

UPGRADES TO MELROSE PARK PUBLIC SCHOOL

SUSTAINABLE DEVELOPMENT PLAN (SDP) – PHASE 3 SCHEMATIC DESIGN

APRIL 2025



CONTACT



Andrea Vargas
Principal Sustainability Consultant
T: +61 427 661 739
E: andrea.vargas@arcadis.com

Arcadis Australia Pacific.
Gadigal Country
Level 16, 580 George Street,
Sydney NSW

UPGRADES TO MELROSE PARK PUBLIC SCHOOL

Sustainable Development Plan (SDP) – Phase 3 Schematic Design

Author Andrea Vargas

Reviewer Shruti Thomas

Approver Maha Momeni

Date April 2025

Version Control

Revision No.	Date Issued	Description	Author	Approver
01	10/12/2024	Draft Issue for REF	Andrea Vargas	Shruti Thomas
02	14/02/2025	Issue for REF	Andrea Vargas	Shruti Thomas
03	1/04/2025	Updated Issue for REF	Shruti Thomas	Nick Larin

CONTENTS

Executive Summary	3
1 Introduction	4
1.1 Activity Description	7
1.2 Activity Site	7
1.3 Evaluation of Environmental Impacts	8
1.4 Reference Documents	8
2 Other Sustainability Drivers	9
Education Facilities Standards and Guidelines (EFSG)	9
NSW Government Resource Efficiency Policy (GREP)	9
Green Star Buildings	9
NSW Sustainable Buildings State Environmental Planning Policies (SEPP).....	9
City of Parramatta – Environmental Sustainability Strategy 2024 - 2033	10
3 Sustainability Initiatives and strategies	11
3.1 Indoor Environment Quality	11
3.2 Water Conservation	12
3.3 Energy Efficiency.....	13
3.4 Material efficiency.....	14
3.5 Social and Cultural Considerations	14
3.6 Climate Change Resilience.....	14
4 Mitigation measures	16
5 Recommendations and Next Steps	16
Appendix A – Green Star Scorecard	17
Appendix B – ESD Schedule.....	18

GLOSSARY

Term	Definition
CCRA	Climate Change Risk Assessment
EFSG	Educational Facilities Standards and Guidelines (NSW Department of Education school design guide)
EPD	Environmental Product Declaration
ESD	Environmentally Sustainable Development
ESG	Environmental, Social and Governance
GBCA	Green Building Council of Australia (Administer the Green Star buildings ratings system)
GHG	Greenhouse Gas
GREP	Government Resource Efficiency Policy (mandated policy for NSW Government agencies)
Landowner	The Minister for Education and Early Learning
NABERS	National Australian Built Environment Rating System
NCC	National Construction Code
Project Name	Upgrades to Melrose Park Public School
Proponent	The Department of Education (DoE)
SEARS	Secretary's Environmental Assessment Requirements: Schedule 2 of the Environmental Planning and Assessment Regulation 2000
SINSW	School Infrastructure NSW (NSW Department of Education directorate)

Executive Summary

Arcadis was engaged by School Infrastructure NSW (SINSW) to develop a Sustainable Development Plan (SDP) for Melrose Park Public School. This SDP outlines key sustainability opportunities and sets clear sustainability targets in accordance with SINSW's requirements. The SDP has been prepared in line with the Department of Education's Educational Facilities Standards and Guidelines (EFSG), the Green Star Buildings Rating System, and the SINSW Design Framework for Sustainability. This report has also been prepared to respond to REF and other planning requirements, to achieve a 5-Star Green Star rating. This aligns with SINSW's commitment to sustainability and the Department of Education's EFSG.

Key Sustainability Considerations:

- **Indoor Environmental Quality:** The design will optimise daylighting, ventilation, and thermal comfort.
- **Water Conservation:** Water-efficient fixtures, rainwater harvesting, and water-sensitive urban design will be implemented.
- **Energy Efficiency:** The project will exceed NCC requirements by 10% through passive design, efficient systems, and potential renewable energy sources.
- **Material Efficiency:** Sustainable materials with low embodied carbon and high recycled content will be prioritised.
- **Social and Cultural Considerations:** The design will prioritise accessibility, universal design, and social interaction.
- **Climate Change Resilience:** The SDP incorporates strategies to mitigate climate change risks and build a resilient school facility.

Green Star Rating

The project is targeting a 5-Star Green Star rating, a holistic benchmark for sustainable building design and construction. We have prepared a preliminary Green Star scorecard (Appendix A) that currently achieves 36 points, meeting the minimum score required for a 5-star rating. This rating will be achieved through a combination of strategic planning, design innovation, and rigorous performance monitoring.

ESD Schedule and Monitoring

The ESD Schedule, included in Appendix B, will be used to track progress towards sustainability goals. This schedule will outline specific actions, responsibilities, and timelines for implementing sustainable strategies. Regular monitoring and evaluation will ensure that the project remains on track to achieve its targets.

This SDP will evolve into a Sustainable Development Report (SDR) post-construction, capturing the final sustainability outcomes and ensuring that all ESD measures have been effectively implemented to meet the project's sustainability targets.

By incorporating these strategies and adhering to the principles outlined in the SDP, the Melrose Park Public School project will deliver a sustainable, high-performance facility that benefits the community and the environment.

1 Introduction

This Sustainable Development Plan (SDP) has been prepared to accompany a Review of Environmental Factors (REF) for an activity proposed by the Department of Education under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and *State Environmental Planning Policy (Transport and Infrastructure) 2021* (SEPP TI).

This document has been prepared in accordance with the Guidelines for Division 5.1 assessments (the Guidelines) by the Department of Planning, Housing and Infrastructure.

This report examines and takes into account the relevant environmental factors in the Guidelines and *Environmental Planning and Assessment Regulations 2021* under Section 170, Section 171 and Section 171A of the EP&A Regulation as outlined in .

Table 1 - Summary of Relevant Section of the Part 5 Guidelines and EP&A Regulation

Regulation / Guideline Section	Requirement	Response	Report Section
Review of Environmental Factors (REF)	Identify how ESD principles (as defined in Part 8, Division 5, Section 193 of the Environmental Planning and Assessment Regulation) are be incorporated in the design and ongoing operation of the development.	Potential sustainability opportunities have been identified based on key environmental criteria, aligning with the preliminary Green Star scorecard, relevant EFSG guidelines, and SINSW's overarching sustainability goals. These opportunities are detailed in Section 3 of this document.	Refer to Section 3.
Review of Environmental Factors (REF)	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 <i>Environmental Design in Schools Manual</i> .	The project is committed to targeting a 5 Star Green Star Buildings v1 rating which is an industry recognised building sustainability tool. This rating will be achieved through a range of strategies, including passive design, energy efficiency, water conservation, and sustainable materials. Refer to Section 3 - Mitigation Measures - Proposed Initiatives for detailed information on the specific strategies and how they align with ESD principles.	Section 3 Appendix A Appendix B
Review of Environmental Factors (REF)	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 project is committed to minimising greenhouse gas emissions and resource consumption. This will be achieved through a combination of strategies, including: <ul style="list-style-type: none"> • <u>Energy Efficiency</u>: High-performance building envelope, energy-efficient systems, and on-site renewable energy generation. • <u>Water Efficiency</u>: Water-efficient fixtures and fittings, rainwater harvesting, and water-sensitive urban design principles. • <u>Material Efficiency</u>: Sustainable material selection and waste minimisation strategies. 	Section 3.3 Net Zero Statement

Table 1 - Summary of Relevant Section of the Part 5 Guidelines and EP&A Regulation

Regulation / Guideline Section	Requirement	Response	Report Section
		By implementing these measures, the project aligns with the Government's net zero emissions goal and contributes to a more sustainable future.	
Review of Environmental Factors (REF)	Where Chapter 3 of the SEPP (Sustainable Buildings) 2022 applies: <ul style="list-style-type: none"> demonstrate how the development has been designed to address the provisions set out in Chapter 3.2(1). 	The school has been designed to address the provisions of Chapter 3: Energy efficiency, water efficiency, material efficiency, indoor environmental quality and adaptability and resilience.	Refer to Sections 1 and 2
Review of Environmental Factors (REF)	<ul style="list-style-type: none"> provide a NABERS Embodied Emissions Material Form to disclose the amount of embodied emissions attributable to the development in accordance with section 35BA of the EP&A Regulation. 	The project is completing a NABERS Embodied Emissions Material Form based on the Cost plan provided by the Quantity Surveyor.	NABERS Embodied Emissions Report
Review of Environmental Factors (REF)	Provide a net zero statement (as defined in section 35C of the EP&A Regulation) that includes: <ul style="list-style-type: none"> evidence of how the development will either be fossil fuel-free after the occupation of the development commences or transition to be fossil fuel-free by 1 January 2035. details of any renewable energy generation and storage infrastructure implemented and any passive and technical design features that minimise energy consumption. estimations of annual energy consumption for the building and amount of emissions relating to energy use in the building (if information is available). 	The project has completed a Net Zero Statement which was certified by an engineer.	Net Zero Statement

Table 1 - Summary of Relevant Section of the Part 5 Guidelines and EP&A Regulation

Regulation / Guideline Section	Requirement	Response	Report Section
Part 8, Division 5, Section 193 of the Environmental Planning and Assessment Regulation	The Precautionary Principle	Serious or irreversible damage to the environment is being avoided by previously developed land for the site. A thorough site investigation was also conducted at early project phase to ensure that there are no serious and irreversible environmental impacts. The design principles within the Green Star Buildings tool are being applied to this site which will ensure that the risk of environmental damage is very low. An Environmental Management Plan is to be developed by the Head Contractor for the project to implement measures during construction to minimise impacts on the environment.	Section 3 and Appendix A.
Part 8, Division 5, Section 193 of the Environmental Planning and Assessment Regulation	Inter-generational equity	The Project will maintain the health, diversity and productivity of the environment for future generations by minimising the consumption of energy and water, and waste generation. Section 3 outlines the initiatives to be implemented.	Section 3, Appendix A, Appendix B
Part 8, Division 5, Section 193 of the Environmental Planning and Assessment Regulation	Conservation of biological diversity and ecological integrity	The development will be designed to ensure biological diversity and ecological value is improved for the site via careful landscape design. Special emphasis will be placed on the introduction of a diverse range of landscaping.	Section 3, Appendix A, Appendix B
Part 8, Division 5, Section 193 of the Environmental Planning and Assessment Regulation	Improved valuation, pricing, and incentive mechanisms	<p>The project will include a number of measures to minimise pollution and consider the life cycle cost of systems.</p> <p>Per the EFSG, all design considerations must take into account whole of life, including maintenance, access, quality, life span, future improvements and sustainability.</p> <p>An EMS will be in place throughout construction to ensure that pollution is prevented, and waste is minimised through effective waste stream handling, collection and recycling.</p>	Section 3, Appendix A, Appendix B

1.1 Activity Description

The activity is for upgrades to Melrose Park Public School within a one to three-storey built form, including:

- Demolition of existing school buildings;
- Site preparation works including tree removal;
- Construction of the following buildings:
 - **Block A:** One (1) storey building comprising:
 - universal pre-school;
 - outdoor play area for the UPS; and
 - detached storeroom;
 - **Block B1:** Two (2) storey building comprising:
 - staff and administration areas;
 - library;
 - 4 special programs rooms;
 - Pedestrian bridge to Block B2;
 - **Block B2:** Three (3) storey building comprising:
 - 23 classrooms;
 - amenities/services cores; and
 - pedestrian bridge to Block B3;
 - **Block B3:** Three (3) storey building comprising:
 - 12 classrooms; and
 - amenities/services cores;
 - **Block C:** One (1) storey building comprising:
 - hall;
 - amenities;
 - canteen;
 - OSHC; and
 - COLA;
- Construction of two (2) car parking areas; and
- Landscaping works.

1.2 Activity Site

Melrose Park Public School is located at 110 Wharf Road, Melrose Park and is legally known as Lot 3 in DP 535298 with an approximate site area of 2.5 hectares. The site has a frontage to Wharf Road (east), Mary Street (south), and Waratah Street (west). The site is adjoined by 2-3 storey light industrial development to the north, 1-2 storey industrial and commercial developments to the south, residential dwellings to the east and industrial and commercial development to the west.

An aerial photograph of the site is provided in **Figure 1** below.



Figure 1 - Aerial Photograph

1.3 Evaluation of Environmental Impacts

Based on the identification of potential impacts and an assessment of the nature and extent of the impacts of the proposed activity, it is determined all activities under sustainability will have minimal impact on the locality, community and/or the environment.

1.4 Reference Documents

This report has been prepared based on the information and drawings shown below:

This report has been prepared based on the information and drawings shown below:

- Architectural drawings produced by PTW Architects, dated 21/01/2025
- Mechanical and Electrical Schematic Design report and drawings dated 17/01/2025
- Green Star Buildings v1 Submission Guidelines – Rev C, dated 18/10/2023
- NSW Sustainable Buildings SEPP – Technical Note, dated September 2023
- NCC 2022 Section J Energy Efficiency

2 Other Sustainability Drivers

SINSW promotes the benefits of incorporating sustainable development concepts and approaches into building design, construction, and operation to meet current and future accommodation requirements. This commitment is guided by a range of guidelines and state regulations, including:

Education Facilities Standards and Guidelines (EFSG)

EFSG is as a comprehensive resource for planning, designing, and operating school facilities within the NSW Department of Education. SINSW takes a clear stance on environmentally sustainable development and outlines key sustainability principles within the EFSG and aligns with current Australian best practices. The EFSG sets essential standards for schools, emphasizing their role in creating eco-friendly and forward-looking educational environments. This has been captured in the ESD Schedule.

NSW Government Resource Efficiency Policy (GREP)

The NSW Government Resource Efficiency Policy (GREP) is a comprehensive strategy designed to align state projects with sustainability objectives, which all SINSW projects must comply with. GREP focuses on enhancing resource efficiency within NSW Government agencies, specifically targeting three key areas: energy, water, and waste management. Additionally, the policy aims to mitigate harmful air emissions resulting from government operations. By addressing the rising costs of energy, water, clean air, and waste management, GREP enables government agencies to leverage their purchasing power to promote the adoption of resource-efficient technologies and services. It also sets a strong example by embedding resource efficiency into decision-making processes.

Green Star Buildings

The Green Star Buildings Framework is a comprehensive rating system and certification program designed to assess and promote the sustainability of buildings and construction projects, primarily in Australia. It provides guidelines and performance criteria across various categories, including energy efficiency, water usage, indoor environmental quality, materials, and innovation, to evaluate a building's environmental performance. This framework encourages the integration of sustainable practices and technologies into building design and construction, fostering environmentally friendly and energy-efficient structures.

By registering the project for a Green Star Building v1 rating with the Green Building Council of Australia the project would be held to a third-party review and be required to meet appropriate documentation standards and reporting requirements. In line with GREP requirements, Melrose Park Public School must achieve a minimum 5-star Green Star rating as it is located within the Sydney regions. To do so, the Project is required to meet the Minimum Expectations and the Climate Positive Pathway.

