



O'Connell Street Primary School

Environmental Sustainability Management Plan

Revision 4

Prepared for:

Old Kings School
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Revision

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Executive summary

This Environmental Sustainability Management Plan has been prepared for Old Kings School C/- TZG Architects. This report is intended to provide an overview of the proposed project's ecologically sustainable design (ESD) components in line with the relevant Secretary's Environmental Assessment Requirements (SEARs) and the Environmental Planning and Assessment Act (EP&A).

This report includes:

- An overview of the sustainability drivers for the project (both regulatory & identified project drivers),
- Details regarding ecologically sustainable aspects incorporated into the design in response to the controls of the SEARs, and
- Information contained within the Educational Facilities Standards and Guidelines (EFSG) for schools, by the Department of Education NSW.
- A Green Star Compliance pathway and matrix that describes how the project demonstrates 4 Star Green Star equivalent design.

Information contained within this report has been prepared in direct response to:

- The SEARs Requirements outlined in Clause 6
- Inputs for the Environmental Impact Statement (EIS) for the project

The above are current and applicable to the development at the time of writing.

The requirements for the LEP/SEARs/EP&A are demonstrated through the development of a design equivalent to 4 Star Green Star, appropriate to a refurbished primary school. The strategy adopted by the design team demonstrates that the current design achieves a minimum 47 points, with another 13 points that may be achieved, yet to be confirmed. (Total score: 47-60 points)

O'Connell Street Primary School

1. Introduction

The project involves the redevelopment of the O'Connell St Public School in Parramatta, NSW. The site is located near the Parramatta river foreshore just outside the Parramatta CBD and within the vicinity of a variety of local businesses and amenities.

The project upgrade consists of redevelopment of the site to accommodate a new primary school for 1,000 students. The works comprise:

- Refurbishment of Building A to accommodate administration and office spaces;
- Refurbishment of Building B to accommodate a new library / resource centre and 'home base' classrooms;
- Refurbishment of Building C to accommodate staff areas, a canteen, 'home base' classrooms and common learning areas;
- Refurbishment of Building D to accommodate 'home base' classrooms and practical activities spaces; and
- Construction of a new hall (to be made available for community uses outside of school hours) and a Covered Outdoor Learning Area (COLA).

In addition to the works described above, the development includes:

- Services upgrades;
- A bus pick-up and drop-off area on Marist Place;
- New access and car parking off O'Connell Street and Marist Place;
- Removal of the existing Underground Storage Tank and associated decontamination works; and
- Tree removal and new landscaping to accommodate passive and active recreation spaces, including covered outdoor play and learning areas.

The development has the following characteristics:

- The street address is 24 O'Connell St, Parramatta, NSW.
- The site has approximately 8,300m² of accommodation.
- The site has frontage of approximately 200m along O'Connell St
- The site is currently occupied by the existing public school. Note only buildings A&B are occupied – the remainder are currently vacant. The relevant site component is included over the page.
- The buildings on site have the following areas:

GROSS FLOOR AREA (GFA)	
BUILDING A + B	2,228.17
BUILDING C	2,157.08
BUILDING D	2,690.11
BUILDING H	1,241.84
	8,317.20 m ²

1.1 Design Documentation

The following relevant design documents have assisted in the preparation of this report, as prepared by TZG Architects, "30% documentation Issue", including:

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0000 GENERAL

SK-0000 COVER PAGE
SK-0001 SITE PLAN

SK-0100 DETAILED SITE PLAN: SECURE SCHOOL ZONE
SK-0101 DETAILED SITE PLAN: EASTERN CARPARK
SK-0102 DETAILED SITE PLAN: WESTERN CARPARK

SK-0200 SITE ELEVATIONS
SK-0201 SITE ELEVATIONS

SK-0300 SITE SECTIONS

1000 BUILDING AB

SK-1100 BUILDING AB GROUND FLOOR PLAN
SK-1101 BUILDING AB FIRST FLOOR PLAN
SK-1102 BUILDING AB SECOND FLOOR PLAN
SK-1103 BUILDING AB THIRD FLOOR PLAN

