

# Galungara & Jordan Springs Schools – Stage 2

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**ESD Compliance Report**

**School Infrastructure NSW**

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### Document Revision History

Revision Ref	Issue Date	Purpose of issue / description of revision
A	29 May 2023	Compliance Report
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### Document Validation (latest issue)

X 

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X 

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Checked by: Julian Bott

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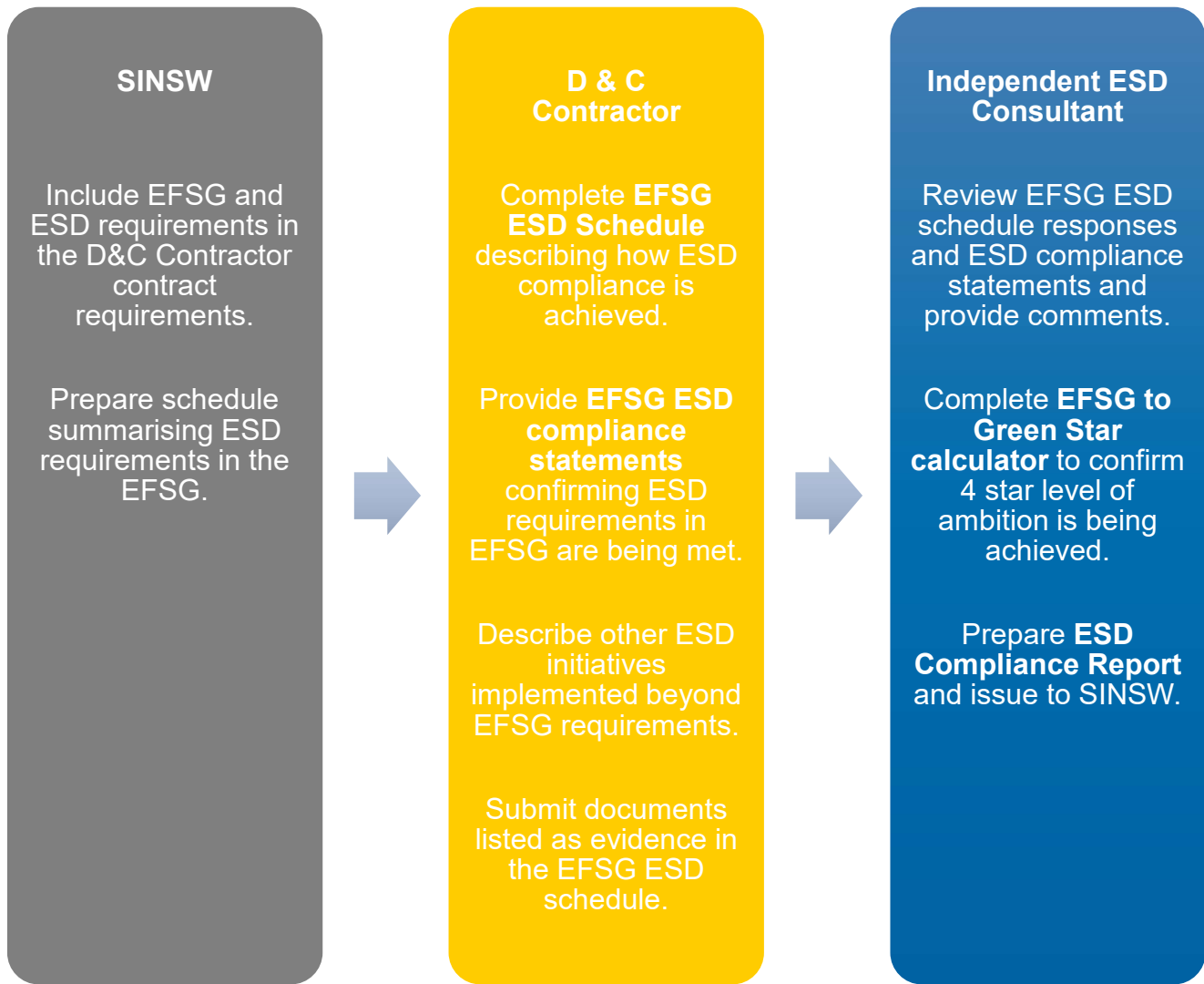
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# 1.0 ESD Compliance Report

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## 1.1 ESD Compliance Review Process

The alternative ESD certification process for the project is summarised in the diagram below. This is based on the project complying with the ESD requirements set out in School Infrastructure NSW (SINSW)'s Educational Facilities Standards and Guidelines (EFSG) and comparing this to a 4 star Green Star benchmark.



## 1.2 Alternative ESD Certification Assessment

To benchmark the EFSG ESD requirements against a 4 star Green Star Design & As-Built v1.3 rating to meet SSD 9354 (Jordan Springs) condition B9 and SSD-9368 (Galungara) condition B11 the following methodology was used:

1. Identify the Green Star credit compliance requirements that are covered, in part or full, by the ESD requirements in the EFSG Design Guides. For each credit identified establish the “EFSG equivalence in stringency” from 25% to 100%. For example, if the EFSG requirements address approximately half of the Green Star compliance requirements then the equivalent stringency factor would be 50%. These stringency factors were agreed following discussions with SINSW.
2. The points available for a credit based on complying with the relevant EFSG ESD requirements is then calculated as follows: Green Star Credit Points Available x EFSG Stringency Factor (%).
3. If the EFSG ESD requirements are achieved on the project (as described in the EFSG ESD Schedule completed by the D&C Contractor) then the points available, as calculated in item 2, are assumed to be achieved.
4. These points are then summed to give the total achieved through EFSG compliance.
5. If the project has delivered ESD initiatives beyond the minimum required by the EFSG, and these would be recognised in a formal Green Star rating, then additional points (up to the total available for that credit) can be added to the total.
6. If the total points achieved is greater than 45 points, then the project is assumed to have achieved the required ESD performance benchmark for the purposes of demonstrating compliance with SSD 9354 and SSD-9368 ESD condition B9 and B11 respectively.

## 1.3 Documents Provided

The following documents were provided for the ESD Compliance review.

*As-Built Drawings prepared by or on behalf of JHA and Richard Crookes Construction:*

- Architectural
- Structural
- Civil
- Mechanical
- Electrical
  - Power, Communications and Security
  - Lighting
- Hydraulic Services
- Landscape
- Acoustic
- ESD
- Other

## 1.4 Review Activity

The EFSG ESD Schedule and the ESD compliance statements provided by JHA and Richard Crookes, confirming that the design and construction of the project meets all the ESD requirements set out in the EFSG with approved departures, are complete and comply with the agreed ESD compliance reporting requirements for the project.

An EFSG Departures Schedule prepared by JHA and Richard Crookes identified some departures from the ESD requirements in the EFSG Design Guides.

Cundall reviewed the referenced evidence documentation provided by JHA and Richard Crookes. No material deviations from the EFSG ESD schedule response or the ESD compliance statements were found during the review.

## 1.5 Alternative ESD Certification Review

Cundall have undertaken a review of the ESD performance of the projects based on the information provided by JHA and Richard Crookes and in accordance with the agreed alternative ESD certification methodology.

The methodology uses the Green Star Design & As-Built rating tool to establish benchmarks against which the projects response is compared.

Under the Alternative ESD Certification Process a minimum of 45 points is required. The breakdown of points achieved on the projects based on the independent review is shown in the table below.

	Total Points available in Green Star Rating Tool	Green Star Points addressed in part or full in EFSG Design Guides	Equivalent Points based on stringency of EFSG ESD requirements	Alternative ESD Points achieved on this project based on EFSG compliance	Additional ESD Initiatives implemented beyond EFSG requirements	Total Alternative ESD Points achieved on project
Management	14	11	7	7	0	7
Indoor Environment Quality	17	14	11	11	0	11
Energy	22	7	7	7	0	7
Transport	10	3	3	3	0	3
Water	12	6	5	5	0	5
Materials	14	2	2	2	0	2
Land Use & Ecology	6	4	3	3	0	3
Emissions	5	4	2	2	0	2
Innovation	10	7	5	5	0	5
<b>Total</b>	<b>110</b>	<b>58</b>	<b>45</b>	<b>45</b>	<b>0</b>	<b>45</b>

## 1.6 Conclusion

An ESD performance benchmark for the design and construction of the projects was established by comparing the EFSG ESD requirements to the credit compliance and points requirements of a 4 star Green Star Design & As-Built v1.3 rating.

Based on this review the projects' ESD performance meets the required benchmark using the alternative ESD certification process.

# Appendix A: ESD Review Purpose & Background

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## Appendix A ESD Review Purpose & Background

### Purpose of this report

Cundall were engaged to provide an independent ESD review of the design and construction of Jordan Springs and Galungara Schools against the ESD requirements in School Infrastructure New South Wales' (SINSW) Educational Facilities Standards and Guidelines (EFSG). The review was based on documentation submitted by JHA and Richard Crookes:

- EFSG ESD schedule
- Contractor and Design ESD compliance statements

Cundall were also engaged to prepare a Green Star equivalency review based on the initiatives and processes described in the EFSG ESD schedule completed by JHA and Richard Crookes. This is an informal comparison of the level of ambition of the EFSG ESD requirements compared against multiple Green Star credit criteria to assist SINSW to demonstrate compliance SSD 9354 (Jordan Springs) condition B9 and SSD-9368 (Galungara) condition B11.

This report provides a summary of the EFSG ESD Schedule review and the Green Star equivalency review.

### SSD Requirements for ESD

The Development Consent for the project, SSD-9354, contains 2 provisions for ESD:

*B9. Prior to the commencement of construction, unless otherwise agreed by the Planning Secretary, the Applicant must demonstrate that ESD is being achieved by either:*

- (a) *registering for a minimum 4 star Green Star rating with the Green Building Council Australia and submit evidence of registration to the Certifier; or*
- (b) *seeking approval from the Planning Secretary for an alternative certification process.*

*E14. Unless otherwise agreed by the Planning Secretary, within six months of commencement of operation, Green Star certification must be obtained demonstrating the development achieves a minimum 4-Star Green Star Design & As Built rating. If required to be obtained, evidence of the certification must be provided to the Certifying Authority and the Planning Secretary. If an alternative certification process has been agreed to by the Planning Secretary under Condition B9, evidence of compliance of implementation must be provided to the Planning Secretary and Certifying Authority.*

The Development Consent for the project, SSD-9368, contains 2 provisions for ESD:

*B11. Prior to the commencement of construction, unless otherwise agreed by the Planning Secretary, the Applicant must demonstrate that ESD is being achieved by either:*

- (c) *registering for a minimum 4 star Green Star rating with the Green Building Council Australia and submit evidence of registration to the Certifier; or*
- (d) *seeking approval from the Planning Secretary for an alternative certification process.*

*E12. Unless otherwise agreed by the Planning Secretary, within six months of commencement of operation, Green Star certification must be obtained demonstrating the development achieves a minimum 4 star Green Star Design & As Built rating. If required to be obtained, evidence of the certification must be provided to the Certifier and the Planning*



*Secretary. If an alternative certification process has been agreed to by the Planning Secretary under Condition B11, evidence of compliance of implementation must be provided to the Planning Secretary and Certifier.*

This report demonstrates compliance through an alternative certification process.

## **EFSG Schedules and Compliance Statements**

The EFSG ESD template was completed by the D&C Contractor including:

- Commentary – provide a brief description of compliance against each requirement (commentary)
- Evidence – identify where this compliance is documented
- Responsibility – confirm which party(s) has responsibility for confirming that the design complies fully with the EFSG ESD requirement.

The D&C Contractor also provided:

- A Compliance Statement confirming that the project's design and construction complies with the EFSG ESD requirements as described in the completed EFSG ESD Schedule.
- Design Statements from the relevant consultants and contractors engaged by the D&C Contractor confirming that their component of the project complies with the relevant EFSG ESD requirements.
- Supporting evidence documentation referenced in the EFSG ESD schedule.

The Independent ESD Consultant reviewed the EFSG ESD Schedule and compliance statements provided by the D&C Contractor and provided comments on behalf of SINSW regarding the ESD response.

The Contractor provided documentation stated in the EFSG ESD Schedule evidence column to demonstrate compliance with the EFSG ESD Requirements to SINSW and the Independent ESD Consultant. The Independent ESD Consultant undertook spot checks of this documentation against the Contractor's compliance statements and the ESD requirements set out in the EFSG.

Additional ESD initiatives that went beyond the requirements of the EFSG ESD requirements were also reviewed and included in the Alternative ESD assessment.

The EFSG ESD schedule and compliance statements were updated as required and issued to the Independent ESD Consultant for inclusion in this final ESD Compliance Report.

## **Limitations**

Cundall's review is based on documentation and statements prepared by JHA and Richard Crookes and their contractors and consultants. Cundall have not undertaken independent design calculations, analysis or modelling to confirm that the design complies with the EFSG, Building Code of Australia, Australian Standards or any other relevant codes, regulations or client requirements.

Cundall did not witness the construction or installation of any items listed in the EFSG schedule and was not present for any site inspections.

The Green Star equivalency review prepared by Cundall is based on the initiatives and processes described in the EFSG ESD schedule completed by JHA and Richard Crookes.

The Green Star equivalency review is NOT the same as a formal Green Star rating. It is an informal comparison of the level of ambition of the initiatives described in the EFSG ESD schedule compared to the approximate performance of a 4 star Green Star rated building. No public statements can be made related to an "equivalent" Green Star rating as the methodology used and level of rigour applied is not the same as the Green Star Submission Guidelines, and would also breach the trademark and copyright of the Green Building Council of Australia.

# Appendix B: EFSG ESD Schedule

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## **Appendix B EFSG ESD Schedule**