To achieve a 5 star Green Star rating to the Green Star Buildings V1 rating tool requires a **minimum 35 points** and minimum expectations to be achieved to target the rating. Details of the scorecard can be found in **Appendix A**.

NSW Sustainable Buildings State Environmental Planning Policies (SEPP)

The NSW Sustainable Buildings SEPP aims to simplify, measure and report the way buildings are planned and designed in NSW. Sustainable Buildings SEPP was introduced to measure the performance of new buildings in NSW and to ensure that new buildings are in alignment with the Net Zero commitments set by the state government.

As per the requirements outlined in NSW Sustainable Buildings SEPP, all new commercial buildings >1,000 m² should measure and report on the embodied emissions for the building. Furthermore, all State Significant developments, such as educational buildings must produce a Net Zero Statement to show the developments

does not use fossil fuels or can transition by 2035 in alignment with NSW government's net zero ambitions. Melrose Park Public School meets the above criteria and must prepare a Embodied emissions report and Net Zero Statement as part of Design Development.

City of Parramatta – Environmental Sustainability Strategy 2024 - 2033

The City of Parramatta's Environmental Sustainability Strategy 2024-2033 focuses on regeneration, resilience, and climate action to encourage environmental outcomes that bring people and nature together.

The strategy focuses on five key priorities as shown in Parramatta's Environmental Sustainability Strategy

- Climate Positive,
- Future Ready Community,
- Blue Green City,
- Nature Positive, and
- Circular Economy.

These priorities set out the city's long-term environmental sustainability ambitions and the steps being taken to achieve them. The strategy aims to create a sustainable and resilient future for Parramatta, while also protecting and enhancing its natural environment.

3 Sustainability Initiatives and strategies

To achieve our sustainability performance targets and create high-quality learning environments, we've identified key initiatives aligned with EFSG guidelines, SINSW's sustainability goals, and the Green Star rating system. These initiatives, initially developed during Concept Design and refined in Schematic Design, should be further optimised during Detailed Design.

A summary of the initiatives is provided below, with further details on timing, evidence, and responsibilities outlined in the ESD schedule in **Appendix B**.

3.1 Indoor Environment Quality

Initiative	Description	Green Star Credit	SINSW Sustainability Strategy Priority	EFSG Criteria
Use of Low VOC paints	Use low emissions paints of all internal flat and low-sheen areas, and water-based paints for all internal, gloss or semi-gloss finishes.	Healthy – Exposure to Toxins (Credit 13)	Unlock Human Potential	0.08 Sustainable Materials
Thermal Comfort	Predicted Mean Vote between +1 and -1 or all occupied areas.	N/A	Unlock Human Potential	0.06 Energy Conservation - Passive Design
Passive Design - Ventilation	Incorporate natural ventilation in buildings, and artificial ventilation for spaces which cannot be ventilated naturally.	Healthy – Clean Air (Credit 10)	Unlock Human Potential	0.06 Energy Conservation - Passive Design
Access to Daylight	The buildings provide good daylight and its lighting is of high quality.	Daylight (Credit 11.3)	Unlock Human Potential	0.06 Lighting and Daylight
Passive Design Solution – Optimising Building Insulation	Install optimum insulation in building fabric where possible i.e., floors or internal walls to improve energy efficiency and thermal comfort in all occupied spaces	Positive – Energy Use (Credit 22)	Act on Climate Change	0.06 Energy Conservation - Passive Design
Passive Design Solution – Improved Glazing	Install improved glazing i.e., low-e, double glazed systems to improve thermal comfort, energy efficiency and sealing.	Positive – Energy Use (Credit 22)	Act on Climate Change	0.06 Energy Conservation - Passive Design

3.2 Water Conservation

Initiative	Description	Green Star Credit	SINSW Sustainability Strategy Priority	EFSG Criteria
Low water use in landscaping	Use of Australian native plants and low water species plants for landscaping.	Nature – Biodiversity Enhancement (Credit 36)	Act on Climate Change	-
Water efficient fixtures	All fixtures and water-using appliances installed within the project's scope must, at a minimum, meet the prescribed WELS ratings: Taps, Urinals and Dishwashers: 5 Star Toilets and Clothes washing machine: 4 star Showers: 3 Star	Positive – Water Use (Credit 25)	Consume Responsibly	0.07 Water Conservation
Rainwater collection	The current design includes a 25kL rainwater tank and the water will be utilised for irrigation. Connecting the rainwater tank to toilets for flushing is not feasible due to the current design constraints, approval has been asked to SINSW.	Positive – Water Use (Credit 25)	Consume responsibly	0.07 Water Conservation
Water use monitoring	Sub-meters will be installed for amenities and canteens. The method of measurement for these meters will be integrated into the Building Management System (BMS).	Positive – Water Use (Credit 3.1)	Consume responsibly	0.07 Water Conservation
Stormwater Management	Water quality treatment measures include rainwater tanks for on-site reuse, pit insert baskets, and filter cartridges within a tank at the end of the system.	Waterway Protection (Credit 39)	Consume responsibly	-

3.3 Energy Efficiency

Initiative	Description	Green Star Credit	SINSW Sustainability Strategy Priority	EFSG Criteria
Passive Design Solution – Optimising Building Insulation	Install optimum insulation in building fabric where possible i.e., floors or internal walls to improve energy efficiency and thermal comfort in all occupied spaces	Positive – Energy Use (Credit 22)	Act on Climate Change	0.06 Energy Conservation - Passive Design
Passive Design Solution – Improved Glazing	Install improved glazing i.e., low-e, double glazed systems to improve thermal comfort, energy efficiency and sealing.	Positive – Energy Use (Credit 22)	Act on Climate Change	0.06 Energy Conservation - Passive Design
Monitoring Systems	Smart building technologies and intelligent controls for ventilation, air conditioning, and lighting controls, to optimize energy usage. HVAC Temperature Humidity and CO2 Sensors will be provided to measure ambient air conditions through the precinct BMS. Motion sensors are provided to deactivate HVAC systems when unoccupied. Lighting motion and timing sensors activate lighting and dimming sensitivity to reduce energy use.	Responsible – Verification and Handover (Credit 3)	Act on Climate Change	DG 55 Thermal Comfort DG 63 Lighting Design
Energy efficient Lighting, appliances and equipment	Energy efficiency LED lighting must be installed. Energy efficient appliances and equipment	Lighting Comfort (Credit 11.1)	Unlock Human Potential	0.06 Energy Conservation
Renewable energy	A grid connected solar PV system will be provided	Energy source (Credit 23)	Act on climate change	-
The building has low energy consumption.	The building uses 10% less energy compared to a reference building.	Energy use (Credit 22)	Act on climate change	0.06 Energy Conservation
Electrification of all infrastructure	Electric heating will be provided	Energy use (Credit 22)	Act on climate change	0.06 Energy Conservation

3.4 Material efficiency

Initiative	Description	Green Star Credit	SINSW Sustainability Strategy Priority	EFSG Criteria
Recycled and reused materials	Maximise recycled and reused material in the construction of buildings.	Responsible - Responsible Envelope (7.1), Responsible Systems (8.1-8.2) and Responsible Finishes (9.1-9.2)	Consume Responsibly	0.08 Sustainable Materials
Material selection to reduce absorption of heat	Choose light-coloured and reflective materials for pavements, sidewalks, and buildings to reduce the absorption of solar heat.	Resilient – Heat Resilient (19)	Build Resilience	0.08 Sustainable Materials

3.5 Social and Cultural Considerations

Initiative	Description	Green Star Credit	SINSW Sustainability Strategy Priority	EFSG Criteria
At least 80% of plants are indigenous, native plant species	Choose native plant species that are indigenous to the local area and provide habitat and food sources for native fauna.	Nature – Biodiversity Enhancement (36)	Foster Connections	0.09 Ecological Conservation
Community use of facilities	Design facilities for use outside of school hours for activities such as weekend church groups, sport events and public meetings.	Community Resilience (18)	Foster Connections	0.01 Scope / 0.09 Ecological Conservation

3.6 Climate Change Resilience

A climate change risk and adaptation workshop was conducted on 14 October 2024, where stakeholders and consultants assessed how the project can respond to future expected environmental conditions as a result of climate change. During the session, 60 risks related to key climate hazards affecting the school were identified. These risks were then assessed based on their likelihood and potential consequences.

Arcadis has consolidated the workshop results into a Climate Risk Register, which includes a description of each risk, assigned risk owners, current controls and treatments, and proposed adaptation actions.

Initiative	Description	Green Star Credit	SINSW Sustainability Strategy Priority	EFSG Criteria
Climate Change Risk Assessment	Conduct a CCRA to identify all extreme, high, medium, and low risks to the project.	Resilient – Climate Change (16)	Act on Climate Change	0.05 Climate Change Adaptation
Prepare a climate change adaptation and resilience plan	Mitigate all high and extreme risks to the project and consider adaptation measures for most medium risks.	Resilient – Climate Change (16) Resilient – Operations Resilience (17) Resilient – Community Resilience (18)	Act on Climate Change	0.05 Climate Change Adaptation

4 Mitigation measures

The following consolidated summary of the mitigation measures were identified throughout your report.

Mitigation Name	Project Stage <i>Design (D) Construction (C) Operation (O)</i>	Mitigation Measures	Reason for Mitigation Measure
Net Zero	D / C / O	The project must be fossil fuel free development	NSW Net Zero Plan
Reduction in energy consumption	D / C	The project must have initiatives to reduce energy consumption by at least 10% from reference building	Reduction in greenhouse gas emissions, alignment with EFSG, NSW Net Zero Plan, Green Star
Green Star rating	D / C	The project must achieve 4 Star Green rating. The project has been registered with GBCA and a draft scorecard has been prepared.	Alignment with SINSW Sustainability policy

5 Recommendations and Next Steps

This ESD report outlines the initial sustainable design initiatives integrated into the Phase 3 - Schematic Design stage of the Upgrades to Melrose Park Public School project. These initiatives align with SINSW's commitment to sustainability, the Green Star rating system, and the EFSG guidelines.

Next Steps

To further strengthen the project's sustainability performance and achieve the 5-Star Green Star rating, the following key steps are recommended:

- **Detailed Modelling and Analysis:** Conduct in-depth modelling and analysis to ensure compliance with Green Star, EFSG, and NCC Section J requirements.
- **Alternative Options:** Explore and evaluate alternative design options to optimise performance and address any challenges that may arise.
- **Collaboration and Optimisation:** Continue collaborating with the design and consultant teams to refine the design and identify opportunities for further improvement.
- **Monitoring and Evaluation:** Implement a robust monitoring and evaluation framework to track progress and identify areas for optimisation.

This report serves as a foundational document to further embed sustainability into the design process, aligning with SINSW's objectives to deliver a net-positive school building.

Appendix A – Green Star Scorecard



Date	31/3/2025
Revision	2.0
Author	ST/AV
Tool	v1 Rev C

Credit	Points	Minimum
Low	19	31
Medium	14	0
High	3	0
Total	105	-

Credit Title	Aim of Credit	Credit Code	Criteria Title	Credit Requirements Summary For full criteria refer to Green Star for Buildings Submission Guidelines	Points Available	5 star	Credit Risk Status	Corresponding EFSG Requirement	Discipline Responsibility									
									SINSW	Contractor	Architects	Structures	Mechanical	Electrical	Hydraulic	Acoustics	ESD	
RESPONSIBLE																		
Industry Development	The development facilitates industry transformation through partnership, collaboration and data sharing.	Credit Achievement; meet all three of the following criteria:			1		1	Low	0.03 Sustainability Benchmarking									
		1.1	Green Star Accredited Professional	A Green Star AP must be contractually engaged as part of the core project team for the duration of the project.														
		1.2	Financial Transparency	The project team discloses the cost of sustainable building practices of the project, including design, construction and documentation to the GBCA.														
		1.3	Marketing Sustainability Achievements	Information on the sustainability initiatives that the building targeted must be provided to enable it being featured on the GBCA's website. The project team must outline how the building will detail its sustainability achievements to its stakeholders (typical building occupants and visitors). The Green Star Certification achieved for the project must be prominently displayed in a location that is visible to the public.														
Responsible Construction	The builder's construction practices reduce impacts and promote opportunities for improved environmental and social outcomes.	Minimum Expectation; meet all four of the following criteria:			ME		ME	Low	N/A	x								
		2.1	Environmental Management System	Builder must have an Environmental Management System (EMS) certified to a recognised standard, such as AS/NZS ISO 14001, BS 7750 or the European Community's EMAS.														
		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.														
		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 <i>Green Star Construction and Demolition Waste Reporting Criteria</i> .														
		2.4	Sustainability Training	The Builder must provide the following training to 95% of all contractors and subcontractors present on site for at least three (3) days: • Information on the sustainable building certification(s) sought, including: – the sustainability attributes of the building and their benefits; – the value of certification; and – the role site worker(s) play in delivering a sustainable building.														
		Credit Achievement; in addition to the Minimum Expectation, meet the following criteria:			1			Low										
		2.5	Construction and Demolition Waste Diversion	Projects must divert at least 90% 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 <i>Green Star Construction and Demolition Waste Reporting Criteria</i> .														