2000 BUILDING C

SK-2100 BUILDING C GROUND FLOOR PLAN
SK-2101 BUILDING C FIRST FLOOR PLAN
SK-2102 BUILDING C SECOND FLOOR PLAN

3000 BUILDING D

SK-3100 BUILDING D GROUND FLOOR PLAN
SK-3101 BUILDING D FIRST FLOOR PLAN
SK-3102 BUILDING D SECOND FLOOR PLAN

4000 NEW HALL

SK-4100 NEW HALL GROUND FLOOR PLAN

All assumptions and strategies within the current scheme and drawings are subject to change through the design development and documentation stages.



Figure 1 - Site Overview showing Building Numbers

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2. Project Sustainability Drivers

The proposed sustainability response for the project includes various associated drivers including:

- Secretary's Environmental Assessment Requirements (SEARs), specific for O'Connell St Public School
- Minimum code requirements, including National Construction Code (NCC), State Environmental Planning Policy for seniors living (SEPP) and Environmental Planning and Assessment Act (EP&A)

2.1 Applicable Regulatory Frameworks

The following regulatory frameworks apply to the development:

2.1.1 SEARs Conditions

The SEARs conditions require an Environmental Impact Statement (EIS), to be prepared in accordance with the EP&A. Specific requirements addressed here fall under clause 6 – Ecologically Sustainable Development (ESD), detailed below:

6. Ecologically Sustainable Development (ESD)

- *Detail how ESD principles (as defined in clause 7(4) of Schedule 2 of the Environmental Planning and Assessment Regulation 2000) will be incorporated in the design and ongoing operation phases of the development.*
- *Demonstrate that the development has been assessed against a suitably accredited rating scheme to meet industry best practice.*
- *Include a description of the measures that would be implemented to minimise consumption of resources, water including water sensitive urban design) and energy.*

The second bullet point above is demonstrated through the Green Star 4 Star Pathway. This report details the sustainable initiatives included in the design.

2.1.2 EP&A Schedule 2, Clause 7(4)

The Environmental Planning and Assessment Act (EP&A) states the following in regards to ESD initiatives:

The principles of ecologically sustainable development are as follows:

- (a) the "precautionary principle", namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:*
 - i. careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and*
 - ii. an assessment of the risk-weighted consequences of various options,*
- (b) "inter-generational equity", namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations,*
- (c) "conservation of biological diversity and ecological integrity", namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,*
- (d) "improved valuation, pricing and incentive mechanisms", namely, that environmental factors should be included in the valuation of assets and services, such as:*
 - i. polluter pays, that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,*
 - ii. the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste,*
 - iii. environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.*

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2.1.3 NCC Section J – Energy Efficiency

Introduced into the National Construction Code series in 2004, Section J establishes minimum energy efficiency provisions for all classes of building. The provisions are designed to achieve the functional objective of Section J which is to reduce greenhouse gas emissions. This compliance is demonstrated through the Section J Compliance Report by WGE.

The building is a Class 9b building – a building of a public nature (school).

2.1.4 NSW Government Resource Efficiency Policy

The aim of the GREP is to reduce Government's operating costs and lead by example in increasing resource productivity. The policy aims to drive resource efficiency by Government agencies in three main areas: energy, water and waste, and reduce harmful air emissions from government operations.

The policy will ensure Government agencies:

- meet the challenge of rising prices expected for energy, fuel, water and waste management
- use purchasing power to drive down cost of resource efficient technologies and services
- show leadership by incorporating resource efficiency in decision making.

A definition is given by the NSW Whole of Government Sustainability Principles which were published in 2006: *Sustainability in the NSW public sector means addressing the needs of current and future generations through the integration of social justice, economic prosperity and environmental protection in ways that are transparent, accountable and fiscally responsible.*

This document references the Educational Facilities Standards and Guidelines (EFSG), which set the benchmark precedence for this development.

2.1.5 Compliance

The SEARS Controls require the EP&A requirements to be met, as well as demonstrating the development has been assessed against a suitably accredited rating system. This report demonstrates that the development will be designed and constructed to an equivalent 4 Star Green Star standard, indicating "Best Practice".

