ESD Briefing Note

Full Circle Design Services

PO Box 5636
St Georges Terrace
WA 6831

Ph: +61 (0) 412 475 819
E: graham.agar@fcds.com.au
www.fullcircledesign.com.au
ACN: 163 742 890

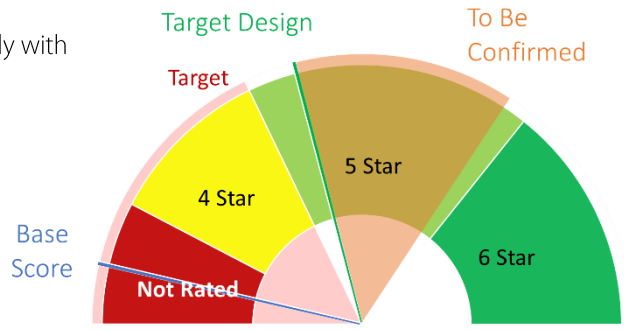
Project:	Woolworths East Victoria Park
Service:	Sustainable Design
Subject:	ESD Overview – DA Phase
Revision:	A
Date:	14th March 2024
Author:	Graham Agar

This briefing note provides a summary of the sustainable design inclusions and intended pathway for the development of the Woolworths in East Victoria Park.

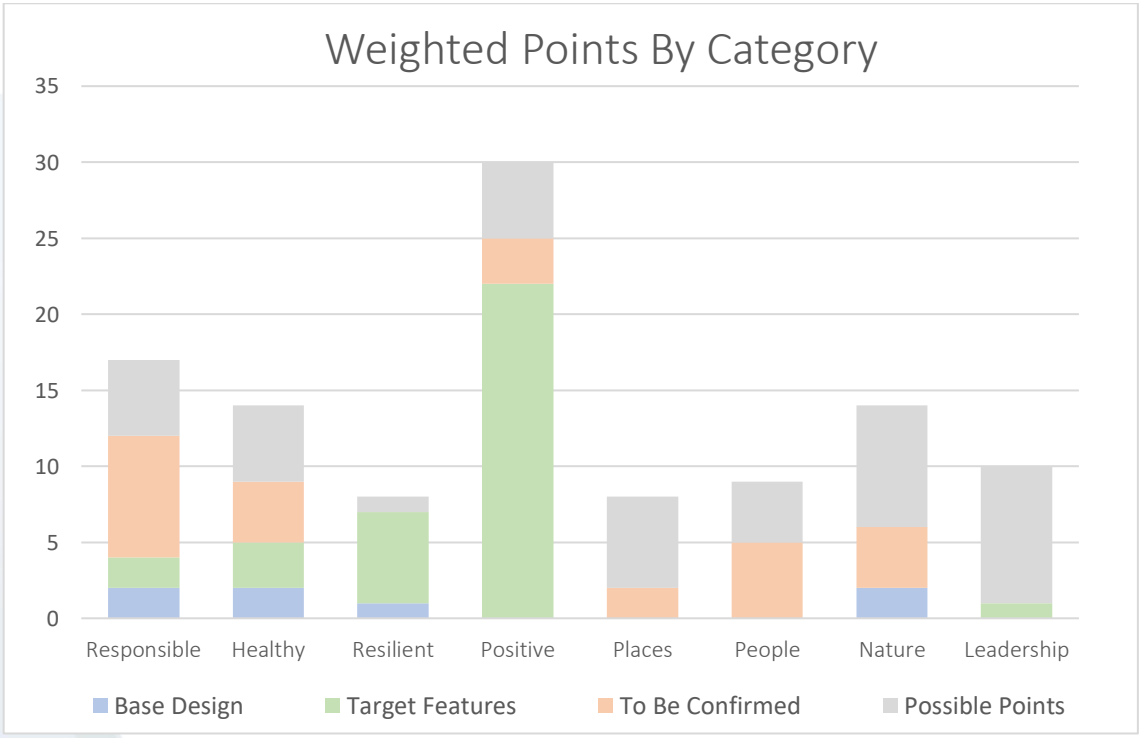
The development plan includes a single building, with ground floor retail over two levels of basement parking. Above the shopping centre is a 94 place early learning centre .

The project is committed to achieving a 5-Star Green Star Buildings Certification and has commenced the registration process. The project is committed to:

- Zero carbon operating energy
- Offset of construction carbon
- Large onsite energy generation, potentially with battery storage
- Electric vehicle charging
- Natural lighting
- Sustainable materials
- 40% Potable Water Reduction
- Building Tuning and Optimisation
- Heat Island Mitigation



The project is relatively early in design phase, however, has identified a pathway to achieve 41 points – around 20% over the cut off for 5 Stars, with a strong focus on carbon footprint, responsible, healthy and resilient construction.



Full Circle
Design Services

March 2024

Woolworths East Victoria Park

Sustainable Design Assessment Report

Graham Agar
FULL CIRCLE DESIGN SERVICES

Full Circle Design Services

Full Circle Design Services	
Telephone: 0412 475 819	**Report №:** 2024_017_ESD_REP_02_SDRP
E-mail: graham.agar@fcds.com.au	**Original Date of Issue:** 14th March 2024
ACN: 163 742 890	
ABN: 84 163 742 890	

Title:	Woolworths East Victoria Park – Sustainable Design Assessment Report
Author :	Graham Agar
Client:	Woolworths
Contact:	Tom Keen
Description:	This report provides a brief summary of the proposed sustainable design strategy for the proposed new Woolworths development on the corner of Albany Highway and Shepperton Road in East Victoria Park. The report outlines overall intent and sustainable design features to be included within the design, as well as an overall assessment of the expected outcome for the project.

Revision	Date	Checked by		Transmitted by	
A	13th March 2024		GEA		GEA

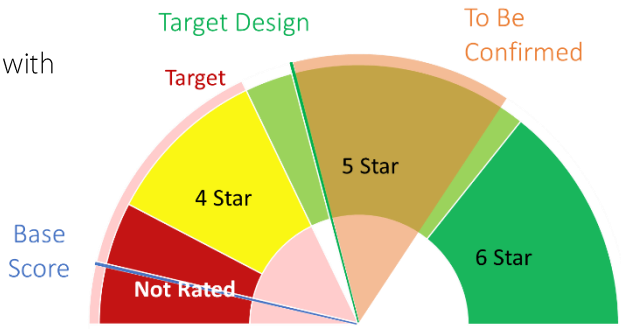
Distribution	Revision								
Receiver	A								
Woolworths	X								

Executive Summary

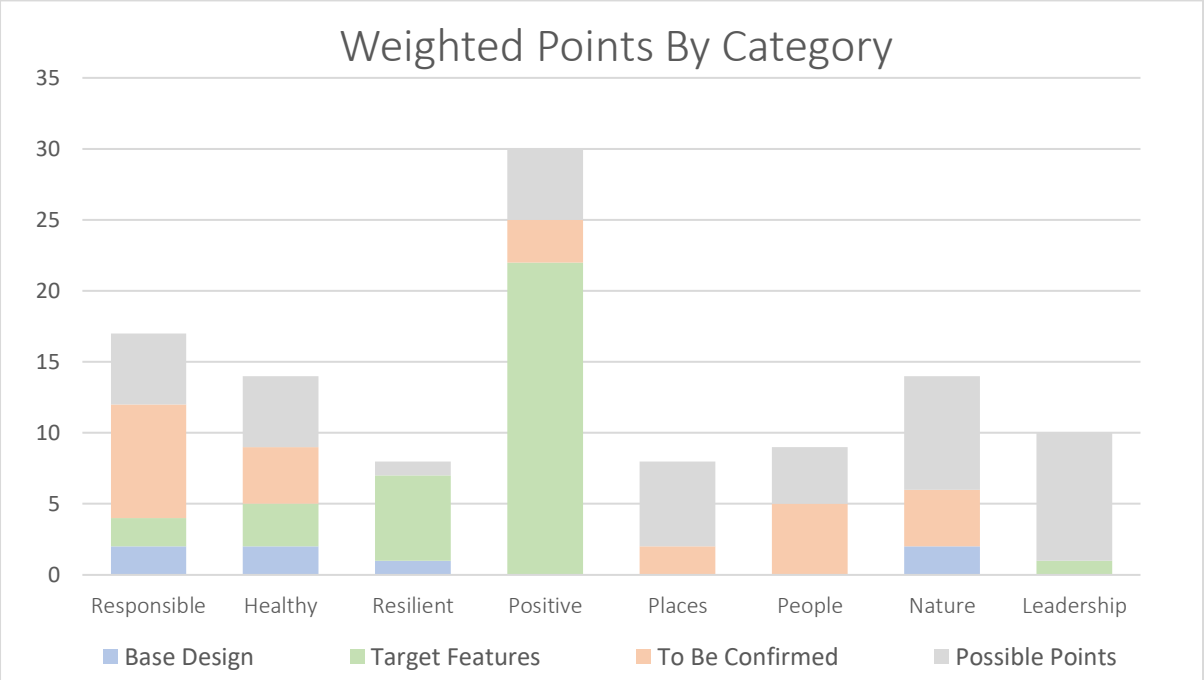
FCDS have been commissioned to provide general sustainable design advice and briefing services for the proposed new retail development for Woolworths on the corner of Shepperton Road and Albany Highway.

The project is committed to achieving a 5-Star Green Star Buildings certified outcome for the new project, with registration under progress. The design is intending to :

- Zero carbon operating energy
- Offset of construction carbon
- Large onsite energy generation, potentially with battery storage
- Electric vehicle charging
- Natural lighting
- Sustainable materials
- 40% Potable Water Reduction
- Building Tuning and Optimisation



The project is relatively early in design phase, however, has identified a pathway to achieve 47 points – around 30% over the cut off for 5 Stars – with a strong focus on carbon footprint, responsible healthy and resilient construction.



The following report provides additional information regarding the achievement of relevant key design initiatives and is supported by a more detailed score card.

Full Circle Design Services

Contents

Full Circle
Design Services

1. Introduction

FCDS have been commissioned to provide general sustainable design advice and briefing services for the proposed new Woolworths East Victoria Park, on the corner of Shepperton Road and Albany Highway.

The project has committed to achieving a 5-Star Green Star Buildings outcome, which includes strong commitments around energy and water performance, as well as operational and embodied carbon, occupant wellbeing and social sustainability.

1.1 Site Description

The proposed project is a retail development, with ground floor speciality shops and a supermarket below a 94 seat early learning centre and above two levels of basement car parking.

The current site is bare ground, having previously been cleared with existing retail shops demolished:

The development includes more than 5,000m^2 of internal space, with a peak occupancy of around 80 staff.

1.2 Sustainability Targets

The project is aiming to achieve at least 35 points (5 Star / Australian Excellence level) under the Green Star Buildings V1.1b rating system.

Design features to prioritise energy efficiency and simplification of operations as well as improving occupant comfort are being prioritised.