Verification and Handover	The building has been optimised and handed over to deliver a high level of performance in operation.	Minimum Expectation; meet all three of the following criteria:														
		3.1	Metering and Monitoring	The building must have accessible energy and water metering for all common uses, major uses, and major sources. The meters must be connected to a monitoring system capable of capturing and processing the data produced by the meters. The meters and monitoring systems must: • Provide continual information (up to 1-hour interval readings); • Be commissioned and validated per the most current 'Validating Non-Utility Meters for NABERS Ratings' protocol, or National Measurement Institute (NMI) standards; • Be capable of identifying inaccuracies in the meter network and producing alerts. Inaccuracies are defined as those over meter tolerances based on their metering accuracy class (e.g. 'Class 1' meters shall not have inaccuracies of more than 1% due to metering accuracy class); and • Be sufficient to support future achievement of a NABERS rating.	ME	ME	Low	N/A		x				x	x	x
		3.2	Commissioning and Tuning	The project team must perform the following prior to construction: • Set environmental performance targets; and • Perform a services and maintainability review; • Design for airtightness; During construction and practical completion: • Commission the building; and • Engage building tuning service provider; • Test for airtightness; After practical completion: • Tune the building over the next 12 months.			Low	N/A	x	x				x		
		3.3	Building Information	The project team must provide the following to the building owner: • Operations and maintenance information for all nominated building systems; • A building log book developed in line with CIBSE TM31: Building Log Book Toolkit before practical completion of the project; and • Building user information.			Low	N/A	x	x						
		Credit Achievement; in addition to the Minimum Expectation, meet one or both (Building Services Value > \$20M) of the following criteria:														
		3.4	Soft Landings Approach	The Builder is to implement Stages 1 - 4 of the <i>Soft Landing Framework Australia and New Zealand</i> .	1		Not targeted									
		3.5	Independent Commissioning Agent	An ICA must be appointed to advise, monitor, and verify the commissioning and tuning of the nominated building systems throughout the design, tender, construction, commissioning and tuning phases.			Not targeted									
Responsible Resource Management	Operational waste is able to be recovered in a safe and easy manner.	Minimum Expectation; meet all three of the following criteria:														
		4.1	Collection of Waste Streams	The building must provide bins or storage containers to building occupants to enable them to separate their waste. These bins must be labelled and easy to access, and evenly distributed throughout the building. They must also allow for separating the following as a minimum: • General waste going to landfill • Recycling streams to be collected by the building's waste collection service, including: – paper and cardboard – glass – plastic • One additional waste stream identified by the project team. This may include collecting any of the following waste types: organics, e-waste, batteries etc. Any other single waste stream (except food waste) that is expected to represent more than 5% 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 storage area(s) must have easy and safe access by collection vehicles.	ME	ME	Low	0.10 Operational Waste	x	x						
		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 storage area(s) must have easy and safe access by collection vehicles.			Low			x	X					
		4.3	Signoff by Waste Specialist and/or Contractor	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 storage area(s) must have easy and safe access by collection vehicles.			Low			x						

Responsible Procurement	The procurement process for all products, materials, and services follows best practice environmental and social principles.	Credit Achievement; meet both of the following criteria:																
		5.1	Risk and Opportunity Assessment	<p>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 assessment must be completed by the design team with input from the building owner. At least one of each of the following three areas must be represented in the 10 items:</p> <ul style="list-style-type: none"> • Building Services • Plant & Equipment • Materials <p>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:</p> <ul style="list-style-type: none"> • Human rights • Labour practices • The environment • Fair operating practices • Consumer issues 	1		Not targeted											
Responsible Structure	The building's structure is comprised of responsibly manufactured products.	5.2	Responsible Procurement Plan	<p>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.</p> <p>The plan must:</p> <ul style="list-style-type: none"> • 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 <p>The plan must be embedded in tender documentation for the head contractor or relevant trades. It must be implemented in partnership with relevant contractor's and trades throughout construction, demonstrating data collection, monitoring, and reporting has been carried out.</p>			Not targeted											
Responsible Envelope	The building's envelope is comprised of responsibly manufactured products.	Credit Achievement																
		6.1	Responsible Products Value	50% of all structural components (by cost) meet a Responsible Products Value of at least 10.	3	3	High			x	x	x						
Responsible Envelope	The building's envelope is comprised of responsibly manufactured products.	Exceptional Performance																
		6.2	Minimum or Average Responsible Products Value	<p>In addition to 6.1, one of the following must be met:</p> <ul style="list-style-type: none"> • 10% of all products in the structure (by cost) meet a Responsible Products Value of at least 15 Or • 80% of all products in the structure (by cost) meet a Responsible Products Value of at least 10. 	2		Not targeted											
Responsible Envelope	The building's envelope is comprised of responsibly manufactured products.	Credit Achievement																
		7.1	Responsible Products Value	30% of all building envelope components (by cost) meet a Responsible Products Value of at least 10.	2	2	Medium	0.08 Sustainable Materials		x	x							
Responsible Envelope	The building's envelope is comprised of responsibly manufactured products.	Exceptional Performance																
		7.2	Minimum or Average Responsible Products Value	<p>In addition to 7.1, one of the following must be met:</p> <ul style="list-style-type: none"> • 10% of all products in the building envelope (by cost) meet a Responsible Products Value of at least 15 or • 60% of all products in building envelope (by cost) meet a Responsible Products Value of at least 10. 	2		Not targeted	0.08 Sustainable Materials										

Responsible Systems	The building's mechanical, electrical, hydraulic and transport systems are comprised of responsibly manufactured products.	Credit Achievement														
		8.1	Responsible Products Value	20% of all active building systems (by cost) meet a Responsible Products Value of at least 6.	1		Not targeted	0.08 Sustainable Materials								
		Exceptional Performance														
		8.2	Minimum or Average Responsible Products Value	In addition to 8.1, one of the following must be met: • 5% of all active building systems (by cost) meet a Responsible Products Value of at least 11 or • 35% of all active building systems (by cost) meet a Responsible Products Value of at least 6.	1		Not targeted	0.08 Sustainable Materials								
Responsible Finishes	The building's internal finishes are comprised of responsibly manufactured products.	Credit Achievement														
		9.1	Responsible Products Value	40% of all internal building finishes (by cost) meet a Responsible Products Value of at least 7.	1	1	Low	0.08 Sustainable Materials		x	x					
		Exceptional Performance														
		9.2	Minimum or Average Responsible Products Value	In addition to 9.1, one of the following must be met: • 10% of all internal building finishes (by cost) meet a Responsible Products Value of at least 12 or • 60% of all internal building finishes (by cost) meet a Responsible Products Value of at least 7.	1		Not targeted	0.08 Sustainable Materials								
RESPONSIBLE Total					17	7		0								

HEALTHY															
Clean Air	Pollutants entering the building are minimised, and a high level of fresh air is provided to ensure levels of indoor pollutants are maintained at acceptable levels.	Minimum Expectation; meet all three of the following criteria:													
		10.1	Ventilation System Attributes	<ul style="list-style-type: none"> Separation from pollutants: Non-residential 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. If using ASHRAE Standard 62.1:2013, compliance is to be demonstrated in accordance with the distances specified in Table 5.5.1 of the Standard. Analytical solutions are also acceptable by following the example provided within Appendix F of ASHRAE Standard 62.1: 2013. Class 2 and Class 3 building ventilation systems must be designed to comply with the separation distances as outlined in Australian Standards 1668.2:2012 (table 3.4) Cleaning ductwork: all ductwork that serves the building must be cleaned prior to occupation in accordance with a recognised standard. 	ME	ME	Low			x				x	
		10.2	Provision of Outdoor Air	Outdoor air is provided at a rate 50% greater than the minimum required by AS1668.2:2012, or CO ₂ concentrations are maintained below 800ppm at all times during the occupancy period.			Low			x		x		x	
		10.3	Exhaust or Elimination of Pollutants	It must be demonstrated that pollutants from printing and photocopying equipment, cooking processes and equipment are limited from the nominated area by either: <ul style="list-style-type: none"> Removing the source of pollutants; or Exhausting the pollutants directly to the outside. 			Low			x				x	
		Credit Achievement; in addition to the Minimum Expectation, meet both of the following criteria:													
		10.4	Ventilation System Attributes	Any mechanical ventilation system within the building must provide adequate access to both sides of all moisture and debris-catching components for maintenance within the air distribution system.	2		Not targeted								
		10.5	Provision of Outdoor Air	For mechanically ventilated or mix mode spaces, outdoor air is provided at a rate 100% greater than the minimum required by AS1668.2:2012, or CO ₂ concentrations are maintained below 700ppm at all times during the occupancy period.			Not targeted								
Light Quality	The building provides good daylight and its lighting is of high quality.	Minimum Expectation; meet all three of the following criteria:													
		11.1	Lighting Comfort	Lighting within the building must meet the following requirements: <ul style="list-style-type: none"> All LED lighting installed across the whole project has no observable effect as per the standard IEEE 1789-2015 - IEEE Recommended Practices for Modulating Current in High-Brightness LEDs for Mitigating Health Risks to Viewers Light sources must have a minimum Colour Rendering Index (CRI) 85 or higher, in all internal and external applications 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 All light sources must have a MacAdam Ellipse or a Standard Deviation Colour Matching (SDCM) of 3 or lower. 	ME	ME	Low	0.06 Lighting and Daylight		x				x	
		11.2	Glare from Light Sources	Bare light sources must be fitted with baffles, louvers, translucent diffusers, ceiling design, or other means that obscures the direct light source from all viewing angles of occupants, including occupants looking directly upwards. Refer the Submission guidelines for more prescriptive pathways.			Low	0.06 Glare Control and shading		x				x	
		11.3	Daylight	The project team is required to show how the building's design: <ul style="list-style-type: none"> Maximises the number of occupants that are in or near daylight 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 daylight spaces; Maximises daylight to spaces that prioritise learning, healing, and living: <ul style="list-style-type: none"> For schools, how all classrooms have access to a view and daylight; For hospitals, how all patient areas have access to a view and daylight; and For apartments, how in 95% of all apartments, the living rooms and all bedrooms have access to a view and daylight; and Provides building occupants with unrestricted access to daylight indoor common spaces 			Low	0.06 Lighting and Daylight		x		x			

		Credit Achievement; meet at least one criteria (2 points) Exceptional Performance; meet both criteria (4 points)															
		11.4	Artificial Lighting	<ul style="list-style-type: none"> 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 a vertical illuminance calculation grid. <p>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.</p>	4		Not targeted										
		11.5	Daylight	For non-residential buildings, at least 40% of the nominated area averaged across the building must receive high levels of daylight with no less than 20% on any floor or tenancy (whichever is smaller). For residential buildings, 60% of the combined living and bedroom area of each apartment unit must comply with the daylight requirements. Kitchens are not included in the calculations. The daylight levels must also be present in at least 20% of the area of each bedroom and living area.	2		Medium	0.06 Lighting and Daylight	x	x							x
Acoustic Comfort	The building provides acoustic comfort for building occupants.	Minimum Expectation															
		12.1	Acoustic Comfort Strategy	<p>An Acoustic Comfort Strategy must be prepared describing how the building design will deliver acoustic comfort to the building occupants. It must address:</p> <ul style="list-style-type: none"> Quiet enjoyment of space; Functional use of space; Control of intrusive or high levels of noise; Privacy; Noise Transfer; and Speech intelligibility. <p>The Acoustic Comfort Strategy is to include:</p> <ul style="list-style-type: none"> 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 Description of how the design solution is intended to achieve the proposed performance metrics <p>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.</p>	ME	ME	Low		x							x	
		Credit Achievement; in addition to the Minimum Expectation, meet 3 of 5 of the following criteria:															
		12.2	Maximum Internal Noise Levels	<p>In addition to the Minimum Expectation, the following are the applicable acoustic criteria assessable under this credit:</p> <ul style="list-style-type: none"> Maximum Internal Noise Levels Minimum Internal Noise Levels Acoustic Separation Impact Noise Transfer Reverberation Control (non-residential spaces only) <p>Depending upon the project type, the project must comply with some, or all, of the above criteria.</p>	2	2	Low		x							x	
		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.			Low		x							x	
		12.4	Acoustic Separation	The project must address noise transmission between enclosed spaces within the nominated area demonstrated through privacy or sound insulation.			Low		x							x	
		12.5	Impact Noise Transfer	<p>Impact noise transfer measured in accordance with ISO 16283-2 through a floor where:</p> <ul style="list-style-type: none"> 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. 			Not targeted										
		12.6	Reverberation Control	Reverberation time in the regularly occupied area must be below the maximum stated in the 'Recommended Reverberation Time' provided in Table 1 of AS/NZ 2107:2016.			Not targeted										

Exposure to Toxins	The building's occupants are not directly exposed to toxins in the spaces they spend time in.	Minimum Expectation; meet all three of the following criteria:			ME	ME	Low	0.08 Sustainable Materials		x	x							
		13.1	Paints, Adhesives, Sealants & Carpets	At least 95% of internally applied paints, adhesives, sealants (by volume) and carpets (by area) must meet stipulated 'Total Volatile Organic Compounds (TVOC) Limits' below. Compliance can be demonstrated in the following ways: • The product(s) are certified under a Recognised Product Certification Scheme listed in the 'Exposure to Toxins Product Certifications Schemes Index'. The certificate must be current at the time of purchase • The product(s) are tested in a laboratory • There are no paints, adhesives, sealants, and carpets in the building at practical completion														
		13.2	Engineered Wood Products	Either no new engineered wood products are used in the building or at least 95% (by area) of all engineered wood products meet specified formaldehyde emission limits.														
		13.3	Banned or Highly Toxic Materials	A comprehensive hazardous materials survey must be carried out. Asbestos, lead or PCBs have been stabilised or removed and disposed 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.														
		Credit Achievement; in addition to the Minimum Expectation, meet the following criteria:																
		13.4	TVOC and Formaldehyde Levels	Onsite test meeting following limits: • TVOC = 0.27 ppm; • Formaldehyde = 0.02 ppm; and • 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.	2	2	Low	0.08 Sustainable Materials		x	x							
Amenity and Comfort	The building provides internal amenities that improve occupant experience of using the building.	Credit Achievement																
		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 per below: • Parent room; • Relaxation, meditation or prayer room; or • Exercise room; and The room size to be provided must be as follows: • The size of the room is calculated at a ratio of 1m² per every 10 occupants or staff; and • The room must be no smaller than 10m².	2	2	Low			x	x							
Connection to Nature	The building fosters connection to nature for building occupants.	Credit Achievement; Views + either Plants and Nature-inspired design or Interaction with Nature Exceptional Performance; all criteria																
		15.1	Views	At least 60% of the nominated area has a clear line of sight to a high quality internal or external view. All floor areas within 8m from a compliant view can be considered to meet this credit criterion.	2	2	low			x	x							
		15.2	Plants	Indoor plants must be provided in regularly occupied areas. 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.			Not targeted											
		15.3	Nature-inspired Design	Five additional nature-inspired design interventions must be provided in alignment with the following principles: • Elements that provide multiple natural sensory experiences; • Elements that reflect natural and cultural patterns and forms; • Using natural materials; and • Large scale and holistically incorporated natural motifs and art.			low			x	x							
		15.4	Interaction with Nature	• 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 floor area/site area (whichever is greater) must be planted area (either vertical or horizontal); and • The allocated area must be accessible and have the necessary infrastructure to allow the activity to occur.			low			x	x							
HEALTHY Total					14	10		0										

RESILIENT																
Climate Change Resilience	The building has been built to respond to the direct and indirect impacts of climate change.	Minimum Expectation														
		16.1	Pre-screening Assessment	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).	ME	ME	Low	0.05 Climate Change Adaptation	x	x						x
		Credit Achievement; in addition to the Minimum Expectation, meet both the following criteria:														
		16.2	Climate Change Risk and Adaptation Assessment	A suitably qualified professional must undertake a climate change risk and adaptation assessment and author a report.	1	1	Low	0.05 Climate Change Adaptation	x	x						x
		16.3	Managing Risks	The project team must ensure risks are addressed as follows: • All risks rated as 'Extreme' must be addressed through specific design responses; • All risks rated as 'High' must be addressed through design or future operational responses; and • Regardless of risk rating, at least two risks identified in the assessment must be addressed by specific design responses.	1	1	Low		x	x						x
Operations Resilience	The building can respond to acute shocks and chronic stresses that can affect its operations over time.	Credit Achievement; meet all three of the following criteria:														
		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 project and provide a diverse range of actions; • Collaborate with key internal and external project stakeholders to identify and confirm the relevant acute shocks and chronic stresses likely to impact the functionality of the project and its ability to meet performance goals; • Identify and confirm a range of interdependent infrastructure systems, networks, services and assets on which the project is likely to rely and interface with; • Identify key areas of system vulnerability, specifically how these may be affected by the identified shocks and stresses and as result may impact the project through reduced capacity and/or functionality; and • Outline emergency response procedures in the event of an identified shock event/natural disaster impacting the project and the local community. • Consult with relevant authorities with regards to evacuation procedures and	2		Not targeted									
		17.2	Managing Risks	• All risks rated as 'Extreme' must be addressed through specific design responses. • All risks rated as 'High' must be addressed through design or future operational responses. • Regardless of risk rating, at least two risks identified in the assessment must be addressed by specific design responses.			Not targeted									
		17.3	Addressing Power Loss	Project team must assess building's survivability in the case of a blackout, then designed to account for its design purpose and provide a measure of survivability.			Not targeted									
Community Resilience	The building contributes to improving the resilience of the community.	Credit Achievement														
		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; and • Identifies how material shocks and stresses identified for the building may impact on these stakeholders by considering a range of social indicators.	1		Not targeted	0.01 Scope / 0.09 Ecological Conservation								
Heat Resilience	The building reduces its impact on heat island effect.	Credit Achievement														
		19.1	Heat Island Reduction	Design responses to mitigate urban heat island: 75% of the site area to be one or a combination of: • Vegetation; • Green roofs; • Roofing materials, including shading structures, having the following: – For roof pitched <15° – a three-year SRI of minimum 64; or – For roof pitched >15° – a three-year SRI of minimum 34. • Unshaded hard-scaping elements with a three-year SRI of minimum 34 or an initial SRI of minimum 39; • Hardscaping elements shaded by overhanging vegetation; and • Water bodies and/or water courses. Area of site that is shaded by permanent structures during the summer solstice are also deemed compliant.	1	1	Low	0.08 Sustainable Materials		x	x					
		Credit Achievement; meet one criteria or a combination of Active Generation and Storage Systems and Demand Response criteria:														