Please see overleaf

PROJECT: REVISION & Date AUTHOR		6/06/2023		STAGE 1 Evidence Accepted		STAGE 2 Proposed Evidence - CONTRACTOR		STAGE 2 PROPOSED EVIDENCE - ISV		As-Built Review INDEPENDENT SUSTAINABILITY VERIFICATION								
Theme (old)	Sustainability Strategy Priority	Sustainability Initiatives / Requirements Where applicable, this is an extract only from the relevant EFSG. For full requirements refer to https://efsg.det.nsw.edu.au/	Recommended evidence to demonstrate compliance	Has this been implemented in the project? Y or N or NA	Contractor's ESD Consultant comments	Jordan Springs	Galangra	Stage 2 Proposed evidence Galangra and JPS By Contractor This evidence needs to show that the requirement from column C has been met	Responsibility: (identify party responsible to provide evidence)	Is the proposed evidence accepted Y or N 17/08/2022	Proposed Evidence Review Comments 17/08/2022	D&C Contractors Response (22/08/22)	Evidence Agreed (CUNDALL COMMENT)	Independent ESD Review of AB Documentation Evidence (13/01/2023)	D&C Contractors Response (insert date)	Independent ESD Review of AB Documentation Evidence (06/04/2023)	Independent ESD Compliance Review (15/05/2023)	Evidence Index (optional)
	Act on climate change	Improvement over NCC - All new facilities must be designed and built so that energy consumption is predicted to be at least 10% lower than if built to minimum compliance with National Construction Code requirements. Each building's system and facade must comply with the corresponding Section 3 requirements in the National Construction Code. That is, the building cannot show that their facade, or any system, performs worse than the reference building. The energy consumption reduction must be achieved without including renewable energy generation in the calculation.	1. Energy modelling report / Predictive energy modelling and thermal comfort assessment. Report needs to show at least 10% improvement of building over minimum NCC requirements, and 2. As built evidence that model is an accurate representation of the building, e.g. drawings; and 3. Specifications / calculations supporting modelling inputs, e.g. window energy rating scheme certificates, calculated R values of walls, roofs, etc. 4. As an alternative to 2 and 3 above, a Statement by energy modeller confirming that the model accurately represents the building.	N - Carried over from Stage 1	Project following EFSG 2018 requirement as to be consistent with Stage 1 requirement. Targeting to achieve 10% improvement with existing on-site PV	JV3 Report Compliance Statement	JV3 Report Compliance Statement	EFSG 2018 Compliance with Stage 1 existing PV system	ESD	N	JV3 Report demonstrated 10% improvement on NCC. Proposed fabric must not be worse than NCC. Improvement can include PV Compliance Statement.	Noted 19.08.22 JHA - ESD 22/08/22: Proposed NCC 2016 Section 3 compliance to match fabric with Stage 1, fabric not worse than NCC 2016 and 10% improvement with account of PV from Stage 1 existing PV sizing.	Yes	Please provide As Bullets for NCC Section 3 Compliance statement for this item		Please provide OC Sign off certificate for Section 1.	Yes	1
	Water	Act on climate change	Passive design The need for active cooling and heating shall be minimised by employing passive / sustainable design principles listed in DG 55, DG 06.02 and DG 27.1.2 as well as the GA NSW Environmental Design in Schools Guidelines. This includes: - Window size and shading to prioritise passive cooling in summer and heating in winter - Orientation - Thermal mass - Building fabric colour and performance - Shading	Y	Can be achieved with efficient services. Energy modelling report to demonstrate compliance.	Architectural Drawings Architectural Technical Specification Compliance Statement	Architectural Drawings Architectural Technical Specification Compliance Statement	Project JV3 report	Head Contractor Architect Electrical Mechanical ESD	N	Architectural Drawings Architectural Technical Specification Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	Only Architectural drawings provided. Please provide As Bullets for Architectural Technical Specification Compliance Statement			Yes	2
	Waste & materials	Act on climate change	Energy efficient lighting design and modelling - LED lighting must be installed - The design of the lighting systems and the selection of fittings is to be undertaken based on a Whole of Life approach, such as diodes and control gear with a long life - Section 1 part 6 maximum illumination power density provisions must be adhered to, along with all other elements of part 6 - System must support sustainable design principles including reducing energy consumption, such as timed or sensor feedback functionality - Lighting designs should be carried out utilising industry standard lighting design software such as AGI32, Dialux or Relux.	Y	Electrical drawing to demonstrate energy efficient lighting has been installed	Electrical Drawings Electrical Specification Compliance Statement	Electrical Drawings Electrical Specification Compliance Statement	Lighting Schedule	Electrical	N	Electrical Drawings Electrical Specification Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	Please provide As Bullets for Electrical Drawings Electrical Specification Compliance Statement Note: Lighting legend/covers sheet required to identify symbols on lighting drawings. Lighting schedule not provided.			Yes	3
	Waste & materials	Act on climate change	Lighting control and switching - The use of lighting controls will assist in substantially improving energy efficiency on sites, and should be considered for all new lighting systems, in new build or site refurbishments. - Lighting control should be simple to operate and adhere to all requirements of DG 63.06 - Constant Light Output and Daylight Harvesting systems are recommended given their ability to reduce lighting energy whilst maintaining comfortability in spaces. Consideration should be given to these strategies as stipulated in DG 63.06 - Including daylight sensors in rooms to reduce light output or turn off light when sufficient daylight is provided within the space - When the space is large and perimeter lighting is adjacent to windows, perimeter lighting is on a separate zone to make maximum use of daylight - Local switching should be provided where it is identified that the users can benefit from manual operation of the lighting and other lighting automation technology is considered cost prohibitive. The switching should be clearly marked and robust. Provisions for energy efficient switching in Schools are outlined within DG63 and DG65.	N - Carried over from Stage 1	Switch without not per EFSG refer electrical departure register	Electrical Drawings Electrical Specification Compliance Statement	Electrical Drawings Electrical Specification Compliance Statement	Carried over from Stage 1	Electrical	Y	Electrical Drawings Electrical Specification Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	Please provide As Bullets for Electrical Drawings Electrical Specification Compliance Statement Note: Lighting legend/covers sheet required to identify symbols on lighting drawings. Lighting schedule not provided.			Yes	4
	Waste & materials	Act on climate change	Energy efficient appliances & equipment Electrical equipment must be at least 0.5 stars above the market average star rating or comply with high efficiency standards specified in the ERP HVAC system must have timed or sensor feedback functionality for energy conservation Systems shall be designed to minimise energy consumption. System design / equipment selection is to be based on whole of life cost analysis. Specific requirement are outlined in the EFSG.	N - Carried over from Stage 1	FE Schedule/Receipt to demonstrate compliance Current FE schedule does not have star rating listed	Electrical Drawings Electrical Specification EFSG Requirements Compliance Statement	Electrical Drawings - Series AA-BB-## Electrical Specification dated June 2019 Compliance Statement	FE Schedule to show compliance	Head Contractor Architect	Y	Electrical Drawings Electrical Specification Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	Please provide As Bullets for FE Schedule			Yes	5
	Waste & materials	Act on climate change	Heat loss/gain The design must take steps to control heat loss from the building during cooler winter months and heat gain during the warmer months. Refer to HVAC Design considerations in DG04.01	Y	Energy model to demonstrate compliance	Mechanical Drawings JV3 Report Compliance Statement	Mechanical Drawings - Series AA-BB-## JV3 Report dated 5 April 2019 Compliance Statement	Project JV3 report	Mechanical/ESD	Y	Mechanical Drawings JV3 Report Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	Please provide As Bullets for Section 1 OC compliance Statement Mechanical Contractor EFSG Compliance Statement		Please provide OC Sign off certificate for Section 1.	Yes	6
	Waste & materials	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" 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.	N - Carried over from Stage 1	Stage 2 to maintain the stage 1 controller for consistency, refer electrical departure register	Mechanical Drawings Commissioning Documents Compliance Statement	Mechanical Drawings (Series AA-BB-##) Mechanical Commissioning Documents Compliance Statement	Carried over from Stage 1	Mechanical	Y	Mechanical Drawings Commissioning Documents Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	Please provide As Bullets for Commissioning Documents Compliance Statement			Yes	7
	Waste & materials	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	NA	No PV for the proposed Stage 2 development, existing Stage 1 PV to be used for the whole site compliance with EFSG	Architectural Single Line Diagrams Electrical Specification Compliance Statement	Electrical Single Line Diagram Electrical Specification dated 28 June 19 Compliance Statement	Not part of Stage 2 scope	Electrical	TBC	Statement by Head Contractor confirming n/a.	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	Approved Departure			Yes	8
	Place	Act on climate change	Battery Energy Storage System A battery energy storage system shall only be designed in consultation with SINGW Sustainability sustainability.enquiries@det.nsw.edu.au	NA	Not targeting	n/a	n/a	Not part of Stage 2 scope	Electrical	TBC	Statement by Head Contractor confirming n/a.	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	Approved Departure			Yes	9
	Place	Act on climate change	Heaters Electric heating must be preferred over gas heating. Where gas heating is considered, it must be approved by SINGW 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	NA	Mechanical drawing/statement to demonstrate that the proposed heater complies	Mechanical Drawings Compliance Statement	n/a	No Electric Heaters for proposed development	Mechanical	TBC	To be included in Departure Schedule, be confirmed by RCC and approved by SINGW.	RCC to provide statement confirming there is no gas heating. Please advise why this is a departure 19.08	Yes	Included in contractor statement confirming not applicable			Yes	10
	Place	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 wind resistant) and heat pumps are preferred energy sources to minimise energy consumption.	Y	Hydraulic drawings/schematics showing installed DHW system	Hydraulic Drawings Hydraulic Specification Compliance Statement	Hydraulic Drawings (Series H2##) Hydraulic Specification dated 13 Sep 19 Compliance Statement	Hydraulic drawings	Hydraulic	Y	Hydraulic Drawings Hydraulic Specification Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	Please provide As Bullets for Hydraulic Drawings Hydraulic Specification Compliance Statement			Yes	11
	Resilience	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 sensitive natural environments or sites subject to natural risks (i.e. flood prone sites, bush fire areas).	Y	Head contractor to provide reports or site survey to demonstrate compliance	ESR reports - Urban design assessment which includes local environment/character considerations. - Archeological assessment - Historical archeological impact assessment - Traffic Impact Assessment	ESR reports - Urban design assessment which includes local environment/character considerations. - Archeological assessment - Historical archeological impact assessment - Traffic Impact Assessment	Environmental risk report	Head Contractor	N	ES reports: Urban design assessment which includes local environment/character considerations. - Archeological assessment - Historical archeological impact assessment - Traffic Impact Assessment - Green Travel Plan - Geotechnical Investigation - Detailed environmental site assessment	Noted. Cundall to receive previous SDA submission docs 19.08.22	Yes				Yes	12
	Energy & carbon	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 reduce the potential impact of wind, fire intensity, radiant heat, and rate of spread as well as intercepting burning embers. - Avoid combustible fencing materials. - Provide irrigation and garden sprinklers to water areas near the buildings (subject to water authority approval).	NA	Does not apply to Stage 2	Landscape Drawings Architectural Drawings Compliance Statement	Bushfire Installation Certificate Compliance Statement	NA	Landscape	TBC	Statement by Head Contractor confirming n/a.	RCC to confirm carried over from Stage 1 19.08.22	Yes	Please provide As Bullets for Head Contractor Statement			Yes	13
	Energy & carbon	Build resilience	Climate change adaptation 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 storms 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 as that associated costs 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. 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 scenario Where significant risks are identified in the initial assessment, a comprehensive climate change risk assessment must be undertaken. Any high or extreme risks identified must be addressed through design measures.	Y	Head contractor to provide Emergency Management Plan	n/a	n/a	Emergency Management Plan	Head Contractor	N	Please explain how an Emergency Management Plan is related to Climate Change Adaptation. Otherwise, if no CCAP produced for project this is N/A and departure to be demonstrated as approved by SINGW.	JHA-ESD 22/08/22: RCC to register as departure as carried over from Stage 1 NA approach	Yes	Please provide As Bullets for Head Contractor Statement			Yes	14
	Energy & carbon	Build resilience	Weather protection Circulation areas provided between administrative, staff and all student spaces (except Agriculture), should be protected from sun, rain and unfavourable winds.	Y	Designed to have covered walkways and ensure that demonstrate compliance to this requirement	Architectural Drawings Compliance Statement	Architectural Drawings - (Series AA-AR-1100) Compliance Statement	As built drawing to show compliance	Architect	Y	Architectural Drawings Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	Ok for As-Built Review			Yes	15

Theme (old)	Sustainability Strategy Priority	Sustainability Initiatives / requirements <small>Where applicable, this is an extract only from the relevant EFSG. For full requirements refer to https://efsg.dcl.nsw.edu.au/</small>	Recommended evidence to demonstrate compliance	Has this been implemented in the project? Y or N or NA	Contractor's ESD consultant comments	Jordan Springs	Galangara	Stage 2 Proposed evidence Galangara and JSPS By Contractor <small>This evidence needs to show that the requirement from column C has been met</small>	Responsibility (Identify party responsible to provide evidence)	Is the proposed evidence accepted Y or N 17/08/2022	Proposed Evidence Review Comments	D&C Contractors Response (22/08/22)	Evidence Agreed (CUNDALL COMMENT)	Independent ESD Review of AB Documentation Evidence (13/03/2023)	D&C Contractors Response (insert date)	Independent ESD Review of AB Documentation Evidence (06/04/2023)	Independent ESD Compliance Review (15/05/2023)	Evidence Index (optional)
Energy & carbon	Build resilience	<b>Urban Heat Island Mitigation - Roof Colour</b> 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.  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 82  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 82	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.	N- Carried over from Stage 1	Requires light colored roof where current schedule has medium or dark colored	Architectural Drawings Architectural Technical Specification Compliance Statement	Architectural Technical Specification dated 22 September 2020 Compliance Statement	Carried over from Stage 1	Architect	Y	Architectural Drawings Architectural Technical Specification Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	Please provide As Builts for Full Architectural Set of Drawings and Schedules showing SRI			Yes	16
Energy & carbon	Consume responsibly	<b>Building User's Guide</b> 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	1. Building user's guide	Y	Head contractor to provide Building User's Guide	Commissioning Documents Operation & Maintenance Manuals Compliance Statement	RCC Operation & Maintenance Manuals RCC Witness Testing & Training Attendance Sheets Compliance Statement	Building User's guide	Head Contractor	N	BUG is accepted. Please add *Evidence of delivery *Training attendance sheets *Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	Please provide As Builts for BUG  *Evidence of delivery *Training attendance sheets *Compliance Statement			Yes	17
Energy & carbon	Consume responsibly	<b>Stormwater management</b> Must aim to minimise the transportation of toxicants to waterways and other offsite environments, and maintain the existing hydrological regime. Due diligence for flooding must be done early to inform building and landscaping design.	1. Stormwater modelling report showing stormwater pollution and flows. 2. Civil / Hydraulic drawings showing management measures. 3. Water sensitive urban design report (if WSGD was used)	Y	Civil to demonstrate compliance	Civil Drawings Civil Design Report Compliance Statement	Civil Drawings (Series CO4.#) Civil Design Report dated 7 April 20 Compliance Statement	Civil drawings showing management measures	Civil/Hydraulic	N	Civil Drawings Civil Design Report Compliance Statement	Noted. RCC to provide Civil stormwater management plan in lieu of Civil Design Report 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	Only Jordan Springs civil drawings provided. Please provide As Builts for Galangara school Civil stormwater management plan			Yes	18
Energy & carbon	Consume responsibly	<b>Drinking water catchment protection</b> 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 treatment plants) - Stormwater or works involving the disposal of untreated runoff	1. Water cycle management study 2. Evidence that recommendations in the study have been followed / implemented	NA	Not applicable if there's no drinking water catchment areas proposed	n/a	n/a			TBC	Statement by Head Contractor confirming n/a.	Noted 19.08.22	Yes				Approved Departure	19
	Consume responsibly	<b>Hazardous materials</b> 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 Biphenyls (PCB) - Lead Paint - Other Dangerous Substances 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.  Where hazardous materials are found a Hazardous Materials Management Plan should be prepared	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	Head contractor to provide Hazardous Materials Management Plan	Site Audit Statement Site Audit Report Compliance Statement	Site Audit Statement Site Audit Report Compliance Statement	Hazardous materials management plan	Head Contractor	N	Hazardous Materials Management Plan Site Audit Statement Site Audit Report Remediation Certificate Compliance Statement	No remediation certificate required as sites have been found to contain no hazardous materials 19.08.22 JHA-ESD 22/08/22: Cundall please review RCC statement above	Yes				Yes	20
	Consume responsibly	<b>Operational waste</b> 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: - Organics - Commingled containers - Paper & cardboard - Container deposit scheme - Soft plastic - General waste 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.  Safe methods for vehicle access and the transfer of waste must also be considered.  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 provision for the facilities to accommodate for the OWMP. The OWMP must address all requirements from DG 2.7.2	Operational waste management plan  Operational waste reports showing diversion rates	Y	Head contractor to provide Operational Waste Management Plan	Operational Waste Management Plan Compliance Statement	Galangara Public School - Operational Waste Management Plan Compliance Statement	Operational waste management plan	Head Contractor	Y	Please add compliance statement from Architect demonstrating OWMP recommendations have been implemented in design.	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	Nil information provided. Architect/Head Contractor to provide statement if initiatives have been implemented for Stage 1 and Stage 2			Yes	21
Energy & carbon	Consume responsibly	<b>Building Flexibility</b> 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.	As built drawings or statement by relevant professional	Y	Drawing to demonstrate building flexibility/statement	Architectural Drawings Structural Drawings Compliance Statement	Structural Drawings (Series S10.2) Compliance Statement	As built drawing to show compliance	Architect	N	Architectural Drawings Structural Drawings Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	Ok for As-Built Review			Yes	22
Energy & carbon	Consume responsibly	<b>Hydraulic services</b> Hydraulic services should: - 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 durability is essential	1. Hydraulic report showing sustainability initiatives implemented to reduce potable water consumption 2. As built drawings showing trade waste arrestors	Y	Letter from Hydraulic to show the sustainability initiatives implemented to reduce potable water consumption	Hydraulic Drawings Hydraulic Specification Compliance Statement	Hydraulic Drawings (Series H101) Compliance Statement	Letter from Hyd	Hydraulic	N	Hydraulic Drawings Hydraulic Specification Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	Please provide As Builts for Hydraulic Specification Compliance Statement Only Hydraulic drawings provided			Yes	23
	Consume responsibly	<b>Water sub-metering</b> In addition to the main water meter for the site provide sub meters for the following: - Laboratory buildings - Amenities blocks - Canteens - Any other major water use on the site	1. As built hydraulic drawings	Y	As built hydraulic drawing to show the sub-meters and comply the requirement	Hydraulic Drawings Hydraulic Specification Compliance Statement	Hydraulic Specification dated 13 Sep 19 Compliance Statement	Hydraulic drawings	Hydraulic	N	Hydraulic Drawings Hydraulic Specification Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	Please provide As Builts for Hydraulic Specification Compliance Statement Only Hydraulic drawings provided			Yes	24
Energy & carbon	Consume responsibly	<b>Rainwater collection</b> 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.	1. As built hydraulic drawings showing tank connection to end uses and capacity	N- Carried over from Stage 1	Existing Stage 1 RWT to connect to proposed WC	Hydraulic Drawings Compliance Statement	Hydraulic Drawings (Series H101) Compliance Statement	Hydraulic drawings to demonstrate carry over from Stage 1	Hydraulic	Y	Hydraulic Drawings Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	Ok for As-Built Review			Yes	25
Energy & carbon	Consume responsibly	<b>Fire system water reuse</b> 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.	Fire engineering report	NA	Fire engineering report	n/a	n/a	No sprinkler system for the proposed development	Fire	Y	Statement from Head Contractor confirming n/a.	Noted 19.08.22	Yes				Yes	26
Energy & carbon	Consume responsibly	<b>Ground water</b> 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.	1. Relevant due diligence report / investigation	NA	Not applicable if ground water is not used for irrigation	n/a	n/a			Y	Statement from Head Contractor confirming n/a.	Noted 19.08.22	Yes				Yes	27
	Consume responsibly	<b>Trade waste</b> Arrestors for acid, grease, plaster and clay of adequate capacity must be installed to treat wastewater from science laboratories, kitchens, art rooms and canteens as required in DG52.	1. As built drawings showing trade waste arrestors or 2. Letter by Hydraulic Engineer confirming arrestor have been installed as required	NA	No trade waste required on both sites. Canteen is existing	Hydraulic Drawings	Hydraulic Drawings (Series H101) Compliance Statement	NA	Architect Hydraulic	Y	Statement from Head Contractor confirming n/a.	Noted 19.08.22	Yes				Yes	28
	Consume responsibly	<b>Water Fixture efficiency</b> All products must be rated to AS 6400 to the following minimum WELS ratings: - 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.  In any case, all new water-using appliances must be at least 0.5 stars above the average WELS star rating by product type, except toilets and urinals, which must be purchased at the average WELS star rating. Where WELS rating is not available, use the alternative WaterMark rating scheme.	1. Schedules of materials, fixtures, fittings and equipment with WELS/WaterMark ratings, demonstrating compliance and identifying those with flow restrictors and timed flow.	Y	FFE Schedule/receipt to demonstrate compliance Current FFE schedule does not have star rating listed	Architectural Technical Schedule Hydraulic Drawings Hydraulic Specification Compliance Statement	Hydraulic Drawings (Series H2#) Hydraulic Specification dated 13 Sep 19 Compliance Statement	FFE Schedule to show compliance	Head Contractor Architect	N	Architectural Technical Schedule Hydraulic Drawings Hydraulic Specification Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	Please provide As Builts for Hydraulic Specification Compliance Statement Only Hydraulic drawings provided FFE Schedule and Hydraulic spec not provided.			Yes	29
Energy & carbon	Consume responsibly	<b>Life cycle assessment (environmental)</b> Environmental impacts of products and materials has been assessed and inform material selection	Life cycle assessment report		Not targeting	n/a	n/a			Y	To be included in Departure Schedule, be confirmed by RCC and approved by SINSW.	Noted 19.08.22 JHA-ESD 22/08/22: This is not a mandatory credit of EFSG therefore not target rather than departure	Yes	Included in contractor statement confirming not targeted			Yes	30
Water	Consume responsibly	<b>Whole of life costing (WOLC)</b> Total cost of ownership (TCO) assessment / Analysis of direct and indirect costs and benefits / Life cycle costing analysis  When calculating the whole of life cost for the different materials / building elements or systems, the following must be considered: - The total initial capital cost of the system/s - including design, project management, builder and building services works in connectors etc. - resources (energy and where applicable water) consumption. - Maintenance. - The replacement of component parts. - disposal costs - ecological sustainable options - durability - ventilation - safety The whole of life cost shall be calculated over the estimated life of the asset/s.	Life cycle costing report for relevant system		Not targeting	n/a	n/a			Y	To be included in Departure Schedule, be confirmed by RCC and approved by SINSW.	Noted 19.08.22 JHA-ESD 22/08/22: This is not a mandatory credit of EFSG therefore not target rather than departure	Yes	Included in contractor statement confirming not targeted			Yes	31