Through demonstrating this building will be designed and constructed to an equivalent 4 Star Green Star Design and As Built Standard, the criteria for the above points in the SEARs will be demonstrated. The EP&A Schedule 2 is demonstrated through the list of best practice initiatives included in this report. These combine to provide a design that carefully considers the needs of the local ecology, as well as present and future generations.

This building will meet the Section J requirements for part 1 – 8 through either Deemed-to-Satisfy solutions, or a performance based solution. This is documented in the Section J compliance report.

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2.2 Green Star Equivalency

This development is designed to meet an equivalent design of 4 Star Green Star Design & As Built development. No formal rating will be pursued, as this is not required in line with the Government's EFSG.

The Green Star suite of rating tools has been compiled by the Green Building Council of Australia to assess the level of environmentally sustainable design that may be incorporated into a building. In October, 2014 the GBCA consolidated all previous legacy tools into one new tool: Green Star Design and As-Built. This looks at developments in 9 categories, namely:

- Management,
- Indoor Air Quality,
- Energy,
- Transport,
- Water,
- Materials,
- Land Use and Ecology,
- Emissions
- Innovation.

A 4 star rating is equivalent to "Australian Best Practice". A minimum 45 points is required to achieve 4 Star. This design currently is on track to achieve 47 weighted points, with another 13 points possible in the current design, but labelled "to be confirmed". This demonstrates a 4 Star equivalent design. Further detailed information is provided within Section 3 of this report.



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3. Ecological Design Response

With the intent to satisfy the sustainability drivers identified within Section 2 and mitigate the negative ecological impacts of the development, the preliminary design response & targeted ESD initiatives for the proposed development will target these elements through the documented 4 Star Green Star Pathway. This pathway is further explained below and documented in Appendix I.

3.1 Ecology and Landscape

The ecology of the site will not be significantly changed from its current state. This is achieved through:

- The existing landscaping on the site is maintained where practicable. Some planting to occur around the site to increase the ecological performance of the site.
- Developing an engineered solution to stormwater to not adversely affect runoff from the site to catchments.
- Using a combination of exotic and native plants species.
- Performing a Hazmat review and decontamination of damaged components, where required.

A combination of low-demand vegetation and low ratios of hard surface areas will all assist in the objectives of the SEARS by reducing the stormwater run-off impacts of the development and the overall impact on the surrounding ecology. Note stormwater is not proposed to be reused.

3.2 Energy, Greenhouse Gas Emissions

Energy and more specifically, energy efficiency and reductions in Greenhouse Gas Emissions, remains a key driver for sustainability within the project. Operational energy use within buildings represents approximately 23% of all energy related greenhouse gas emissions in Australia (ABSEC, 2007). By planning for greater energy efficiency within new developments, the annual greenhouse emissions are lowered.

Energy Efficiency initiatives proposed for inclusion within the development will include:-

- Vernacular architecture through building shape and function, to encourage natural light and a connection to nature, which reduces artificial light requirements
- Thermal mass, quality glazing and shading eliminates the need for air conditioning.
- Low lighting densities and no use of incandescent lamps in rooms and primarily LED lights
- Timing of lights and occupancy sensors in common areas for energy reduction
- Window extent has reduced and is not full façade.
- Premium efficiency motors on fans as rated by National Electrical Manufacturer's Association
- Significant reduction in embodied energy of the building, through reusing existing buildings, as well as recycled bricks.

Through these measures, the energy consumption of the building is expected to be approximately 35-45% below that of a standard practice building.

3.3 Water Resources / Potable Demand Reduction

The development will seek to address water efficiency and reduce the potable water demand via the following initiatives:-

- All new water fittings and fixtures are to meet the high Water Efficiency Rating Scheme (WELS) ratings outlined in the EFSG, specifically this includes:
 - Toilets Min 4 Star WELS
 - Showerheads Min 3 Star WELS; and
 - Taps Min 5 Star WELS
- Tracking of water use via water meters
- Harvesting rainwater for use in irrigation pending final design of the site. The rainwater tank is nominally sized at 5kL and designed to serve the irrigation on site.