Grid Resilience	The building contributes to the functioning of the grid as it transitions to a higher level of renewable energy capacity.	20.1	Active Generation and Storage Systems	The building has the capacity to reduce its electricity peak demand by 10% of the building's annual peak electricity demand for at least a one-hour period. The peak demand reduction can occur through • thermal storage solutions (such as chilled water storage systems); • electricity storage solutions (batteries); or • renewable on-site generation. Building management system (BMS) must include a demand management dashboard that shows the peak demand target, current, historical demand, alongside the critical performance characteristics. The BMS must also have the capacity to accept external control signals to enable signing up to current or future demand response programs	3	Not targeted											
		20.2	Demand Response	The demand response strategy must show how at least 10% of the building's annual peak electricity demand is being shed without affecting occupant amenity (comfort, lighting, movement) as outlined in credits Light Quality and Amenity and Comfort for at least 4 hours.		Not targeted											
		20.3	Passive Design Solutions	• The building's facade demonstrates a 10% improvement over a reference building modelled to Section J requirements of the National Construction Code 2019, or the version of the code applicable to the building's construction, whichever is later. The calculation must follow either Method 2 in the wall/glazing calculator or use a JV3 model; and • The building is mostly naturally ventilated (that is, the building has no mechanical cooling or heating for 80% of the building's occupiable area); and • The building's occupiable area is less than 3,000m².		Not targeted											
RESILIENCE Total				8	2	0											
POSITIVE																	
Upfront carbon emissions	The building's upfront carbon emission contributions from materials and products have been reduced and offset.	Minimum Expectation															
		21.1	Reducing Upfront Carbon Emissions	Emits 10% less upfront carbon emissions compared to a reference building	ME	ME	Low	N/A		x	x	x					
		Credit Achievement; in addition to the Minimum Expectation, meet the following criteria:															
		21.2	Reducing Upfront Carbon Emissions	Emits 20% less upfront carbon emissions compared to a reference building. Demolition works are offset.	3	3	Medium	N/A		x	x	x					
		21.3	Offsetting Demolition Works	Demolition works are offset			not targeted	N/A									
		Exceptional Performance; in addition to the Credit Achievement, meet the following criteria:															
Energy use	The building has low energy consumption.	21.4	Reducing Upfront Carbon Emissions	Emits 40% less upfront carbon emissions compared to a reference building	3		Not targeted										
		Minimum Expectation															
		22.1	Reducing Energy Use	The building uses 10% less energy compared to a reference building.	ME	ME	Low	0.06 Energy Conservation		x	x		x	x			x
		Credit Achievement; in addition to the Minimum Expectation, meet the following criteria:															
		22.2	Reducing Energy Use	The building uses 20% less energy compared to a reference building.	3	3	Medium			x	x		x	x			x
		Exceptional Performance; in addition to the Credit Achievement, meet the following criteria:															
		22.3	Reducing Energy Use	The building uses 30% less energy compared to a reference building.	3		Not targeted										

Energy source	The building's energy comes from renewables.	Minimum Expectation														
		23.1	Zero Carbon Action Plan	The project team must develop a Zero Carbon Action Plan for the building. The plan must be signed off by the building owner or developer and included in any operational documents for the building. The Zero Carbon Action Plan must include a target date by when the building is expected to operate as net zero carbon. The Zero Carbon Action Plan must cover all energy consumption, procurement, and generation and cannot rely on procuring renewable fuels as its only solution. It must also include infrastructure provided for tenants or future occupants such as gas installations for cooking.	ME	ME	Low		x							x
		Credit Achievement; in addition to the Minimum Expectation, meet the following criteria:														
		23.2	Renewable Electricity	All electricity under the control of the building owner or operator must be accounted for and sourced from renewables.	3		Not targeted									
Exceptional Performance; in addition to the Credit Achievement, meet the following criteria:																
		23.3	Renewable Energy	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.	3		Not targeted									
Other carbon emissions	The building's other carbon emissions, such as those from refrigerants, are eliminated or offset.	Credit Achievement														
		24.1	Eliminating or Offsetting Refrigerants	All refrigerants from building systems or domestic appliances provided by the building must be captured in the credit. There are two pathways available: • Eliminates high-GWP refrigerants from the building; or • Offsets 100% of carbon emissions from refrigerants.	2		Not targeted									
		Exceptional Performance; in addition to the Credit Achievement, meet the following criteria:														
		24.2	Other Emissions	The project must calculate and onset: • Emissions for refrigerants; • Emissions from the building's electricity use (as determined in the Energy Use credit) multiplied by the grid coefficient (unless the Energy Source Credit Achievement is met, in which case these emissions are zero); • Emissions from the building's energy use as determined in the Energy Use credit (unless the Energy Source Exceptional Performance is met, in which case these emissions are zero); • Upfront carbon emissions as determined in the Upfront carbon emissions credit; • Emissions from module A5 construction equipment use, and utilities during construction on site (unless the Life Cycle Impacts calculator was used for the Upfront Carbon Emissions credit); • Life cycle emissions from modules B and C as calculated in Life Cycle Impacts; • Construction waste emissions; and • Any other carbon emissions over 1% of the total carbon emissions profile for the building.	2		Not targeted									
Water use	The building has low water consumption.	Minimum Expectation; meet one of the following criteria:														
		25.1	Sanitary Fixture and Appliance Efficiency	All fixtures and water-using appliances installed within the project's scope must, at a minimum, meet the prescribed WELS ratings: Taps, Urinals and Dishwashers: 5 Star Toilets and Clothes washing machine: 4 star	ME	ME	Low	0.07 Water Conservation		x	x					
		25.2	Reducing Water Use	Shower: 3 Star Uses 15% less potable water compared to a reference building through the GBCA's Water Use Calculator.												
		Credit Achievement; in addition to the Minimum Expectation, meet both of the following criteria:														
		25.3	Reducing Water Use	Uses 45% less potable water compared to a reference building through the GBCA's Water Use Calculator.	3		Not targeted	0.07 Water Conservation								
		25.4	Recycled Water Infrastructure	Building must have infrastructure for recycled water in a district or location where local council or water authorities (or similar) have planned for installation of recycled water infrastructure.			Not targeted									
Exceptional Performance; in addition to the Credit Achievement, meet the following criteria:																
		25.5	Reducing Water Use	Uses 75% less potable water compared to a reference building through the GBCA's Water Use Calculator.	3		Not targeted									
Life Cycle Impacts	The building has lower environmental impacts from key resources over its lifespan than a typical building.	Credit Achievement														
		26.1	Life Cycle Impacts	The project demonstrates a 30% reduction in life cycle impacts when compared to standard practice.	2	2	Medium			x						x
POSITIVE Total					30	8		0.0								

PLACES																		
Movement and Place	The building's design and location encourages occupants and visitors to use active, low carbon, and mass transport options instead of private vehicles.	Minimum Expectation; meet both of the following criteria:																
		27.1	Changing Facilities	The project must provide adequate facilities for regular occupants (not for visitors), including: • Showers; 2 Showers / (55-68 staff) • Lockers / (140)	ME	ME	Low											
		27.2	Accessible, Inclusive, and Located in a Safe and Protected Place	Upon accessing, pedestrians and cyclists must be protected from the elements and other vehicles. Access must be safe, with consideration given to avoiding steep gradients, surface grip levels, and visibility around tight corners.			Low		x	x	x							
		Credit Achievement; in addition to the Minimum Expectation, meet all four of the following criteria:																
		27.3	Bicycle Parking Facilities	The building's access must prioritise walking and cycling options. This means the building's access must be well lit, weather protected and separated from vehicles.	3	3	Low		x	x	x							
		27.4	Sustainable Transport	• The project team must prepare and implement a Sustainable Transport Plan. The requirements must be reflected in the design of the building's facilities and ongoing operational processes; and • Provide EV charging point to at least 5% of all car parking spaces, all car sharing parking spaces, infrastructure and load management plan for future 25% of all car parking spaces, and dedicated routes for future provision of electrical cabling.			Medium		x	x								
		27.5	Reducing Private Vehicle Use	Complete the Movement and Place Calculator and demonstrate at least: • Emission reduction: 40% • Active mode encouragement: 90% • VKT reduction: 20%			Low		x	x	x							
		27.6	Encouraging Walkability	Building's design and location must encourage walking to and from a number of amenities. This means designing roads within the site boundary to prioritise pedestrians, and either providing within, or being located close to, a number of amenities.			Low		x	x	x							
Enjoyable Places	The building provides places that are enjoyable and inclusive.	Credit Achievement; meet both of the following criteria:																
		28.1	Publically Accessible Places	The project provides new, publicly accessible spaces that are enjoyable and support community activity and interaction - 0.25 m²/occupant or 2.5% of GFA, whichever is greater.	2		Not targeted											
		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.			Not targeted											
Contribution to Place	The building's design makes a positive contribution to the quality of the public environment.	Credit Achievement; meet one of the following criteria:																
		29.1	Urban Context Report	Provide an urban context report and demonstrate how building's design responds to it.	2		Not targeted											
		29.2	Independent Design Review	Design reviews are held at key points in the development of the design. At a minimum, these must occur as follows: • Design Review during concept/schematic design stage, to ensure that proponents can take advantage of the advice offered at a time where the design is flexible enough to accommodate change without impacting on time and cost constraints; • A subsequent review when the design has been further progressed. This review session will typically occur during design development; and • At building permit stage (after development approval) a further check must take place by the Design Review Panel Chair or delegate, to ensure that the final design reflects approved development application and any relevant conditions related to design quality.			Not targeted											

Culture, Heritage and Identity	The building reflects local culture, heritage and identity.	Credit Achievement, meet one of the following criteria:																
		30.1	Community led design response	The project team must show that they have undertaken local analysis to identify culture, heritage and identity unique to the project site and area. The project team must undertake community engagement as part of this local analysis, the project must reflect local identity, culture and heritage in the design of the building in a publicly demonstrable way. This can be achieved through: • Community art or placemaking projects; • Selection of suppliers/designers of artwork or cultural elements; • Building elements that tell stories of the past and heritage; and • Spaces and uses that reflect the local identities	1		Not targeted											
		30.2	Independent Design Review	Design reviews are held at key points in the development of the design. At a minimum, these must occur as follows: • Design Review during concept/schematic design stage, to ensure that proponents can take advantage of the advice offered at a time where the design is flexible enough to accommodate change without impacting on time and cost constraints; • A subsequent review when the design has been further progressed. This review session will typically occur during design development; and • At building permit stage (after development approval) a further check must take place by the Design Review Panel Chair or delegate, to ensure that the final design reflects approved development application and any relevant conditions related to design quality			Not targeted											
PLACES Total				8	3	0												
PEOPLE																		
Inclusive Construction Practices	The builder's construction practices promotes diversity and reduces physical and mental health impacts.	Minimum Expectation																
		31.1	On-site Facilities, Policies and Training	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 site on discrimination, racism, and bullying on-site.	ME	ME	Low	x	x									
		Credit Achievement, in addition to the Minimum Expectation, meet all three of the following criteria:																
		31.2	Needs Analysis	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.	1		Not targeted											
		31.3	Physical and Mental Health Programs	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; • Finding fulfilment at work or mindful meditation; and • Other issues identified in the Needs Analysis			Not targeted											
31.4	Evaluating the Program's Effectiveness	The project must provide an evaluation report to the client and sub-contractors with the following information: • Information on the programs or initiatives that were delivered, including information on dates, attendance, and available languages; and • A review on whether the programs delivered the intended outcomes including recommendations for improving future delivery of these programs		Not targeted														

Indigenous inclusion	The building celebrates Aboriginal and Torres Strait Islander people, culture and heritage.	Credit Achievement; meet one of the following criteria:																
		32.1	Reconciliation Action Plan	Project team must demonstrate that: • A key member of the Project Team is part of the organisational RAP Working Group; • At least 90% of the RAP targets have been met on the project; and • All implemented actions related to the RAP are publicly reported on the Project's website.	2		Not targeted											
		32.2	Inclusion of Indigenous design	The project team must demonstrate that the Australian Indigenous Design Charter guiding principles are incorporated in the design of the building including: • How local Aboriginal and Torres Strait Islander communities have been engaged throughout the design development; • How the project has been designed to acknowledge and recognise the Indigenous culture of the site; • How information on the reconciliation and cultural values of the project will be made available to the public, visitors and building tenants in the operational phase of the project's life	2	2	Low		x	x	x							
Procurement and Workforce Inclusion	The building's construction facilitates workforce participation and economic development of disadvantaged and under-represented groups.	Credit Achievement; meet both of the following criteria:																
		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.	2	2	Low		x	x								
		33.2	Employment Opportunities	Generate employment opportunities for disadvantaged and under-represented groups either: • Directly, through workforce targets; or • Indirectly, through social procurement. A combination of these strategies can be used to achieve the credit, as long as the total dollar spend on the above activities is equal to or greater than the required 2% value of the building's total contract value.	2	2	Low		x	x								
		Exceptional Performance; meet both of the following criteria:																
		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 4% of the building's total contract value to generate employment opportunities for disadvantaged and under-represented groups.	1		Not targeted											
		33.2	Employment Opportunities	Generate employment opportunities for disadvantaged and under-represented groups either: • Directly, through workforce targets; or • Indirectly, through social procurement. A combination of these strategies can be used to achieve the credit, as long as the total dollar spend on the above activities is equal to or greater than the required 4% value of the building's total contract value.	1		Not targeted											
Design for Inclusion	The building is welcoming to a diverse population and is welcoming to their needs.	Credit Achievement																
		34.1	Inclusive Design	The building's design and construction must be able to be navigated and enjoyed by stakeholders of diverse ages, genders, and 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; and • Inclusive spaces: Introduce internal and external spaces for a diverse range of users, including parents, family restrooms, emergency rooms, quiet rooms and social interaction rooms. These rooms must be accessible to all users.	2		Not targeted											
		Exceptional Performance; in addition to the Minimum Expectation, meet the following criteria: 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; and • The consultation process must generate a report that is then used to influence the design of the project. As a result of the needs analysis, the building must show how it aligns with best practice guidelines, such as the Design for Dignity Guidelines: Principles for Beyond Compliance Accessibility in Urban Regeneration.			1		Not targeted											
PEOPLE Total					9	4	0											