Theme (old)	Sustainability Strategy Priority	Sustainability initiatives / requirements <small>Where applicable, this is an extract only from the relevant EFSG. For full requirements refer to https://efsg.dfg.nsw.edu.au/</small>	Recommended evidence to demonstrate compliance	Has this been implemented in the project? Y or N or NA	Contractor's ESD consultant comments	Jordan Springs	Galangara	Stage 2 Proposed evidence Galangara and JPS By Contractor <small>This evidence needs to show that the requirement from column C has been met</small>	Responsibility (Identify party responsible to provide evidence)	Is the proposed evidence accepted Y or N 17/08/2022	Proposed Evidence Review Comments 17/08/2022	D&C Contractors Response (22/08/22)	Evidence Agreed (CUNDALL COMMENT)	Independent ESD Review of AB Documentation Evidence (13/03/2023)	D&C Contractors Response (insert date)	Independent ESD Review of AB Documentation Evidence (06/04/2023)	Independent ESD Compliance Review (15/05/2023)	Evidence Index (optional)
Water	Consume responsibly	<b>Sustainable materials</b> Construction materials must be selected based on the following: - 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.	1. Environmental Product Declarations of products / materials used; Product certificates (like GBCA, FSC, etc.) 2. Suppliers' declarations confirming recycled contents in products 3. Bill of quantities	Y	Head contractor to provide Product certificate/statement to demonstrate compliance	Architectural Drawings Compliance Statement	Architectural Technical Specification dated 22 September 2020 Compliance Statement	Product certificate/statement	Head Contractor	N	Architectural Asbuilt Drawings Specifications IFE Finishes Schedule Compliance Statement Head Contractor Architect	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	Utility Architectural drawings provided.  Please provide As-Built for Specifications IFE Finishes Schedule Compliance Statement Head Contractor As-built. Only Architectural drawings provided.			Yes	32
Water	Consume responsibly	<b>Sustainable timber</b> - 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, AF5 or PEFC certified. - All timber used is to be termite (white ant) resistant or treated to be termite resistant to the appropriate hazard level.	1. Evidence of chain of custody 2. Bill of quantities	Y	Head contractor to provide Product certificate/statement to demonstrate compliance	Architectural Drawings Compliance Statement	Architectural Technical Specification dated 22 September 2020 Compliance Statement	Product certificate/statement	Head Contractor	N	Architectural Asbuilt Drawings Specifications IFE Finishes Schedule Compliance Statement Head Contractor Architect	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	Please provide As-Built for Specifications IFE Finishes Schedule Compliance Statement			Yes	33
Water	Consume responsibly	<b>Built for disassembly</b> 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.		Y	Head contractor to provide statement to demonstrate compliance	Architectural Drawings Compliance Statement	Architectural Drawings - General Arrangement Series (AA-AR-20#). Compliance Statement	Product certificate/statement	Head Contractor	N	Architectural Drawings Structural Steel Drawings Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	OK for As-Built Review			Yes	34
Water	Consume responsibly	<b>Concrete</b> - Use materials complying with AS based on the Whole of Life approach to materials selection. - Do not use breccia or diorite in concrete mixes. - Fly ash is a manufacturing by-product that can be used as a cement replacement but should be limited to a maximum of 20% by weight of cement content.	1. Structural specifications and drawings 2. Structural Engineer's report showing % cement replacement	Y	Contractor to provide structural specifications and drawings to demonstrate compliance	Structural Drawings Compliance Statement	Structural Drawings (Series SD_L#) Compliance Statement	Structural specification	Structural	N	Structural Drawings Structural Specifications Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	Structural Drawings Structural Specifications Compliance Statement			Yes	35
Water	Consume responsibly	<b>Construction waste</b> 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.	Construction waste reports showing percentage (minimum 90%) of waste re-used and recycled (diverted from landfill)	Y	Contractor to provide construction waste report that demonstrate compliance	Monthly Waste Reports Compliance Statement	Monthly Waste Reports Compliance Statement	Waste report	Head Contractor	Y	Please include Monthly Waste Reports and Head Contractor Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping		Please provide As-Built for Structural Specifications Compliance Statement			Yes	36
Place	Consume responsibly	<b>Maintainability</b> 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.  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.  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.  Maintenance required and cost of this maintenance are to be considered in assessment of the project's life cycle cost.  Operation and Maintenance manuals (O&M Manuals) are to be provided, written in clear, concise English covering the various building elements, assemblies, equipment, service installations and systems incorporated into the Works.	1. As-built drawings including all equipment access arrangements for maintenance	Y	Head contractor to provide Operation and Maintenance manuals	<b>SAFETY BY DESIGN</b> SD Register Architectural Drawings Hydraulic Specifications Compliance Statement	<b>SAFETY BY DESIGN</b> SD Register Architectural Technical Specifications dated 22 September 2020 Compliance Statement	Operational and maintenance manual	Head Contractor	N	<b>SAFETY BY DESIGN</b> SD Register Head Contractor Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes				Yes	37
Place	Foster connections	<b>Site investigations for place making / community connections</b> The following detailed reports/surveys/ information should be considered in developing the business case: - 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 possible risk - i.e. filled or dumped ground.	1. Relevant reports/surveys developed (these ideally include recommendations for further development stages) 2. Evidence demonstrating recommendations / best practice solutions have been implemented/addressed.	Y	Head contractor to provide reports or site survey to demonstrate compliance	EIS reports: - Urban design assessment which includes local environment/character considerations. - Archeological assessment - Historical archeological impact assessment - Traffic Impact Assessment - Green Travel Plan - Geotechnical investigation - Detailed environmental site assessment	EIS reports: - Urban design assessment which includes local environment/character considerations. - Archeological assessment - Historical archeological impact assessment - Traffic Impact Assessment - Green Travel Plan - Geotechnical investigation - Detailed environmental site assessment	Reports or site survey to demonstrate compliance	Head Contractor	N	EIS reports: - Urban design assessment which includes local environment/character considerations. - Archeological assessment - Historical archeological impact assessment - Traffic Impact Assessment - Green Travel Plan - Geotechnical investigation - Detailed environmental site assessment	Noted. Cundall to receive previous SSDA submission docs 19.08.22	Yes				Yes	38
Place	Foster connections	<b>Ecological conservation</b> 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.  An Ecological Assessment Report must be prepared for the site in order to understand the existing conditions and future conservation strategies.  The design of the facilities must provide unique and valuable environmental conservation learning opportunities and effective environmental modelling to the wider community. 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.	1. Biodiversity or ecological assessment / local flora and fauna survey 2. Ecological Assessment Report which documents the following: - ecological values (present, 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 vegetations including Aboriginal or Torres Strait Islander persons and environmental issues.	Y	Contractor to provide Biodiversity Management plan that demonstrate compliance	Landscape Drawings Compliance Statement	Landscape Drawings (Series L-7015) Compliance Statement	Biodiversity Management Plan	Head Contractor	N	Landscape Drawings Biodiversity Management Plan Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping		Please provide As-Built for Landscape Drawings Compliance Statement		Please provide compliance statement from Landscape.	Yes	39
Place	Foster connections	<b>Productive landscape</b> Consider including opportunities for development of community garden within the site and relationships with community groups for this to occur.	Site plan demonstrating location and size of community garden	N	Landscape plans to demonstrate compliance	Landscape Drawings Compliance Statement	Landscape Drawings (Series L-200#) Compliance Statement	Departure	Landscape	TBC	To be included in Departure Schedule, be confirmed by RCC and approved by SINGW.	Please explain why inclusion in the departure schedule is required 19.08.22	Yes	Included in contractor statement confirming not implemented			Yes	40
Place	Foster connections	<b>Bicycle storage</b> Provide 1 space for every 20 students to AS2890.3 standard		NA	No bicycle storage for the proposed Stage 2 development	nil	nil	Not part of Stage 2 scope		TBC	Statement by Head Contractor confirming n/a.	Noted 19.08.22	Yes				Yes	41
Place	Foster connections	<b>Community use of facilities</b> 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.  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.	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. 2. A list of community engagement activities undertaken to develop a community benefits strategy. 3. Plans clearly outlining how the outcomes from the community benefits strategy have been implemented in the project. 4. Lease-use or lease agreements where already in place	NA	Architect to confirm that direct access has been provided to open space and could comply with this requirement	May be explored in the future.	Signed statement received from Project Director Schools Infrastructure NSW 11/06/2021	Not part of Stage 2 scope	Architect	TBC	To be included in Departure Schedule, be confirmed by RCC and approved by SINGW. <b>OR</b> Signed statement received from Project Director Schools Infrastructure NSW to demonstrate compliance.	Noted 19.08.22	Yes				Yes	42
Place	Foster connections	<b>Open play space</b> 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: - Paved and grassed areas - Rooftops and terraces - Covered outdoor areas  The designated open play space must be easily monitored and managed by school staff. 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: - In close proximity to the school - Easily accessible - Safe and secure Designs must aim to achieve a minimum of 1.0m2 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.	Plan view drawings showing provision of open space	Y	Proposed CDLA can comply with this requirement	Landscape Drawings Architectural Drawings Compliance Statement	Landscape Drawings (Series L-200#) Compliance Statement	Architectural drawings	Architect	N	Landscape Drawings Architectural Drawings Compliance Statement	Noted 19.08.22	Yes	Please provide As-Built for Landscape Drawings Compliance Statement			Yes	43
Water	Foster connections	<b>Staff room</b> Staff rooms should adequately accommodate staff work and recreation, and focus on indoor environment quality, enjoyment and interaction through provision of the following: - Daylight - Ventilation - Views - Landscaping/Indoor Plants - Acoustic Comfort	1. Extracts from the EFSG requirements for staff rooms 2. Evidence of staff room delivered accordingly	NA	Mechanical drawing to demonstrate the staff rooms are designed as required	Architectural Drawings Compliance Statement	Architectural Drawings - General Arrangement Series (AA-AR-20#). Compliance Statement	No staff room for the proposed development	Mechanical	TBC	Statement from Head Contractor confirming n/a.	Noted 19.08.22	Yes				Yes	44
Place	Foster connections	<b>Reconciliation action plan (RAP)</b> The project should adopt formalised steps to provide opportunities for Aboriginal and Torres Strait Islander peoples 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 between Indigenous and non-Indigenous Australians.  The project demonstrate a relationship to, and a role in delivering the action-items within the Department of Education's RAP.  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.  The project must adopt all relevant requirements within the NSW Government's Aboriginal Procurement Policy (January 2021)	1. Evidence of the project's relationship with the RAP, e.g. actions implemented in line with RAP, etc.	Y	Head contractor to provide Reconciliation Action Plan	* DOE's RAP * Aboriginal cultural heritage assessment	* DOE's RAP * Aboriginal cultural heritage assessment	Reconciliation Action Plan	Head Contractor	Y	DOE's RAP	Noted 19.08.22	Yes				Yes	45
Place	Foster connections	<b>Security</b> Safety in Design and Crime Prevention Through Environmental Design (CPTED) principles are to be implemented in project planning stage. Advice on the electronic surveillance systems can be sought early in the design phase.  ICTV systems are required in several locations where indicated in the Rooms and Spaces Technical Data table, including: - Secondary canteen - Primary sick bay - Library	1. Crime risk assessment or equivalent 2. Evidence of designing and crime principles implemented 3. Security services plans, schedules and forms by School Security Unit (SSU) 4. SSU specification and evidence of input on project specification	Y	School Security Unit to provide Security Services Plans, schedules and forms	Compliance Statement from Group ISA	Landscape Drawings (Series L-200#) Compliance Statement	Security services plans, schedules and forms	Head Contractor	Y	Please add Compliance Statement from Head Contractor and Architect	Noted 19.08.22	Yes	Jordan: only one floor plan provided with locations of PIR detector  Please provide As-Built for Compliance statements Security Services plan schedules and forms			Yes	46