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3.4 Emissions

The development will seek to address ecologically damaging emissions via the following initiatives:-

- Stormwater runoff will be reduced or remain equal through detention if required, subject to the final civil design. This is assisted by rainwater collection.
- Limited risk of Legionella through no water-based heat rejection systems
- External lighting reduced from pointing up to the night sky
- Low or zero VOC paints & adhesives
- Low Formaldehyde content in the engineered wood products selected.

3.5 Indoor Environment Quality

In providing an attractive environment commensurate to learning, the development will target a number of elements to increase the indoor environment quality. The following will be targeted in the development:

- Air pollutants exhausted in line with best practices and ASHRAE 62.1, and printing equipment pollutants eliminated through selection of printers
- Acoustic comfort provided through low noise levels in occupied spaces, and high levels of acoustic separation between spaces. This is achieved through acoustic glazing facing O'Connell St, etc.
- Low sound reverberation through choice of finishes
- High quality lighting solutions through surface illuminance and reducing glare through installation of blinds
- Reduced health risks through low or zero VOC paints, and low formaldehyde engineered wood products
- Designing the habitable spaces to have a high degree of quality views, and daylight where possible
- High levels of sunshade on exposed facades
- Developing specific strategies for school children, including task illumination, glare reduction and warm colour lighting.

3.6 Waste

To address best practice operational and construction waste management, the following is included:-

- A dedicated waste recycling storage area will be provided, sized for the needs of the project
- Recycling facilities will be provided around the site, for separation of different waste streams.
- Diverting a minimum 90% of construction/demolition waste from landfill. This will be achieved through recycling and reusing items on site, such as bricks and building components.

3.7 Management

To ensure the appropriate ongoing performance of the site, the following management strategies will be considered to ensure high quality delivery and ongoing performance of the building. This is in line with the management category of Green Star:-

- The services installed will be commissioned in line with the relevant standards.
- The management will maintain the life of finishes to the building for a minimum of 10 years, to ensure reduced waste of materials.
- Environmental performance targets will be made for common areas and services. These will be set and measured for water and energy

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4. Summary of Design Response

This Environmental Sustainability Management Plan has been prepared for Old King's School C/- TZG Architects. The report has provided an overview of the proposed project's ecologically sustainable design and how it directly addresses the intent of the SEARs and EP&A. This is primarily demonstrated through the equivalent 4 Star Green Star Design & As-Built design for the development.

The majority of initiatives are driven by the Educational Facilities Standards and Guidelines (EFSG), provided by the Department of Education. In providing a design that meets the full requirements of this document, a number of initiatives are automatically included.

By including a significant number of best practice environmental initiatives throughout the development, the resultant building is designed to reduce the ecological damage commonly associated with construction and design. Further, by using Green Star as a metric, a high number of specific and relevant actions have been included in the design.

We trust that the information that has been outlined within this report provides a suitable overview of the project's commitment to ecological sustainable development and a reduced environmental impact.