NATURE																	
Impacts to Nature	Ecological value is conserved and protected	Minimum Expectation; meet all three of the following criteria:															
		35.1	Ecologically Sensitive Sites	At the date of purchase or option contract, land clearing does not occur on the site as a result of the building, infrastructure, or construction works on the following: • Old-growth forest; • Prime agricultural land; • Any wetland listed as being of 'High National Importance'; • Aspects considered 'Matters of National Environmental Significance' listed under the <i>Environmental Protection and Biodiversity Conservation Act (1999)</i> .	ME	ME	Low		x	x							
		35.2	Managing Light Pollution Impacts	• Light pollution to neighbouring bodies: all outdoor lighting on the project complies with AS 4282:1997 Control of the obtrusive effects of outdoor lighting. • Light pollution to night sky: one of the following specified reductions in light pollution must be achieved by the project: - Control of upward light output ratio (ULOR); or - Control of direct illuminance.			Low			x			x				
		35.3	Wetland Management Plan	The site-specific Wetland Management Plan must be prepared by a qualified Ecologist or other qualified professional and include requirements for ongoing quarterly monitoring, annual reporting and management of the wetland ecosystem for a minimum of five years. The plan must be exhibited to the public on the applicant's website, or the local council's offices or library, for a minimum of 24 months.			Low		x	x							
		Credit Achievement; in addition to the Minimum Expectation, meet both of the following criteria:															
		35.4	Protecting Ecological Values	• Context report: understand the site's historical and current ecological context by documenting the site's current ecological values by type and biomass. • Protecting ecology: show how ecological values will be protected.	2		Not targeted										
		35.5	Retaining High Biodiversity Values	If deemed necessary by an Ecologist, at least 50% of existing site with high biodiversity value is retained.			Not targeted										
Biodiversity Enhancement	The building's landscape enhances the biodiversity of the site and off site	Credit Achievement; meet all three of the following criteria:															
		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.	2		Not targeted	0.09 Ecological Conservation									
		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.			Not targeted										
		36.3	Biodiversity Management Plan	A suitably qualified professional must prepare 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.			Not targeted										
		Exceptional Performance; in addition to the Minimum Expectation, meet both of the following criteria:															
		36.4	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.	2		Not targeted										
		36.5	Diversity of Species	• Landscape must be shown to be diverse and include multiple species/genus/etc. • An ecologist must review, assess and verify how the choice of landscaping and biodiversity is diverse and resilient to climate change impacts, thereby increasing the longevity of the landscape. • Greater than 80% of plants must be indigenous and the site must include at least one significant (nesting) tree or equivalent habitat provision per 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.			Not targeted										
Nature Connectivity	Wildlife movement is facilitated within and adjacent to the site.	Credit Achievement															
		37.1	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; or • Infrastructure: Design features such as a canopy bridge, wildlife tunnels, green roofs, amphibian tunnels and green infrastructure are used to connect nature on site to adjacent natural areas, which are either existing, restored or new.	2		Not targeted										

Nature Stewardship	Biodiversity is restored beyond the building site.	Credit Achievement; meet all four of the following criteria:																	
		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.	2		Not targeted												
		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.			Not targeted												
		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; or • The project owner supports an organisation that restores an area on their behalf.			Not targeted												
		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.			Not targeted												
Waterway Protection	Local waterways are protected, and the impacts of flooding and drought are reduced	Credit Achievement; meet both of the following criteria:																	
		39.1	Stormwater Volume	Demonstrate a reduction in average annual stormwater discharge (ML/yr) of 40% across the whole site.	2	2	Medium			x									
		39.2	Pollution Reduction Targets	All stormwater discharged from site meets: Total Suspended Solids 85%; Gross Pollutants 90%; Total Nitrogen 45%; Total Phosphorus 65%			Medium			x									
		Exceptional Performance; in conjunction with the Minimum Expectation, meet both of the following criteria:																	
		39.3	Stormwater Volume	Demonstrate a reduction in average annual stormwater discharge (ML/yr) of 80% across the whole site.	2		Not targeted												
39.4	Pollution Reduction Targets	All stormwater discharged from site meets: Total Suspended Solids 90%; Gross Pollutants 95%; Total Nitrogen 60%; Total Phosphorus 70%		Not targeted															
LEADERSHIP																			
Market Transformation	Celebrates initiatives or outcomes that are deemed new and break barriers, and in turn inspire others to follow.	Credit Achievement; up to 5 points available																	
		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 following GBCA scoring metrics: • Control of outcome: the initiative delivers a guaranteed outcome • Length of impact: the initiative delivers long-lasting impacts • Scale of impact: the scale of impact is significant. For example, the outcome may satisfy multiple UN Sustainable Development Goals • Transformation potential: the initiative has the potential to transform an industry or sector • Value generation: the initiative can deliver benefits to both stakeholders (e.g. building owner or occupants) as well as the general public.	5		Not targeted												
Leadership Challenges	Promotes achievements that are considered leading practice in Australia.	41.1	Leadership Challenges	Projects teams can target as many Leadership Challenges as they wish. Leadership Challenges will be uploaded to the GBCA website as they are developed. All criteria as listed on the Leadership Challenge must be met to claim reward.	Unlimited		Not targeted												
LEADERSHIP Total					5	0		0											

Environmental Category	Points Available	5 star
RESPONSIBLE	17	7
HEALTHY	14	10
RESILIENT	8	2
POSITIVE	30	8
PLACES	8	3
PEOPLE	9	4
NATURE	14	2
SUB-TOTAL POINTS	100	36
LEADERSHIP	5	0
TOTAL SCORE	105	36
Minimum Expectations met		Yes
4 Star - 15-34 points 5 Star - 35-70 points 6 Star - 70+ points		

Appendix B – ESD Schedule

Template: DOC21-469093 ESD Schedule v9

Act on climate change	Indoor environment controls - Both the thermal comfort and indoor air quality shall be controlled automatically within specified parameters. - Controls shall be simple and intuitive to use. - A "traffic light" light system (described in DG 55.01 Thermal Comfort and Indoor Air Quality Policy) should be used to inform users of the suitability of outdoor conditions to utilise natural ventilation.	Ph 2-5: Services Design	DG55 DG 55.01 Thermal Comfort and Indoor Air Quality Policy	0.06 Energy Conservation	DAB c15 GHG Emissions Reduction	Credit 22.1 Energy Use	1. As built evidence demonstrating controls have been installed as required. 2. Commissioning report / statement by head contractor confirming controls have been set as required	Y			Phase 3 - Mechanical schematic design report and drawings	Mechanical
Act on climate change	Renewable energy A grid connected solar PV system must be installed in line with DG66 requirements. Where feasible, PV systems shall be installed to offset as much of the electricity consumed by the school as is practicable	Ph 2-5: Services Design	DG2.3.4 DG55		DAB c15 GHG Emissions Reduction; DAB c16 Peak Electricity Demand Reduction	Credit 23 Energy Source	1. As installed drawings of PV system 2. Energy modelling report showing renewable energy generation	Y		Energy	Phase 3 - At the moment, electrical drawings are showing 40kW in accordance with SINSW standard for PV Systems. This will be reviewed and updated at Phase 4.	ESD/Electrical
Act on climate change	Battery Energy Storage System A battery energy storage system shall only be designed in consultation with SINSW Sustainability sustainability.enquiries@det.nsw.edu.au	Ph 2-5: Services Design	DG66.8.3		DAB c15 GHG Emissions Reduction; DAB c16 Peak Electricity Demand Reduction	Credit 20.1 Grid Resilience - Active Generation and Storage systems	As installed drawings of battery storage system	N			Phase 3 - N/A	Electrical
Act on climate change	Heaters Electric heating must be preferred over gas heating. Where gas heating is considered, it must be approved by SINSW Sustainability Heating equipment must be designed from a whole-of life perspective and: - Support sustainable design principles including reducing energy consumption and carbon emissions - Be accessible and serviceable - easy to maintain with minimal impact on school use when maintenance is being performed	Ph 2-5: Services Design	DG56	0.06 Energy Conservation	DAB c15 GHG Emissions Reduction	Credit 22.1 Energy Use	1. If reverse cycle air conditioning is installed, confirmation that gas heaters are not installed, OR 2. Evidence that the gas heaters installed are energy efficient	Y			Phase 3 - No gas heating - it will be all electrical. Captured in Schematic mechanical design report and drawings	Mechanical
Act on climate change	Water heaters - Hot water and tempered water generation for schools must be carefully considered to ensure that a Whole of Life assessment is undertaken to minimise life cycle costs and carbon emissions - Environmentally friendly options such as solar heating (if vandal resistant) and heat pumps are preferred energy sources to minimise energy consumption.	Ph 2-5: Services Design	DG53.09	0.06 Energy Conservation	DAB c15 GHG Emissions Reduction	Credit 22.1 Energy Use	1. WOL cost assessment for hot water systems 2. Hydraulic drawings/schematics showing installed DHW systems	Y			Phase 3 - The hot water systems will be instantaneous electric, meaning no stored water is required. Solar heating is not an option, and heat pumps have not been selected to avoid the need for additional flow and return pipework, circulating pumps, and electric boosters for hot water units (HWU). This approach minimises both life cycle costs and carbon emissions. The Whole-of-Life (WoL) assessment will be completed during the design finalisation phase.	Hydraulics
Build resilience	Site investigations for resilience The following detailed reports/ surveys/ information should be considered in developing the business case: - Slope, drainage and erosion issues including flood risks (if any) - Geotechnical and soil conditions - Airborne pollutants - Bushfire risks - Appraisal of available services infrastructure - Climate change risk assessment must be undertaken considering at least two different climate change scenarios An environmental risk report will be required for developments proposed within bushfire-prone areas or other subject to natural risks (i.e. flood-prone areas)	Ph 1: Site Selection and Masterplan	DG03.02	0.05 Climate Change Adaptation	DAB c3 Adaptation and Resilience	Credit 16 Climate Change Resilience Credit 35 Ecologically Sensitive Sites	1. Detailed reports or surveys developed 2. Environmental risk report 3. Evidence demonstrating recommendations have been implemented and risks addressed through design responses.	N			Phase 3 - N/A	Surveyor
Build resilience	Bushfire protection Development applications on bush fire prone land must be accompanied by a Bush Fire Assessment Report demonstrating compliance with the aim and objectives of Planning for Bush Fire Protection and the specific objectives and performance criteria for the land use proposed. Local Authorities and the Rural Fire Service can provide advice on the design of buildings in bush fire prone areas. The Building Code of Australia and AS3959 "Construction of buildings in bushfire-prone areas" set out the requirements for buildings which are within close proximity to a defined bush fire zone. Mandatory landscape management strategies: - Keep the amount of fuel (leaves, twigs, logs, dead grass) in the vicinity of buildings to a minimum. - Ensure trees are located at away from buildings to avoid branches overhanging and leaves collecting on roofs. - Do not plant shrubs against buildings. - The crowns of trees planted on the hazard side of the development should not be contiguous. - Plant fire resistant trees and shrubs on the hazard side of the development to	Ph 1: Site Selection and Masterplan	DG13.01		DAB c3 Adaptation and Resilience	Not covered in Green Star	1. Bush fire assessment report 2. Statement by Architect / fire consultant outlining building strategies implemented in line with BCA and AS3959. 3. Bush fire management plan outlining management strategies implemented 4. Landscape plans detailing bush fire management measures implemented	N			Phase 3 - N/A	Fire Consultant

Build resilience	<p>Climate change adaptation</p> <p>Sites and school communities must be able to withstand natural and urban hazards and adaptively respond to climate change over time, especially for projects involving vulnerable communities e.g. climate generating exacerbated flood, storm surge, inundation, heatwaves, bush fires, extreme storm and other weather events. School facilities must be able to withstand natural hazards and adapt to shocks and stresses to avoid social and economic costs of interrupted operation and repairing or replacing damaged assets. To achieve this, increasing resilience to natural hazards must be considered in the business case development so that associated costs are budgeted. An initial assessment of natural hazards and project vulnerability must be carried out, in consultation with resilience experts, to inform the business case and identify hazards where further analysis is required.</p> <p>The assessment must report on at least two different timescales (2050 and 2070) and consider high emissions scenarios consistent with 2C and 4C for each timescale. The Intergovernmental Panel on Climate Change (IPCC) endorsed emissions scenarios should be used to dictate the assessed scenarios</p>	Ph 1: Site Selection and Masterplan	DG02.08	0.05 Climate Change Adaptation	DAB c3 Adaptation and Resilience	Credit 16 Climate Change Resilience	1. Climate risk assessment, and 2. Climate adaptation plan 3. Emergency management plan	Y			Phase 3 - CCRA report completed and sent for review	ESD
Build resilience	<p>Weather protection</p> <p>Circulation areas provided between administrative, staff and all student spaces (except Agriculture), should be protected from sun, rain and unfavourable winds.</p>	Ph 2-5: Architectural Design	DG08.05		Not covered in Green Star	Not covered in Green Star	As built drawings showing circulation areas are protected as required	Y			Phase 3: All circulation spaces are covered. Evidence - Architectural drawings	Architect
Build resilience	<p>Urban heat island mitigation - Roof colour</p> <p>The roof colour will also have an impact on the thermal performance of the roof, therefore the product's Solar Reflectance Index (SRI) should be considered to mitigate the heat island effect.</p> <p>The product selected must meet the following three-year Solar Reflectance Index (SRI) requirements: For roof pitch < 15, minimum SRI of 64 For roof pitch > 15, minimum SRI of 34</p> <p>Where a three-year SRI is not available, the following requirements must be met: For roof pitch < 15, minimum SRI of 82 For roof pitch > 15, minimum SRI of 30</p>	Ph 3-4: Product and Material Selection	DG20 Fabric Selection		DAB c25 Heat Island Effect	Credit 19 Heat Resilience	1. Site Plan highlighting all relevant areas as referenced within the area schedule; 2. Area Schedule listing the areas of each of the relevant site elements and where relevant, the SRI values and referencing plan drawings for the site; and 3. Supplier Documentation material data sheet for compliant roofing and hardscape materials.	Y			Phase 3 - As per NCC requirements, light colour roofs will be specified.	Architect
Consume responsibly	<p>Building User's Guide</p> <p>Produce a Building User's Guide to enable the client to understand the building systems and operate systems to maximise efficiency. This must: - Clearly and concisely describe the operation of building and its services - Detail a reasonable maintenance program - Advise the user of the most suitable replacements for consumables</p>	Ph 7-9: Construction, Commissioning Post Occupancy and Operation			DAS c4 Building Information	Credit 3.3 Verification and Handover - Building Information	1. Building user's guide	N/A			Not applicable for current scope	Contractor
Consume responsibly	<p>Stormwater management</p> <p>Must aim to minimise the transportation of toxicants to waterways and other offsite environments, and maintain the existing hydrological regimes. Due diligence for flooding must be done early to inform building and landscaping design</p>	Ph 1: Site Selection and Masterplan	DG2.4.3		DAB c26 Stormwater	Credit 39 Waterway Protection	1. Stormwater modelling report showing stormwater pollution and flows. 2. Civil / Hydraulic drawings showing management measures. 3. Water sensitive urban design report (if WSUD was used)	Y			Phase 3 - Modelling is progressing. Total Suspended Solids: 80% Total Phosphorus: 65% Total Nitrogen: 45% Gross Pollutants: 90% Water quality treatment measures	Civil
Consume responsibly	<p>Drinking water catchment protection</p> <p>For developments within drinking water catchment areas, a water cycle management study is to be included with the Development Application for Education Facility developments involving: - Agriculture facilities - Biosolids and effluent re-use schemes - Sewerage systems or works (including package sewerage treatment plants) - Stormwater or works involving the disposal of untreated runoff</p>	Ph 1: Site Selection and Masterplan	DG51.07		GSC c24 Integrated Water Cycle	Not covered in Green Star	1. Water cycle management study 2. Evidence that recommendations in the study have been followed / implemented	N/A			N/A	John Staff
Consume responsibly	<p>Hazardous materials</p> <p>Where a new school is to be developed a Hazardous materials study is to be conducted, including: - Asbestos Containing Materials (ACM) - Synthetic Mineral Fibres (SMF) - Polychlorinated Biphenyl's (PCB) - Lead Paint - Ozone Depleting Substances</p> <p>Any existing structures and all parts of the site should be examined in order to determine the presence of hazardous materials before commencement of any renovation or demolition. Inspection should be conducted in accordance with DG48.</p> <p>Where hazardous materials are found a Hazardous Materials Management Plan</p>	Ph 1: Site Selection and Masterplan	DG48.01		DAB 24.2 Contamination and Hazardous Materials	Credit 13 Exposure to Toxins	1. Hazardous materials study / site inspection report / survey 2. Management plans for hazardous materials identified 3. Remediation strategies implemented 4. Environmental auditor certificates / clearance certificates	Y			Phase 3 - Contamination report	Contam specialist