Theme (old)	Sustainability Strategy Priority	Sustainability Initiatives / requirements Where applicable, this is an extract only from the relevant EFSG. For full requirements refer to https://efsg.dcl.nsw.edu.au/	Recommended evidence to demonstrate compliance	Has this been implemented in the project? Y or N or NA	Contractor's ESD consultant comments	Jordan Springs	Galangara	Stage 2 Proposed evidence Galangara and JSPS By Contractor This evidence needs to show that the requirement from column C has been met	Responsibility (Identify party responsible to provide evidence)	Is the proposed evidence accepted Y or N 17/08/2022	Proposed Evidence Review Comments 17/08/2022	D&C Contractors Response (22/08/22)	Evidence Agreed (CUNDALL COMMENT)	Independent ESD Review of AB Documentation Evidence (13/03/2023)	D&C Contractors Response (insert date)	Independent ESD Review of AB Documentation Evidence (06/04/2023)	Independent ESD Compliance Review (15/05/2023)	Evidence Index (optional)
	Foster connections	Digital infrastructure 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	1. Contracts describing the network infrastructure specification and operational requirements	Y	Head contractor to provide contracts that describe the network infrastructure specification and operational requirements	General Statement	Electrical Drawings (Series E2#) Compliance Statement	Network contracts	Head Contractor	Y	Please add a compliance statement	Noted 19.08.22		Please provide As-built Network contracts and Electrical Comms package.			Yes	47
Place	Foster connections	<b>Sustainable Transport Planning / Transport Assessment</b> Transport planning must prioritise the delivery of feasible, connected networks and rectify transport deficiencies. 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. The School Travel Plan must be developed to inform the design response, construction traffic management, travel plan and post-occupancy operations to meet daily travel demand to school	1. Transport Assessment, which must address: • 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 Note.	Y	Contractor to provide Transport Assessment to demonstrate compliance with this requirement	*Green Travel Plan *Traffic Impact Assessment	SSD 9368 - D20 - School Travel Plan	Transport Assessment	Transport	Y	Green Travel Plan SINSW Transport Assessment Calculator/Report	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping		Carried forward form design review			Yes	48
	Unlock human potential	<b>Green cleaning</b> Designs should support the implementation of a Green Cleaning policy for the school, this may include: • Appropriate cleaning areas are to be provided to safely store chemicals and equipment. • Hand washing stations • Use of HEPA filtration in vacuum equipment • Use of materials and surfaces that are easily cleaned • Consideration of operational waste procedures and the safe and simple transfer of waste throughout the school	1. W&E Clean School User Guide 2. Green Cleaning specifications	Y	Head contractor to provide Green Cleaning specification which complies with this requirement	* W&E Clean School User Guide * Extract from Part F-2	n/a	Green Cleaning Specification	Head Contractor	Y	W&E Clean School User Guide Extract from Part F-2	Noted 19.08.22		Carried forward form design review			Yes	49
	Unlock human potential	<b>Healthy canteen policy</b> The NSW Healthy School Canteens Strategy applies to all NSW Government schools (primary, secondary and central schools) with a canteen. 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.	1. Research report behind Healthy Canteen Policy 2. Evidence that policy initiative has been incorporated into the school under assessment.	NA	Head contractor to provide research report behind Healthy Canteen Policy	* Healthy Canteen Strategy * Drawings showing canteen location	* Healthy Canteen Strategy * Drawings showing canteen location	Not part of Stage 2 scope	Head Contractor	TBC	Statement from Head Contractor confirming n/a.	Noted 19.08.22		Not Applicable			Yes	50
Place	Unlock human potential	<b>Daylight glare control</b> Discomforting glare and brightness contrasts must be avoided. Designers must seek to: - 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. 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. Glare must only be controlled by blinds as a last resort. Designers must prepare sun diagrams in the design phase as a minimum requirement.	1. Daylight glare modelling report / sun diagrams showing direct sunlight has been excluded as required. 2. Drawings supporting inputs of model, showing location of blinds and any other glare control device	Y	As-built drawing to have blinds installed to the facades that has direct sunlight	JV3 Report Architectural Drawings	JV3 Report dated 5 April 2019 prepared by Meinhardt. Architectural Drawings - General Arrangement Series (AA-AR-20#). Compliance Statement	Architectural drawings	Architect	N	JV3 Report Architectural Drawings - General Arrangement Series (AA-AR-20#). Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes	As Built Evidence is required to demonstrate blinds are within contractor's documentation. Please identify where the details of blind specifications and install locations feature within "As-Built" Documentation			Yes	51
Place	Unlock human potential	<b>Acoustic Performance</b> Design of internal spaces must address the following Acoustic outcomes: - <b>Internal Noise Levels</b> - 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 range stipulated in Table 1 of the AS/NZS 2107:2016 standard. The more stringent of the two should be met. - <b>Room to room noise control</b> : Sound insulation must be provided in accordance with the requirements of Table 11.06.2 "Guideline airborne and impact sound insulation requirements" and Table 11.06.3 "Sound insulation requirements (minimum design Rw)". Doors, walls, operable walls, partitions etc. must meet prescriptive requirements for acoustic separation to provide privacy and comfort within relevant spaces. - <b>Minimum Speech Transmission Index</b> is > 0.60 for Teaching and learning spaces as per Table 11.06.4 - <b>Reverberation</b> : Reverberation time is fundamental to describing the "acoustical liveliness" of a room. The reverberation time within a room must be within the range stipulated in Table 11.06.1 of Section 11.6 Acoustic Performance Guidelines or Table 1 of the AS/NZS 2107:2016 standard. The more stringent of the two should be met.	1. Report by qualified acoustics consultant demonstrating noise measurements are compliant. 2. Detailed Drawings indicating sound insulation details and other relevant acoustic design features.	N- Carried over from Stage 1	Pending confirmation with Mech	Acoustic Assessment Compliance Statement	Acoustic Assessment Compliance Statement	Carried over from Stage 1	Acoustic	Y	Acoustic Assessment Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping		Nil information provided. As-Built Documentation Required Acoustic Assessment Compliance Statement			Yes	52
Resilience	Unlock human potential	<b>Noise emission (to the environment)</b> 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. Where no condition regarding noise sources exists for a school development, noise emission from such sources should be designed, in-principle, to satisfy the requirements of the Industrial Noise Policy.	1. Report by qualified acoustics consultant	N- Carried over from Stage 1	Acoustic consultant to demonstrate compliance	Acoustic Assessment Compliance Statement	Acoustic Assessment Compliance Statement	Acoustic consultant to confirm compliance with acoustic design certificate for construction	Acoustic	Y	Acoustic Assessment Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping		Nil information provided. As-Built Documentation Required Acoustic Assessment Compliance Statement			Yes	53
Resilience	Unlock human potential	<b>Fly free indoors</b> 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. Schools in localities where fly incidence constitutes a health hazard (especially trachoma or other nuisance) will require fly screens to all opening sashes.	As-built drawings showing fly screening has been provided as required	NA	no food preparation and non-water based toilet within the proposed development	Architectural Drawings	Architectural Drawings	Not part of Stage 2 scope	Architect	TBC	Statement from Head Contractor confirming n/a.	Noted 19.08.22		Not Applicable			Yes	54
Resilience	Unlock human potential	<b>Accessibility</b> All new facilities must meet current DTS provisions of the NCC and the associated standards. 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. Additionally, DoE have enhanced circulation requirements as noted in DG / CIRCULATION - Provide hearing augmentation system for areas that have amplification, generally within gymnasium, libraries, movement studios and Communal Halls, provide a system to assist theurally challenged to hear music and speech within the main auditorium and on the stage. - Provide the International Symbol for Deafness to indicate that an assistive hearing device is installed.	1. Accessibility plan 2. As-built drawings or other evidence demonstrating that minimum and enhanced accessibility requirements have been provided for walkways, corridors, ramps, etc. 3. Photographic or other evidence of signage installed	Y	Head contractor to provide photographic or other evidence of signage installed	Access Occupation Certificate Compliance Statement	Access Occupation Certificate Compliance Statement	Signage evidence	Head Contractor	N	Access Occupation Certificate Photographic Evidence Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping		Please provide As-built Access Occupation Certificate Photographic Evidence Compliance Statement			Yes	55
Energy & carbon	Unlock human potential	<b>Access to Views</b> 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. High quality views include: External views - vegetation, body of water, sky, or frequent outdoor movement (people, vehicles, animals) Internal views - landscaped area, water features, atrium 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 office/administration areas.	1. Views Calculations and Mark-up this must be done in accordance with the GBCA's Daylight and Views Hand Calculation Guide: https://www.gbca.org.au/uploads/79/55913/Green%20Star_Daylight%20and%20Views%20Hand%20Calculation%20Guide%20May%202015%20REVISED.pdf	Y	Calculations and Mark-up to demonstrate compliance with the requirement	n/a	n/a	View Calculations and Mark-up according to GBCA	Architect ESD	Y	View Calculations and Mark-up according to GBCA	Noted 19.08.22		Carried forward from design review			Yes	56
	Unlock human potential	<b>Access to Daylight</b> 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 - 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 hours OR the following requirements are met: No over-shading - external shading should not impinge on the direct 25 degree line from centre of the window Minimum 40% Visual Light Transmittance (VLT) for building glazing 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 office/administration areas.	1. Daylight modelling report demonstrating how natural daylight has been maximised in all habitable spaces; and 2. As-built drawings demonstrating that the model accurately represents the building (i.e. window size and location, skylights installed, etc.); and 3. Specifications supporting inputs used in modelling (e.g. skylights and glass specs)	Y	Green Star hand calculation to demonstrate compliance	Electrical Drawings Electrical Specification Architectural Technical Specification	Architectural Drawings - General Arrangement Series (AA-AR-20#). Compliance Statement	Green Star hand calculation	Architect ESD	Y	Green Star hand calculation	Noted 19.08.22		Carried forward from design review			Yes	57



Theme (old)	Sustainability Strategy Priority	Sustainability Initiatives / requirements Where applicable, this is an extract only from the relevant EFSG. For full requirements refer to https://efsg.dfg.net.nsw.edu.au/	Recommended evidence to demonstrate compliance	Has this been implemented in the project? Y or N or NA	Contractor's ESD consultant comments	Jordan Springs	Galangara	Stage 2 Proposed evidence Galangara and JSPS By Contractor This evidence needs to show that the requirement from column C has been met	Responsibility (Identify party responsible to provide evidence)	Is the proposed evidence accepted Y or N 17/08/2022	Proposed Evidence Review Comments 17/08/2022	D&C Contractors Response (22/08/22)	Evidence Agreed (CUNDALL COMMENT)	Independent ESD Review of AB Documentation Evidence (13/03/2023)	D&C Contractors Response (insert date)	Independent ESD Review of AB Documentation Evidence (06/04/2023)	Independent ESD Compliance Review (15/05/2023)	Evidence Index (optional)	
Waste & materials	Unlock human potential	<b>Ventilation and Indoor Air Quality</b> The maximum CO2 concentration must not exceed 1,500ppm for more than 20 consecutive minutes in each day A ventilation strategy must be developed to ensure that sufficient ventilation is provided to all spaces to meet the requirements of the BCA/NCE 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. This must also meet requirements for: - 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. - Chemical store ventilation: Provide mechanical exhaust system with high and low level exhaust points to all chemical stores, with a minimum of 15 air changes per hour flow rate. Adhere to ventilation requirements set out in DG57.09	1. Cooling system strategy including WOL analysis 2. Concept plans 3. Construction drawings 4. Trade-based specification 5. As built drawings, including indication of windows and cross ventilation 6. As built drawings, including indication of windows and cross ventilation	N- Carried over from Stage 1	Roof ventilation has not been provided Dedicated CO2 Sensors are not proposed for small spaces that do not have dedicated AC systems Mechanically assisted crossflow ventilation has not been provided			Carried over from Stage 1		Y	INDOOR CO2 LEVELS Mechanical Drawings Commissioning Documents Compliance Statement	INDOOR CO2 LEVELS Mechanical Drawings Series (Series AA-BF-#) Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping				Yes	58	
Waste & materials	Unlock human potential	<b>Lighting comfort</b> - 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 Gymnasiums 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. - To ensure flicker-free lighting, the following luminaire requirements should be considered: LED lighting - electronic drivers with 12-bit or greater resolution - Modelling must provide output that clearly demonstrates that the proposed design is compliant with the standards including but not limited to the parameters listed in DG 61.03.02	1. Lighting drawings 2. Architectural drawings 3. Lighting specifications / schedules 4. Product data sheets 5. Isolve plot drawings 6. Lighting modelling report showing compliant uniformity and UGRs	Y	Electrical design to demonstrate compliance with the requirement	Electrical Drawings Architectural Drawings	Electrical Specification dated June 2019 Compliance Statement	Elec drawing	Electrical	N	Electrical Drawings Electrical Luminaire Schedule Architectural Drawings Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping					Yes	59	
Place	Unlock human potential	<b>Thermal comfort</b> The inclusion of active cooling within school facilities is directed by the Department's Air Cooling policy: 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. 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. Thermal modelling is undertaken to demonstrate that learning spaces and libraries have been designed to achieve a predicted mean vote (PMV) of +/- 1 for 95% of occupied hours	1. Mechanical drawings showing HVAC systems installed, or 2. Confirmation from sub-contractors that services have been installed and commissioned as required, and 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	N- Carried over from Stage 1	Project following EFSG 2018 requirement as to be consistent with Stage 1 requirement. PMV limitation not required	Mechanical Drawings J3 Report Compliance Statement	Mechanical Drawings Series (Series AA-BF-#) J3 Report dated 5 April 2019 prepared by Meinhardt. Compliance Statement	Carried over from Stage 1 EFSG 2018 Compliance	Mechanical ESD	Y	Mechanical Drawings J3 Report Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping			Please provide OC Sign off certificate for Section 1.	Yes	60		
Place	Unlock human potential	<b>Microbial control</b> 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. Valves need to comply with microbe disinfection requirements - "Code of Practice for Thermostatic Mixing Valves NSW" as approved by the NSW Health Department.	1. Letter by hydraulic engineer confirming hot water is stored above 65 deg and that valves comply with code of practice.	NA	Instantaneous hot water units only. No stored hot water	Hydraulic Drawings Hydraulic Specification Compliance Statement	Hydraulic Specification dated 13 Sep 19 Compliance Statement	NA	Hydraulic	TBC	Statement from Head Contractor confirming n/a.	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping					Yes	61	
Place	Unlock human potential	<b>External access lighting</b> External Access Lighting shall be provided to illuminate building entrances, footpaths, sheltered walkways, roadways and car park. External Access Lighting must: - Be minimal and designed to prevent glare to pedestrians, nearby residents and to motorists. Evidence of compliance with AS4282, AS/NZS 1558 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 roadway) and internal security lighting (for footpaths, walkways and entrances). - Illuminate building entry doors. - Highlight 'accident-prone' areas such as changes in level, stairs and ramps. - Provide vertical illumination.	1. As built drawings indicating the location of all external luminaires 2. Letter by lighting designer describing glare prevention measures	Y	Electrical drawings indicating the location of all external luminaires	Electrical Drawings Compliance Statement	Electrical Drawings (Series E2#) Compliance Statement	Elec drawing	Electrical	Y	Electrical Drawings Compliance Statement	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping	Yes				Yes	62	
Place	Unlock human potential	<b>Low VOC-emitting materials</b> 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. - Paints must meet the limits stipulated in the Australian Paint Approval Scheme's (APAS) VOC limits for low VOC paints. - Paints, adhesives and sealants must not exceed the maximum VOC limits stipulated in the Green Star Buildings rating tool. - Carpets must not exceed the total VOC limits stipulated in the Green Star Buildings tool.	1. Product specifications, certificates, safety datasheets that demonstrate low-VOC contents 2. Bill of quantities	Y	Head contractor to provide product specifications, certificates, datasheets that demonstrate compliance with VOC-contents	Product Specification and Data Sheets Compliance Statement	Product Specification and Data Sheets Compliance Statement	Product certificate/statement	Head Contractor	Y	Product Specification and Data Sheets Compliance Statement	Noted 19.08.22					Yes	63	
	Unlock human potential	<b>Low formaldehyde-emitting materials</b> Only low formaldehyde-emitting engineered wood products should be used, such as those that meet the Australian Standards for formaldehyde emission limit E1 (INChNs 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.	1. Product specifications, certificates, safety datasheets that demonstrate low formaldehyde contents 2. Bill of quantities	Y	Head contractor to provide product specifications, certificates, datasheets that demonstrate compliance with formaldehyde contents	Product Specification and Data Sheets Compliance Statement	Product Specification and Data Sheets Compliance Statement	Product certificate/statement	Head Contractor	Y	Product Specification and Data Sheets Compliance Statement	Noted 19.08.22					Yes	64	
Place	Unlock human potential	<b>Acoustic post-occupancy evaluation</b> 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) - Internal noise levels, - Room acoustics, - Noise emission, - Room-to-room acoustics performance The noise measurement and documentation must be provided by a qualified acoustic consultant and in accordance with AS/NZS 2107:2016 Measurements shall be conducted in at least 10% of regularly occupied spaces.	1. Commitment by S1 to conduct acoustic post-occupancy evaluation	Y	Acoustic report to demonstrate compliance	n/a	n/a	Acoustic report to confirm compliance with all acoustic requirements	Acoustic	Y	Acoustic report to confirm compliance with all acoustic requirements	Noted 19.08.22	Yes				Yes	65	
Place	Unlock human potential	<b>Pesticide free environments</b> Schools must be designed, constructed and maintained, without using chemicals for termite and other pest control. No chemical pesticides and termiticide to be used. Preventive treatments to be by physical means and careful design to minimise risk	Statement by head contractor that no pesticides or termites have been used.	Y	Head contractor to provide statement that no pesticides or termites have been used	Landscape Drawings	Landscape Planting Schedule Compliance Statement	Statement of compliance	Head Contractor	Y	Statement of compliance	Noted 19.08.22					Yes	66	
	Unlock human potential	<b>Healthy Places</b> The design of the project should address five key principles for Healthy Places, as defined in Green Star Communities credit 9.3. These are: - Walkability - Active and public transport, - Wayfinding - Good public space design - Social interaction	1. Narrative providing examples of how each principle is being addressed, with examples from the Masterplan Report and Traffic/Transport Plan	Y	As-built drawing to demonstrate that the design has addressed the five key principles for healthy places	n/a	n/a	Architectural drawings to demonstrate compliance	Architect	N	Architect Statement of Compliance addressing: - Walkability - Active and public transport, - Wayfinding - Good public space design - Social interaction	Noted 19.08.22 JHA-ESD 22/08/22: Noted and updated in evidence mapping					Yes	67	
														Please Provide As-built documentation for Mechanical Drawings Commissioning Documents Compliance Statement				Yes	58
														Electrical luminaire schedule not provided Please provide as-built documentation for Electrical Drawings Electrical Luminaire Schedule Compliance Statement				Yes	59
														Please provide As-Built - Section 1 OC Certificate Compliance Statement		Please provide OC Sign off certificate for Section 1.	Yes	60	
														Carried forward from design review				Yes	61
														Ok for As-Built Review				Yes	62
														EPDs from Stage 2				Yes	63
														EPDs from Stage 2				Yes	64
														Please provide as-built Acoustic compliance with all acoustic requirements				Yes	65
														Please provide as-built Compliance Statement				Yes	66
														Architect Statement of Compliance not provided, addressing the following: - Walkability - Active and public transport, - Wayfinding - Good public space design - Social interaction				Yes	67

# Appendix C: Contractor's ESD Compliance Statement

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## **Appendix C Contractor’s ESD Compliance Statement**

Please see overleaf



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BRISBANE  
 SYDNEY  
 MELBOURNE  
 HO CHI MINH CITY

ABN 76 002 113 779

Nominated Architect:  
 LM Carrigan  
 NSW ARB 7568  
 BOAQ 5696  
 ARBV 20773

## Consultant / Contractor ESD Design Compliance

### Statement

The design compliance statements, on company letterheads, must be provided for each consultant listed in the EFSG ESD Framework in Schedule 1. The compliance statement must reference all of the EFSG clauses that the consultant / contractor is responsible for.