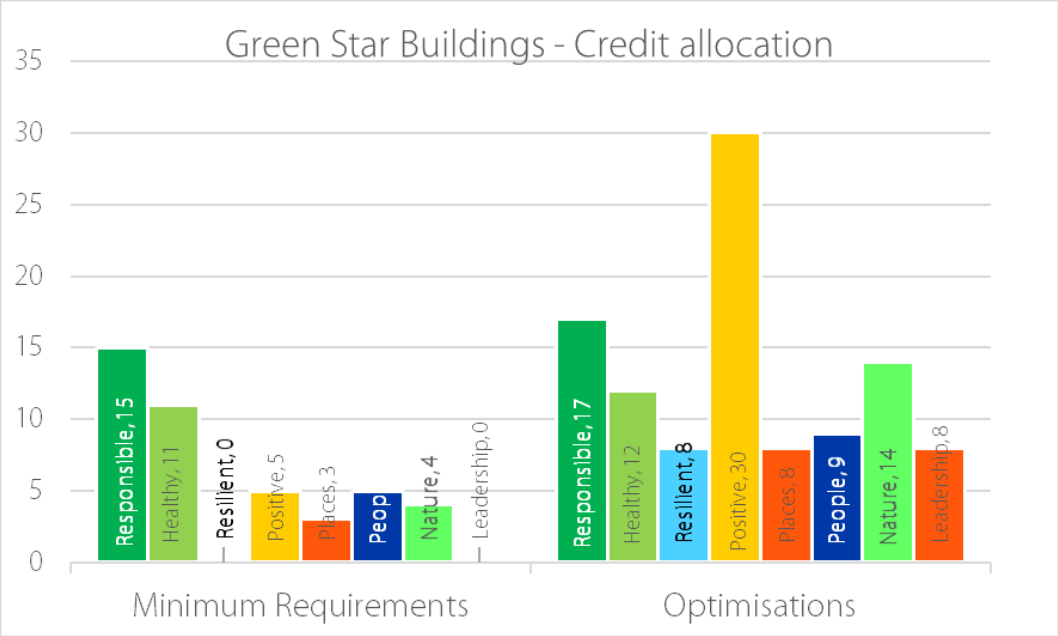
Category	Target	Design Team Response
General Sustainability	Australian Excellence	The project is targeting formal certification to Green Star Buildings.
	Operational Performance	Monitor and tune building performance in operation – target < 110kWhrs per m^2 per annum.
Energy Consumption	10% Improvement over BCA - Facade	This will require insulation and glazing performance in excess of minimum standard.
	30% Improvement over BCA - Overall	• Energy efficient services (lighting and mechanical in particular) to be provided. • Reverse cycle heat pump (gas boost) for domestic hot water. • Daylight harvesting
	Renewable Energy	The project should include a large solar photovoltaic array, potentially with on-site battery storage to improve on site utility.
Water Consumption	Low Flow Tapware	Ensure all taps, showers, WC's, urinal, dishwashers and washing machines provided are within 1 star of the best available WELS rating.
	Waterwise Irrigation	Utilise drought tolerant and native planting where possible. Utilise rain / moisture sensing and sub-soil drip irrigation for all planted areas.
Waste Targets	75%+ Recycling in operation	Design to facilitate capture of recyclable goods and use of comingled recycling. Minimum three waste streams to be collected.
	>90% Recycling in construction	Use of high efficiency resource recovery facility to sort waste in construction.
Durability	>10 Years for Common Area Finishes	Internal finishes shall target >10 year life spans, with minimal repair and maintenance rather than regular replacement.
Indoor Environment Quality	Mixed Mode Operation	Key spaces to be able to function in air conditioned or naturally ventilated modes.
Envelope	Envelope Leakage	Construct envelope to achieve <10 m^3/hr per m^2 of façade at 50Pa.

1.3 Green Star Buildings

Green Star Buildings assesses proposed facilities for people against a number of sustainable design metrics, specifically, the tool requires that buildings:

- Protect of environmentally significant areas
- Reduce carbon emissions in construction and operations, aligning with a pathway to Net Zero by 2030
- Aare water efficient
- Provides a high quality indoor environment
- Promotes physical activity
- Consider and address climate change impacts
- Reduces environmental impacts during construction
- Embraces diversity
- Reduces operational waste
- Undergoes performance verification

Performance is assessed across a number of categories, as described below. Many credits have an emphasis of planning and consultancy:.



Projects have a relatively low percentage requirement to achieve certification as best practice as only 15% above minimum performance requirements, however, a 6-Star certification requires design team to achieve almost three quarters of all available optimisations.

Star Rating	Buildings
4 Star – Best Practice	15 Points
5 Star – Australian Excellence	35 points
6 Star – World Leadership	70 Points

1.3.1 Assessment Categories

Buildings	Sustainable Design Features
Responsible	Features which are intended to minimise ecological footprint by control of the design, construction and commissioning process. The features also include elements to optimise operational performance through design of effective spaces and measuring consumption.
Healthy	Features aiming to ensure the building provides a strong response to occupant health and wellbeing.
Resilient	Rewards projects preparing and for the imminent impacts of climate change, including provision of support to the surrounding community. Shocks to power infrastructure, ongoing weather pattern adjustment and the urban heat island effect
Positive	Design elements which contribute positively to the environment. Buildings must minimise harm as a starting point and also act as a restorative force for good to achieve points.
Places	Features which reflect outcomes that are linked to the location and nature of the development. Points are achieved by reducing the impacts of transport – on the environment and occupant health.
People	Features which improve social sustainability outcomes within the development and community.
Nature	Features and design solutions which prioritise and restore the natural environment around prospective developments
Leadership	The category for projects to demonstrate leadership beyond the scope of the current Green Star framework, addressing Challenges which have been developed by the GBCA or which break barriers and inspire others to follow.

The following sections present a summary of the project approach within the various categories.

2. Responsible Design Features

The Responsible category refers to credits which are intended to minimise ecological footprint by control of the design, construction and commissioning process. The features also include elements to optimise operational performance through design of effective spaces and measuring consumption.

The following section outlines FCDS expectation with respect the Responsible design elements intended to be included by the project team:

2.1 Marketing Excellence

The design team will produce documentation to describe sustainable design features of the development for key stakeholders – including prospective occupants of each tenancy.

2.2 Environmentally Responsible Construction

The main contractor will be expected to implement an environmental management system, using ISO 14001 practices to monitor its implementation on site.

The plan will include waste management and minimisation, targeting a minimum of 90% of construction and demolition waste diversion from landfill.

Contractors visiting site for more than 3 days will be required to undertake site familiarisation and sustainable design training covering design features for this development, as well as a wider overview of sustainability issues.

2.3 Commissioning, Verification and Handover

The design team have been provided clear design targets for environmental performance – refer to Section 1.2 above.

The designers and contractors will complete a constructability and maintainability review as part of the shop drawing process.

Commissioning will be in accordance with best practice international standards, including CIBSE, ASHRA and Airah. The building envelope will be tested for air leakage prior to practical completion.

Common area services will be closely monitored over the first 12 months of operation to minimise performance issues and optimise operational efficiency against design targets.

The designers will include meters for each major use, utilising utility meter reading systems to monitor and report on performance.

Detailed handover documentation will be provided to building stakeholders in electronic format, including As Built drawings and functional control descriptions.


Green Building Council Australia

Green Building Council of Australia

certifies that

Graham Agar

has obtained the following qualification

Green Star® Accredited Professional

The Green Star® Accredited Professional qualification recognises advanced knowledge and experience in sustainability, and competency in the application of the Green Star® rating tools.

Jul 2010 – Jun 2021 (Continual Enrolment)

greenstar Accredited Professional

Davina Rooney

Davina Rooney
Chief Executive
Green Building Council of Australia

2.1 Sustainable Design Professional

The project team have included sustainable design considerations from schematic design phase and will continue through to practical completion and beyond.

2.2 Operational Waste

The design team will be ensuring that the project is effectively designed to manage operational waste across metrics including sizing, segregation of waste streams and accessibility for waste contractors.

Based on the Randwick City Council guide for waste generation rates (referenced GBCA best practice guide), the development would be expected to generate around 10,000 L of waste and 9,250 L of recyclables per day;

Usage			Daily Generation Rate		Weekly Generation Rate	
			Waste	Recycling	Waste	Recycling
Education	94	Students	141	47	705	235
Retail	4,280	m^2	9,290	9,074	65,027	63,520
Food and Beverage	374	m^2	382	120	2,672	837
Office	0	m^2	0	0	0	0
Total			**9,812**	**9,241**	**68,403**	**64,592**
240 L Bins			**41**	**39**	**286**	**270**
660 L Bins			**15**	**15**	**104**	**98**

2.3 Responsible Products

This category review products selected for building structure, envelope, systems and finishes and provides points for projects which can demonstrate performance improvement over standard practice.

Key elements supporting these features are:

- Design and Construction procurement processes to align with ISO 20400 – Sustainable Procurement Guidance
- Mechanical, electrical and hydraulic systems are to include at least 20% (by cost) achieving a Responsible Products Value, greater than 6, as per the table below:
- Finishes to follow similar sustainable requirements, with a net score of at least 9 for more than 20% of products

Metric	Score
• Industry specific environmental product declarations (EPD)	2 Points
• Product specific environmental product declarations (EPD)	4 Points
• ISO14001 certification	3 Points
• Reused Product	15 Points
• FSC Certified	10 Points
• Best Practice PVC certification	5 Points

Based on our understanding of the project and recent experience in this space, FCDS expect the project team will deliver sustainable material selections in building envelope and structure, as well as the building finishes.

3. Healthy Design Features

The Healthy credit category is about ensuring the building provides a strong response to occupant health and wellbeing. Features supporting air quality, views, access to light and noise contribute to point scoring within this category:

3.1 Ventilation System Attributes

Outside air and natural ventilation systems are to comply with the prescriptive requirements of AS 1668.2 (mechanical ventilation) and AS 1668.4 (natural ventilation) for air quantity, intake location and exhaust separation.

Outside air rates are to be increased by at least 50% over the minimum requirements of the Australian Standards, or are to be controlled by CO_2 detection systems to maintain low concentrations within the breathing zone.

Local exhaust systems are to be provided to isolate occupied spaces from contamination such as kitchens.

3.2 Lighting Systems

Lighting systems are to be flicker free and provide a minimum Colour Rendering Index (CRI) average R1 to R8 > 85, and a CRI R9> 50r, with a maximum of 3 MacAdam Ellipses.

The design will meet best practice illuminance levels for each task within each space type with a maintained Illuminance values must achieve a uniformity of no less than that specified in Table 3.2 of AS/NZS 1680.1:2006

3.3 Glare Control

External shading systems will provide some coverage from direct solar penetration. The design has a strong solar passive basis, with most vision glazing pointing north and translucent roof sheeting limiting glare to internal and warehouse spaces

Lighting systems are to be provided with diffusers or other design features which maintain direct glare from the luminaries below the UGR (Unified Glare Rating) limit within AS 1680.1

3.4 Access to Daylight

All occupants have excellent access to natural lighting through strong passive design (north facing windows with overhangs) and relatively shallow plans.

3.5 Noise Levels

The use of high-quality mechanical plant and good architectural detailing will result in comfortable internal noise levels, generally matching AS 2107.

The design also includes walls and space layouts to limit noise carryover from loud to quiet spaces. Ceilings and finishes are expected to be detailed to limit reverberation within the space.

3.6 Low Toxicity Products

The design team are expected to select finishes and composite wood products with low Volatile Organic Compound (VOC) and low formaldehyde content. This includes joinery, carpets, adhesives and sealants. Wall and ceiling paints will target a level <5 g/L for VOC content.

4. Resilient Design Features

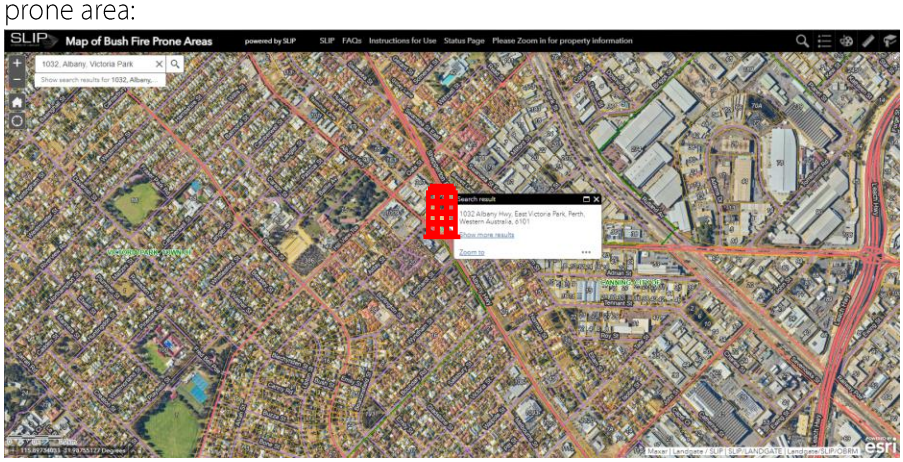
The Resilient category of credits highlight the need for projects to be ready for the imminent impacts of climate change and to provide a level of support to the surrounding community. Shocks to power infrastructure, ongoing weather pattern adjustment and the urban heat island effect are considered within the category.