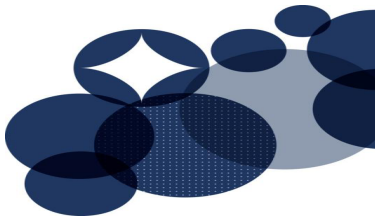
Appendix 1

Star Green Star Matrix – Nominated Compliance Pathway

Green Star - Design & As Built Scorecard

Project:	O'Connell St Public School
Targeted Rating:	4 Star - Best Practice

Total Points Available	Total Points Targeted	Total Points TBC
110	47	13



CATEGORY / CREDIT	AIM OF THE CREDIT / SELECTION	CODE	CREDIT CRITERIA	POINTS AVAILABLE	4 STAR POINTS TARGETED	TBC POINTS	ASSESSMENT COMMENTS
Management				14			
Green Star Accredited Professional	To recognise the appointment and active involvement of a Green Star Accredited Professional in order to ensure that the rating tool is applied effectively and as intended.	1.1	Accredited Professional	1			No GSAP as no Green Star official rating
Commissioning and Tuning	To encourage and recognise commissioning, handover and tuning initiatives that ensure all building services operate to their full potential.	2.0	Environmental Modelled Targets	-	Yes	Yes	Targets for energy and water use to be included in school plan
		2.1	Services and Maintainability Review	1			Unlikely for full services and maintainability review to be included in current scope
		2.2	Building Commissioning	1	1		Building to be commissioned to relevant standards.
		2.3	Building Systems Tuning	1			Building to be tuned to CIBSE TM31. Required 12 month tuning commitment post completion
		2.4	Independent Commissioning Agent	1			No ICA on job, N/A
Adaptation and Resilience	To encourage and recognise projects that are resilient to the impacts of a changing climate and natural disasters.	3.1	Implementation of a Climate Adaptation Plan	2			No Climate Change Adaptation plan, N/A
Building Information	To recognise the development and provision of building information that facilitates understanding of a building's systems, operation and maintenance requirements, and environmental targets to enable the optimised performance.	4.1	Building Operations and Maintenance Information	1	1		O&M manual development to be included, developed in line with the credit criteria
		4.2	Building User Information	1		1	could be achieved through display of energy consumption in real time to students.
Commitment to Performance	To recognise practices that encourage building owners, building occupants and facilities management teams to set targets and monitor environmental performance in a collaborative way.	5.1	Environmental Building Reporting	1			Management must commit to environmental performance targets for building through internal policy, etc.
		5.2	End of Life Waste Management	1	1		Achieved by committing to extending the life of finishes to at least 10 years - standard for schools
Metering and Monitoring	To recognise the implementation of effective energy and water metering and monitoring systems.	6.0	Metering Strategy	-	Complies		All meters to be accessible.
		6.1	Monitoring Strategy	1			Monitoring strategy implemented inline with a standard such as CIBSE TM39. Not required through EFSG
Construction Environmental Management	To reward projects that use best practice formal environmental management procedures during construction.	7.0	Environmental Management Plan	-	Complies		An EMP must be developed and in place for the construction process. Required as part of EFSG, 02.03
		7.1	Formalised Environmental Management System	1	1		An EMS must be developed and implemented during construction. Follows from EMP above
Operational Waste	To recognise projects that implement waste management plans that facilitate the re-use, upcycling, or conversion of waste into energy and stewardship of items to reduce the quantity of outgoing waste	8.1	Waste in Operations	1	1		Achieved through following the SMEC waste management plan
Total				14	5	1	

Indoor Environment Quality				17			
Quality of Indoor Air	To recognise projects that provide high air quality to occupants.	9.1	Ventilation System Attributes	1	1		Ventilation system attributes to comply with Green Star credit criteria. Standard per mechanical design.
		9.2	Provision of Outside Air	2			Rooms largely naturally ventilated to AS1668.4. Air unlikely to be supplied 100% above AS1668.2 minimum to conditioned spaces.
		9.3	Exhaust or Elimination of Pollutants	1	1		No kitchens or car park. Print equipment to be stored in exhausted, separated room.
Acoustic Comfort	To reward projects that provide appropriate and comfortable acoustic conditions for occupants.	10.1	Internal Noise Levels	1	1		In line with EFSG, table 11.06.1
		10.2	Reverberation	1	1		In line with EFSG, table 11.06.1
		10.3	Enclosed Spaces	1			Not achieved in line with EFSG, table 11.06.2
Lighting Comfort	To encourage and recognise well-lit spaces that provide a high degree of comfort to users.	11.0	Minimum Lighting Comfort	-	Yes		Lighting specification to state flicker free lighting, in line with EFSG reqs. For colour
		11.1	General Illuminance and Glare Reduction	1	1		Contractor to note compliance requirements. Glare eliminated through blinds or shading and design in line with AS 1680.1
		11.2	Surface Illuminance	1	1		Achieved through designing in line with AS 1680.1
		11.3	Localised control	1			Not achieved
Visual Comfort	To recognise the delivery of well-lit spaces that provide high levels of visual comfort to building occupants.	12.0	Glare Reduction	-	Complies		Blinds required to facades in line with DG76.
		12.1	Daylight	2			Unlikely to be achieved in this space
		12.2	Views	1	1		Likely to be achieved given high number of windows with uninterrupted views to courtyards, outside, etc.