Date: 8 November 2022  
 Project Name: Galungara Public School & Jordan Springs Public School  
 Project address: 95 Farmland Dr, Schofields NSW 2762 & 14 Cullen Ave, Jordan Springs NSW 2747

#### ESD Compliance Statement for Architect

We confirm that the Architectural design complies with the ESD requirements in the EFSG as summarised below. Please note that the current Stage 2 design for Galungara Public School and Jordan Public School is continuation of the previous Stage 1 design. Design elements such as building orientation, mass, scale and building fabric follow the original master planning and SSDA documents.

EFSG Evidence Index	Sustainability Strategy Priority	EFSG Sustainability Initiatives	EFSG Compliance		Comments
			Yes	No	
2	Act on Climate Change	Passive Design	x		<p><b>Requirement</b></p> <p><b>Passive design</b></p> <p>The need for active cooling and heating shall be minimised by employing passive / sustainable design principles listed in DG 55, DG 06.02 and DG 27.12 as well as the GA NSW Environmental Design in Schools Guidelines.</p> <p>This includes:</p> <ul style="list-style-type: none"> <li>- Window size and shading to prioritise passive cooling in summer and heating in winter</li> <li>- Orientation</li> <li>- Thermal mass</li> <li>- building fabric colour and performance</li> <li>- shading</li> </ul> <p>Comment:</p> <p>The following measures have been implemented,</p> <ul style="list-style-type: none"> <li>- Efficient window sized for maximising daylighting as well as controlling infiltration and heat loss, using low e glazing</li> <li>- Window sizes generally meet EFSG requirements for daylighting and natural ventilation. Shared Withdrawal Rooms on the Ground Floor at block B3 in Galungara Public School need mech assistance to meet</li> </ul>



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					<p>ventilation requirements as per Stage 1 strategy.</p> <ul style="list-style-type: none"> <li>-Roofing-the colour selected is light (shale grey) minimising heat absorption, in conjunction with insulation within the roof and wall cavities</li> <li>-The orientation is as true to North as possible (stage 2 / building orientation following the master planning has been done before), whilst still provisioning ample shading within the COLA spaces, and throughout the landscape with shade giving trees</li> <li>-Glazing/shading-Low e glazing is used throughout walls. In addition, the volumes at level 1 overhang the volumes on the ground floor creating shaded facades as well as shaded "deck" spaces below</li> <li>- Thermal Insulation has been provided to all main building walls and roofs to NCC requirements.</li> </ul>
15	<b>Build Resilience</b>	Weather Protection	x		<p><b>Requirement</b>  <b>Weather protection</b>          Circulation areas provided between administrative, staff and all student spaces (except Agriculture), should be protected from sun, rain and unfavourable winds.          Comment:          This has been provided through the following measures:          - Roofs over all walkways          - Covered COLA area</p>
22	<b>Consume Responsibly</b>	Building Flexibility	x		<p><b>Requirement</b>  <b>Building flexibility</b>          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.          Comment:          This has been provided through the following measures,          - Internal walls as non-load bearing for future flexibility          - Wide sliding doors to enable combining the homebases when is needed          - Minimal internal structural columns and internal top hung sliding doors</p>
	<b>Consume Responsibly</b>	Operational Waste	x		<p><b>Requirement</b>  <b>Operational waste</b>          A waste storage area must be included in all new school sites. The provision of space</p>



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25				<p>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"> <li>- Organics</li> <li>- Comingled containers</li> <li>- Paper &amp; cardboard</li> <li>- Container deposit scheme</li> <li>- Soft plastic</li> <li>- General waste</li> </ul> <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 provision for the facilities to accommodate for the OWMP. The OWMP must address all requirements from DG 2.7.2</p> <p>Comment:</p> <ul style="list-style-type: none"> <li>-Waste management plan (WMP)for operational waste has been generated on early stage of design which included stage 1 and 2</li> <li>-Bin storage area has been designed as part of documents with according to the waste management plan and includes required details within the space e.g. a Hose Cock.</li> </ul>



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29	<b>Unlock Human Potential</b>	Water Fixture Efficiency	x	<p><b>Requirement</b></p> <p><b>Water Fixture efficiency</b>          All products must be rated to AS 6400 to the following minimum WELS ratings:          - 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> <p>In any case, all new water-using appliances must be at least 0.5 stars above the average WELS star rating by product type, except toilets and urinals, which must be purchased at the average WELS star rating. Where WELS rating is not available, use the alternative Watermark rating scheme.</p> <p><b>Comment:</b>          Referring to ESD Report Proposed water fixtures and fittings WELS ratings compared to standard practice</p> <table border="1"> <thead> <tr> <th>FIXTURE</th> <th>PROPOSED FIXTURES</th> <th>STANDARD PRACTICE</th> </tr> </thead> <tbody> <tr> <td>Toilets</td> <td>5 Star (4 / 3L dual flush)</td> <td>4 Star (4.5 / 3L dual flush)</td> </tr> <tr> <td>Hand basins</td> <td>6 Star (4.5L/min)</td> <td>4 Star (7L / min)</td> </tr> <tr> <td>Kitchen sink taps</td> <td>6 Star (4.5L / min)</td> <td>4 Star (7L / min)</td> </tr> <tr> <td>Showers</td> <td>3 star (7.5 L / min)</td> <td>3 star (9 L / min)</td> </tr> </tbody> </table> <p>- Proposed fixture efficiencies represent approximately 25% reduction in potable water consumption compared to the standard practice case.</p>	FIXTURE	PROPOSED FIXTURES	STANDARD PRACTICE	Toilets	5 Star (4 / 3L dual flush)	4 Star (4.5 / 3L dual flush)	Hand basins	6 Star (4.5L/min)	4 Star (7L / min)	Kitchen sink taps	6 Star (4.5L / min)	4 Star (7L / min)	Showers	3 star (7.5 L / min)	3 star (9 L / min)
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43	Foster Connections	Open Play Space	x	<p><b>Requirement</b></p> <p><b>Open play space</b>        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"> <li>- Paved and grassed areas</li> <li>- Rooftops and terraces</li> <li>- Covered outdoor areas</li> </ul> <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"> <li>- In close proximity to the school</li> <li>- Easily accessible</li> <li>- Safe and secure</li> </ul> <p>Designs must aim to achieve a minimum of 10m<sup>2</sup> per student. Where this figure is not achievable the proposed m<sup>2</sup> per student of the completed project must not be less than the existing m<sup>2</sup> per student currently on the site.</p> <p><b>Comment:</b></p> <p>Covered outdoor area /open play areas/COLA has been designed in between the homebases with great accessibility to indoor learning areas and amenities located outside in COLAs areas. Specified spaces for schools are :</p> <p>JSPS - 15m<sup>2</sup> per student.        AAPS - It is 9m<sup>2</sup> per student not including the council sports oval. Given there is a joint use agreement with BCC to use the council sports fields, this would provide 10m<sup>2</sup> per student as per EFSG.</p>
46	Foster Connections	Security	x	<p><b>Requirement</b></p> <p><b>Security</b>        Safety in Design and Crime Prevention Through Environmental Design (CPTED) principles are to be implemented in project planning stage.        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"> <li>- Secondary clinic</li> <li>- Primary sick bay</li> <li>- Library</li> </ul>





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					<p>Comment:          Security design has been provided for both schools (including stage 1 and 2)</p>
51	<b>Unlock Human Potential</b>	Daylight Glare Control	x		<p><b>Requirement</b>  <b>Daylight glare control</b>          Discomforting glare and brightness contrasts must be avoided. Designers must seek to:</p> <ul style="list-style-type: none"> <li>- 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).</li> <li>- Exclude direct sunlight from desk level in all learning spaces between 9am and 3:30pm.</li> </ul> <p>'Sun exclusion and glare control can be achieved by the use of elements such as sunshades, eave extensions, tinted glazing, screens, vertical blades and the like'.          Glare must only be controlled by blinds as a last resort.          Designers must prepare sun diagrams in the design phase as a minimum requirement.</p> <p>Comment:          The following have been implemented,</p> <ul style="list-style-type: none"> <li>- the volumes at level 1 overhang the volumes on the ground floor creating shaded facades as well as shaded</li> <li>- eave extensions</li> <li>- Roller Blinds</li> </ul>
67	<b>Unlock Human Potential</b>	Healthy Places	x		<p><b>Requirement</b>  <b>Healthy Places</b></p> <p>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"> <li>- Walkability</li> <li>- Active and public transport,</li> <li>- Wayfinding</li> <li>- Good public space design</li> <li>- Social interaction</li> </ul> <p>Comment:</p>



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				<p>Current project represents Stage 2 for Both JSPS and GPS and both schools are now established.</p> <p>Both schools are set within residential neighbourhoods and are walkable from nearby residential communities in the local catchment area.</p> <p>Both schools have good access to nearby community sporting fields. As per arrangement with the local council the school Hall at Galungara Public school can be used for local community events outside of school hours.</p> <p>Galungara Public School is approximately 350m walk from nearest public transport (bus).</p> <p>Jordan Springs Public School is located approximately 210m walk from the nearest public transport (bus).</p> <p>Currently Jordan Springs Public school experiences congestion at the drop off area off Cullen Ave at morning at pick-up and drop off times.</p> <p>SINSW is reviewing pedestrian access strategies to enhance pedestrian safety at pick-up and drop off times. Thi is not part of the current project.</p>
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Date: 26 September 2022

Galungara Public School & Jordan Springs Public School

**SINSW ESD Framework – Compliance Statement**

Richard Crookes Constructions (RCC) confirms that the design and construction of Galungara Public School and Jordan Springs Public School Stage 2, is in accordance with the ESD requirements of the EFSG as described in the SINSW ESD framework and shown by Appendix A, unless noted otherwise in Appendix B which holds statements confirming ESD requirements which are not applicable to Stage 2 of the project.

Yours faithfully,

**FOR AND ON BEHALF OF RICHARD CROOKES CONSTRUCTIONS PTY LIMITED**



**Tom Hemmett**

Project Manager

Appendix A – Head Contractor Compliance Statements:

<b><u>EFSG Evidence Index</u></b>	<b><u>Sustainability Initiatives/requirements</u></b>	<b><u>Compliance Statement</u></b>
Item 2	<p><b>Passive design</b></p> <p>The need for active cooling and heating shall be minimised by employing passive / sustainable design principles listed in DG 55, DG 06.02 and DG 27.12 as well as the GA NSW Environmental Design in Schools Guidelines.</p> <p>This includes:</p> <ul style="list-style-type: none"> <li>- Window size and shading to prioritise passive cooling in summer and heating in winter</li> <li>- Orientation</li> <li>- Thermal mass</li> <li>- building fabric colour and performance</li> <li>- shading</li> </ul>	RCC confirms compliance through employing the passive/sustainable design principles listed in DG 55, DG 06.02 and DG 27.12 as well as the GA NSW Environmental Design in Schools Guidelines.
Item 4	<p><b>Lighting control and switching</b></p> <ul style="list-style-type: none"> <li>- The use of lighting controls will assist in substantially improving energy efficiency on sites, and should be considered for all new lighting systems, in new build or site refurbishments.</li> <li>- Lighting control should be simple to operate and adhere to all requirements of DG 63.06</li> <li>- Constant Light Output and Daylight Harvesting systems are recommended given their ability to reduce lighting energy whilst maintaining comfortably lit spaces. Consideration should be given to these strategies as stipulated in DG 63.06</li> <li>- Including daylight sensors in rooms to reduce light output or turn off light when sufficient daylight is provided within the space</li> <li>- When the space is large and perimeter lighting is adjacent to windows, perimeter lighting is on a separate zone to make maximum use of daylight</li> <li>- Local switching should be provided where it is identified that the users can benefit from manual operation of the lighting and other lighting automation technology is considered cost prohibitive. The switching should be clearly marked and robust. Provisions for energy efficient switching in Schools are outlined within DG63 and DG65.</li> </ul>	RCC confirms that this requirement is carried over from stage 1, where it was not as per the EFSG and was included in the electrical departures register.
Item 5	<p><b>Energy efficient appliances &amp; equipment</b></p> <p>Electrical equipment must be at least 0.5 stars above the market average star rating or comply with high efficiency standards specified in the GREP            HVAC system must have timed or sensor feedback functionality for energy conservation            Systems shall be designed to minimise energy</p>	RCC confirms that this has not been implemented in the project as it has been carried over from stage 1.

	<p>consumption. System design / equipment selection is to be based on whole of life cost analysis. Specific requirements are outlined in the EFSG.</p>	
Item 7	<p><b>Indoor environment controls</b></p> <ul style="list-style-type: none"> <li>- Both the thermal comfort and indoor air quality shall be controlled automatically within specified parameters.</li> <li>- Controls shall be simple and intuitive to use.</li> <li>- 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.</li> </ul>	<p>RCC confirms that this was not implemented on the project as Stage 2 has maintained the stage 1 controller for consistency, where this was not a requirement. As such refer to the electrical departure schedule.</p>
Item 16	<p><b>Urban Heat Island Mitigation - Roof Colour</b></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 &lt; 15, minimum SRI of 64          For roof pitch &gt; 15, minimum SRI of 34</p> <p>Where a three-year SRI is not available, the following requirements must be met:          For roof pitch &lt; 15, minimum SRI of 82          For roof pitch &gt; 15, minimum SRI of 39'</p>	<p>RCC confirms that this has not been implemented on the project as the roof colour has been carried over from stage 1. Refer to RF01 in the Architectural Technical Schedule (Shale Grey, SRI 66) and roof plan drawings.</p>
Item 17	<p><b>Building User's Guide</b></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:</p> <ul style="list-style-type: none"> <li>- Clearly and concisely describe the operation of building and its services</li> <li>- Detail a reasonable maintenance program</li> <li>- Advise the user of the most suitable replacements for consumables</li> </ul>	<p>RCC confirms that the building user's guide is provided with instructions on how to operate systems to maximum efficiency.</p>
Item 20	<p><b>Hazardous materials</b></p> <p>Where a new school is to be developed a Hazardous materials study is to be conducted, including:</p> <ul style="list-style-type: none"> <li>- Asbestos Containing Materials (ACM)</li> <li>- Synthetic Mineral Fibres (SMF)</li> <li>- Polychlorinated Biphenyl's (PCB)</li> <li>- Lead Paint</li> <li>- Ozone Depleting Substances</li> </ul> <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</p>	<p>Prior to the project starting a site contamination assessment was completed. The assessment found no findings of hazardous materials or other contamination on each school site.</p>