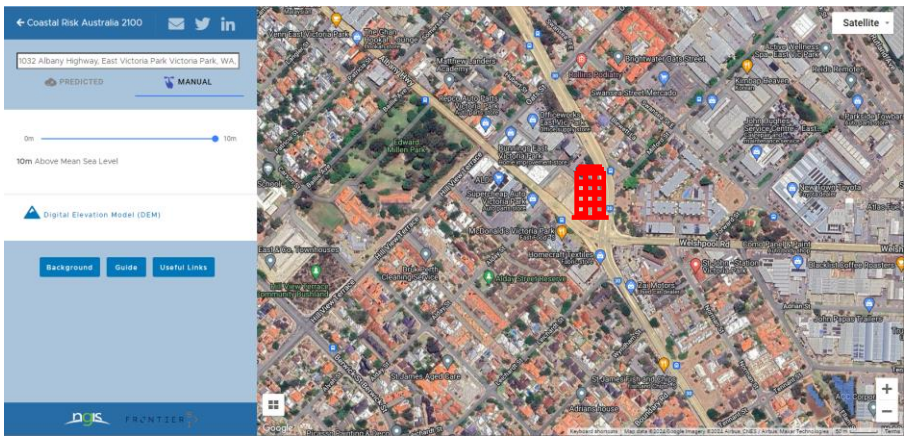
4.1 Climate Change Resilience

FCDS have undertaken a base review of the project and the potential likely impacts of climate change on the site, based on the following likely impacts of climate change in South West WA – RCP 8.5 to 2090:

Variable	Current	Predicted	Expected Change	Possible Range
Annual Average Temperature (°C)	25.8°C	29.3°C	+3.5°C	28.4 – 30°C
Number of days over 35°C	28	63	+35	50-72
Annual Average Rainfall (mm)	851.7mm	698mm	-18%	536 – 809mm
Summer	40.5mm	38.5mm	-5%	27.9 – 55.1mm
Autumn	144.1mm	135.4mm	-6%	98 – 162.8mm
Winter	398.2mm	282.7mm	-29%	223 – 338.5mm
Spring	147.5mm	94.4mm	-36%	60.5 – 126.8mm
Annual Average Potential Evaporation	1800mm	1836mm	+2%	1818-1872mm
Annual Relative Humidity	55%	54.4%	-0.6%	53.7 – 55%

The site not considered susceptible to flooding under climate change scenarios, and is not in a bushfire prone area:





4.2 Climate Change Risk Management

Following the base risk review above, the design team have included the following features to mitigate risks and provide an improved outcome for occupants and the local community:

Climate Change Impact	Risk	Proposed Response
Increased temperatures lead to increased bushfire risk and intensity.	High due to current classification of site.	Consider provision of air filtration on air conditioning systems.
Rising sea levels and increased flood risk.	Very low.	Avoid construction below ground level. Ensure structure can adapt to changing water levels.
Reduced rainfall	Increasing requirement for irrigation, increased cost of scheme water.	Utilise smart irrigation, including moisture detection and prioritise drought tolerant planting. Utilise native grass for turfed areas.
Increased temperatures lead to increased reliance on air conditioning.	Building is unable to provide comfortable environment for extended periods.	Provide high efficiency air conditioning systems with automatic controls. Upgrade building envelope in excess of BCA minimum requirements.
Increased temperatures lead to increased power demand.	Operating cost increases as electrical prices increase. Power security becomes questionable.	Good control systems and energy efficient design. Installation of solar photovoltaics for renewable generation.

4.3 Operations Resilience

The internal storage for Woolworths is likely to require careful consideration for operation under loss of power. Design solutions will be reviewed to provide an optimal response, potentially including:

- Strong solar passive design
- Building envelope upgrade above minimum compliance
- Onsite renewable generation
- Potential for island mode operation

4.4 Grid Resilience:

The building will be been designed to reduce its electricity peak demand by 10% of the annual peak electricity demand for at least a one-hour period through a variety of features, some of which may include:

- Improved building envelope
- Outside air management and control
- High efficiency systems
- On site renewable generation.
- Potential for island mode operation

The building metering system will permit performance analysis and load management.

5. Positive Design Features

The Positive category refers to design elements which contribute positively to the environment. Buildings must actively reduce their harm, but also act as a restorative force for good in order to achieve credits. The category assesses energy use, energy source, water consumption and refrigerant emissions, aligning with the National Standard for carbon neutral assessment and certification (Climate Active).

5.1 Upfront Carbon Emissions

The design team will target material selections which reduce the embodied energy by a minimum of 10%. Features to support this include the reuse of structures and civil infrastructure on site, as well as the use of natural finishes, waste diversion and high durability as part of the proposed solution. Green Star certification will include offsetting carbon associated with demolition on site.

Material	PER embodied energy MJ/kg
Air dried sawn hardwood	0.5
Stabilised earth	0.7
Concrete blocks	1.5
In situ concrete	1.9
Precast tilt-up concrete	1.9
Kiln dried sawn hardwood	2
Precast steam-cured concrete	2
Clay bricks	2.5
Gypsum plaster	2.9
Kiln dried sawn softwood	3.4
Autoclaved aerated concrete (AAC)	3.6
Plasterboard	4.4
Fibre cement	4.8
Cement	5.6
Local dimensioned granite	5.9
Particleboard	8
Plywood	10.4
Glue-laminated timber	11
Laminated veneer lumber	11
MDF (medium density fibreboard)	11.3
Glass	12.7
Imported Dimensioned Granite	13.9
Hardboard	24.2
Galvanised steel	38
Acrylic paint	61.5
PVC (polyvinyl chloride)	80
Plastics — general	90
Copper	100
Synthetic rubber	110
Aluminium	170

5.2 Energy Use

The design team will ensure low energy use by improving performance against BCA Section J minimum, across building envelope, air conditioning and ventilation systems and lighting.

5.3 Energy Source

Ideally, the design will omit all fossil fuels from site or – at least – have a clear plan for their removal as soon as practical.

5.4 Water Use

The development is targeting a minimum 15% reduction in water consumption against benchmarks, including the provision of low flow fixtures are being provided for sanitary uses in accordance with the table below:

Fixture Type	Minimum WELS rating	Maximum Flow Allowable
Taps	5 stars	4.5-6 L/min
Urinals	5 stars	1.0 L / Flush + Smart demand flush device
Toilets	4 stars	<3.5 L average flush <4.7L full flush, <3.2 half flush
Showers	3 stars	6.0 – 7.5 L/min
Clothes Washing Machines	4 stars	
Dishwashers	5 stars	

5.5 Net Zero Energy and Emissions Reduction

The design team are confident that the proposed energy efficient design features and onsite renewable generation will represent an annual energy consumption reduction of at least 30% against BCA minimum requirements.

5.6 Overall Footprint Reduction

The design team are confident that the proposed design features will result in a net life cycle emissions reduction of at least 30% if assessed by an LCA practitioner.

6. Places Design Features

The places category reflects outcomes that are linked to the location and nature of the development. Design features which reduce the impacts of transport – on the environment and occupant health – are rewarded with credits. In addition, proximity of the development to local amenity and public transport which can promote walking and reduce reliance on vehicles is also recognised.

Within the site, the category considers the provision of communal spaces and their potential beneficial impacts on the occupants. Externally, project teams are encouraged to engage with, consult and justify their design to the local community as well as their shareholders.

6.1 Active Transport

The Woolworths tenancy includes staff change and locker facilities. Public facilities and bike parking are under review.

6.2 Sustainable Transport

Green Star Buildings requires project teams to make provision for car sharing as well as EV Parking and future charging.

Considering the location and nature of the development, strong consideration should be given to EV charging facilities, including potential for paid fast charging.

As a minimum FCDS recommend the design team consider comply with BCA 2022 as a minimum for EV provisions:

BCA 2022 Requirements – Part J9D4	
A carpark associated with a Class 2, 3, 5, 6, 7b, 8 or 9 building must be provided with electrical distribution boards dedicated to electric vehicle charging—	
in accordance with Table J9D4 in each storey of the carpark; and	1 DB Per Level
labelled to indicate use for electric vehicle charging equipment.	
Electrical distribution boards dedicated to serving electric vehicle charging in a carpark must—	
be fitted with a charging control system with the ability to manage and schedule charging of electric vehicles in response to total building demand; and	
when associated with a Class 5 to 9 building, have capacity for each circuit to support an electric vehicle charger able to deliver a minimum of 12 kWh from 9:00 am to 5:00 pm daily; and	
be sized to support the future installation of a 7 kW (32 A) type 2 electric vehicle charger in— 100% of the car parking spaces associated with a Class 2 building; or 10% of car parking spaces associated with a Class 5 or 6 building; or 20% of car parking spaces associated with a Class 3, 7b, 8 or 9 building; and	~12 Bays
contain space of at least 36 mm width of DIN rail per outgoing circuit for individual sub-circuit electricity metering to record electricity use of electric vehicle charging equipment; and	
be labelled to indicate the use of the space required above is for the future installation of metering equipment.	

EV Charging provisions and design approach is currently under review and is not part of the proposed Green Star pathway.

7. People Design Features

The People category of credits provides an increased emphasis on social sustainability outcomes within the Green Star system. Projects are required to consider gender inclusivity and provide staff support around issues such as mental and physical health as part of their impact on the people building the project as well as the people who will use it long term.

The category also rewards projects that deliver strong outcomes for Indigenous or disadvantaged and under-represented social groups.

7.1 Minimum Requirements

The main contractor will be required to provide gender specific bathrooms and PPE on site and provide policies and training on discrimination, racism, bullying, drug and alcohol awareness and mental health. This will include introducing programs and solutions to address at least five current health issues such as suicide prevention, healthy eating and depression.

7.2 Needs Analysis

The contractor will be required to complete a needs analysis of site workers and contractors to inform the programs and policies implemented.

8. Nature Design Features

The Nature category is based on providing design solutions which prioritise and restore the natural environment around prospective developments. Features consider biodiversity, previous site usage, site emissions and waterway protection. Projects are requried to demonstrate best practice performance across the range of local impact areas considered.

8.1 Minimum Requirements

- The site is not an old growth forest, prime agricultural land or within 100m of a nationally significant wetland.
- The external lighting will comply with AS 4282 – Control of the obtrusive effects of Outdoor Lighting
- No external light fitting will have an Upward Light Output Ratio (ULOR) of more than 5%.

8.2 Ecological Value

The current and future ecological value of the site will be retained through the use of primarily native planting, with green spaces across the site.

8.3 Stormwater

The design is to infiltrate a proportion of stormwater into local ground water, aiming to minimum outflow and achieve pollution reduction matching the performance below:

Pollutant	Contaminant Reduction
Total Suspended Solids (TSS)	90%
Gross Pollutants	95%
Total Nitrogen	60%
Total Phosphorus	70%

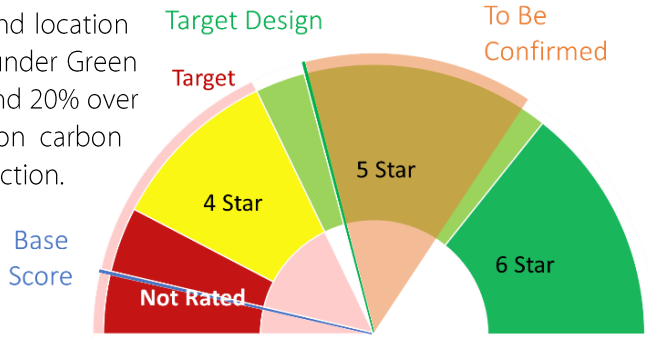
9. Leadership and Other Initiatives

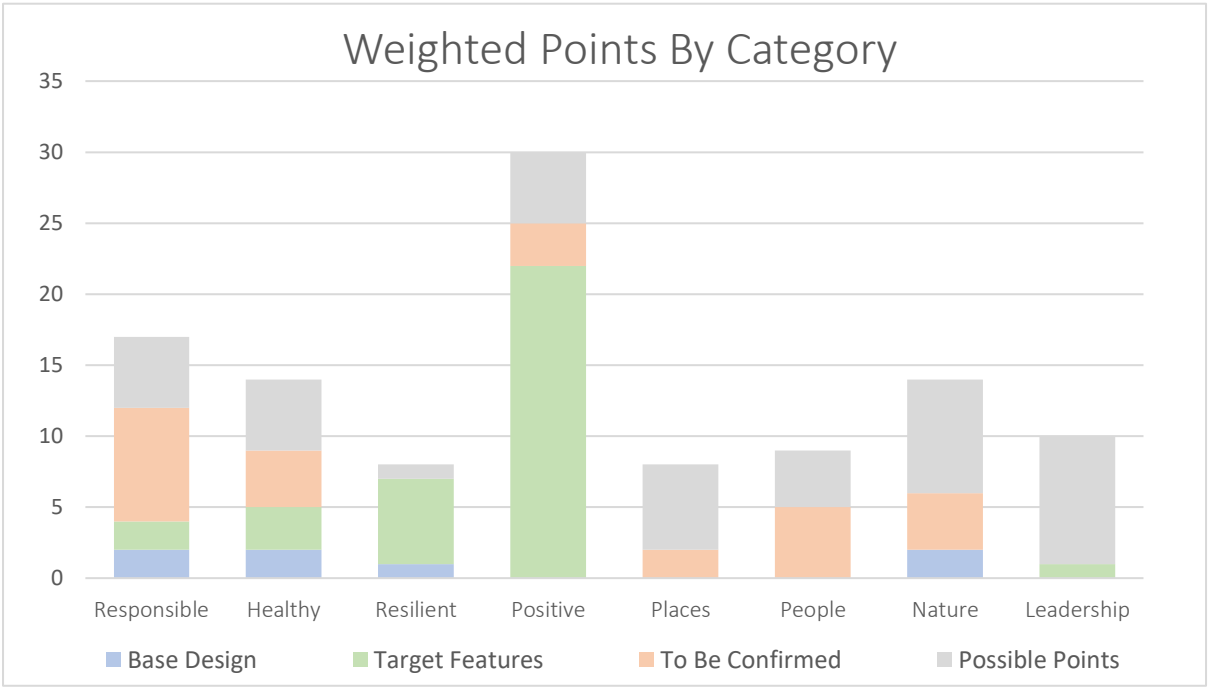
The Green Star Buildings tool includes a category for projects to demonstrate leadership beyond the scope of the current Green Star framework, addressing Challenges which have been developed by the GBCA or which break barriers and inspire others to follow.