Reduced Exposure to Pollutants	To recognise projects that safeguard occupant health through the reduction in internal air pollutant levels.	13.1	Paints, adhesives, sealants and carpets	1	1		Contractor to note compliance requirements in Green Star guidelines and provide option price
		13.2	Engineered wood products	1	1		Contractor to note compliance requirements in Green Star guidelines and provide option price
Thermal Comfort	To encourage and recognise projects that achieve high levels of thermal comfort.	14.1	Thermal Comfort	1			requires thermal modelling, unlikely in naturally ventilated spaces
		14.2	Advanced Thermal Comfort	1			requires thermal modelling, unlikely in naturally ventilated spaces
Total				17	9	0	

Energy				22			
Greenhouse Gas Emissions	A. Performance Pathway	15E.0	Conditional Requirement: Reference Building Pathway	-	Complies	Complies	
		15E.1	Comparison to a Reference Building Pathway	20	7	2	Represents a 35% reduction in energy consumption across a year, compared to 10% below DtS equivalent. Potential to achieve up to 45%. This is achieved through excellent lighting and providing no air conditioning.
Peak Electricity Demand Reduction	Reference Building Pathway	16.1-A	Deemed to Satisfy Pathway	-			
		16.1-B	Reference Building Pathway	2	1		Due to efficient lighting and no air conditioning. The peak energy use is significantly reduced by the sum of all air conditioning units being used.
Total				22	8	2	

Transport				10			
Sustainable Transport	Performance Pathway	17-A.1	Modelled Pathway	10	8	2	While no formal transport modelling has been performed as part of this scope, OSPS has a number of dedicated busses that will significantly reduce the demand on private vehicles. Through providing subsidised busses, an estimated minimum 8 points is achieved here. Likely all 10 awarded if transport modelling is undertaken.
		17-B.1	Access by Public Transport	0			Access to Public Transport Calculator completed for site address. 2 points achieved.
		17-B.2	Reduced Car Parking Provision	0			Based on max occupancy of 1061, less than 42 spaces provided. Innovation point
		17-B.3	Low Emission Vehicle Infrastructure	0			None envisaged.
		17-B.4	Active Transport Facilities	0			Unlikely to be met given the use of the space. Potential to meet for permanent staff only
		17-B.5	Walkable Neighbourhood	0			Walkscore 98 achieved.
		Total				10	8

Water				12		
Potable Water	Deemed-to-Satisfy Pathway	18-A.1	Potable Water - Modelled Pathway	0	2	Potential to achieve up to 7 points, given such low shower demand in schools. Detailed calculations required to allocate these points
		18-B.1	Sanitary Fixture Efficiency	1	1	Taps/toilets in line with EFSG
		18-B.2	Rainwater Reuse	1	1	a rainwater tank is provided, sized to meet irrigation demand. This would be met through a CIR demonstrating appropriate sizing
		18-B.3	Heat Rejection	2	2	Awarded if there is no water based heat rejection. Heat rejection is through split systems, not cooling towers
		18-B.4	Landscape Irrigation	1	1	Awarded if drip irrigation system with moisture sensor override is used or no potable water consumed. Unlikely
		18-B.5	Fire System Test Water	1		No fire protection system in place
		Total				6