	<p>renovation or demolition.          Inspection should be conducted in accordance with DG48.</p> <p>Where hazardous materials are found a Hazardous Materials Management Plan should be prepared</p>	
Item 25	<p><b>Rainwater collection</b></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.</p> <p>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.</p> <p>The rainwater tanks must be connected to toilets for toilet flushing. If this is not feasible, approval must be granted by SINSW.</p>	<p>RCC confirms this is not applicable as existing stage 1 Rainwater Tank is to be connected to WCs.</p>
Item 29	<p><b>Water Fixture efficiency</b></p> <p>All products must be rated to AS 6400 to the following minimum WELS ratings:</p> <ul style="list-style-type: none"> <li>- Tapware to 5 star flow rating requirements</li> <li>- Showers to have 3 star flow rating requirements</li> <li>- Water Closet Pans to 4 star flow rating requirements</li> <li>- Urinals to 5 star flow rating requirements</li> <li>- Flow restrictors can be used to minimise water usage and wastage for staff amenities</li> <li>- Taps with timed flow can be used to minimise water usage and wastage in student amenities.</li> <li>- 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.</li> </ul> <p>In any case, all new water-using appliances must be at least 0.5 stars above the average WELS star rating by product type, except toilets and urinals, which must be purchased at the average WELS star rating. Where WELS rating is not available, use the alternative WaterMark rating scheme.</p>	<p>RCC confirms compliance through that the water fixtures are rated to AS6400 and compliant to “Water Fixture Efficiency” requirements. Please refer to Architectural and Hydraulic Specifications.</p>
Item 32	<p><b>Sustainable materials</b></p> <p>Construction materials must be selected based on the following:</p> <ul style="list-style-type: none"> <li>- Adequately and economically perform their intended functions, and also have lower adverse environmental impacts throughout their life cycle (refer to DG 3)</li> <li>- Contain reduced or no hazardous substances ( e.g. low VOC) to ensure effective indoor environmental quality. Reduce the demand for rare or non-renewable</li> </ul>	<p>RCC confirms that construction materials were selected in accordance with the “Sustainable Materials” requirements. Please refer to the Architectural Technical Schedule.</p>

	<p>resources.</p> <ul style="list-style-type: none"> <li>- Have low embodied energy and water.</li> <li>- Are made from or contain recycled materials or can be reused or recycled at the end of their useful life.</li> </ul>	
Item 33	<p><b>Sustainable timber</b></p> <ul style="list-style-type: none"> <li>- 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</li> <li>- All timber used is to be termite (white ant) resistant or treated to be termite resistant to the appropriate hazard level.</li> </ul>	RCC confirms that all timber complies with “sustainable timber” ESD requirements. Please refer to Architectural specifications.
Item 34	<p><b>Built for disassembly</b></p> <p>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>	RCC confirms that during design and construction RCC has considered 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.
Item 36	<p><b>Construction waste</b></p> <p>Targets must be established to increase diversion of waste sent to landfill, with a minimum diversion rate target of 90%.</p> <p>Consider opportunities for re-use and recycling of materials in the construction phase</p>	RCC confirms that we have been targeting a minimum waste diversion rate of 90%. Refer to monthly waste reports.
Item 37	<p><b>Maintainability</b></p> <p>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.</p> <p>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</p>	RCC confirms compliance with ESD requirement “Maintainability” through Operation and Maintenance Manuals.

	<p>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> <p>Operation and Maintenance manuals (O&amp;M Manuals) are to be provided, written in clear, concise English covering the various building elements, assemblies, equipment, service installations and systems incorporated into the Works.</p>	
Item 39	<p><b>Ecological conservation</b>  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.  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>	<p>RCC confirms compliance to the Biodiversity Management Plan and as such "Ecological Conservation" requirements, noting that that the project's biodiversity assessments found no existence of threatened species and only recommended some tree protection measures. Please refer to the completed assessments and evidence of compliance.</p>
Item 46	<p><b>Security</b>  Safety in Design and Crime Prevention Through Environmental Design (CPTED) principles are to be implemented in project planning stage.  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"> <li>- Secondary clinic</li> <li>- Primary sick bay</li> <li>- Library</li> </ul>	<p>RCC confirms compliance through implementing Safety in Design and Crime Prevention Through Environmental Design (CPTED) principles. CPTED has been implemented in design through secure fencing installed on the perimeter, building alarm systems connected to the DoE Security network and CCTV located in</p>
Item 47	<p><b>Digital infrastructure</b>  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</p>	<p>RCC confirms that the new buildings have a common wireless solution compatible with stage 1 of</p>



	replacement of existing legacy wireless equipment, such as wireless access points and site switches	the schools. Refer to Electrical drawings for details.
Item 55	<p><b>Accessibility</b></p> <p>-All new facilities must meet current DTS provisions of the NCC and the associated standards. 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 auditorium and on the stage</p> <p>- Provide the International Symbol for Deafness to indicate that an assistive hearing device is installed.</p>	RCC confirms compliance with ESD "Accessibility" requirements through meeting current DTS provisions. Also refer to compliance certificate issued by RCC's access consultant.
Item 58	<p><b>Ventilation and Indoor Air Quality</b></p> <p>The maximum Co2 concentration must not exceed <b>1,500ppm</b> 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"> <li>- Natural ventilation mode and cross ventilation: in line with DG5.01</li> <li>- 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.</li> <li>- Roof ventilator control: in line with DG65.16</li> <li>- Wind powered roof ventilators: Designed to suit local ambient climatic conditions to ensure correct sizes, locations and numbers as detailed in DG57.14</li> <li>- Sanitary Spaces sufficient natural ventilation or mechanical ventilation, to disperse odours and /or humidity in line with</li> <li>- Cross ventilation is to be used where possible.</li> <li>- Provide mechanical ventilation to all Disabled Toilets.</li> <li>- Ventilation in storage spaces in line with DG5.05</li> </ul>	RCC confirms that this has not been implemented in the project due to carry over of the requirements from stage 1.

	<ul style="list-style-type: none"> <li>- Ventilation in permanent learning spaces and libraries in line with DG55</li> <li>- Outdoor air requirements and control of Indoor CO2 levels - designs must adhere to DG55.02</li> <li>- 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.</li> <li>- Chemical store ventilation: Provide mechanical exhaust system with high and low level exhaust points to all chemical stores, with a minimum of 15 air changes per hour flow rate. Adhere to ventilation requirements set out in DG57.09</li> </ul>	
Item 63	<p><b>Low VOC-emitting materials</b>  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> <ul style="list-style-type: none"> <li>- Paints must meet the limits stipulated in the Australian Paint Approval Scheme's (APAS) VOC limits for low VOC paints.</li> <li>- Paints, adhesives and sealants must not exceed the maximum VOC limits stipulated in the Green Star Buildings rating tool.</li> <li>- Carpets must not exceed the total VOC limits stipulated in the Green Star Buildings tool.</li> </ul>	RCC confirms compliance as shown by the product specifications, certificates and safety datasheets that demonstrate low-formaldehyde contents.
Item 64	<p><b>Low formaldehyde-emitting materials</b>  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>	RCC confirms compliance as shown by the product specifications, certificates and safety datasheets that demonstrate low-formaldehyde contents.
Item 66	<p><b>Pesticide free environments</b>  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>	RCC confirms that no pesticides or termicide have been used or are required.

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Appendix B – Head Contractor Statement Confirming Not Applicable Items:

EFSG Evidence index	Sustainability Initiative/requirement	Statement
8	<p><b>Renewable energy</b>            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</p>	RCC confirms that this is not applicable as no solar PV system is installed in stage 2.
9	<p><b>Battery Energy Storage System</b>            A battery energy storage system shall only be designed in consultation with SINSW Sustainability  <a href="mailto:sustainability.enquiries@det.nsw.edu.au">sustainability.enquiries@det.nsw.edu.au</a></p>	RCC confirms this is not applicable as there is no solar PV system and as such no need for an energy storage system.
10	<p><b>Heaters</b>            Electric heating must be preferred over gas heating. Where gas heating is considered, it must be approved by SINSW Sustainability</p> <p>Heating equipment must be designed from a whole-of life perspective and:</p> <ul style="list-style-type: none"> <li>- Support sustainable design principles including reducing energy consumption and carbon emissions</li> <li>- Be accessible and serviceable - easy to maintain with minimal impact on school use when maintenance is being performed</li> </ul>	RCC confirms this item is not applicable as there is no gas heating in the development.
13	<p><b>Bushfire protection</b>            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</p>	RCC confirm this is not applicable as it was carried over from stage 1

	<p>bushfire-prone areas” set out the requirements for buildings which are within close proximity to a defined bush fire zone.</p> <p>Mandatory landscape management strategies:</p> <ul style="list-style-type: none"> <li>- Keep the amount of fuel (leaves, twigs, logs, dead grass) in the vicinity of buildings to a minimum.</li> <li>- Ensure trees are located at away from buildings to avoid branches overhanging and leaves collecting on roofs.</li> <li>- Do not plant shrubs against buildings.</li> <li>- The crowns of trees planted on the hazard side of the development should not be contiguous.</li> <li>- Plant fire resistant trees and shrubs on the hazard side of the development to reduce the potential impact of wind, fire intensity, radiant heat, and rate of spread as well as intercepting burning embers.</li> <li>- Avoid combustible fencing materials.</li> <li>- Provide irrigation and garden sprinklers to water areas near the buildings (subject to water authority approval).</li> </ul>	
14	<p>Climate change adaptation          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.</p> <p>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</p>	<p>RCC confirms that this is not applicable as it is carried over from stage 1.</p>

	<p>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> <p>Where significant risks are identified in the initial assessment; a comprehensive climate change risk assessment must be undertaken. Any high or extreme risks identified must be addressed through design measures.</p>	
19	<p>Drinking water catchment protection  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:</p> <ul style="list-style-type: none"> <li>- Agriculture facilities</li> <li>- Biosolids and effluent re-use schemes</li> <li>- Sewerage systems or works (including package sewerage treatment plants)</li> <li>- Stormwater or works involving the disposal of untreated runoff</li> </ul>	RCC confirms this is not applicable as there is no drinking water catchment areas proposed.
26	<p>Fire system water reuse  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>	RCC confirms this is not applicable as there is no sprinkler system proposed for the stage 2 development.
27	<p>Ground water  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>	RCC confirms this is not applicable as the ground water is not used for irrigation.
28	<p>Trade waste  Arrestors for acid, grease, plaster and clay of adequate capacity must be installed to treat wastewater from science laboratories, kitchens, art rooms and canteens as required in DG52.</p>	RCC confirms this is not applicable as there are no laboratories, kitchens or canteens in the stage 2 scope.

30	Life cycle assessment (environmental) Environmental impacts of products and materials has been assessed and inform material selection"	RCC Confirms that this was not targeted.
31	<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"> <li>- the total initial capital cost of the system/s – including design, project management, builder and building services works in connections etc.</li> <li>- resources (energy and where applicable water) consumption.</li> <li>- Maintenance.</li> <li>- the replacement of component parts.</li> <li>- disposal costs</li> <li>- ecological sustainable options</li> <li>- durability</li> <li>- vandalism</li> <li>- safety</li> </ul> <p>The whole of life cost shall be calculated over the estimated life of the asset/s."</p>	RCC Confirms that this was not targeted.
40	Productive landscape Consider including opportunities for development of community garden within the site and relationships with community groups for this to occur."	RCC confirms that this was not implemented on stage 2.
41	Bicycle storage Provide 1 space for every 20 students to AS2890.3 standard	RCC confirms this is not applicable as Bicycle Storage is not part of the stage 2 Scope.
42	Community use of facilities 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.	RCC confirms that this is not part of Stage 2.

	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."	
44	<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"> <li>•Daylight</li> <li>• Ventilation</li> <li>• Views</li> <li>• Landscaping/Indoor Plants</li> <li>• Acoustic Comfort</li> </ul>	RCC confirms this is not applicable as there is no staff room in the development for stage 2.
50	<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.</p> <p>As such, School canteens should be designed to encourage onsite preparation, storage, display and promotion of healthy 'everyday' foods.</p>	RCC confirms this is not applicable as there is no canteen in the stage 2 scope.
54	<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>	RCC confirms this is not applicable as there is no food preparation areas or non-water-based toilets within stage 2.
61	<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>	RCC confirms this is not applicable as there is no stored hot water units, only instantaneous.

	<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>	
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## Consultant / Contractor EFSG Design Compliance Statement

The design compliance statements, on company letterheads, must be provided for each consultant listed in the EFSG ESD Framework in Schedule 1. The compliance statement must reference all of the EFSG clauses that the consultant / contractor is responsible for.

Date: 21/09/22  
 JHA Job Reference: 210567  
 Project Name: Galungara Public School & Jordan Springs Public School  
 Project address: 95 Farmland Dr, Schofields NSW 2762 & 14 Cullen Ave, Jordan Springs NSW 2747  
 EFSG Index: 1, 2, 6, 52, 53, 60

### ESD Compliance Statement for ESD & Acoustic Consultant

We confirm that the ESD & Acoustic design complies with the ESD requirements in the EFSG as summarised below.

EFSG Evidence Index	Sustainability Strategy Priority	EFSG Sustainability Initiatives	EFSG Compliance		Comments
			Yes	No	
1	Act on Climate Change	Improvement over NCC	x		<p><b>Requirement Improvement over NCC</b>            All new facilities must be designed and built so that energy consumption is predicted to be at least 10% lower than if build to minimum compliance with National Construction Code requirements.</p> <p>Each building's system and façade must comply with the corresponding Section J requirements in the National Construction Code. That is, the building cannot show that their façade, or any system, performs worse than the reference building.</p> <p>The energy consumption reduction must be achieved without including renewable energy generation in the calculation.</p> <p>Comment:            The project is following EFSG 2018 and NCC 2016 Section J as to be consistent with Stage 1 requirement. Targeting to achieve 10% improvement with the existing on-site PV.</p>
2	Act on Climate Change	Passive Design	x		<p><b>Requirement Passive design</b>            The need for active cooling and heating shall be</p>

				<p>minimised by employing passive / sustainable design principles listed in DG 55, DG 06.02 and DG 27.12 as well as the GA NSW Environmental Design in Schools Guidelines.</p> <p>This includes:</p> <ul style="list-style-type: none"> <li>- Window size and shading to prioritise passive cooling in summer and heating in winter</li> <li>- Orientation</li> <li>- Thermal mass</li> <li>- building fabric colour and performance</li> <li>- shading</li> </ul> <p>Comment:</p> <p>Project architectural drawings to demonstrate compliance with the design requirements. Project JV3 report to demonstrate the sustainability approach with the building fabric and energy efficiency.</p>
6	<b>Act on Climate Change</b>	Heat Loss/Gain	x	<p><b>Requirement</b> <b>Heat loss/gain</b></p> <p>The design must take steps to control heat loss from the building during cooler winter months and heat gain during the warmer months. Refer to HVAC Design considerations in DG04.01</p> <p>Comment:</p> <p>Project mechanical drawings to demonstrate compliance with the HVAC requirement. Project JV3 report to demonstrate the energy efficiency requirement to prevent heat loss during cooler winter months and heat gain during the warmer months.</p>
52	<b>Unlock Human Potential</b>	Acoustic Performance	x	<p><b>Requirement</b> <b>Acoustic Performance</b></p> <p>Design of internal spaces must address the following Acoustic outcomes:</p> <ul style="list-style-type: none"> <li>- <b>Internal Noise Levels:</b> 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 range stipulated in Table 1 of the AS/NZS 2107:2016 standard. The more stringent of the two should be met.</li> <li>- <b>Room to room noise control:</b> Sound insulation must be provided in accordance with the requirements of Table 11.06.2 "Guideline airborne and impact sound insulation requirements" and Table 11.06.3 "Sound insulation requirements (minimum design Rw)" . Doors, walls, operable walls, partitions etc. must meet prescriptive requirements for acoustic separation to provide privacy and comfort within relevant spaces.</li> <li>- <b>Minimum Speech Transmission</b> Index is &gt; 0.60 for</li> </ul>

				<p>Teaching and learning spaces as per Table 11.06.4</p> <p><b>- Reverberation:</b> Reverberation time is fundamental to describing the ‘acoustical liveliness’ of a room. The reverberation time within a room must be within the range stipulated in table 11.06.1 of Section 11.6 Acoustic Performance Guidelines or Table 1 of the AS/NZS 2107:2016 standard. The more stringent of the two should be met.</p> <p>Comment: Carried over from Stage 1</p>
53	Unlock Human Potential	Noise Emission (to the environment)	x	<p><b>Requirement</b> <b>Noise emission (to the environment)</b> 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 requirements of the Industrial Noise Policy.</p> <p>Comment: Carried over from Stage 1</p>
60	Unlock Human Potential	Thermal Comfort	x	<p><b>Requirement</b> <b>Thermal comfort</b> The inclusion of active cooling within school facilities is directed by the Department's Air Cooling policy: 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. - Thermal modelling is undertaken to demonstrate that learning spaces and libraries have been designed to achieve a predicted mean vote (PMV) of +/- 1 for 95% of occupied hours</p> <p>Comment: The project is following EFSG 2018 and NCC 2016 Section J as to be consistent with Stage 1 requirement. PMV simulation is not required.</p>

Signed:



Name of responsible person: Eddith Chu | Senior Sustainability Engineer

Company: JHA Consulting Engineers



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Sydney | Brisbane

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Ph (02) 94371000

14 December 2022

Richard Crookes Construction  
Level 3/4 Broadcast Way,  
ARTARMON NSW 2064

**RE :**                    **Galungara PS**

JHA Consulting Engineers Pty Ltd has been engaged by Richard Crookes Construction to conduct inspections and reviews on the electrical services installation for the above project.