By virtue of meeting the minimum compliance requirements of a 5-Star certification, the project will be eligible for one leadership credit for compliance with the carbon neutral pathway.

10. Assessment Review

FCDS assessment of the proposed project brief and location has helped map a strategy to achieve 41 points under Green Star Buildings Tool, this provides a margin of around 20% over the cut off for 5 Stars – with a strong focus on carbon footprint, responsible healthy and resilient construction.





As part of the project team commitment to achieve this benchmark, the project has already commenced registration. As part of this commitment, the design team intend to deliver:

- Zero carbon operating energy and Offset of construction carbon
- Large onsite energy generation, potentially with battery storage
- Building Tuning and Optimisation
- Sustainable materials
- 40% Potable Water Reduction

Full Circle
Design Services

Planning | Design | Delivery | Performance

www.fullcircledesign.com.au

Please Contact: Graham Agar

0412 475 819

Graham.agar@fcds.com.au

Full Circle Design Services

Green Star Credit List

Project Name	Woolworths East Vic Park
Project Number	2022_065
Version	Buildings V1.1
Target Rating	5 Stars 35 Points
Buffer	10%
Client	Woolworths
Local Council	Town of Victoria Park
Building Owner	Woolworths
Building Tenant	Woolworths

ESD Consultant	FCDS	GFA (m2)	5,598.0
Project Manager	Fabcott	Site Area (m2)	7400
Architect	Hames Sharley	Type	Retail
Quantity Surveyor	QS	UFA	5,538.0
ICA	ICA	Car Bays	234
Building Surveyor	Surveyor	Occupants	80

Project Team		
Main Contractor	Builder / Main Contractor	
Discipline	Consultant	Contractor
Mechanical	Mechanical Consultant	Mechanical
Electrical	Electrical Consultant	Electrical
Fire	Fire Consultant	Fire Contractor
Hydraulic	Hydraulic Consultant	Plumber
Civil	Civil Consultant	Civil
Structural	Structural Consultant	Structure
Façade	Façade Consultant	Façade
Lift	Lift Consultant	Lift
Landscape	Landscape Consultant	Landscape
Specialists		
Acoustic Engineer	Acoustics	
Waste Consultant	Waste Design	
Transport Planner	Transport Engineer	
Life Cycle Modeller	LCA Analyst	
Climate Change	CCAR	

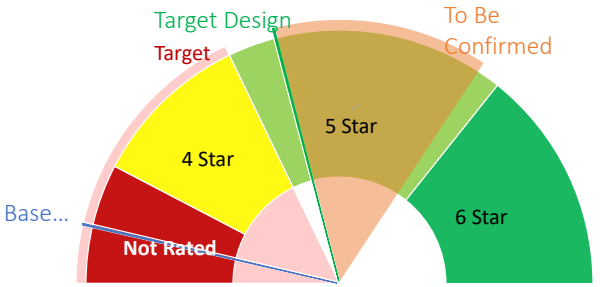
Target Design Features		
Credit	Points	Comment
M41.1 - Net Zero	1	Design is required to meet Net Zero Pathway as part of 5-Star certification.
H14.1 - Amenity and Comfort	2	Communal facilities and Treatment suites will meet this requirement.
P25.2 - Improved Water Performance	3	Low flow tapware and efficient irrigation would meet this requirement
R5.1 - Risk and Opportunity Assessment	1	Requirement to be discussed with main contractor. Considered likely to add value to the project and likely to be completed as a means to address COVID risk.
P21.2 - Net Zero Path	3	LCA Analysis for the site will be undertaken by qualified professional .
P26.1 - Life cycle Impacts	2	To be reviewed with LCA practitioner if appointed
H13.4 - On Site Toxicity Testing	1	Onsite review of VOC and formaldehyde content would verify performance outcome but at a high cost.
R16.2 - Climate Change Risk and Adaptation Assessment	1	FCDS will develop a CCAR for the tenancy.
R17.1 - Comprehensive Risk Assessment	2	FCDS can carry out a base level review to identify these risks.
R20.1 - Active Generation and Storage Systems	3	200kW PV array would meet this requirement and deliver an economically beneficial outcome for the centre. Minor upgrade to meter monitorring system to meet performance requirements of the credit.
P22.3 - Emissions Reduction	3	PV Array and passive design should achieve this outcome.
P22.2 - Net Zero Path	3	Requires building energy model and justification. Project would be expected to comply based on passive design and provision of 200kW PV Array.
P23.2 - 100% Renewable Electricity	3	Cost of offsetting energy consumption considered reasonably small. Budget based on expected energy use and 80% solar utilisation on site, offset for 5 years.
P23.3 - 100% Renewable Energy	3	Offset of fossil fuels from minor uses provides limited value other than the credit points.
R3.9 - Soft Landings Approach	1	Project requires the use of an ICA or the completion of the soft landings approach.
P24.1 - Net Zero Path	2	Selection of GWP < 10 is not commercially feasible for this project. Limits product selection.
P24.2 - Emission Elimination	2	Offset is considered a significant cost.

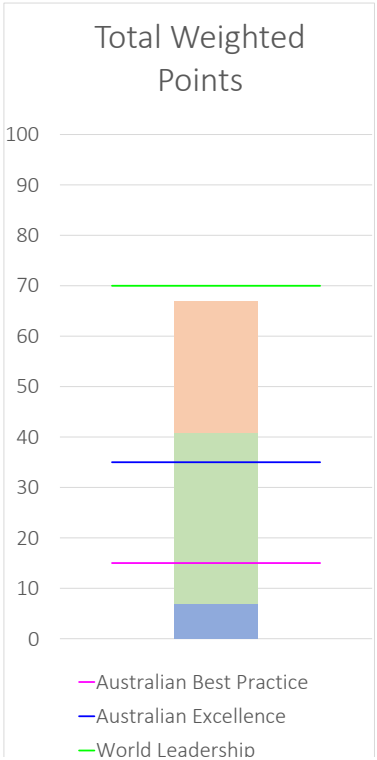
This is FCDS self-assessment of the proposed redevelopment of Woolworths East Vic Park. This scorecard is in no way equivalent to a formal review or certification by the Green Building Council and is intended to demonstrate how the design team intends to meet their target of 'Australian Excellence' in sustainable design.
Credits are classifed as follows:
Target Features refers to sustainable design initiatives selected and expected to be implented by the project team.
To be Confirmed credits are features which are not currently documented but may be implemented by the project team, depending on design development.

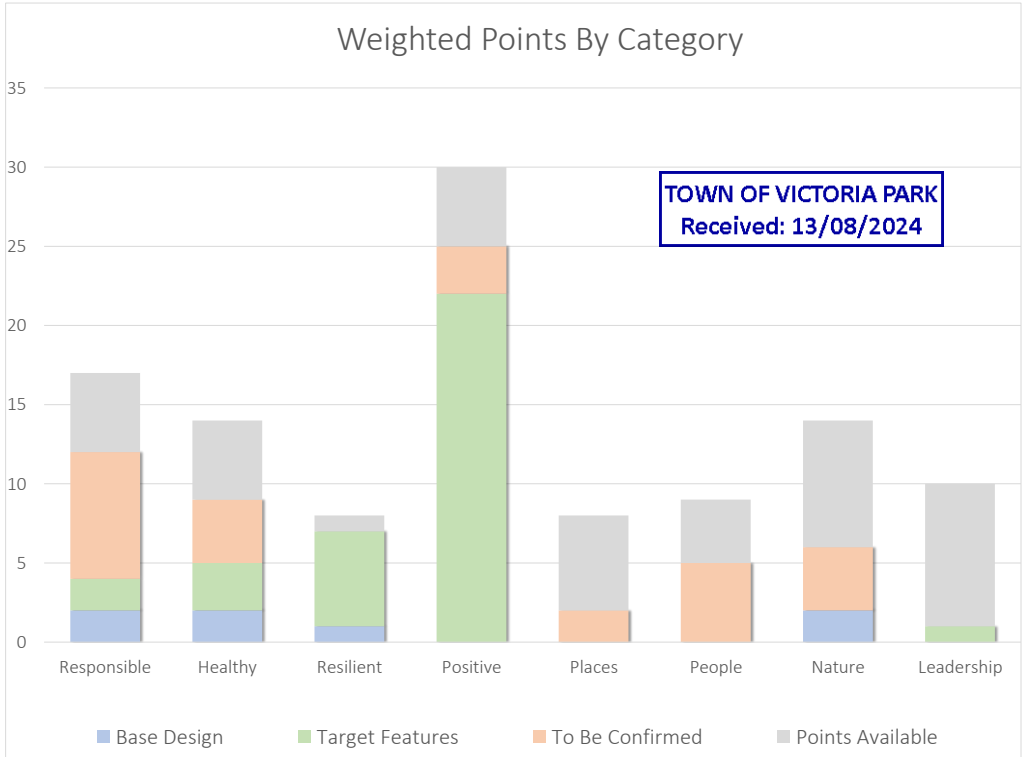
Revision	Date	Reason for Issue
A	14th March 2024	DA Submission

Rating Achieved

Category	Available Points	Base Design	Target Features	To Be Confirmed	Not Achieved
Responsible	17	2	2	8	5
Healthy	14	2	3	4	5
Resilient	8	1	6	0	1
Positive	30	0	22	3	5
Places	8	0	0	2	6
People	9	0	0	5	4
Nature	14	2	0	4	8
Leadership	10	0	1	0	9
	110	7	34	26	43
		7.0	41.0	69.0	