Consume responsibly	<p>Operational waste</p> <p>A waste storage area must be included in all new school sites. The provision of space must include source separation including bin stations and appropriate signage of waste and receptacles for multiple waste streams, including:</p> <ul style="list-style-type: none"> - Organics - Commingled containers - Paper & cardboard - Container deposit scheme - Soft plastic - General waste <p>Designers must refer to AS 4123.7 Mobile waste containers - Colours, markings, and designation requirements for further guidance on bin colour, waste stream and waste type.</p> <p>Safe methods for vehicle access and the transfer of waste must also be considered.</p> <p>For new and refurbished schools, an operational waste management plan (OWMP) must be developed to establish operational waste targets, identify opportunities for reuse and recycling in the operation of the facilities and make adequate</p>	Ph 2: Concept Design - Space planning	DG02.7.1		DAB c8 Operational Waste	Credit 4 Responsible Resource Management	Operational waste management plan Operational waste reports showing diversion rates	Y			Phase 3 - Waste management consultant has been engaged. Architectural drawings will be marked up to show the waste collection area.	Architect
Consume responsibly	<p>Building flexibility</p> <p>Position structural members considering the future flexibility of the structure. Avoid ad hoc placing of columns internally, giving preference to uniformity in layout. Design all internal walls as non-load bearing to enable future flexibility.</p>	Ph 2: Concept Design - Space planning	DG21.1.16		Not covered in Green Star	Not covered in Green Star	As built drawings or statement by relevant professional	Y			Phase 3 - Traditional layout. Layout is similar to MMoC - large spans, can increase areas	Architect
Consume responsibly	<p>Hydraulic services</p> <p>Hydraulic services should:</p> <ul style="list-style-type: none"> - Support sustainable design principles including reducing water consumption and waste production. - Appropriately treat any trade waste to ensure minimal environmental impact - Be accessible and serviceable - easy to maintain with minimal impact on school use when maintenance is being performed - Use products with a long life span - many hydraulic services are concealed so 	Ph 2-5: Services Design	DG51.01		DAB c18 Potable Water	Credit 25 Water Use	1. Hydraulic report showing sustainability initiatives implemented to reduce potable water consumption 2. As built drawings showing trade waste arrestors	Y			Phase 3 - - Water-saving fixtures selected by the architect are expected to meet the prescribed WELS ratings: Taps, Urinals and Dishwashers: 5 Star Toilets and Clothes washing machine: 4 star Showers: 3 Star	Hydraulics
Consume responsibly	<p>Water sub-metering</p> <p>In addition to the main water meter for the site provide sub meters for the following:</p> <ul style="list-style-type: none"> - Mixed irrigation systems - Laboratory buildings - Amenities blocks - Canteens - Any other major water use on the site 	Ph 2-5: Services Design	DG53.04		DAB c6.0 Metering	Credit 3.1 Verification and Handover - Metering and Monitoring	1. As built hydraulic drawings	Y		Water Conservation	Phase 3: - The landscape team to advise on any specific irrigation requirements, a point of connection and a sub-meter adjacent to the water storage tanks for potential future use have been included into the design. - Sub-meters will be installed for amenities and canteens. We assume	Hydraulics
Consume responsibly	<p>Rainwater collection</p> <p>Include roof water harvesting and tank storage in new schools and where practical in existing schools to reduce the demand on drinking water supplies. Tank water can connect to drip irrigation systems for adjacent landscape/gardens with the major preference being for gravity fed supply to minimise ongoing maintenance. The rainwater tanks must be connected to toilets for toilet flushing. If this is not feasible, approval must be granted by SINSW.</p>	Ph 2-5: Services Design	DG53.14 DG2.4.2 DG53.01		DAB c18B.2 Rainwater Reuse	Credit 25 Water Use	1. As built hydraulic drawings showing tank connection to end uses and capacity	Y		Water Conservation	Phase 3 - The current design includes a 25kL rainwater tank and the water will be utilised for irrigation. Connecting the rainwater tank to toilets for flushing is not feasible due to the current design constraints, approval has been asked to SINSW.	Hydraulics
Consume responsibly	<p>Fire system water reuse</p> <p>Where schools are required to install a sprinkler system for fire safety, it is recommended to install a closed loop system must be installed to capture and reuse fire systems testing and maintenance water, or by using an alternative non-potable water source.</p>	Ph 2-5: Services Design	DG2.4.2		DAB c18B.5 Fire System Test Water	Credit 25 Water Use	Fire engineering report	Y			Phase 3 - Closed loop and break tank are shown in the hydraulics drawings	Hydraulics
Consume responsibly	<p>Ground water</p> <p>Where ground water is available for use for irrigation purposes in drought affected locations, enquiries must be undertaken with the Department of Planning, Industry and Environment to determine the suitability of a ground water system.</p>	Ph 2-5: Services Design	DG53.03		DAB c18 Potable Water	Credit 25 Water Use	1. Relevant due diligence report / investigation	N/A			Phase 3 - N/A at this stage. It will be developed at a later stage	Hydraulics
Consume responsibly	<p>Trade waste</p> <p>Arrestors for acid, grease, plaster and clay of adequate capacity must be installed to treat wastewater from science laboratories, kitchens, art rooms and canteens</p>	Ph 2-5: Services Design	DG52		Not covered in Green Star	Not covered in Green Star	1. As built drawings showing trade waste arrestors or 2. Letter by Hydraulic Engineer confirming arrestor have been installed as required	N/A			Phase 3 - N/A at this stage. It will be developed at Phase 4. Art sink to be reviewed.	Hydraulics
Consume responsibly	<p>Water use efficiency</p> <p>All products must be rated to AS 6400 to the following minimum WELS ratings:</p> <ul style="list-style-type: none"> - Tapware to 5 star flow rating requirements - Showers to have 3 star flow rating requirements - Water Closet Pans to 4 star flow rating requirements - Urinals to 5 star flow rating requirements - Flow restrictors can be used to minimise water usage and wastage for staff amenities - Taps with timed flow can be used to minimise water usage and wastage in student amenities. - New and replacement urinals must use manual in lieu of automatic flushing mechanisms. A microwave-activated urinal flushing system may be used as an alternative. <p>In any case, all new water-using appliances must be at least 0.5 stars above the</p>	Ph 3-4: Product and Material Selection	DG53.02 DG2.4.1		DAB c18B.1 Potable Water - Sanitary Fixture Efficiency	Credit 25 Water Use	1. Schedules of materials, fixtures, fittings and equipment with WELS/WaterMark ratings, demonstrating compliance and identifying those with flow restrictors and timed flow.	Y	Y		Phase 3 - Architecture drawings and spec to capture this requirement in Phases 4 and 5	Architect
Consume responsibly	<p>Life cycle assessment (environmental)</p> <p>Environmental impacts of products and materials has been assessed and inform material selection</p>	Ph 3-4: Product and Material Selection	DG01.03		DAB c19A - Life cycle assessment	Credit 26 Life Cycle Impacts	Life cycle assessment report	N/A			Phase 3 - N/A at this stage. It will be developed at a later stage	ESD

Consume responsibly	<p>Whole of life costing (WOL) Total cost of ownership (TCO) assessment / Analysis of direct and indirect costs and benefits / Life cycle costing analysis</p> <p>When calculating the whole of life cost for the different materials / building elements or systems, the following must be considered:</p> <ul style="list-style-type: none"> - the total initial capital cost of the system/s – including design, project management, builder and building services works in connections etc. - resources (energy and where applicable water) consumption. - Maintenance. - the replacement of component parts. - disposal costs - ecological sustainable options - durability - vandalism - safety <p>The whole of life cost shall be calculated over the estimated life of the asset/s.</p>	Ph 3-4: Product and Material Selection	DG01 All design guides for selection of materials and building systems		GSC c20 - Return on investment	Not covered in Green Star	Life cycle costing report for relevant system	N/A		Phase 3 - N/A at this stage. It will be developed at a later stage	ESD
Consume responsibly	<p>Sustainable materials Construction materials must be selected based on the following:</p> <ul style="list-style-type: none"> - Adequately and economically perform their intended functions, and also have lower adverse environmental impacts throughout their life cycle (refer to DG 3) - Contain reduced or no hazardous substances (e.g. low VOC) to ensure effective indoor environmental quality. Reduce the demand for rare or non-renewable resources. - Have low embodied energy and water. - Are made from or contain recycled materials or can be reused or recycled at the end of their useful life. 	Ph 3-4: Product and Material Selection	DG02.05		DAB c21 Sustainable Products	Credit 5 Responsible Procurement Credit 6 Responsible Structure Credit 7 Responsible Envelope Credit 8 Responsible Systems Credit 9 Responsible Finishes	<p>1. Environmental Product Declarations of products / materials used; Product certificates (like GECA, FSC, et3)</p> <p>2. Suppliers' declarations confirming recycled contents in products</p> <p>3. Bill of quantities</p>	N/A		Phase 3 - N/A at this stage. It will be developed at a later stage	ESD/Architect
Consume responsibly	<p>Sustainable timber - No rainforest timbers, or timbers from high conservation forests, are to be used unless plantation grown. Use only recycled timber, engineered and glued timber composite products, or timber from plantations or from sustainably managed regrowth forests that is FSC, AFS or PEFC certified</p> <p>All timber used is to be termite (white ant) resistant or treated to be termite</p>	Ph 3-4: Product and Material Selection	DG2.5.1 DG21.05.01		DAB c20.2 Responsible Building Materials - Timber	Credit 6 Responsible Structure	<p>1. Evidence of chain of custody</p> <p>2. Bill of quantities</p>	N/A		Phase 3 - N/A at this stage. It will be developed at a later stage	ESD/Architect
Consume responsibly	<p>Built for disassembly Consider the use of building materials which are able to be disassembled for re-use in conjunction with considerations for the addition and removal of accommodation over time.</p>	Ph 3-4: Product and Material Selection	DG02.07			Not covered in Green Star		N/A		Phase 3 - N/A at this stage. It will be developed at a later stage although it is unlikely.	Architect
Consume responsibly	<p>Concrete - Use materials complying with AS based on the Whole of Life approach to materials selection. - Do not use breccia or dolerite in concrete mixes. - Fly ash is a manufacturing bi-product that can be used as a cement replacement but should limited to a maximum of 20% by weight of cement content</p>	Ph 3-4: Product and Material Selection	DG21.02		DAB c19B.1	Credit 6 Responsible Structure	<p>1. Structural specifications and drawings</p> <p>2. Structural Engineer's report showing % cement replacement</p>	N/A		Phase 3 - N/A at this stage. It will be developed at a later stage	Structures
Consume responsibly	<p>Construction waste Targets must be established to increase diversion of waste sent to landfill, with a minimum diversion rate target of 90%. Consider opportunities for re-use and recycling of materials in the construction phase</p>	Ph 7-9: Construction, Commissioning Post Occupancy and Operation	DG02.07		DAB c22 Construction and Demolition Waste	Credit 2.3 Construction and Demolition Waste	Construction waste reports showing percentage (minimum 90%) of waste re-used and recycled (diverted from landfill)	N/A		Phase 3 - N/A at this stage. It will be developed at a later stage	Structures
Consume responsibly	<p>Maintainability All systems and equipment that is installed within a school is to be provided with suitable access to ensure that this equipment is safely and efficiently maintainable. In order to ensure that maintenance is available, on the completion of all buildings, drawings are to be provided showing the completed (As Built) building including all equipment and equipment access arrangements.</p> <p>Any mechanical ventilation system within the building must be designed to provide adequate access for maintenance, to both sides of all moisture and debris-catching components, within the air distribution system. Moisture-producing and debris-catching components include items such as cooling coils, heating coils, fan coil units, humidifiers and filters in the air handling system.</p> <p>The project team should demonstrate that there is a project level review process in place to ensure that the building has been designed as per the EFSG, that any issues identified have been closed out and that the outcomes can be communicated to the relevant facilities/ operations teams</p> <p>Maintenance required and cost of this maintenance are to be considered in assessment of the project's life cycle cost.</p>	Ph 2-5: Services Design	DG16.10 DG 01.04		DAB c2.1 Services and Maintainability Review DAB c9 1.2 Ventilation System Attributes DAB c4 Building Information	Credit 10 Clean Air Credit 3 Verification and Handover	<p>1. As built drawings including all equipment access arrangements for maintenance</p>	Y		Phase 3 - Mechanical schematic design report and drawings Q&MM Manuals to be provided after Construction stage and will be provided by the contractor	Mechanical/Contractor