We advise that based on our visual inspections completed to date and from what has been reviewed, the installation appears to be, in our opinion, in line with the final design documentation and Specifications. JHA are not continuously onsite as such the JHA inspections are not exhaustive; they are limited to services that are visible and accessible at the time of inspection. This statement is subject to receipt of close out to all JHA defects comments, O&M review comments, and close out comments.

I am an appropriately qualified and competent person in this area and as such can provide a statement that the items that were observed were as per the design intent.

These inspections do not relieve the Contractor of their responsibility to carry out the works in accordance with the issued contract documents. A final installation Certification is to be provided by the installing contractor.

<b>Full Name of Designer:</b>	Marc Estimada
<b>Qualifications:</b>	BE(Elec)Hons MIEAust, CPEng, NER (2903203) Registered Engineer – Electrical (BDC04559)
<b>Address of Designer:</b>	Level 23, 101 Miller Street North Sydney NSW 2060
<b>Business Telephone No:</b>	(02) 9437 1000
<b>Name of Employer:</b>	JHA Consulting Engineers

Yours sincerely,

Marc Estimada  
Director



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16 December 2022

Richard Crookes Construction  
Level 3/4 Broadcast Way,  
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**RE : Galungara**

JHA Consulting Engineers Pty Ltd has been engaged by Richard Crookes Construction to conduct inspections and reviews on the Hydraulic services installation for the above project.

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**Full Name of Designer:** Mitchell McLennan  
**Qualifications:** Diploma Hydraulics  
Certifier Hydraulic (Building, Specialty, Stormwater) (BDC04933)  
**Address of Designer:** Level 23, 101 Miller Street  
North Sydney NSW 2060  
**Business Telephone No:** (02) 9437 1000  
**Name of Employer:** JHA Consulting Engineers

Yours sincerely,

Mitchell McLennan  
Senior Associate



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North Sydney NSW 2059  
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15 December 2022

Richard Crookes Construction  
Level 3/4 Broadcast Way,  
ARTARMON NSW 2064

**RE :**                           **Galungara PS**

JHA Consulting Engineers Pty Ltd has been engaged by Richard Crookes Construction to conduct inspections and reviews on the mechanical services installation for the above project.

We advise that based on our visual inspections completed to date and from what has been reviewed, the installation appears to be, in our opinion, in line with the final design documentation and Specifications. JHA are not continuously onsite as such the JHA inspections are not exhaustive; they are limited to services that are visible and accessible at the time of inspection.

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**Full Name of Designer:** Dagher Dagher  
**Qualifications:** B.Eng. (Mechanical Engineer), M.Eng (Mechanical Engineering)  
**Address of Designer:** JHA Consulting Engineers  
Level 23, 101 Miller Street  
NORTH SYDNEY NSW 2060  
**Business Telephone No:** (02) 9437 1000  
**Name of Employer:** JHA Consulting Engineers

Yours sincerely,

Dagher Dagher  
**Mechanical Engineer**



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1 December 2022

Richard Crookes Construction  
Level 3/4 Broadcast Way,  
ARTARMON NSW 2064

**RE :                   Jordon Springs**

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<b>Qualifications:</b>	BE(Elec)Hons MIEAust, CPEng, NER (2903203) Registered Engineer – Electrical (BDC04559)
<b>Address of Designer:</b>	Level 23, 101 Miller Street North Sydney NSW 2060
<b>Business Telephone No:</b>	(02) 9437 1000
<b>Name of Employer:</b>	JHA Consulting Engineers

Yours sincerely,

Marc Estimada  
Director



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5 December 2022

Richard Crookes Construction  
Level 3/4 Broadcast Way,  
ARTARMON NSW 2064

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<b>Full Name of Designer:</b>	Mitchell McLennan
<b>Qualifications:</b>	Diploma Hydraulics Certifier Hydraulic (Building, Specialty, Stormwater) (BDC04933)
<b>Address of Designer:</b>	Level 23, 101 Miller Street North Sydney NSW 2060
<b>Business Telephone No:</b>	(02) 9437 1000
<b>Name of Employer:</b>	JHA Consulting Engineers

Yours sincerely,

Mitchell McLennan  
Senior Associate





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1 December 2022

Richard Crookes Construction  
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**Full Name of Designer:** Dagher Dagher  
**Qualifications:** B.Eng. (Mechanical Engineer), M.Eng (Mechanical Engineering)  
**Address of Designer:** JHA Consulting Engineers  
Level 23, 101 Miller Street  
NORTH SYDNEY NSW 2060  
**Business Telephone No:** (02) 9437 1000  
**Name of Employer:** JHA Consulting Engineers

Yours sincerely,

Dagher Dagher  
**Mechanical Engineer**

**Date:** 22 March 2023

**Galungara Public School & Jordan Springs Public School**

Pesticide Free Environments

I confirm that both schools have been designed, constructed and maintained, without using chemicals for termite and other pest control. All preventative treatments have been done by physical means and were carefully designed to minimise risk.

**FOR AND ON BEHALF OF RICHARD CROOKES CONSTRUCTIONS PTY LIMITED**



**Tom Hemmett**

Project Manager

# Appendix D: Departure Schedule

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## **Appendix D Departure Schedule**

Please see overleaf

EFSG Design Guide Departures to GPS

EFSG Reference	Requirement	Departure	Justification	Departure carried across from Stage 1	Raised by	Supported by EFSG / Comment	
<b>Services</b>							
DG05.02	Air Movement - Ceiling Void Ventilation	Provide ventilation so as to remove hot air build-up in large enclosed roof spaces. Roof mounted turbo ventilators are on approved method.	Roof ventilation ceiling void ventilation has not been provided	The ceiling void volume is small due to low roof pitch, does not justify the use of roof ventilators	Yes	JHA	Yes - carried over from Stage 1
DG 37	Roof Mounted Turbo Ventilators	The size and number of ventilators to be included will depend upon the volume and use of the individual rooms and the local climatic conditions to provide suitable air changes and room cross ventilation. Provide a minimum of two roof ventilators to each Secondary General Learning Space or a Primary Home Base unless otherwise directed, or other number recommended by the manufacturer for the size of the space.	Roof ventilators not provided for learning spaces	Building top floor natural ventilation to be inline with the scheme employed for the lower floors, via operable openings in the facade. Roof ventilators increase risk of roof leakage, and add cost to the project.	Yes	JHA	Yes - carried over from Stage 1
DG55.01	CO2 Sensors	CO2 sensors are to be installed within the space	Dedicated CO2 sensors are not proposed for small spaces that do not have dedicated AC systems, example learning space Withdrawal Rooms	Small spaces do not have dedicated AC, as such CO2 control is not practical for these spaces. Note CO2 sensors will be provided for all learning spaces with dedicated AC	Yes	JHA	Yes - carried over from Stage 1
DG55.01	Controls	controls shall be simple and intuitive to use. A prominent green light shall highlight to occupants when conditions are suited to opening windows and doors to utilise natural ventilation. A prominent blue light shall highlight to occupants when the air conditioning is operating.	The proposed controller is inline with what is provided in the cooler classrooms project which deviates slightly from the DG 55 controller. The differences are:	The cooler classrooms controller is a newer version of the LGSS controller, and is being rolled out in all cooler classrooms projects. The addition of the amber light provides users with additional feedback regarding when the system is in manual mode.	Yes	JHA	Yes - carried over from Stage 1
DG55.02	4.2 Performance Criteria	HVAC system shall comply with the below internal noise criteria	Documented ceiling cassette units will not comply with the DG55 criteria.	This has been put forward due to project spatial and budget constraints. SI to confirm approval	Yes	JHA	Yes - carried over from Stage 1
DG67.14	Wind Powered Roof Ventilators	Roof mountings can use wind powered roof ventilators with dampers to provide effective summer ventilation. Design to suit local ambient climatic conditions to ensure correct sizes, locations and numbers are provided for each particular application. Refer to manufacturer's specification for assistance in system sizing according to various wind velocities.	Roof ventilators are not proposed for the learning areas	Refer to DG37 comments	Yes	JHA	Yes - carried over from Stage 1
DG67.18	Mechanically Assisted Cross Ventilation	In two storey blocks where cross flow ventilation is not possible at the lower floor, mechanically assisted cross ventilation is to be provided to the lower floor learning spaces nominated in the EFSG. The ventilation system is to be sized to provide at least 7 air changes per hour. The system is to be thermostatically controlled to activate when room temperature exceeds 28C and is to run continuously until the room temperature falls below 22C.	Mechanically assisted cross flow ventilation has not been provided	Air conditioning is provided for this project. The air conditioning range or control renders the proposed mechanically assisted cross ventilation redundant.	Yes	JHA	Yes - carried over from Stage 1
DG 61.08 and DG61.17	Location of Electrical Distribution Boards	Locate EDBs on the basis that the distribution board cannot supply equipment outside a radius of more than 25m.	Propose EDB sub-circuits cabling length to be within 35-40m radius.	Operable windows have been provided for natural ventilation, and ceiling fans are	Yes	JHA	Yes - carried over from Stage 1
DG 64.03	Comms conduits	2 x 100mm Comms CONDUITS required as a minimum	Only 1 x 100mm comms conduit run in sections.		Yes	JHA	Yes - carried over from Stage 1
DG64.11	Building Comms Room	One Building Communication Room per floor	One Building Communication room per building.		Yes	JHA	Yes - carried over from Stage 1
63.06.01	Lighting Control	DALI Control gear and a smart control system is required	No lighting control system has been provided.		Yes	JHA	Yes - carried over from Stage 1
63.07	Lighting Switching	Switch panel setout as per EFSG layout.	Switch setout not per EFSG		Yes	JHA	Yes - carried over from Stage 1
DG62.06	Ceiling Fans	Localised 3hr timer to each GLS.	Fans are just manually switched controlled.		Yes	JHA	Yes - carried over from Stage 1
DG63.06	Lighting Control	Use push button timers where possible with appropriate time periods, e.g. 2 hours for classrooms, 15 minutes for store rooms.	1) Local lighting to be controlled by lighting motion sensors in lieu of push button timers.		Yes	JHA	Yes - carried over from Stage 1
DG62	Surge Protection	Individual surge protection to all final sub-circuits containing socket outlets	No surge protection has been provided. Except on the main switchboards.		Yes	JHA	Yes - carried over from Stage 1
DG63.08	Specific Area Considerations	1. External walkways to be designed to AS1158.3.1 P6 category requirement 2. External lighting control to be installed in administration block foyer.	Lighting has not been fully designed externally to this category.		Yes	JHA	Yes - carried over from Stage 1
DG64.15	AV Device	The standard for the AV Device was first introduced on 19/10/2019. Before that the requirements were an interactive projector.	Our recommendations is to follow EFSG 2022. This will be closer to the stage-1 design than the EFSG 2018.	Aligning with current EFSG will provide modern teaching technology and more closely align with stage-1 that EFSG 2018. Simplified procurement and maintenance agreements as a result of following the	Yes	JHA	Yes - carried over from Stage 1
DG11	Acoustics	Walls between learning spaces to achieve RW45	No full height walls and/or acoustic treatment in the ceiling voids to achieve nominated rating	Walltypes WP2 and WP3 are 120mm above ceiling and perforated walls on both sides of the walls. Based on these, the maximum achievable rating is RW35.	Yes	JHA	Yes - carried over from Stage 1
DG11	Acoustics	Prescriptive construction: Entry doors to occupied teaching spaces to be solid core, minimum 35mm thick with acoustic seals on all rebated closing faces	Sliding doors documented as entry doors to teaching spaces	To achieve door requirements hinged doors provide a cost effective solution in lieu of glazed sliding doors	Yes	JHA	Yes - carried over from Stage 1
DG11	Acoustics	Reverberation time for teaching spaces to be <0.5secs	Insufficient area of sound absorptive internal finishes to achieve required reverberation time	Proposed ceilings in teaching spaces are a combination of set plasterboard and perforated plasterboard. Additional absorption like wall pinboards not documented	Yes	JHA	Yes - carried over from Stage 1
DG11	Acoustics	To achieve impact sound pressure levels within teaching spaces to be LnTw < 55dB	Cushion back / vibration mat are not documented in architectural drawings / specs for vinyl flooring spaces with teaching spaces below.	Teaching spaces have a stringent impact noise criteria that it is usually achieved with underlays for vinyl flooring.	Yes	JHA	Yes - carried over from Stage 1
DG11	Acoustics	To control rain noise in the teaching spaces with metal roofing	Solid FC barrier proposed in ACL report has not been documented in architectural drawings / specs.	High internal noise levels are expected during medium/high rainy events as the proposed roofing/ceiling system does not have solid barrier between the metal roofing and the perforated ceiling in the teaching spaces	Yes	JHA	Yes - carried over from Stage 1
DG11	Acoustics	Internal noise levels from mechanical systems to not exceed 40dB(A)	ERVs in teaching spaces with perforated ceilings	Break-out noise from the ERVs within the teaching spaces will be clearly audible as the ceilings are perforated and acoustic treatment has not been documented in the ACL report neither in the architectural documentation.	Yes	JHA	Yes - carried over from Stage 1
DG11	Acoustics	Internal noise levels from mechanical systems to not exceed 40dB(A)	Insufficient noise controls for supply and return mechanical ductworks	Not enough noise controls for inlet and outlet ductworks will drive to exceedances of the internal noise levels within the teaching spaces due to mechanical systems.	Yes	JHA	Yes - carried over from Stage 1
AS149 / AS1677	Mechanical Refrigerant Volume	Refrigerant concentration			Yes	JHA	Yes - carried over from Stage 1