TOWN OF VICTORIA PARK
Received: 13/08/2024

Full Circle
Design Services

World Leadership

TOWN OF VICTORIA PARK
Received: 13/08/2024

	Ref No.	Title	Aim of Credit	Sub-Element	Credit Criteria Summary	Design Team Actions	Key Stakeholder	Points Available	Base Design	Target Features	To Be Confirmed	Unlikely Points	Comments
Responsible	R1.1	Industry Development	The development facilitates industry transformation through partnership, collaboration and data sharin	Green Star Accredited Professional	The building owner or developer appoints a Green Star Accredited Professional, discloses the cost of sustainable building practices to the GBCA, and markets the building's sustainability achievements.	Appoint a GSAP as part of the project team.	FCDS	1	1				FCDS are completing this scope. Sustainable design information will be available through FCDS reporting and development marketing material.
	R1.2			Financial Transparency		The project team must complete, and include in the submission, the Green Star Financial Transparency Disclosure Template. The template assists the project team to submit the cost of sustainable building practices of the project including design, construction and documentation to the GBCA	FCDS						FCDS will complete this scope.
	R1.3			Marketing Excellence		* Complete Green Star Case Study * Detail Sustainability Achievements to Stakeholders * Display Green Star Certification Prominently	FCDS, Hames Sharley, Woolworths & Fabcott						FCDS will need assistance from project marketing teams and project architect.
	R2.1	Responsible Construction	The builder's construction practices promote the reduction of impacts and opportunities for improved environmental outcomes.	Environmental Management System	The builder's construction practices reduce impacts and promote opportunities for improved environmental and social outcomes.	The builder or head contractor (responsible party) must have a formalised systematic and methodical approach to planning, implementing and auditing in place during construction. From the start of construction the builder or head contractor must implement an Environmental Management Plan (EMP) which must be project specific and cover the entire project scope including all construction activities.	Builder / Main Contractor	Minimum Requirement	Met				Contractor will be certified.
	R2.2			Construction and Demolition Waste Diversion		Projects must divert at least 80% of construction and demolition waste from landfill.	Builder / Main Contractor	Minimum Requirement	Met				Contractor will utilise off site management of waste to divert from landfill.
	R2.3			ESD Training		The head contractor must provide the following training to 95% of all contractors and subcontractors present on site for at least three days.	Builder / Main Contractor	Minimum Requirement	Met				Contractor to add ESD training to site induction
	R2.4			Construction and Demolition Waste Diversion - Exceptional		Projects must divert at least 90% of construction and demolition waste from landfill.	Builder / Main Contractor	1	1				Considered standard practice when specified.
	R3.1	Verification and Handover	The building has been optimised and handed over to deliver a high level of performance in operation.	Environmental performance targets	The building has been commissioned and will be tuned. The building was set up for optimum ongoing management due to its appropriate metering and monitoring systems. The project team create and deliver operations and maintenance information to the facilities management team at the time of handover. Information is available to building users on how to best use the building	Set environmental performance targets prior to construction and document them within an OPR (Owners Project Requirements)	FCDS	Minimum Requirement	Met				FCDS will generate OPR as part of ESD consultant Scope.
	R3.2			Services and maintainability review		Complete a services and maintainability review prior to construction.	ICA	Minimum Requirement		Target			Contractor will be required to appoint ICA and follow maintenance review outcomes.
	R3.3			Building Commissioning		Commission the building in accordance with recognised best practice international standards, including a building envelope test. A specific building envelope pressure test plan and schematic are to be developed.	ICA & Mechanical Consultant	Minimum Requirement		Target			Buildign envelope pressure test to be undertaken.
	R3.4			Building Systems Tuning		Engage a buoilding tuning service provider and tune the building for at least 12 months.	Woolworths, FCDS & Fabcott	Minimum Requirement	Met				Building tuning to be complete within FCDS scope of works.
	R3.5			Metering and Monitoring		Provide accesible energy and water metering for all common uses, major uses, and major sources, connected to a monitoring system capable of capturing and processing the data produced by the meter	FCDS, Mechanical Consultant, Hydraulic Consultant & Electrical Consultant	Minimum Requirement	Met				Electrical design includes meters. Meter monitoring system to be added.
	R3.6			Operation and Maintenance Information		Provide operations and maintenance information for all nominated building systems to the building owner (or designated representative).	FCDS, Mechanical Consultant, Hydraulic Consultant & Electrical Consultant	Minimum Requirement	Met				O+M Documentation is not problematic.
	R3.7			Building Log Book		Develop a building log book to present to the building owner (or designated representative) before practical completion of the project	FCDS, Mechanical Consultant, Hydraulic Consultant & Electrical Consultant	Minimum Requirement	Met				FCDS will generate the log book with assistance from project team and contractors.
	R3.8			Building User Information		All building user information must be available to the building owner and facilities management team at the time of practical completion.	Builder / Main Contractor, FCDS, Mechanical Consultant, Hydraulic Consultant & Electrical Consultant	Minimum Requirement	Met				O+M Documentation is not problematic.
	R3.9			Soft Landings Approach	An independent level of verification is provided to the commissioning and tuning activities through the involvement of an independent commissioning agent, or through a soft landings approach that involves the future facilities management team. For large projects (>$20M) both must occur.	Deliver Soft Landings Approach for the project, including involving the FM team and/or Owners Representative across commissioning and handover, development of the Operations and Maintenance Manuals, Sign off on Operations and Maintenance Manuals and be trained before handover.	Woolworths, ICA & Fabcott	1		1			Project requires the use of an ICA or the completion of the soft landings approach.
	R3.10			Independent Commissioning Agent		Appoint an independent commissioning agent (ICA) to act an advocate for and reports directly to the project owner.	Woolworths, ICA & Fabcott						

	Ref No.	Title	Aim of Credit	Sub-Element	Credit Criteria Summary	Design Team Actions	Key Stakeholder	Points Available	Base Design	Target Features	To Be Confirmed	Unlikely Points	Comments
Responsible	R4.1	Operational Waste	Operational waste can be separated and recovered in a safe and easy manner.	Separation of Waste Streams	The project team must demonstrate the building is designed to allow effective management of operational waste by: • Separating waste streams; • Providing a dedicated and adequately sized waste storage area; and • Ensuring easy and safe access to waste storage areas for both occupants and waste collection contractors.	The building must provide labelled and accessible bins or storage containers to building occupants to enable them to separate their waste. At least four waste streams are to be collected, each at >1% of annual operational waste, with any waste stream over 5% (other than food) of the annual volume provided with dedicated collection points.	Woolworths, Waste Design & Hames Sharley	Minimum Requirement		Target			Waste stream planning will require additional storage to cater for tenancies outside of Woolworths
	R4.2			Dedicated Waste Storage		A dedicated area, or areas, for the storage and collection of the applicable waste streams must be provided. The storage area must be sized to accommodate all bins or containers, for all applicable waste streams, for at least one collection cycle.	Waste Design & Hames Sharley	Minimum Requirement		Target			Woolworths waste store will be within Loading Dock, additional waste store for Child Care and Specialty Stores
	R4.3			Access to Waste Storage Area		The storage area(s) must have easy and safe access by collection vehicles and cleaning staff	Woolworths, Waste Design & Hames Sharley	Minimum Requirement		Target			Tenancies other than Woolworths need access to waste stores.
	R4.4			Qualified Waste Auditor		A waste specialist and/or contractor must sign-off on the designs to confirm they are adequately sized and located for the safe and convenient storage and collection of the waste streams identified	Woolworths, Waste Design	Minimum Requirement	Met				Waste management plans will be developed for the development.
	R5.1	Responsible Procurement	The procurement process for all products, materials, and services for the building's design and construction follows best practice environmental and social principles.	Risk and Opportunity Assessment	The building's design and construction procurement process follows ISO 20400 Sustainable Procurement - Guidance and at least one identified supply chain risk and opportunity is addressed.	Undertake a risk and opportunities assessment of its supply chain to identify environmental and social risks and opportunities.	Builder / Main Contractor, FCDS & Hames Sharley	1		1			Requirement to be discussed with main contractor. Considered likely to add value to the project and likely to be completed as a means to address COVID risk.
	R5.2			Responsible Procurement Plan		Develop and implement a plan to mitigate and manage identified risks and drive implementation of identified opportunities.	Builder / Main Contractor, FCDS & Hames Sharley						
	R6.1	Responsible Structure	The building's structure is comprised of responsibly manufactured products.	Responsible Structure	80% of all structural components (by cost) meet a Responsible Products Value score of at least 10	• Industry specific environmental product declarations (EPD) - 2 Points • Product specific environmental product declarations (EPD) - 4 Points • ISO14001 certification - 3 Points • Reused Product - 15 Points • FSC Certified - 10 Points • Best Practice PVC Certified - 5 Points	Structural Consultant & Hames Sharley	3			3		
	R6.2			Responsible Structure - Exceptional	In addition, one of the following is met: • 10% of all products in the structure (by cost) meet a Responsible Products Value score of at least 15; OR • 30% of all products in the structure (by cost) have an average Responsible Products Value score of at least 12.		Structural Consultant & Hames Sharley	2					No reused building form. Consideration to be given to low impact structure.
	R7.1	Responsible Envelope	The building's envelope is comprised of responsibly manufactured products.	Responsible Envelope	60% of all building envelope components (by cost) meet a Responsible Products Value score of at least 10.	• Industry specific environmental product declarations (EPD) - 2 Points • Product specific environmental product declarations (EPD) - 4 Points • ISO14001 certification - 3 Points • Reused Product - 15 Points • FSC Certified - 10 Points • Best Practice PVC Certified - 5 Points	Structural Consultant, Façade Consultant & Hames Sharley	2			2		
	R7.2			Responsible Envelope - Exceptional	In addition, one of the following is met: • 10% of all products in building envelope (by cost) meet a Responsible Products Value score of at least 15. OR • 25% of all products in the building envelope (by cost) have an average Responsible Products Value score of at least 12.		Structural Consultant, Façade Consultant & Hames Sharley	2					Building envelope will consider the use of carbon neutral briks and the like.
	R8.1	Responsible Systems	The building's mechanical, hydraulic, transportation and electrical systems are comprised of responsibly manufactured products.	Responsible Systems	20% of all active building systems (by cost) meet a Responsible Products Value score of at least 6.	• Industry specific environmental product declarations (EPD) - 2 Points • Product specific environmental product declarations (EPD) - 4 Points • ISO14001 certification - 3 Points • Reused Product - 15 Points • FSC Certified - 10 Points • Best Practice PVC Certified - 5 Points	Mechanical Consultant, Electrical Consultant, Fire Consultant, Hydraulic Consultant, Civil Consultant & Lift Consultant	1			1		Air conditioning, lighting and plumbing systems are considered likely to meet product specific EPD, ISO 14001 and Best Practice PVC requirements.
	R8.2			Responsible Systems Exceptional	In addition, one of the following is met: • 5% of all active building systems (by cost) meet a Responsible Products Value score of at least 11. OR • 15% of all active building systems (by cost) have an average Responsible Products Value score of at least 8.		Mechanical Consultant, Electrical Consultant, Fire Consultant, Hydraulic Consultant, Civil Consultant & Lift Consultant	1					Additional credit not considered likely.
	R9.1	Responsible Finishes	The building's internal finishes (flooring, plasterboard, paints, ceilings, partitions, doors, internal windows etc.) are comprised of responsibly manufactured products and materials.	Responsible Finishes	60% of all internal building finishes (by area) meet a Responsible Products Value score of at least 7.	• Industry specific environmental product declarations (EPD) - 2 Points • Product specific environmental product declarations (EPD) - 4 Points • ISO14001 certification - 3 Points • Reused Product - 15 Points • FSC Certified - 10 Points • Best Practice PVC Certified - 5 Points	Hames Sharley & FCDS	1			1		Design will target responsible finsihes within occupied areas. Applicability pending on extent of fitout.
	R9.2			Responsible Finishes - Exceptional	In addition, one of the following is met: • 10% of all internal building finishes (by area) meet a Responsible Products Value score of at least 12. OR • 20% of all internal building finishes (by area) have an average Responsible Products Value score of at least 9.		Hames Sharley & FCDS	1			1		Credit to be targeted, awiting finishes selection.