Foster connections	<p>Site investigations for place making / community connections</p> <p>The following detailed reports/ surveys/ information should be considered in developing the business case:</p> <ul style="list-style-type: none"> - Local environment/ character - Climate and microclimate - Heritage significance / impact - Appraisal of physical and visual factors affecting site development - Available transport/ road infrastructure servicing the site - Geo-technical and Soil reports will be required for each site to investigate the suitability of the topsoil and anticipated sub-grade materials for horticultural purposes. - Testing for toxic residues must be undertaken in all areas identified as being a 	Ph 1: Site Selection and Masterplan	DG03.02		<p>GSC c12 Culture, Heritage and Identity</p> <p>DAB 24.2 Contamination and Hazardous Materials</p>	<p>Credit 30 Culture, Heritage and Identity</p> <p>Credit 35 Impacts to Nature</p>	<p>1. Relevant reports/surveys developed (these ideally include recommendations for further development stages)</p> <p>2. Evidence demonstrating recommendations / best practice solutions have been implemented/addressed</p>	Y			Phase 3 - Consultation with first nations ongoing. Preliminary investigation done at concept	Architect/John Staff
Foster connections	<p>Ecological conservation</p> <p>Schools sites must conserve for future generations, the biological diversity of genetic materials, species and ecosystems on that site and consider the surrounding natural environment.</p> <p>An Ecological Assessment Report must be prepared for the site in order to understand the existing conditions and future conservation strategies.</p> <p>The design of the facilities must provide unique and valuable environmental conservation learning opportunities and effective environmental modelling to the wider community.</p> <p>Schools must connect with nature and incorporate biophilic design principles. Open space must allow for exploration, and biodiversity and earth education to enhance the site's outdoor learning potential.</p>	Ph 1: Site Selection and Masterplan	DG02.06	0.09 Ecological Conservation	<p>DAB c23 Ecological Value</p> <p>GSC c29 Ecological Value (incl Biodiversity Enhancement)</p>	<p>Credit 35.4/5 Impacts to Nature - Protecting Ecological Values, Retaining High Biodiversity Value</p>	<p>1. Biodiversity or ecological assessment / local flora and fauna survey</p> <p>2. Ecological Assessment Report which documents the following:</p> <ul style="list-style-type: none"> - ecological values (current, future, and past) identified for the site and their protection measures - ecological impacts from light and noise pollution and water quality and their mitigation requirements - existing vegetated areas and biodiversity values being retained how biodiversity has been considered within the project's material supply chain - list of management strategies to protect the integrity of ecological values throughout project planning, construction, and occupancy community and local stakeholder expectations including Aboriginal or Torres Strait Islander groups and environmental groups - Adequate due diligence must be conducted where an area of biodiversity or high ecological value is identified on the site, where at least 50% of this area must be retained. <p>3. Biodiversity management plan describing measures for the conservation and protection of threatened species or communities, biodiversity enhancement, tree protection, etc.</p> <p>4. Evidence demonstrating measures have been implemented to protect and enhance endangered species / ecological communities identified; to preserve or re-establish native flora; etc.</p>	N		Social and Cultural Considerations		John Staff
Foster connections	<p>Productive landscape</p> <p>Consider including opportunities for development of community garden within the site and relationships with community groups for this to occur.</p>	Ph 1: Site Selection and Masterplan	DG2.06		GSC c14.2 Local Food Production	Not covered in Green Star	Site plan demonstrating location and size of community garden	Y			Phase 3 - Drawings will include school community gardens. Grounds open to the community weekends/after hours. Architects have designed for this to be incorporated but it is in consultation with SINSW	Architect
Foster connections	<p>Bicycle storage</p> <p>Provide 1 space for every 20 students to AS2890.3 standard</p>	Ph 2: Concept Design - Space planning	SG552 4.36		DAB c17 Sustainable Transport	Credit 27.3 Movement and Place - Bicycle Parking Facilities		Y			Phase 3 - Documented in architectural drawings and to be further developed in other phases.	Architect
Foster connections	<p>Community use of facilities</p> <p>Some school facilities are used out of hours for activities such as weekend church groups, sport events and public meetings. Liaise with the Project Director to gain an understanding of any shared use, or community use arrangements that are being considered for the site.</p> <p>New schools should be designed so that direct access to the open play space, fields, hall and gym can be achieved without the public gaining access to the buildings.</p>	Ph 2: Concept Design - Space planning	DG16.08 Department of Education's Community Use of School Facilities Implementation Procedures		DAB c30B Community Benefits	Not covered in Green Star	<p>1. Confirmation by the Architect that direct access has been provided to open space and any other facilities that could be shared with the community.</p> <p>2. A list of community engagement activities undertaken to develop a community benefits strategy</p> <p>3. Plans clearly outlining how the outcomes from the community benefits strategy have been implemented in the project</p> <p>4. Joint-use or lease agreements where already in</p>	TBC			Phase 3 - Grounds open to the community weekends/after hours. Architects have designed for this to be incorporated but it is in consultation with SINSW	
Foster connections	<p>Open play space</p> <p>Open play space must be provided for students to access during recess, lunch breaks and for outdoor learning. Open play space can be comprised of</p> <ul style="list-style-type: none"> - Paved and grassed areas - Rooftops and terraces - Covered outdoor areas <p>The designated open play space must be easily monitored and managed by school staff.</p> <p>Where a joint use agreement can be negotiated with a local council or land owner, the required play space can be located off-site, providing the facilities are</p> <ul style="list-style-type: none"> - In close proximity to the school - Easily accessible - Safe and secure <p>Designs must aim to achieve a minimum of 10m2 per student. Where this figure is not achievable the proposed m2 per student of the completed project must not be less than the existing m2 per student currently on the site.</p>	Ph 2: Concept Design - Space planning	DG10.03		Not covered in Green Star	Not covered in Green Star	Plan view drawings showing provision of open space	Y			Phase 3 - 10M2 per student open space/play space	Architect

Foster connections	<p>Staff room</p> <p>Staff rooms should adequately accommodate staff work and recreation, and focus on indoor environment quality, enjoyment and interaction through provision of the following:</p> <ul style="list-style-type: none"> • Daylight • Ventilation • Views • Landscaping/Indoor Plants • Acoustic Comfort 	Ph 2: Concept Design - Space planning	EFSG Staff Unit		GSI c Amenity Space	Credit 14 Amenity and Comfort	<p>1. Extracts from the EFSG requirements for staff rooms</p> <p>2. Evidence of staff room delivered accordingly</p>	Y			Phase 3 - Standard configuration. It has been noted that indoor plants won't be provided	Architect
Foster connections	<p>Reconciliation action plan (RAP)</p> <p>The project should adopt formalised steps to provide opportunities for Aboriginal and Torres Strait Islander peoples</p> <p>Projects must implement strategies during design, construction and operation that contribute positively towards reconciliation with Australia's first people and address social inequalities within Australia is between Indigenous and non-Indigenous Australians.</p> <p>The project demonstrate a relationship to, and a role in delivering the action items within the Department of Education's RAP.</p> <p>This could include incorporation of Indigenous design strategies and Indigenous designers, celebration of indigenous culture on the site through art or landscape, and procurement from indigenous suppliers and workers. Refer to the GA NSW 'Designing with Country' Discussion paper for guidance and examples.</p>	Ph 2-5: Architectural Design	<p>Department of Education's Reconciliation Action Plan</p> <p>NSW Government Aboriginal Procurement Policy</p> <p>GANSW 'Designing with Country' discussion paper x</p>		DAB c30D Reconciliation Action Plan	Credit 32 Indigenous Inclusion - RAP	1. Evidence of the project's relationship with the RAP, e.g. actions implemented in line with RAP, etc.	N/A			Phase 3 - N/A at this stage. It will be developed at a later stage	SINSW/John Staff
Foster connections	<p>Security</p> <p>Safety in Design and Crime Prevention Through Environmental Design (CPTED) principles are to be implemented in project planning stage.</p> <p>Advice on the electronic surveillance systems can be sought early in the design phase.</p> <p>CCTV systems are required in several locations where indicated in the Rooms and Spaces Technical Data table, including:</p> <ul style="list-style-type: none"> - Secondary clinic - Primary sick bay - Library 	Ph 2-5: Services Design	DG14.10 DG65.08 DG65.10		GSC c15 Safe Places	Not covered in Green Star	<p>1. Crime risk assessment or equivalent</p> <p>2. Evidence of designing out crime principles implemented</p> <p>3. Security services plans, schedules and forms by School Security Unit (SSU)</p> <p>4. SSU specification and evidence of input on project specification</p>	Y			Phase 3 -Yes, part of the Schools requirement.	Architect
Foster connections	<p>Digital infrastructure</p> <p>New buildings and refurbishments are required to provide a common wireless solution compatible across the school, providing a consistent user experience and support mechanism. This involves the replacement of existing legacy wireless equipment, such as wireless access points and site switches.</p>	Ph 2-5: Services Design	DG64.12.02		GSC c22.2 Digital Infrastructure	Not covered in Green Star	1. Contracts describing the network infrastructure specification and operational requirements	Y			Phase 3: Electrical drawings are showing wireless access points and should be included in the electrical specification documents in future stages.	Electrical
Foster connections	<p>Sustainable Transport Planning / Transport Assessment</p> <p>Transport planning must prioritise the delivery of feasible, connected networks and rectify transport deficiencies.</p> <p>The School Transport Assessment process must prioritise critical transport infrastructure to satisfy community expectations and statutory planning obligations. The assessment seeks to address school travel demand efficiently, safely and sustainably by maximising the most active and sustainable transport modes and reducing car parking capital expenditure and car travel demand.</p> <p>The School Travel Plan must be developed to inform the design response.</p>	Ph 1: Site Selection and Masterplan	Schools Transport Practice Note		DAB c17 Sustainable Transport	Credit 27.4 Movement and Place - Sustainable Transport	<p>1. Transport Assessment, which must address:</p> <ul style="list-style-type: none"> • A review of the school's travel demand; • The establishment of transport modes to promote during construction and post-occupancy; • Identification of transport improvements required to meet school travel demand; • Actions to inform the site design, master plan, Construction Traffic and Pedestrian Management Plan and Travel Plan; • Actions to address road safety concerns; and • Compliance with the Transport Planning Advisory 	N/A			Phase 3 - N/A	SINSW/John Staff
Unlock human potential	<p>Green cleaning</p> <p>Designs should support the implementation of a Green Cleaning policy for the school, this may include:</p> <ul style="list-style-type: none"> - Appropriate cleaning areas are to be provided to safely store chemicals and equipment. - Hand washing stations - Use of HEPA filtration in vacuum equipment 	Ph 7-9: Construction, Commissioning Post Occupancy and Operation	WoG Facilities Management Contr		GSP c6 Green Cleaning	Not covered in Green Star	<p>1. WEB Clean School User Guide</p> <p>2. Green Cleaning specifications</p>	N/A			Phase 3 - N/A at this stage. It will be developed at a later stage	SINSW/John Staff
Unlock human potential	<p>Healthy canteen policy</p> <p>The NSW Healthy School Canteens Strategy applies to all NSW Government schools (primary, secondary and central schools) with a canteen.</p> <p>The school should play a role in encouraging healthy dietary options in an effort to help reduce childhood obesity through food provided in the school canteens. As such, School canteens should be designed to encourage onsite preparation, storage, display and promotion of healthy 'everyday' foods.</p>	Ph 2: Concept Design - Space planning	Department of Education's Healthy Canteen Policy		DAB c30D Integrating Healthy Environments	Not covered in Green Star	<p>1. Research report behind Healthy Canteen Policy</p> <p>2. Evidence that policy initiative has been incorporated into the school under assessment.</p>	N/A			Phase 3 - N/A at this stage. It will be developed at a later stage	SINSW
Unlock human potential	<p>Daylight glare control</p> <p>Discomforting glare and brightness contrasts must be avoided. Designers must seek to:</p> <ul style="list-style-type: none"> - Exclude direct sunlight from all learning spaces, libraries, administrative offices and staff studies for the period of 9.00am to 3.30pm including Eastern Daylight Saving Time between 21st September to 21st March (equinoxes). - Exclude direct sunlight from desk level in all learning spaces between 9am and 3.30pm. <p>'Sun exclusion and glare control can be achieved by the use of elements such as sun shades, eave extensions, tinted glazing, screens, vertical blades and the like'.</p> <p>Glare must only be controlled by blinds as a last resort.</p>	Ph 2-5: Architectural Design	DG12 DG07.01		DAB c12.0 Glare Reduction	Credit 11.2 Light Quality - Glare from Light sources	<p>1. Daylight glare modelling report / sun diagrams showing direct sunlight has been excluded as required</p> <p>2. Drawings supporting inputs of model, showing location of blinds and any other glare control device</p>	Y			Phase 3 - Glare control will be implemented through blinds. Daylight modelling report in progress	Architect