<b>Austruss</b>						
DG21.1.13 Table A (v)	Deflection Criteria - (v) Stud walls under lateral loading	span/500	span/200 or max. 20mm as per Nash Standard	Span/500 can only be achieved by a masonry wall	Yes	Austruss Yes - carried over from Stage 1
<b>Structural</b>						
DG21.1.3 (1)	Deflections	Table A, Item (ii) states Deflections of Floor Structures with non brittle finishes should be limited to Span/500	The following deflection criteria is adopted: Total Long Term: Span/400 (max 25mm). Live Load: Span/500; Dead Load: Span/360	This would apply to all floors with non brittle finishes, and is consistent with the deflection criteria adopted on other previous school projects	Yes	Northrop Yes - carried over from Stage 1
DG21.1.3 (2)	Deflections	Table A, Item (v) states Deflections of Stud walls under lateral loading should be limited to Span/500	Stud walls under lateral loading (serviceability wind loads), the following deflection criteria is adopted: General wall: Deflection < span/240 or maximum 20mm	This would apply to all stud walls and is specific to the cladding material or lining the stud wall is supporting. Departure to be confirmed by truss sub-contractor. The proposed limit reflects what has been approved for previous school projects.	Yes	Northrop Yes - carried over from Stage 1
DG21.03.7	Corrosion Protection to Structural Steel	For 15 years to first maintenance nominate corrosion protection for all structural steelwork whether external or internal, in accordance with the requirements of AS 2312 Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings. Protect internal steelwork as for external. Determine atmospheric environment/classification for the site from AS 2312.	Corrosion Protection to structural steel to comply with AS 2312 Table 6.3 by way of paint treatment and appropriate surface treatment as specified and test by product supplier.	This would apply to all structural steel on the project. The proposed departure reflects what has been approved for previous school projects.	Yes	Northrop Yes - carried over from Stage 1
DG21.06.06	Impact Design Loads on Lightweight Steel Partition Framing	Walls to be designed to withstand a possible impact load of 2kN applied mid-height of wall	All stud walls to be designed for the greater of the following: 1) Wind Loads (where external) 2) Internal pressure of 0.25kPa (service) and	This would apply to all lightweight partitions. The proposed departure reflects what has been approved for previous school projects.	Yes	Northrop Yes - carried over from Stage 1
<b>Architecture</b>						
DG27.01	Minimum pitch requirement	Minimum pitch requirement is 4 degrees	Pitch is 2 degrees as per Stage 1 and SSDA approval	SSDA approval	Yes	GroupGSA Yes - carried over from Stage 1
DG08	Circulation	Anti-static doormats: are required at external access to carpeted circulation areas eg Administration corridors, General Learning corridors and Library Entry. (They are NOT required for individual Home Bases or General Learning Spaces etc with external access)	1100P FINISHES Floor finishes are to be selected and designed to suit the use of the area, the occupants and consider the following factors: End use of the area, access, finish to be used, etc.	SSDA approval and Stage 1 Design	Yes	GroupGSA Yes - carried over from Stage 1
DG31.1	Use of PWD Suite No 2	is the DoE approved integrated system	PWD2 Suite no longer in existence	Capral 400 has been specified, as per Stage 1	Yes	GroupGSA Yes - carried over from Stage 1
DG10.01	General performance requirements	Accommodation requirements as stipulated in EFSG	Refer to area schedules	Refer to area schedules. Departures are due to alignment to either the modular system or to grid. These have not been approved under SSDA and they govern the design	Yes	GroupGSA Yes - carried over from Stage 1
DG10.04	Critical Dimensions For School Buildings	Minimum height of sills above Finished Floor Level: Minimum height of sills above Finished Floor Level: GF+943mm (lower window sills to articulate facade, key conceptual approach)	Fixed panels that are part of a sliding glazed suite are full height from finished floor level	Proposed departure: No operable window sill height below EFSG limits, non compliant windows are fixed	Yes	GroupGSA Yes - carried over from Stage 1
DG16.05	Access And Egress	Main student circulation passages are to have an unobstructed width not less than 2.00m Each flight of stairs must have a minimum of 3 risers and a maximum of 14 risers Height of stair risers in a primary school is to be 150mm (+/- 10mm) Height of stair risers in a secondary school is to be 165mm (+/- 10mm)	Proposed departure: External stairs to have 15 risers, to remove the need to provide a second mid flight landing and increase outdoor play area in COLA. Additionally Block A stair		Yes	GroupGSA Yes - carried over from Stage 1
DG40	Materials and Finishes	DG40 nominates a granolithic topping to all external ramps and stairs	RCC propose to deviate and provided a brotelled concrete finish to these areas		Yes	GroupGSA Yes - carried over from Stage 1
DG45		DG45 nominates fibre cement sheeting to all wet area ceilings. RCC are proposing to deviate from this requirement and provide moisture resistant plasterboard in lieu	RCC are proposing to deviate from this requirement and provide moisture resistant plasterboard in lieu		Yes	GroupGSA Yes - carried over from Stage 1
DG46.04	Bird Roosts	Avoid exposed beams, channels and purlins forming ledges. Avoid use of open trusses and struts to external covered ways, awnings and shade. Exposed roof structure: Avoid purlins laid over beams forming ledges between the purlins. Overlapping Roofs: Avoid roofs overlapping so closely as to form bird havens.	Proposed Departure: Overlapping roofs designed at COLA, however, sufficient clearance and openness to elements to avoid nesting)	SSDA approval applies from Stage 1	Yes	GroupGSA Yes - carried over from Stage 1
PS605	Storage Unit	One Cleaners Room per floor per building	TSG advised that only one per floor are required		Yes	GroupGSA Yes - carried over from Stage 1
PS611	Services	One Building Comms Room per floor per building	TSG advised for stage 1 on 28/2/19 that only one comms room required per building.	SSDA layout approved based on Stage 1 design	Yes	GroupGSA Yes - carried over from Stage 1
SG455	Door Hardware	Centreline of door furniture spindle, or of keyway if no furniture-1000 mm from finished floor.	The specified height is 1100 mm and this is in order to allow all of the required door furniture to fit into a BCA compliant area on the door		Yes	GroupGSA Yes - carried over from Stage 1
	Path surface	Lower path surface had been nominated as soft much surface which is a non-accessible path. agreed to in principle with access consultant, because the only way to access this area is with steps (no ramping). Technically speaking this is non compliant. We are now suggesting that a decomposed gravel surface would be adequate.	Suggesting that a decomposed gravel surface would be adequate, for the pathway.		Yes	GroupGSA Yes - carried over from Stage 1

### EFSG Design Guide Departures to JSPS

EFSG Reference		Requirement	Departure	Justification	Departure carried Across from Stage 1?	Raised by	Supported by EFSG / Comment
<b>Services</b>							
DG05.2	Air Movement	Ceiling void ventilation - provide ventilation so as to remove hot air build-up in large enclosed roof spaces. Roof mounted turbo ventilators are an approved method.	Ceiling void roof ventilators to not to be provided.	The achieved performance benefits associated with attic space roof ventilators does not justify the additional risk of roof leakage, and project cost.	Yes	JHA	Yes - carried over from Stage 1
DG53.14	Rainwater harvesting	Harvest Rainwater: Where practical, harvest roof water to connect to a pumped rainwater supply system to authorities requirements for landscaped areas and toilet flushing	Where rainwater harvesting is practical for the site, it is proposed to connect into a pumped system to serve landscaped areas only, not toilet flushing	Rainwater harvesting to serve toilet flushing is not recommended due to considerable maintenance of a treatment system	Yes	JHA	Yes - carried over from Stage 1
DG 37	Roof Mounted Turbo Ventilators	The size and number of ventilators to be included will depend upon the volume and use of the individual rooms and the local climatic conditions to provide suitable air changes and room cross ventilation. <i>Provide a minimum of two roof ventilators to each Secondary General Learning Space.</i>	Propose to not provide roof ventilators for learning spaces..	Building top floor natural ventilation to be inline with the scheme employed for the lower floors, via operable openings in the facade. Roof ventilators increase risk of roof leakage, and add cost to the project.	Yes	JHA	Yes - carried over from Stage 1
DG55.01	CO2 Sensors	CO2 sensors are to be installed within the space	Dedicated CO2 sensors are not proposed for small spaces that do not have dedicated AC systems, example learning space WD rooms.	Small spaces do not have dedicated AC, as such CO2 control is not practical for these spaces. Note CO2 sensors will be provided for all learning spaces with dedicated AC	Yes	JHA	Yes - carried over from Stage 1
DG55.01	Controls	Controls shall be simple and intuitive to use. A prominent green light shall highlight to occupants when conditions are suited to opening windows and doors to utilise natural ventilation	The proposed controller is inline with what is provided in the cooler classrooms project which deviates slightly from the DG 55 controller. The differences are:	The cooler classrooms controller is a newer version of the DG55 controller, and is being rolled out in all cooler classrooms projects.	Yes	JHA	Yes - carried over from Stage 1
DG55.02	Ventilation	Ventilation systems are designed to maintain an average daily CO2 concentration as per the latest NCC code, and so that the maximum concentration does not exceed 1,500ppm for than 20 consecutive minutes in each day.	AS 1668.2-2012 requires 12 L/s per person outside air mechanical ventilation for occupants 16 years and under, and for others 10 L/s per person . It is proposed to provide 7.5 L/s per person outside air	Most spaces have sufficient natural ventilation openings to satisfy the NCC natural ventilation requirements, and do not require an AS1668.2-2012 compliant mechanical ventilation system for NCC compliance. The outside air	Yes	JHA	Yes - carried over from Stage 1
DG57.14	Wind Powered Roof Ventilators	School buildings can use wind powered roof ventilators with dampers to provide effective summer ventilation. Design to suit local ambient climatic conditions to ensure correct sizes, locations and numbers are provided for each particular application. Refer to manufacturer's specification's for assistance in system sizing.	Roof ventilators are not proposed for the learning areas	Refer to DG37 comments	Yes	JHA	Yes - carried over from Stage 1
DG 61.08 and DG61.17	Location of Electrical Distribution Boards	Locate EDBs on the basis that the distribution board cannot supply equipment outside a radius of more than 25m.	Propose EDB sub-circuits cabling length to be within 35-40m radius.	The intent of the EFSG requirement is to ensure voltage drop compliant. This can be achieved with the 35-40m spacing without negatively impacting the floor finish and adding unnecessary cost. This will	Yes	JHA	Yes - carried over from Stage 1
DG64.11	Main Comms Room	Main Communication Room	Main Communication Room is located on ground floor instead of the level 1 library.	Locating on ground directly below the library allows for the lead in cabling from the street being brought directly into the room, without having to transition up the floors.	Yes	JHA	Yes - carried over from Stage 1
DG62.06	Ceiling Fans	Localised 3hr timer to each GLS.	Ceiling fans to be interconnected to the lightning motion sensor in addition to fan controller. Ceiling fans shall be turned off with no presence is	This will reduce energy wastage to minimum.	Yes	JHA	Yes - carried over from Stage 1
DG63.06	Lighting Control	Use push button timers where possible with appropriate time periods, e.g. 2 hours for classrooms, 15 minutes for store rooms.	1) Local lighting to be controlled by lightning motion sensors in lieu of push button timers.	1) Lighting motion sensor has built-in timers which turn off lighting by default. Push button functionality (ie run off timer) design approach is achieved by introducing	Yes	JHA	Yes - carried over from Stage 1
DG62	Surge Protection	Individual surge protection to all final sub-circuits containing socket outlets	It is not cost-effective to have individual surge protection device on the sub-circuits which will result in oversize of the switchboard and ongoing maintenance on the surge filters	The sub-circuits in existing buildings are not provided with individual surge protection. A surge protection device is provided to the line side of the electrical switchboard. It is not practical to modify existing switchboard to incorporate	Yes	JHA	Yes - carried over from Stage 1
DG63.08	Specific Area Considerations	1. External walkways to be designed to AS1158.3.1 P6 category requirement 2. External lighting control to be installed in administration block foyer.	1. External pedestrian lighting to be designed to lower requirement (P7 or P8 category). 2. Additional light switch to be provided at local	1. P6 category has high vertical illuminance requirement which will require excessive luminaire quantities in selected open areas. Request for flexible design approach where lighting levels/obtrusive lighting is a risk to neighboring	Yes	JHA	Yes - carried over from Stage 1
SG1011	Lift Design and install	The primary functions for buildings up to 4 storeys high are to provide disability access, conveyance of heavy or bulky goods and facilitate non-emergency pedestrian flows within the building. For buildings that are over 4 floors in height, the lift services will be used for mass student and staff vertical movements.	The lift services are reserved for students with limited mobility and for staff use only, all other students will typically use the stairs. LCD on 110lley) within joinery.	Students are encouraged to use the stairs.	Yes	JHA	Yes - carried over from Stage 1
DG64.15	AV Device	The standard for the AV Device was first introduced on 16/10/2019. Before that the requirements were an interactive projector.	Our recommendations is to follow EFSG 2022 for stage 2. This will be closer to the stage 1 design than		Yes	JHA	Yes - carried over from Stage 1
	Library	We do not have the EFSG as of 2018 for the space.	This design is over and above EFSG.		Yes	JHA	Yes - carried over from Stage 1
	Digital Signage	The EFSG guidelines do not request any digital signage.	This design is over and above EFSG.		Yes	JHA	Yes - carried over from Stage 1
65.14	Hearing Augmentation System	Induction Hearing Loop System is required for the Library & Communal Hall.	Infra-Red Hearing Augmentation system was desined compliant with NCC.		Yes	JHA	Yes - carried over from Stage 1

<b>Austruss</b>							
DG21.21.1.13 Table A (v)	Deflection Criteria - (v) Stud walls under lateral loading	span/500	span/200 or max. 20mm as per Nash Standard	Span/500 can only be achieved by a masonry wall	Yes	Austruss	Yes - carried over from Stage 1
<b>Structural</b>							
DG21.1.3 (1)	Deflections	Table A, Item (iii) states Deflections of Floor Structures with non brittle finishes should be limited to Span/500	The following deflection criteria is adopted: Total Long Term: Span/360 (max 25mm); Live Load: Span/500; Dead Load: Span/360	This would apply to all floors with non brittle finishes, and is consistent with the deflection criteria adopted on other previous school projects	Yes	Northrop	Yes - carried over from Stage 1
DG21.1.3 (2)	Deflections	Table A, Item (v) states Deflections of Stud walls under lateral loading should be limited to Span/500	Stud walls under lateral loading (serviceability wind loads), the following deflection criteria is adopted: General wall: Deflection < span/240 or maximum 20mm; Brittle cladding (Tiled or ceramic wall):	This would apply to all stud walls and is specific to the cladding material or lining the stud wall is supporting. Departure to be confirmed by truss sub-contractor. The proposed limit reflects what has been approved for previous school projects.	Yes	Northrop	Yes - carried over from Stage 1
DG21.03.7	Corrosion Protection to Structural Steel	For 15 years to first maintenance nominate corrosion protection for all structural steelwork whether external or internal, in accordance with the requirements of AS 2312 Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings. Protect internal steelwork as for external. Determine	Corrosion Protection to structural steel to comply with AS 2312 Table 6.3 by way of paint treatment and appropriate surface treatment as specified and test by	This would apply to all structural steel on the project. The proposed departure reflects what has been approved for previous school projects.	Yes	Northrop	Yes - carried over from Stage 1
DG21.06.05	Impact Design Loads on Lightweight Steel Partition Framing	Walls to be designed to withstand a possible impact load of 2kN applied mid-height of wall	All stud walls to be designed for the greater of the following: 1) Wind Loads (where external) 2) Internal pressure of 0.25kPa (service) and 0.5kPa	This would apply to all lightweight partitions. The proposed departure reflects what has been approved for previous school projects.	Yes	Northrop	Yes - carried over from Stage 1
<b>Architecture</b>							
DG27.01	Minimum pitch requirement	Minimum pitch requirement is 4 degrees	Pitch is 2 degrees as per Stage 1 and SSSA approval	SSDA approval	Yes	GroupGSA	Yes - carried over from Stage 1
DG08	Circulation	Anti-static doormats: are required at external access to carpeted circulation areas eg Administration corridors, General Learning corridors and Library Entry. (They are NOT required for individual Home Bases or General Learning Spaces etc with external access).	Floor Finishes Floor finishes are to be selected and designed to suit the use of the area, the occupants and consider the following factors:	SSDA approval and Stage 1 Design	Yes	GroupGSA	Yes - carried over from Stage 1
DG31.1	Use of PWD Suite No 2	is the DoE approved integrated system	PWD2 Suite no longer in existence	Capral 400 has been specified, as per Stage 1	Yes	GroupGSA	Yes - carried over from Stage 1
DG10.01	General performance requirements	Accommodation requirements as stipulated in EFSG	Refer to area schedules	Refer to area schedules. Departures are due to alignment to either the modular system or to grid. These have not been approved under SSSA and they govern the design	Yes	GroupGSA	Yes - carried over from Stage 1
DG10.04	Critical Dimensions For School Buildings	Minimum height of sills above Finished Floor Level: Minimum height of sills above Finished Floor Level: Minimum height of sills above Finished Floor Level: GF=943mm (lower window sills to articulate facade, key conceptual approach)	Fixed panels that are part of a sliding glazed suite are full height from finished floor level	Proposed departure- No openable window sill height below EFSG limits, non compliant windows are fixed	Yes	GroupGSA	Yes - carried over from Stage 1
DG16.05	Access And Egress	Main student circulation passages are to have an unobstructed width not less than 2100mm Each flight of stairs must have a minimum of 3 risers and a maximum of 14 risers Height of stair risers in a primary school is to be 150mm (+/- 10mm)	External stairs to have 15 risers, to remove the need to provide a second mid flight landing and increase outdoor play area in COLA. Additionally Block 3 stair will have 17		Yes	GroupGSA	Yes - carried over from Stage 1
DG40	Materials and Finishes	DG40 nominates a granolithic topping to all external ramps and stairs	RCC propose to deviate and provided a trowelled concrete finish to these areas		Yes	GroupGSA	Yes - carried over from Stage 1
DG45		DG45 nominates fibre cement sheeting to all wet area ceilings, RCC are proposing to deviate from this requirement and provide moisture resistant plasterboard in lieu	RCC are proposing to deviate from this requirement and provide moisture resistant plasterboard in lieu		Yes	GroupGSA	Yes - carried over from Stage 1
DG46.04	Bird Roosts	Avoid exposed beams, channels and purlins forming ledges. Avoid use of open trusses and struts to external covered ways, awnings and shade. Exposed roof structure: Avoid purlins laid over beams forming ledges between the purlins. Overhanging Roofs: Avoid roof overhangs or clearances to form bird havens.	Proposed Departure Overlapping roofs designed at COLA, however, sufficient clearance and openness to elements to avoid nesting.	SSDA approval applies from Stage 1	Yes	GroupGSA	Yes - carried over from Stage 1
PS605	Storage Unit	One Cleaners Room per floor per building	TSG advised that only one per floor are required		Yes	GroupGSA	Yes - carried over from Stage 1
PS611	Services	One Building Comms Room per floor per building	TSG advised for stage 1 on 28/2/19 that only one comms room required per building.	SSDA layout approved based on Stage 1 design	Yes	GroupGSA	Yes - carried over from Stage 1
SG455	Door Hardware	Centreline of door furniture spindle, or of keyway if no furniture-1000 mm from finished floor.	The specified height is 1100 mm and this is in order to allow all of the required door furniture to fit into a BCA compliant area on the door		Yes	GroupGSA	Yes - carried over from Stage 1



# Appendix E: EFSG Green Star Benchmarking Review

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## **Appendix E EFSG Green Star Benchmarking Review**

Please see overleaf