	Ref No.	Title	Aim of Credit	Sub-Element	Credit Criteria Summary	Design Team Actions	Key Stakeholder	Points Available	Base Design	Target Features	To Be Confirmed	Unlikely Points	Comments
Healthy	H10.0	Clean Air	Pollutants entering the building are minimised, and a high level of fresh air is provided to ensure levels of indoor pollutants are maintained at acceptable levels.	Ventilation System Attributes	Pollutants entering the building are minimised, and a high level of fresh air is provided to ensure levels of indoor pollutants are maintained at acceptable levels. Compliance is to be demonstrated for > of regularly occupied area	Ventilation systems are to comply with AS 1668.2 2012 and ASHRAE Standard 62.1:2013 for minimum separation between openings, outdoor intakes and sources of pollution. All new and existing ductwork is to be cleaned prior to occupation.	Mechanical Consultant	Minimum Requirement	Met				Basic requirement for mechanical design. No issues with this requirement.
	H10.1			Provision of Outdoor Air		Provide outdoor air to each space in the nominated area at a rate greater than the minimum required by AS 1668.2:2012 by 50% **or** Monitor and control CO2 levels <800ppm during design occupancy **or** Residential Buildings demonstrate best practice approach to outside air and prevention of mould.	Mechanical Consultant						Mechanical design will utilise CO2 detection and control.
	H10.2			Exhaust or Elimination of pollutants		Select and utilise low emissions equipment; printers, stoves, vehicles etc. **and/or** Exhaust sources of pollutants directly to outside and physically separate them from occupants.	Woolworths, Fabcott, Hames Sharley & Mechanical Consultant						Requires provision of a tenant exhaust system for each occupied space.
	H10.3			Ventilation System Attributes	The building's ventilation systems allow for easy maintenance, and high levels of outdoor air are provided.	Provide adequate access to both sides of all moisture and debris-catching components for maintenance within the air distribution system.	Mechanical Consultant	2			2		Ducted fan coil units with MERV filtration and shallow coils can achieve this outcome. Compliance pending unit selection.
	H10.3			Provision of Outdoor Air		Provide outdoor air to each space in the nominated area at a rate greater than the minimum required by AS 1668.2:2012 by 100% or Monitor and control CO2 levels <700ppm during design occupancy or Provide 0.04m2 ventilation per apartment + 0.015m2 per habitable room.	Mechanical Consultant		Met				Outside air rates to be compliant.
	H11.1	Light Quality	The building provides good daylight and its lighting is of high quality.	Minimum lighting comfort	The building provides adequate levels of daylight and good lighting levels suitable for the typical tasks in each space.	• All lighting must be flicker-free; • Light sources must have a minimum Colour Rendering Index (CRI) average R1 to R8 > 85, and a CRI R9> 50r; • Light sources must meet best practice illuminance levels for each task within each space type • The maintained Illuminance values must achieve a uniformity of no less than that specified in Table 3.2 of AS/NZS 1680.1:2006 • All light sources must have a minimum of 3 MacAdam Ellipses.	Electrical Consultant	Minimum Requirement	Met				Limited issues for most spaces.
	H11.2			Glare		Glare from light sources must be limited within the nominated area. Bare light sources must be fitted with baffles, louvers, translucent diffusers, ceiling design, or other means **or** Unified Glare Rating (UGR), as estimated from the manufacturers data sheets for a standard room, must not exceed the maximum values listed in Table 8.2 of AS/NZS 1680.1:2006. Where the nature of the tasks, layout and surface reflectance in a space are not known (e.g. shell and core) the lighting system must comply with the Luminaire selection system as detailed in Clause 8.3.4 of AS/NZS 1680.1:2006.	Hames Sharley & FCDS						Opal diffusers for LEDs should achieve these requirements.
	H11.3			Daylight		• Maximise the number of occupants that are in or near daylit areas during their daily activities for all building types; • Ensure regularly occupied spaces are in reasonable proximity to glazed façades, windows or skylights; • Control or mitigates glare in the daylit spaces; • Maximise daylight to spaces that prioritise learning, healing, and living: • Provide building occupants with unrestricted access to daylit indoor common spaces.	Hames Sharley & FCDS						Design provides good daylight to most spaces. Consideration of skylights to the Woolworths box to improve energy and space quality.
	H11.4			Daylight - Credit	The building provides either or both best practice Artificial Lighting and best practice access to daylight.	For residential buildings, 60% of the combined living and bedroom area of each apartment unit must comply with the daylight requirements. Kitchens are not included in the calculations. The daylight levels must also be present in at least 20% of the area of each bedroom and living area. Residential buildings and hospitality buildings must provide room blackout blinds or curtains to all bedrooms. If blinds or curtains are part of a packaged décor, all blinds offered for the bedroom décor must be blackout blinds.	Hames Sharley & FCDS	2	2				Current design is expected to meet these requirements.
	H11.5			Artificial Lighting		• The walls within the field of view of occupants in regularly occupied spaces must have an average surface reflectance value of 0.70 and an average surface illuminance of at least 50% of the horizontal illuminance levels required for task. • Vertical illuminance in workspaces: ensure that 50% of the horizontal task illuminance reaches the average eye height for 90% of primary spaces using vertical illuminance calculation grid.	Electrical Consultant	2					To be reviewed with designer and lighting modeller in due course. Not considered likely.
	H12.1	Acoustic Comfort	The building provides acoustic comfort for building occupants.	Internal Noise Levels	An Acoustic Comfort Strategy is prepared to describe how the building and acoustic design aims to deliver acoustic comfort to the building occupants.	Internal ambient noise levels in the nominated areas must be no less than 5 dB below the lower range value and no greater than the upper range value relevant to the activity type in each space as recommended in AS/NZS 2107.	Acoustics, Mechanical Consultant & Hames Sharley	Minimum Requirement	Met				Acoustic consultant to be appointed to review and optimise design as well as measuring performance at completion.
	H12.2			Acoustic separation	The building is designed and tested to achieve minimum acoustic performance requirements aligned with the Acoustic Comfort Strategy.	Address noise transmission between enclosed spaces within the nominated area either by sound privacy or insulation.	Acoustics & Hames Sharley	2			0.66		To be reviewed with acoustic desiger indue course.
	H12.3			Impact Noise Transfer		Floors above nomiated areas or adjacent spaces belonging to different tenancies which share a floor must not exceed dB $L_{nT,w}$: – 55 for floors above residential accommodation spaces – 60 for all other spaces	Acoustics & Hames Sharley				0.67		To be reviewed with acoustic desiger indue course.
	H12.4			Reverberation		The reverberation time in the nominated area must be not exceed the maximum for the intended use recommended in AS/NZS2107. This does not apply for residential spaces.	Acoustics & Hames Sharley				0.67		To be reviewed with acoustic desiger indue course.
	H13.1	Exposure to Toxins	The building's occupants are not directly exposed to toxins in the space they work, play, or live in.	Paints, adhesive, sealants and carpets	The building's paints adhesives, sealants, carpets, and engineered wood products are low or non-toxic. Occupants are not exposed to banned or highly toxic materials in the building.	Use low toxicity paints, adhesives, sealants and floor coverings.	Hames Sharley, Mechanical Consultant, Electrical Consultant, Fire Consultant, Hydraulic Consultant, Civil Consultant & Lift	Minimum Requirement	Met				Commit to low toxicity paints, adhesives, sealants and floor coverings.
	H13.2			Engineered wood products		Use low emission formaldehyde composite or engineered wood products	Hames Sharley		Met				Commit to use of E0 joinery and composite wood products.
	H13.3			No lead, asbestos and PCBs		Undertake comprehensive site survey for Lead, PCB's and asbestos. Take appropriate remediation action where relevant.	Woolworths		Met				No requirement, no existing buildings are being reused.
	H13.4			On Site Testing	On-site tests verify the building has low Volatile Organic Compounds (VOC) and formaldehyde levels.	Undertake performance testing on site at completion to confirm building meets target toxicity levels - TVOC < 0.27 ppm and Formaldehyde < 0.02ppm	FCDS & Woolworths	2		1			Onsite review of VOC and formaldehyde content would verify performance outcome but at a high cost.

	Ref No.	Title	Aim of Credit	Sub-Element	Credit Criteria Summary	Design Team Actions	Key Stakeholder	Points Available	Base Design	Target Features	To Be Confirmed	Unlikely Points	Comments
Healthy	H14.1	Amenity and Comfort	The building provides internal amenities that improve occupant experience of using the building.	Amenity and Comfort	The building has dedicated amenity rooms to act as parent room, a relaxation room, or an exercise room	Provide m2 dedicated room(s) to promite either inclusivity, mindfulness or exercise for rgular occupants. Room must be classified as either parent room, relaxation / meditation / prayer room or exercise room. Room must be at least 10m2 and 1m2 per 10 regular occupants or staff. Room must meet light quality, acoustic comfort and Design for Inclusion (where targeted) credits.	Hames Sharley	2		2			Communal facilities and Treatment suites will meet this requirement.
	H15.1	Connection to Nature	The building fosters connection to nature for building occupants.	Views	The building provides views, includes indoor plants, and incorporates nature-inspired design.	>60% of primary occupied spaces are within 8m of a compliant view.	Hames Sharley	1					Design may not be compliant for supermarket box.
	H15.2			Plants		Indoor plants must be provided in the nominated spaces. One or more plants in pots with a soil surface area totalling at least 500cm² for every 15m² of the primary spaces is required. Plants are to be supported by an ongoing2 year maintenance plan.	Hames Sharley & Woolworths						Internal planting not part of design intent.
	H15.3			Nature-InspiredDesign		Five additional nature-inspired design interventions must be provided in alignment with the following principles: • Elements that provide differing natural sensory experiences; • Elements that reflect natural and cultural patterns and forms; • Using natural materials; and • Natural motifs and art.	Hames Sharley						Potential for design integration to be reviewed.
	H15.4			Interaction	5% of the building's floor area/ or site area (whichever is greater) is allocated to nature in which occupants can directly engage with	Occupants can interact with nature either inside the building, or externally through a green wall or roof garden. At least 5% of the building's floor area/ or site area (whichever is greater) must be allocated to this opportunity. The allocated area must be accessible and have the necessary infrastructure to allow the activity to occur (for example water source/taps for irrigation, storage area for tools and equipment).	Woolworths & Hames Sharley	1					5% Of Usable area is ~300m2, planting within child care area may be sufficient.
Resilient	R16.1	Climate Change Resilience	The building has been built to respond to the direct and indirect impacts of climate change.	Climate Change Resilience	The project team completes the climate change pre-screening checklist. The project team communicates the building's exposure to climate change risks to the applicant.	Complete climate change risk review checklist and issue to the building applicant.	CCAR	Minimum Requirement	Met				FCDS to complete detailed climate risk review.
	R16.2			Climate Change Risk and Adaptation Assessment	The project team develops a project-specific climate change risk and adaptation assessment for the building. Extreme and high risks are addressed.	Complete a detailed risk assessment and Mitigation strategy using an appropriately qualified professional . Ensure at least two and all Extreme and High risks are addressed.	Whole Deign Team	1		1			FCDS will develop a CCAR for the tenancy.
	R17.1	Operations Resilience	The building can respond to acute shocks and chronic stresses that can affect its operations over time.	Comprehensive Risk Assessmen	The project team undertakes a comprehensive review of the acute shocks and chronic stresses likely to influence future building operations.	Appoint a suitably qualified professional to undertake a detailed review of operations resolience including key shocks and stresses, such as infrastructure failuer, health pandemic, water security, increasing energy costs and rising cyber dependency	CCAR	2		2			FCDS can carry out a base level review to identify these risks.
	R17.2			Managing Risks	The building's design and future operational plan addresses any high or extreme system-level interdependency risks.	Provide design solutions to address at least two and all high and extreme risks.	CCAR supported by Whole Deign Team						Woolworths include design features to address climate change risk.
	R17.3			Addressing Power Loss	The building's design maintains a level of survivability and design purpose in a blackout.	Complete building performance assessment in black out conditions and provide appropriate design solutions to meet building purpose and provide a measure of survivability for occupants.	CCAR supported by Whole Deign Team						Blackout review not likely to identify any significant issues. Woolworths includes generation and UPS.
	R18.1	Community Resilience	The building contributes to improving the resilience of the community.	Community Resilience	The project team undertakes a needs analysis of the community, identifies shocks and stresses that impact the building's ability to service the community, and develops responses to manage these.	Appoint a qualified professional to develop a community resilience plan that identifies local community groups which rely on or interact (directly or indirectly) with the building. The plan must identify and address at least 2 and all high and extreme risks identified. Undertake at least one community capacity building activity prior to or during construction.	CCAR supported by Whole Deign Team	1					Community resilience is beyond the scope of this project.
	R19.1	Heat Resilience	The building reduces its impact on heat island effect.	Heat Island	At least 75% of the whole site area comprises of one or a combination of strategies that reduce the heat island effect.	Ensure >75% of site area is covered by materials which reduce heat island effect, including: * Vegetation and Green Roofs * Light Roofs (3 Year SRI>64 (flat roof) >34 (Pitched Roof) * Shaded or Light Hardscaping (3 Year SRI > 34) * Water bodies and/or water courses * Permanently Shaded site area	Hames Sharley & Landscape Consultant	1	1				Design is compliant with the provision of a light roof and paving.
	R20.1	Grid Resilience	The building contributes to the functioning of the grid as it transitions to a higher level of renewable energy capacity.	Active Generation and Storage Systems	The building meets one or several of the following: • Provides active generation and storage systems; • Has the infrastructure to deliver an appropriate demand response strategy; or • Has reduced its electricity consumption through passive design.	Design the building to have the capacity to reduce its electricity peak demand by 10% of the building's annual peak electricity demand for at least a one-hour period. The peak demand reduction can occur through thermal storage solutions (such as chilled water storage systems), by electricity storage solutions (batteries), or through renewable on-site generation.	Mechanical Consultant & Electrical Consultant	3		3			200kW PV array would meet this requirement and deliver an economically beneficial outcome for the centre. Minor upgrade to meter monitoring system to meet performance requirements of the credit.
	R20.2			Demand Response		Develop a strategy and systems to automatically shed 10% of a buildings peak electrical demand without affecting occupant amenity for at least 4 hours. Requires the BMS to have predictive capabilities and a demand management dashboard and automatic load shedding, including acceptance of external control signals. Strategy is to be commissioned and demonstrated as functional.	Mechanical Consultant & Electrical Consultant	Minimum Requirement					Building is not expected to have a BMS. EMS may be able to meet requirements.
	R20.3			Passive Design Solutions		Deliver a naturally ventilated building which exceeds BCA requirements for building envelope performance. Alternatively, discuss options with the GBCA for alternate compliance.	FCDS & Hames Sharley	Minimum Requirement					Building is provided with air conditioning.