Unlock human potential	<p>Acoustic Performance</p> <p>Design of internal spaces must address the following Acoustic outcomes:</p> <p>- Internal Noise Levels : An internal noise level assessment must be carried out for all new buildings to ensure comfortable acoustic conditions for the spaces occupied. The internal noise levels within the space must meet the limits stipulated in Table 11.06.1 of Section 11.06 Acoustic Performance Guidelines or be within the noise stipulated in Table 1 of the AS/NZS 2107:2016 standard. The more stringent</p>	Ph 2-5: Architectural Design	DG 11.06 DG 11.03 DG 11.02		DAB c10 Acoustic comfort	Credit 12 Acoustic comfort	<p>1. Report by qualified acoustics consultant demonstrating noise measurements are compliant.</p> <p>2. Detailed Drawings indicating sound insulation details and other relevant acoustic design features.</p>	Y			Phase 3 - Preliminary recommendations for the building façade have been provided in the acoustic design brief but will be reviewed as the design for the project progresses. Noise from mechanical plant will be assessed during the detailed design phase only.	Acoustics
Unlock human potential	<p>Noise emission (to the environment)</p> <p>Generally noise emission to the environment from mechanical services noise sources (such as air conditioners) are the subject of a development consent conditions. In NSW the development consent conditions will refer to the Industrial Noise Policy (INP) or Local Council requirement.</p> <p>Where no condition regarding noise sources exists for a school development, noise emission from such sources should be designed, in principle, to satisfy the</p>	Ph 2-5: Architectural Design	DG11.04		Not covered in Green Star	Not covered in Green Star	1. Report by qualified acoustics consultant	Y			Phase 3 - Environmental noise emissions from the development's mechanical plant will be assessed during detailed design once the mechanical design has sufficiently progressed. We anticipate that compliance with the requirements of the EPA's Noise Policy for Industry	Acoustics
Unlock human potential	<p>Fly free indoors</p> <p>Fly screening must be provided in all schools to the doors, windows and other openings in food preparation, biology, and non-water-closet toilet spaces or where specifically nominated in the EFSG.</p> <p>Schools in localities where fly incidence constitutes a health hazard (especially trachoma or other nuisance) will require fly screens to all opening sashes.</p>	Ph 2-5: Architectural Design	DG31.01		Not covered in Green Star	Not covered in Green Star	As-built drawings showing fly screening has been provided as required	Y			Phase 3 - To be provided in all schools	Architect
Unlock human potential	<p>Accessibility</p> <p>-All new facilities must meet current DTS provisions of the NCC and the associated standards.</p> <p>Generally AS 1428.1 is the minimum design standard for access and mobility. However, it is DoE's policy that any enhanced requirements noted in AS 1428.2 be incorporated in any new design.</p> <p>-Additionally, DoE have enhanced circulation requirements as noted in DG / CIRCULATION</p> <p>- Provide hearing augmentation system for areas that have amplification, generally within Gymnasium, libraries, movement studios and Communal Halls, provide a system to assist the aurally challenged to hear music and speech within the main</p>	Ph 2-5: Architectural Design	DG19.01 DG65.14		DAB 30D Universal design	Credit 34 Design for Inclusion	<p>1. Accessibility plan</p> <p>2. As-built drawings or other evidence demonstrating that minimum and enhanced accessibility requirements have been provided for walkways, corridors, ramps, etc.</p> <p>3. Photographic or other evidence of signage installed</p>	Y			Phase 3 - Standard EFSG requirements. Accessibility report and consultant engaged	John Staff
Unlock human potential	<p>Access to Views</p> <p>Building design must ensure that at least 60% of primary occupied spaces have a clear line of sight to high quality internal or external views. The space must be within 8m from the view.</p> <p>High quality views include:</p> <p>External views - vegetation, body of water, sky, or frequent outdoor movement (people, vehicles, animals)</p> <p>Internal views - 'landscaped area, water features, atrium'</p> <p>Note: Primary Spaces are defined as spaces that where students or staff are expected to work, or remain for an extended period of time, typically longer than 2</p>	Ph 2-5: Architectural Design	DG2.10		DAB c12.2 Views	Credit 15.1 Connection to Nature - Views	<p>1. Views Calculations and Mark-up this must be done in accordance with the GBCA's <i>Daylight and Views Hand Calculation Guide</i>:</p> <p>https://www.gbca.org.au/uploads/79/35919/Green%20Star_Daylight%20and%20Views%20Hand%20Calculation%20Guide%20May%202015%20RELEASE.pdf</p>	Y			Phase 3 - Architectural drawings: All primary spaces have high quality views of landscaping.	Architect
Unlock human potential	<p>Access to Daylight</p> <p>Designers must seek to maximise natural daylight in all learning and administration spaces to improve indoor amenity and create a pleasant environment and reduce energy usage through windows and skylights</p> <p>- Access to high levels of daylight must be ensured for at least 40% of primary occupied spaces per floor. A space is considered to have high levels of daylight if: the space has minimum 160 lux due to daylight during 80% of the nominated hour</p> <p>OR</p> <p>the following requirements are met:</p> <p>No overshadowing – external shading should not impinge on the direct 25 degree line from centre of the window</p> <p>Minimum 40% Visual Light Transmittance (VLT) for building glazing'</p> <p>Note: Primary Spaces are defined as spaces that where students or staff are expected to work, or remain for an extended period of time, typically longer than 2 hours. This includes classrooms, laboratories, computer labs and</p>	Ph 2-5: Architectural Design	DG2.3.1 DG12		DAB c12 Visual Comfort	Credit 11.3 Daylight	<p>1. Daylight modelling report demonstrating how natural daylight has been maximised in all habitable spaces; and</p> <p>2. As built drawings demonstrating that the model accurately represents the building (i.e. window size and location; skylights installed, etc.); and</p> <p>3. Specifications supporting inputs used in modelling (e.g. skylights and glass specs)</p>	Y		Indoor Environment Quality	<p>Phase 2 - Concept design drawings demonstrate access to daylight. This will be further explored through daylight modelling in next phases.</p> <p>Phase 3 - Daylight Modelling currently in progress</p>	ESD

Unlock human potential	<p>Ventilation and indoor air quality</p> <p>The maximum CO₂ concentration must not exceed 1,500ppm for more than 20 consecutive minutes in each day</p> <p>A ventilation strategy must be developed to ensure that sufficient ventilation is provided to all spaces to meet the requirements of the BCA/NCC and associated standards. Specifically ventilation equipment must be designed from a whole-of-life perspective and support healthy indoor environments, energy efficiency and ease of maintenance.</p> <p>This must also meet requirements for:</p> <ul style="list-style-type: none"> - Natural ventilation mode and cross ventilation: in line with DG5.01 - Mechanically Assisted cross ventilation: In two storey blocks where cross flow ventilation is not possible to the lower floor, mechanically assisted cross ventilation is to be provided to the lower floor learning spaces nominated in the EFSG, the design must adhere to DG57.18. - Roof ventilator control: in line with DG65.16 - Wind powered roof ventilators: Designed to suit local ambient climatic conditions to ensure correct sizes, locations and numbers as detailed in DG57.14 - Sanitary Spaces sufficient natural ventilation or mechanical ventilation, to disperse odours and /or humidity in line with - Cross ventilation is to be used where possible. - Provide mechanical ventilation to all Disabled Toilets. - Ventilation in storage spaces in line with DG5.05 - Ventilation in permanent learning spaces and libraries in line with DG55 - Outdoor air requirements and control of Indoor CO₂ levels - designs must adhere to DG55.02 - Ventilation in printing rooms: The ventilation system is to be designed to serve the whole room and is not intended to provide localised exhaust at equipment. Adhere to ventilation requirements set out in DG57.07. 	Ph 2-5: Services Design	<p>DG57.01 DG05.04 DG05.05 DG57.16 DG05.01 DG57.18 DG05.02 DG37 DG65.16</p> <p>Thermal Comfort and Indoor Air Quality – Performance Brief</p>		DAB c15 GHG Emissions Reduction	Credit 10 Clean Air - Ventilation System Attributes	<p>1. Cooling system strategy including WOL analysis</p> <p>2. Concept plans</p> <p>3. Construction drawings</p> <p>4. Trade-based specification</p> <p>5. As built drawings, including indication of windows and cross ventilation</p>	Y		Indoor Environment Quality	<p>Phase 3 - We are achieving 1,800ppm as per the GS minimum requirements which is more stringent than 1500ppm. Refer to Mechanical schematic design report and drawings.</p> <p>Complying with everything that is applicable to the school. Some N/A items i.e. we don't have roof ventilator</p>	Mechanical
Unlock human potential	<p>Lighting control</p> <ul style="list-style-type: none"> - Consider the furniture layouts to determine the orientation of luminaires. Especially when positioning luminaires in Materials Technology spaces to ensure adequate illumination on machines and work surfaces; - avoid potential stroboscopic effects and avoid shadows from ductwork - Mount luminaires as high as possible, but generally no higher than 4000mm AFFL (excluding Gymsnasiums and Halls), to improve luminance uniformity and reduce direct glare in the direction of normal view - The standard lamp colour temperature is 4,000°K, except in certain toilet areas where the Design Guide requires the use of blue colours. - The Colour Rendering Index (CRI) for light sources must be minimum 80 or higher - Compliance with the uniformity requirements stipulated in Table 3.2 of the AS/NZS 1680 standard should be demonstrated by the presentation of the output from lighting design software. - The Unified Glare Rating (UGR) must be calculated in accordance with the procedure outlined in Clause 8.3.3 of AS/NZS 1680.1:2006 standard, and the calculated value must not exceed the maximum values specified in Table 8.2 of the standard - The maintained illuminance levels must meet the recommended levels as specified in the AS/NZS 1680 standard, and the maintained illuminance values achieve a uniformity of no less than the values given in Table 3.2 of AS 1680.1:2006, with an assumed standard maintenance factor of 0.8. <p><i>To ensure flicker-free lighting, the following luminaires requirements should be</i></p>	Ph 2-5: Services Design	DG63.03		DAB c11 Lighting Comfort DAB c11.1 General Illuminance and Glare Reduction	Credit 11 Light Quality	<p>1. Lighting drawings</p> <p>2. Architectural drawings</p> <p>3. Lighting specifications / schedules</p> <p>4. Product data sheets</p> <p>5. Isopleth plot drawings</p> <p>6. Lighting modelling report showing compliant uniformity and UGRs</p>	Y			<p>Phase 3 - It will be included in the electrical specification documents at a later stage.</p>	Electrical
Unlock human potential	<p>Thermal comfort</p> <p>The inclusion of active cooling within school facilities is directed by the Department's Air Cooling policy:</p> <p>2.1 Schools with a long term average mean maximum January temperature of 33 oC and above: Generally, air conditioning is to be provided to all school buildings.</p> <p>2.2 Schools with a long term average mean maximum January temperature of below 33oC: Air conditioning is to be installed in all permanent learning spaces and libraries forming part of each projects scope.</p> <p>- Thermal modelling is undertaken to demonstrate that learning spaces and libraries have been designed to achieve a predicted mean vote (PMV) of +/- 1 for</p>	Ph 2-5: Services Design	DG06.03 DG55.01 DG55.02		DAB c14 Thermal Comfort	Not covered in Green Star	<p>1. Mechanical drawings showing HVAC systems installed, or</p> <p>2. Confirmation from sub-contractors that services have been installed and commissioned as required; and</p> <p>3. Modelling report showing required PMV is achieved. Modelling report to be done in line with methodology described in Draft thermal comfort and indoor air quality interim performance brief for DG55</p>	Y		Indoor Environment Quality	<p>Phase 3 - Thermal modelling currently in progress. Also, mechanical schematic design report and drawings</p>	ESD
Unlock human potential	<p>Microbial control</p> <p>As a measure to prevent legionella, heated water to hand basins, showers etc. shall be stored at temperature above 65 C. Thermostatic mixing valves are to be used for tempered water generation at each point of use.</p> <p>Valves need to comply with microbe disinfection requirements - "Code of Practice for Thermostatic Mixing Valves NSW" as approved by the NSW Health Department.</p>	Ph 2-5: Services Design	DG51.09 DG53.11		DAB c28 Microbial Control	Not covered in Green Star	<p>1. Letter by hydraulic engineer confirming hot water is stored above 65 deg and that valves comply with code of practice.</p>	N/A			<p>Phase 3 - There is no stored water. TMV's are being specified.</p>	Hydraulics
Unlock human potential	<p>External access lighting</p> <p>External Access Lighting shall be provided to illuminate building entrances, footpaths, sheltered walkways, roadways and car park. External Access Lighting must:</p> <ul style="list-style-type: none"> - Be minimal and designed to prevent glare to pedestrians, nearby residents and to motorists. Evidence of compliance with AS4282, AS/NZS 1158 and other applicable Australian Standards must be provided by the designer. - Be located so as to link various sources of illumination such as street lighting (for carpark and roadways) and internal security lighting (for footpaths, walkways and entrances). - Illuminate building entry doors. <p><i>Highlight "accident-prone" areas such as changes in level, stairs and ramps</i></p>	Ph 2-5: Services Design	DG63.08.01		DAB c27.0 Light Pollution to Neighbouring Bodies	Credit 35.2 Impacts to Nature - Managing Light Pollution Impacts	<p>1. As built drawings indicating the location of all external luminaires</p> <p>2. Letter by lighting designer describing glare prevention measures</p>	Y			<p>Phase 3 - It will be included in the electrical specification documents at a later stage.</p>	Electrical

Unlock human potential	<p>Low VOC-emitting materials All surface coatings, and other volatile organic compound (VOC) emitting products including adhesives, sealants, carpets, carpet tiles, and carpet underlays, must be made from low-VOC emission materials.</p> <p>- Paints must meet the limits stipulated in the Australian Paint Approval Scheme's (APAS) VOC limits for low VOC paints.</p> <p>- <u>Paints, adhesives and sealants must not exceed the maximum VOC limits</u></p>	Ph 3-4: Product and Material Selection	DG2.5.2	0.08 Sustainable Materials	DAB c13 Indoor Pollutants	Credit 13 Exposure to Toxins	<p>1. Product specifications, certificates, safety datasheets that demonstrate low-VOC contents</p> <p>2. Bill of quantities</p>	Y		Indoor Environment Quality	Phase 3 - To be included in the product specifications for procurement at a later stage.	Contractor
Unlock human potential	<p>Low formaldehyde-emitting materials Only low formaldehyde-emitting engineered wood products should be used, such as those that meet the Australian Standards for formaldehyde emission limit E1 (NICNAS classification) or lower. The engineered wood products must not exceed the emissions limits stipulated in the Green Star Buildings rating tool. Engineered wood products include particleboard, plywood, Medium Density Fibreboard (MDF), Laminated Veneer Lumber (LVL), High-Pressure Laminate (HPL), Compact Laminate and decorative overlaid wood panels. This requirement excludes formwork.</p>	Ph 3-4: Product and Material Selection	DG2.5.2		DAB c13 Indoor Pollutants	Credit 13 Exposure to Toxins	<p>1. Product specifications, certificates, safety datasheets that demonstrate low-formaldehyde contents</p> <p>Bill of quantities</p>	N/A			Phase 3 - N/A at this stage. It will be developed at a later stage	Contractor
Unlock human potential	<p>Acoustic post-occupancy evaluation Post Occupancy evaluations are often undertaken to assess the performance of recently completed or existing facilities. Where a Post Occupancy Evaluation is to be undertaken it should be conducted by the project team or acoustic engineer and should be undertaken of selected acoustic parameters only. Evaluation must include (as per the above criteria)</p> <ul style="list-style-type: none"> - Internal noise levels, - Room acoustics, - Noise emission, - Room-to-room acoustics performance <p>The noise measurement and documentation must be provided by a qualified acoustic consultant and in accordance with AS/NZS 2107:2016</p> <p><u>Measurements shall be conducted in at least 10% of regularly occupied spaces.</u></p>	Ph 7-9: Construction, Commissioning Post Occupancy and Operation	DG11.07		GSP c13 Internal Noise Levels	Credit 12 Acoustic comfort	1. Commitment by SI to conduct acoustic post-occupancy evaluation	N/A			Phase 3 - N/A at this stage. It will be developed at a later stage	Contractor/Acoustics
Unlock human potential	<p>Pesticide free environments Schools must be designed, constructed and maintained, without using chemicals for termite and other pest control.</p> <p>No chemical pesticides and termicide to be used. Preventive treatments to be by physical means and careful design to minimise risk</p>	Ph 7-9: Construction, Commissioning Post Occupancy and Operation	DG2.5.3		Not covered in Green Star	Not covered in Green Star	Statement by head contractor that no pesticides or termites have been used.	N/A			Phase 3 - N/A at this stage. It will be developed at a later stage	Contractor/Acoustics
Unlock human potential	<p>Healthy Places The design of the project should address five key principles for Healthy Places, as defined in Green Star Communities credit 9.3. These are:</p> <ul style="list-style-type: none"> - Walkability - Active and public transport, - Wayfinding - Good public space design - Social interaction 	Ph 2-5: Architectural Design	DG2.5.4		Healthy Places [GSC 9.2]	Credit 27 Movement and Place	1. Narrative providing examples of how each principle is being addressed, with examples from the Masterplan Report and Traffic/Transport Plan	N/A			Phase 3 - N/A at this stage. It will be developed at a later stage	Urban Planner/Transport