Materials				14			
Life Cycle Impacts	Material Use	19.A.1	Comparative Life Cycle Assessment	0			No LCA provided
		19.A.2	Additional Life Cycle Impact Reporting	0			
		19.B.1	Concrete	3			Potentially awarded for reuse of bricks, which will reduce concrete requirements, TBC
		19.B.2	Steel	1			
		19.B.3	Building Reuse	4	3	1	At least 50% by area of façade reused, and 60% by mass of structure is retained. New Hall may prevent full points, TBC.
Responsible Building Materials	To reward projects that include materials that are responsibly sourced or have a sustainable supply chain	20.1	Structural and Reinforcing Steel	1	1		60% of steel sourced from responsible manufacturer and produced using energy efficient methods.
		20.2	Timber	1	1		Achieved within ESD requirements of EFSG

	sourced or have a sustainable supply chain.	20.3	Cables, pipes, floors and blinds	1	1		Requirements for 'best practice' PVC standards used throughout, in line with EFSG
Sustainable Products	To encourage sustainability and transparency in product specification.	21.1	Sustainable Products	3	1		3% of project contract cost represented through reused materials from the existing site (bricks/timber, etc.)
Construction and Demolition Waste	To reward projects that reduce construction waste going to landfill by reusing or recycling building materials	22.1	Reduction of Construction and Demolition Waste	1			To achieve minimum 90% recycling of construction / demolition waste. No demonstration of this being achieved in CWMP
Total				12	7	1	

Land Use & Ecology				6			
Ecological Value	To reward projects that improve the ecological value of their site.	23.0	Endangered, Threatened or Vulnerable Species	-	Complies		Site previously developed and does not contain endangered or threatened species.
		23.1	Ecological Value	3			Ecological value of the site maintained, no significant improvement
Sustainable Sites	To reward projects that choose to develop sites that have limited ecological value, re-use previously developed land and remediate contaminate land.	24.0	Conditional Requirement	-	Yes		
		24.1	Reuse of Land	1	1		Build on an existing site, point awarded
		24.2	Best Practice Site Remediation	1	1		Hazardous Materials to be removed in line with SMEC report.
Heat Island Effect	To encourage and recognise projects that reduce the contribution of the project site to the heat island effect.	25.1	Heat Island Effect Reduction	1		1	Potential to achieve through reflective roofing, TBC but anticipated too much hard scaping
Total				6	2	1	

Emissions				5			
Stormwater	To reward projects that minimise peak stormwater flows and reduce pollutants entering public sewer infrastructure.	26.1	Peak Discharge To Sewer	1	1		Reduced through civil treatment. Specific measures TBC by civil
		26.2	Pollution Targets	1		1	No Stormwater requirements outlined in for this project. May be met through DA conditions
Light Pollution	To reward projects that minimise light pollution.	27.0	Light Pollution to Neighbouring Properties	-	Complies		
		27.1	Light Pollution to Night Sky	1			Awarded where light shone upwards is restricted, through timing switches and lack of outdoor lights
Microbial Control	To recognise projects that implement systems to minimise the impacts associated with harmful microbes in building systems.	28.1	Microbial Control	1	1		Awarded as no heat rejection system is installed
Refrigerant Impacts	To encourage operational practices that minimise the environmental impacts of refrigeration equipment.	29.1	Refrigerant Impacts	1			Achieved as no refrigerants are installed on the project
Total				5	4	1	

Innovation				10			
Innovative Technology or Process	The project meets the aims of an existing credit using a technology or process that is considered innovative in Australia or the world.	30.A	Innovative Technology or Process	10			
Market Transformation	The project has undertaken a sustainability initiative that substantially contributes to the broader market transformation towards sustainable development in Australia or in the world.	30.B	Market Transformation				
Improving on Green Star Benchmarks	The project has achieved full points in a Green Star credit and demonstrates a substantial improvement on the benchmark required to achieve full points.	30.C	Improving on Green Star Benchmarks			2	Potential to achieve min. 1 innovation credits . Eg - Exceeding Parking reductions - Ultra Low VOC Paints - Quality of stormwater runoff
Innovation Challenge	Where the project addresses an sustainability issue not included within any of the Credits in the existing Green Star rating tools.	30.D	Innovation Challenge				
Global Sustainability	Project teams may adopt an approved credit from a Global Green Building Rating tool that addresses a sustainability issue that is currently outside the scope of this Green Star rating tools.	30.E	Global Sustainability				
Total				10	0	2	

TOTAL	POINTS AVAILABLE	POINTS TARGETED	POINTS TARGETED
	110	47	13