	Ref No.	Title	Aim of Credit	Sub-Element	Credit Criteria Summary	Design Team Actions	Key Stakeholder	Points Available	Base Design	Target Features	To Be Confirmed	Unlikely Points	Comments
Positive	P21.1	Upfront Carbon Emissions	The building's upfront carbon emissions from materials and products have been reduced and offset.	Minimum Expectation	Reduce the building's upfront carbon emissions reductions through good design and material selection.	Complete the LCA Caclualtor and demonstrate that the building's upfront carbon emissions are at least 10% less than those of a reference building.	QS, LCA Analyst & Hames Sharley	Minimum Requirement	Met				FCDS to complete LCA analysis for the building and optimise performance.
	P21.2			Net Zero Path		Employ an LCA professional to demonstrate the building's upfront carbon emissions are at least 20% less than those of a reference building - including any demolition works.	LCA Analyst, Woolworths&Hames Sharley	3		3			LCA Analysis for the site will be undertaken by qualified professional .
	P21.3			Emissions Reduction		Employ an LCA professional to demonstrate the building's upfront carbon emissions are at least 20% less than those of a reference building - including any demolition works and all remaining emissions from Modules A1 – A5 are offset.	LCA Analyst, Builder / Main Contractor, Woolworths&Hames Sharley	3					Desiesign team will utilise sustainable construction materials and processes to reduce building footprint.
	P22.1	Energy Use	The building has low energy consumption.	Minimum Expectation	Reduce the building's energy consumption in comparisson to BCA Section J minimum requirements. All systems and elements must exceed BCA minimum performance, irrespective of overall performance.	Complete building modelling and demonstrate that the building's energy use is at least 10% less than a reference building, excluding renewable generation on site. . For residential buildings, no individual apartment can be less than the larger number of: – The minimum NatHERS rating stated in the code, or – 6.5 star NatHERS rating.	FCDS	Minimum Requirement	Met				Section J compliance requirements are briefed. Target 20% improvement in envelope as part of strategy: * Limit glazing to ~30% of wall area * Provide overhang shading to most windows
	P22.2			Net Zero Path		Complete building modelling and demonstrate that the building's energy use is at least 20% less than a reference building, including renewable generation on site. .	FCDS	3		3			Requires building energy model and justification. Project would be expected to comply based on passive design and provision of 200kW PV Array.
	P22.3			Emissions Reduction		Complete building modelling and demonstrate that the building's energy use is at least 30% less than a reference building.	FCDS	3		3			PV Array and passive design should achieve this outcome.
	P23.1	Energy Source	The building's energy comes from renewables.	Zero Carbon Action Plan	Ensure the building does not require fossil fuels to operate and develops a detailed plan to achieve net carbon neutrality in operation.	Develop a zero carbon action plan and have it endorsed by the building owner. The plan is to address all Scope 1 and 2 emissions, including refrigerants on site and provide design requierments, including additional spatial and infrastructure upgrade required. The plan is to include a cost analysis including potential savings to design as net zero from practical completion.	FCDS, Hydraulic Consultant, Fire Consultant, Mechanical Consultant, Fabcott & Woolworths	Minimum Requirement	Met				* Avoid all fossil fuels on site: - Solar with electric boost hot water - Offset diesel emissions from fire pumps - Reverse cycle heating
	P23.2			100% Renewable Electricity		The building is to ensure all electricity under the control of the building owner or operator must be accounted for and sourced from renewables. Tenant electricity can be excluded. Where this is achieved by off-site renewables, a 5 Year contract must be presented.	FCDS, Hydraulic Consultant, Fire Consultant, Mechanical Consultant, Fabcott & Woolworths	3		3			Cost of offsetting energy consumption considered reasonably small. Budget based on expected energy use and 80% solar utilisation on site, offset for 5 years.
	P23.3			100% Renewable Energy		In addition to the above, where the building includes infrastructure which can use fossil fuels to power building systems, the applicabt must demonstrate how it will not use fossil fuels during the building operation.	FCDS, Hydraulic Consultant, Fire Consultant, Mechanical Consultant, Fabcott & Woolworths	3		3			Offset of fossil fuels from minor uses provides limited value other than the credit points.
	P24.1	Other Carbon Emissions	The building's emissions from refrigerants and remaining carbon sources are eliminated or offset.	Net Zero Path	Ensure the building's emissions from regrigerants and all other categories are eliminated or offset.	Utilise refrigerants with a GWP<10 or offset the GWP. Maintenance access must be provided to access and replace refrigerants.	Mechanical Consultant	2		2			
	P24.2			Emission Elimination		Eliminate all other emissions, including elements above plus; • Life-cycle emissions from modules B and C as calculated in Life Cycle Impacts; • Emissions from construction equipment use, and utilities during construction on site; and • Construction waste emission Alternatively, purchase offsets for 5 years of operational energy use at the current grid emissions coefficient.	Woolworths	2					Selection of GWP < 10 is not commercially feasible for this project. Limits product selection. Offset is considered a significant cost.
	P25.1a	Water Use	The building has low water use.	Water Reduction - Prescriptive	Ensure the building meets minimum water performance requirements through a simple, prescriptive approach.	Provide low flow fixtures and appliances	FCDS	Minimum Requirement	Met				Compliance is a briefed requirement. * Commit to low flow appliances and fixtures * Provide dishwashers and washing machines
	P25.1b			Water Reduction - Performance	Ensure the building meets minimum water performance requirements through a modelled approach.	Demonstrate a 15% performance improvement over minimum compliance using the Green Star Potable Water Calculator	FCDS, Hydraulic Consultant & Hames Sharley		Met				FCDS can undertake performance modelling if requried.
	P25.2			Improved Water Performance	The building uses 45% less potable water compared to a reference building. Multi-unit residential buildings use 40% less potable water compared to a reference building.	Complete water modelling and demonstrate a 40 / 45% performance improvement in water consumption for the proposed development.	FCDS, Hydraulic Consultant & Hames Sharley	3		3			Low flow tapware and efficient irrigation would meet this requirement
	P25.3			Exceptional Water Performance	The building uses 75% less potable water compared to a reference building. Multi-unit residential buildings use 60% less potable water compared to a reference building.	Complete water modelling and demonstrate a 60 / 75% performance improvement in water consumption for the proposed development.	FCDS, Hydraulic Consultant & Hames Sharley	3			3		Credit likely requires grey water or large scale rainwater reuse. Compliance will be reviewed as modelling progresses.
	P26.1	Life Cycle Impacts	The building has lower environmental impacts from resource use over its lifespan than a typical building.	Life cycle Impacts	The project demonstrates a 30% reduction in life cycle impacts when compared to standard practice.	Appoint an LCA practitioner and demonstrate an overall 30% performance improvement against all categories with no more than 10% increase in any category.	LCA Analyst	2		2			To be reviewed with LCA practitioner if appointed

	Ref No.	Title	Aim of Credit	Sub-Element	Credit Criteria Summary	Design Team Actions	Key Stakeholder	Points Available	Base Design	Target Features	To Be Confirmed	Unlikely Points	Comments
Places	P27.1	Movement and Place	The building's design and location encourages occupants and visitors to use active, low carbon, and mass transport options instead of private vehicles.	Showers	The building includes showers and changing facilities for building occupants that are accessible, inclusive and located in a safe and protected space.	Provide showers at a rate of 1 per 50 occupants (1 per 200 occupants over 200)	Hames Sharley	Minimum Requirement		Target			Woolworths includes showers and change areas. Additional amenities to be provided for specialty stores.
	P27.2			Lockers		One locker must be provided for every eight staff occupants. The lockers must be secure and located in the changing rooms.	Hames Sharley	Minimum Requirement		Target			Additional facilities required for non-Woolworths tenancy.
	P27.3			Accessibility and Inclusivity		Upon accessing, pedestrians and cyclists must be protected from the elements and other vehicles. Access must be safe, with consideration given to avoiding steep gradients, surface grip levels and visibility around tight corners. Access to the facilities must be well lit between entryway to bike parking, all amenities and lift lobbies and main access points to the building. All regular building occupants must have easy access to lockers, showers, and building entry. Occupants must be able to find the facilities thanks to clear signage throughout the building and access points.	Hames Sharley	Minimum Requirement		Target			Design requires the addition of pedestrian infrastructure and bike parking to meet these requirements.
	P27.4			Cyclist Facilities	The building's access must prioritise walking and cycling options. This means the building's access must be well lit, weather protected, and separated from vehicles. The building must also include access to cyclist facilities that are separated from the primary vehicle entrance to ensure safety.	Provide good access for cyclists and pedestrians: * Well let * Weather Protected * Separated from Vehicles * Signposted * Secure * Access connected to relevant cyclist storage	Woolworths & Hames Sharley	3					Additional bike parking is required for tenants and staff.
	P27.5			Sustainable Transport	Prepare a sustainable transport plan which seeks to change the mode of transport away from single use vehicles.	Include: * Car share parking schemes * Infrastructure for future EV chargins and parking * EV load management system	Woolworths & Electrical Consultant						Provsion of 12 EV chargers would meet this requirement.
	P27.6			Reducing Private Use	The building's design and location prioritises walking, cycling, and transport options that reduce the need for private fossil fuel powered vehicles.	Appoint a professional to provide a transport plan to reduce emissions associated with private vehicle use in comparisson to a reference building. Includes reduced vehicle emissions, increase active transport and reduction in trip kilometers.	Fabcott & Transport Engineer						Preparation of a transport plan will require appointment of professional if attempting formal certification
	P27.7			Walkability		Provide at least 10 amenities across at least five categories within 400m of the project site. Prioritise pedestrians over cars with strict speed limits on site.	FCDS		Met				Project is considered highly walkable being close to the centre of the town and the local train station.
	P28.1	Enjoyable Places	The building provides places that are enjoyable and inclusive.	Publicly Accessible Spaces	The building delivers memorable, beautiful, vibrant communal or public places where people want to gather and participate in the community. The spaces are inclusive, safe, flexible and enjoyable	For non-residential spaces, provide 0.25m^2/ occupant or 2.5% of GFA (whichever is greater). For residential spaces provide 1.75m^2 per dwelling, with a minimum of 250m^2.	Hames Sharley	2			2		Design includes accesible space. Expectation that Woolworhts will organise place activation.
	P28.2			Activation Strategy		Develop and fund an activation strategy to ensure placemaking continues after practical completion. The strategy must adress target activities, funding, timing of activation, facilitators/suppliers, encouragement, future implmentation.	Hames Sharley & Woolworths						
	P29.1	Contribution to Place	The building's design makes a positive contribution to the quality of the public environment.	Urban Context Analysis	The building's design contributes to the liveability of the wider urban context and enhances the public realm.	Provide an urban content report the considers econcomic, physical, social and cultural factors and considers planned changes to the local area. The plan should identify challenges which the building can contribute to solving and demonstrate appropriate design responses.	Hames Sharley	2					Design is being undertaken in close collaboration with local council and key stakeholders.
	P29.2			Independent Design Review		Utilise an independent design review panel - such as the OGA - to undertake design reviews at key points in the design. As a minimum this includes at concept / schematic phase, design development phase and at building permit stage.	Hames Sharley & Woolworths						Council design reviews are considered to meet these requirements.
	P30.1	Culture Heritage and Identity	The building reflects local culture, heritage and identity	Community Led Design Response	The building's design reflects and celebrates local demographics and identities, the history of the place, and any hidden or minority entities. This celebration was arrived through meaningful engagement with community groups early in the design process.	Produce a report detailing the community engagement activities undertaken and resultant design responses through features such as: • Community art or placemaking projects; • Selection of suppliers/designers of artwork or cultural elements; • Building elements that tell stories of the past and heritage; and • Spaces and uses that reflect the local identities.	Hames Sharley & Woolworths	1					Expected to be produced as part of design process sufficient for self-assessment.
	P30.2			Independent Design Review		Utilise an independent design review panel - such as the OGA - to undertake design reviews at key points in the design. As a minimum this includes at concept / schematic phase, design development phase and at building permit stag	Hames Sharley & Woolworths						Council design reviews are considered to meet these requirements.

	Ref No.	Title	Aim of Credit	Sub-Element	Credit Criteria Summary	Design Team Actions	Key Stakeholder	Points Available	Base Design	Target Features	To Be Confirmed	Unlikely Points	Comments
People	P31.1	Inclusive Construction Practices	The builder's construction practices promotes diversity and reduces physical and mental health impacts	Minimum Requirement	During the building's construction, the head contractor provides gender inclusive facilities and protective equipment. The head contractor also installs policies on-site to increase awareness and reduces instances of discrimination, racism and bullying.	The main contractor shall provide gender specific bathrooms and PPE on site and provide policies and training on discrimination, racism, bullying, drug and alcohol awareness and mental health.	Builder / Main Contractor	Minimum Requirement	Met				
	P31.2			Needs Analysis	The head contractor provides high quality staff support on-site to reduce at least five key physical and mental health impacts relevant to construction workers. They must also evaluate the effectiveness of their interventions.	The contractor must complete a needs analysis of site workers and contractors to determine appropriate actions. The policies and programs should be relevant to all construction workers on site for the full duration of construction. A mix of programs is acceptable throughout the duration of construction period.	Builder / Main Contractor	1			1		Contractor to ensure these requirements are met.
	P31.3			Physical and Mental Health Impacts		The head contractor must introduce programs and solutions to address at least five of the following: • Suicide prevention; • Healthy eating and active living; • Reduce harmful alcohol and tobacco consumption and avoid drug use; • Increased social cohesion, community and cultural participation; • Understanding depression; • Preventing violence and injury; • Decreased psychological stress; and • Finding fulfilment at work or mindful meditation.	Builder / Main Contractor						
	P31.4			Evaluating Effectiveness		Provide an evaluation report to the client and sub-contrators including programs and initiatives delivered and whether they delivered the intended outcomes.	Builder / Main Contractor						
	P32.1	Indigenous Inclusion	The building celebrates Aboriginal and Torres Strait Islander people, culture and heritage.	Reconciliation Action Plan	The building's design and construction celebrates Aboriginal and Torres Strait Islander people, culture and heritage by undertaking one or both of the following: • Playing an active role in the organisational Reconciliation Action Plan; and • Incorporating design elements using the Indigenous Design and Planning principles.	Ensure that the project team includes a member of the organisation RAP Working Group. In addition, at least 90% of the project RAP targets are to have been met and all implemented actions related to the RAP are publicly reported on the Project's website. Any design element must be informed by consultation undertaken with the local Aboriginal and Torres Strait Islander community or through nominated representatives.	Hames Sharley & Woolworths	2			2		
	P32.2			Inclusion of Indigenous Design		Demonstrate that the Australian Indigenous Design Charter are incorporated within the design. As a minimum, ensure the following are addressed: • Indigenous Led: Ensure Aboriginal and Torres Strait Islander representation in the creation of the design; • Community Specific: Ensure respect for the diversity of Aboriginal and Torres Strait Islander culture by following community specific cultural protocols; • Impact of Design: Always consider the reception and implications of all designs so that they are respectful to Indigenous culture; and • Shared Knowledge (collaboration, co-creation, procurement): Develop and implement respectful methods for all levels of engagement and sharing of Indigenous knowledge (collaboration, co-creation, procurement).	Hames Sharley & Woolworths						Woolworths Reconciliation Action plan to be reviewed for compliance.
	P33.1	Procurement and Workforce Inclusion	The building's construction facilitates workforce participation and economic development of disadvantaged and under-represented groups.	Social Procurement Strategy	Through the implementation of a social procurement strategy, at least 2% of the building's total contract value has been directed to generate employment opportunities for disadvantaged and under-represented groups.	Create a strategy which includes a description of project objectives, needs and targets, a demographic survey of the local region, description of roles and responsibilities, data collection tools and templates and reporting requirements.	Woolworths	2					Outside of the scope of this project.
	P33.2			Employment Opportunities Strategies		Direct 2% of project's contract value to generate employment opportunities for disadvantaged and under-represented groups either directly, through workforce targets; or indirectly, through social procurement.	Woolworths						
	P33.3			Exceptional Performance	Through the implementation of a social procurement strategy, at least 4% of the building's total contract value has been directed to generate employment opportunities for disadvantaged and under-represented groups.	Direct 4% of project's contract value to generate employment opportunities for disadvantaged and under-represented groups either directly, through workforce targets; or indirectly, through social procurement.	Woolworths	1					
	P34.1	Design for Inclusion	The building is welcoming to a diverse population and is welcoming to their needs.	Accessible Navigation	The building is designed and constructed to be inclusive to a diverse range of people with different needs.	Ensure the building's design and construction must be able to be navigated and enjoyed by stakeholders of diverse ages, genders, and abilities (for example physical, sight, sound, mind, spectrum), including: • Equal access to the building: Provide equitable, appealing, safe, and secure access in a manner that does not segregate or stigmatise users through all principal entrance points and main thoroughfares inside and outside the building; • Diverse wayfinding: Introduce visual, physical, ofactory, and auditory solutions to help individuals navigate the site in a safe and enjoyable manner; and • Inclusive spaces: Introduce internal and external spaces for a diverse range of users, including parents, family restrooms, emergency rooms, quiet rooms and social interaction rooms. These rooms must be accessible to all users.	Hames Sharley	2			2		To be reviewed as design progresses.
	P34.2			Design for Dignity	Engagement with target groups has informed the inclusive design.	Ensure the design aligns with best practice guidelines, such as the Design for Dignity Guidelines: Principals for Beyond Compliance Accessibility in Urban Regeneration. Building solutions that are expected to be included would be assistive technologies, emotional health spaces, acoustic treatments, adaptive strategies, gender, size, and physical appropriate facilities.	Hames Sharley	1					0

	Ref No.	Title	Aim of Credit	Sub-Element	Credit Criteria Summary	Design Team Actions	Key Stakeholder	Points Available	Base Design	Target Features	To Be Confirmed	Unlikely Points	Comments
Nature	N35.1	Impacts to Nature	Ecological value is conserved and protected.	Impacts to Nature - Minimum Requirements	The building was not built on, or significantly impacted, a site with a high ecological value.	Ensure site preparation and construction works do not clear: – Old-growth forest, – Prime agricultural land, – Any area within 100m of a wetland listed as being of 'High National Importance', – Aspects considered 'Matters of National Significance' listed under the Environmental Protection and Biodiversity Conservation Act (1999)	FCDS	Minimum Requirement	Met				No major issue for this project. Site is compliant.
	N35.2			Light Pollution to Neighbouring Bodies		Demonstrate that all outdoor lighting on the project complies with AS 4282:1997 Control of the obtrusive effects of outdoor lighting.	Electrical Consultant		Met				Electrical consultant to design to avoid light spill and provide models in support.
	N35.3			Light Pollution to Night Sky		Demonstrate that no external luminaire on the project has a ULOR that exceeds 5%, relative to its actual mounted orientation **or** that the direct illuminance from external luminaires on the project produce a maximum initial point illuminance value no greater than 0.5 Lux to the Site Boundary and 0.1 Lux to 4.5m beyond the site into the night sky.	Electrical Consultant & Landscape Consultant		Met				Electrical consultant to design to avoid light spill and provide models in support.
	N35.4			Wetland Management Plan		Where the building is within 100m of a wetland, generate and make public a site-specific Wetland Management Plan. The plan must be prepared by a qualified Ecologist or other qualified professional and include requirements for ongoing quarterly monitoring, annual reporting and management of the wetland ecosystem for a minimum of five years.	Woolworths & Landscape Consultant		Met				Not applicable for this site.
	N35.5			Ecological Value	• The building's design and construction conserves existing natural soil, hydrological flows and vegetation elements; and • If deemed necessary by an Ecologist, at least 50% of existing site with high biodiversity value is retained.	Demonstrate ho current, future and past ecological values of the site are to be protected.Including assessment of local and regional threats and mitigation requirements and engaging with the local community.	Woolworths & Landscape Consultant	2			2		Project meets this requirement.
	N35.6			Diversity Protection		Where an ecologist has assessed the area as high ecological value the project must retain at least 50% of the site area and manage impacts of light and noise poultion, habitat connectivity, water quality, migration and two other local issues.	Woolworths & Landscape Consultant						Project is not considered high ecological value.
	N36.1	Biodiversity Enhancement	The building's landscape enhances the biodiversity of the site.	Landscape Area	• The building's site includes an appropriate landscape area; • The landscaping includes a diversity of species and prioritises the use of climate-resilient and indigenous plants; and • The project team develops a site-specific Biodiversity Management Plan and provides it to the building owner or building owner representative.	Provide landscaping over 15% of the site area or 0.2% of the GFA - whichever is Greater.	Landscape Consultant	2					Excessive requirement for most projects.
	N36.2			Diversity of Species		Landscape must be > 60% indigenous and achieve diversity of: * 10% Plant Species * 20% plant genus * 30% plant family. Provide 1 nesting tree per 500m2 of landscaped area.	Landscape Consultant						0
	N36.3			Biodiversity Management Plan		An ecologist must assess and verify that the choice of landscaping and biodiversity is diverse and resilient to climate change impacts, thereby increasing the longevity of the landscape. An Ecologist must provide this narrative.	Landscape Consultant						0
	N36.4			Increased Landscape Area	• A greater area of landscaping is provided; and • The landscaping includes critically endangered and/or endangered plant species native to the bioregion.	Provide landscaping over 30% of the site area or 0.333% of the GFA - whichever is Greater.	Landscape Consultant	2					0
	N36.5			Increased Diversity of Species		Landscape must be > 80% indigenous and achieve diversity of: * 10% Plant Species * 20% plant genus * 30% plant family. Provide 1 nesting tree per 250m2 of landscaped area.	Landscape Consultant						0
	N37.1a	Nature Connectivity	Wildlife movement is facilitated within and adjacent to the site	Landscaping	The site must be built to encourage species connectivity through the site, and to adjacent sites - through either landscaping **or** infrastructure. If the project sits within a blue or green grid strategy it must contribute to the goals of the strategy.	Provide landscape which is contiguous with existing, restored and new habitats. As a minimum requirement for habitat connectedness, the conservation area must make up at least 25% of the total external area within the building's site boundary to a minimum of 182m²	Landscape Consultant	2					Not feasible for this site.
	N37.1b			Infrastructure		Include design features such as a canopy bridge, wildlife tunnels, green roofs, amphibian tunnels and green infrastructure are used to connect nature on site to adjacent natural areas	Landscape Consultant & Civil Consultant						
	N38.1	Nature Stewardship	Biodiversity is restored beyond the building site.	Offsite Restoration	The building owner, as part of the project's development, undertakes activities that protects or restores biodiversity at scale beyond the development's boundary.	Achieve "Impacts to Nature" credit and restore an area at least equivalent to the GFA of the porject.	Woolworths	2					Could be considered by Woolworths
	N39.1	Waterway Protection	Local waterways are protected, and the impacts of flooding and drought are reduced.	Run Off Volume	The building demonstrates an annual average flow reduction (ML/yr) of 40% compared to pre-development levels and meets specified pollutants targets.	The development must demonstrate an annual average flow reduction (ML/yr) of 40% compared to pre-development levels.	Civil Consultant	2	2				Local infiltration of stormwater will meet this requirement.
	N39.2			Water Pollution		Total Suspended Solids (TSS) 85% Gross Pollutants 90% Total Nitrogen 45% Total Phosphorus 65%	Civil Consultant						
	N39.3			Run Off Volume	The building demonstrates an annual average flow reduction (ML/yr) of 80% compared to pre-development levels and meets specified pollutants targets.	The development must demonstrate an annual average flow reduction (ML/yr) of 80% compared to pre-development levels.	Civil Consultant	2			2		TBC based on civil design. Would require large detention systems
	N39.4			Water Pollution		Total Suspended Solids (TSS) 90% Gross Pollutants 95% Total Nitrogen 60% Total Phosphorus 70%	Civil Consultant						