

ESD Briefing Note



Full Circle
Design Services

Project:	Hands Oval Redevelopment
Service:	Sustainable Design
Subject:	ESD Overview – Schematic Design
Revision:	C
Date:	1 st October 2022
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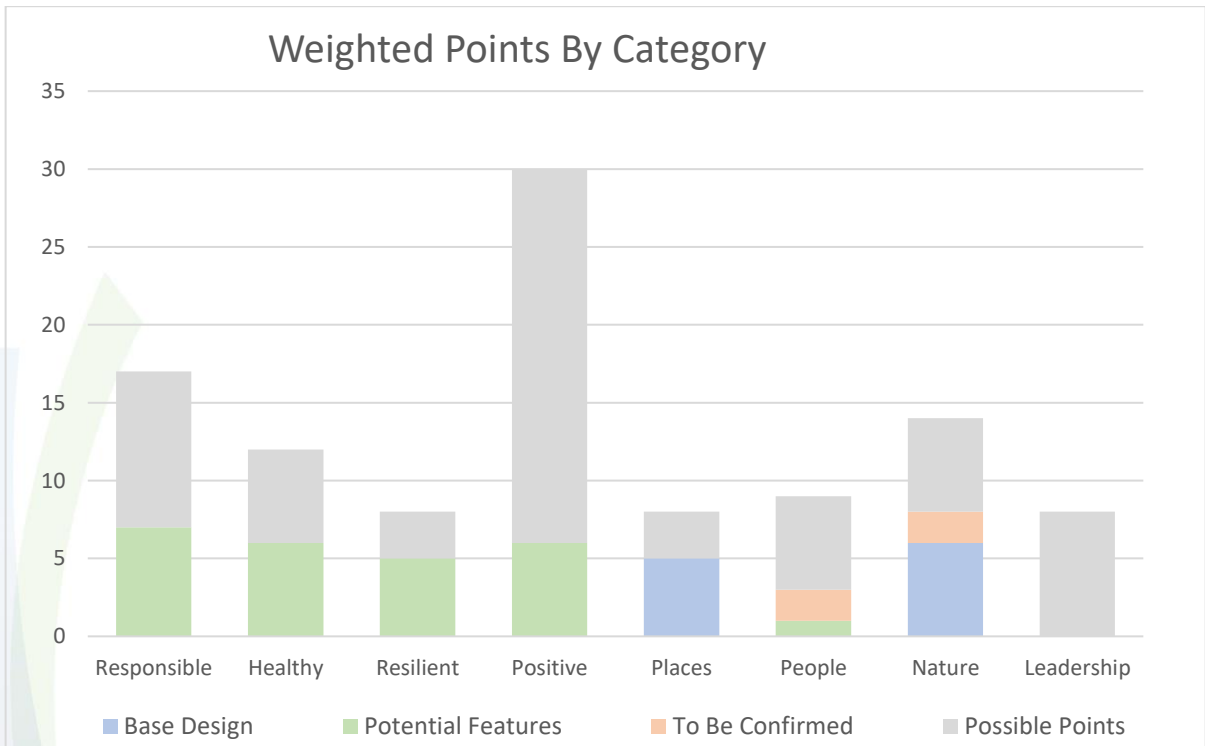
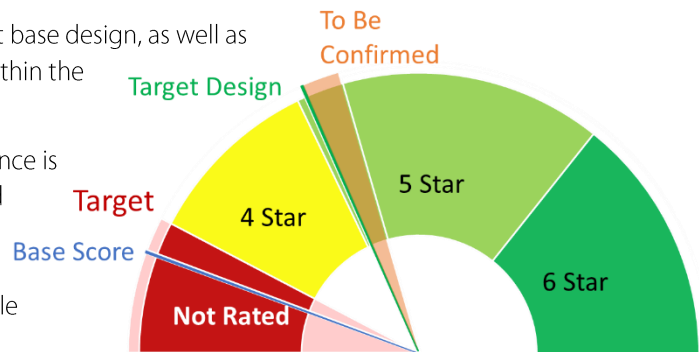
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This briefing note provides a summary of the potential sustainable design inclusions and self-assessment for the redevelopment of the Hands Oval site in South Bunbury.

The project is aiming to achieve best practice sustainable design outcomes, as justified by a self-assessment against the Green Star Buildings Rating Tool.

This note identifies current performance against base design, as well as identifying elements which may be included within the design.

At this stage, the exact inclusions and performance is to be confirmed, however, FCDS have identified potential features sufficient to reach a 5-Star rating. Target features have a strong emphasis on providing a healthy and responsible building:



Sustainable Design Targets:

The project is aiming to achieve at least 15% (4 Star / Best Practice level) when self-assessed under the Green Star Buildings 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	Best Practice Design	The project is targeting a self-assessment to 15% under the Green Star Buildings rating tool – representative of 4 stars – Best Practice.
	Operational Performance	Monitor and tune building performance in operation – targeting <100kWhrs per m ² per annum
Energy Consumption	10% Improvement over BCA 2019 Minimum Practice - Facade	Utilise insulation and glazing performance in excess of minimum standard.
	15% Improvement over BCA 2019 Minimum Practice - Overall	<ul style="list-style-type: none"> • Energy efficient services (lighting and mechanical in particular) to be provided. •
	Renewable Energy	Potential for future large scale PV array
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.
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.

The project is aiming to undertake a self-assessment only, using the Green Star Buildings tool as a benchmark. Final design inclusions are to be confirmed, the following features are options under consideration.

Key Features:

The project would be ineligible for a formal green star assessment owing to the use of fossil fuels on site for generation of hot water, however, has still identified a number of highly sustainable design features which could be included:

- ★ Provision of ~30kW PV array
- ★ Excellent access to views and high indoor air quality
- ★ Low toxicity product selection
- ★ Exceed BCA Envelope Requirements by 10%
- ★ Low flow tapware and sanitary fixtures
- ★ Potential metering system to aid in performance optimisation
- ★ Ongoing sustainable design review and optimisation.
- ★ Integration of nature within design solution
- ★ Responsible construction practices

Stretch Targets

The design team are still working through design features, however, note the following elements still under consideration and identified as stretch targets:

- Stormwater management and filtration to reduce pollutant export
- Use of CO₂ monitoring and control in air conditioned areas to improve air quality and reduce operational impacts
- Target of reducing building embodied energy through local and sustainable material selection
- Potential for active tuning phase in conjunction with building occupants and users
- Lighting design to minimize light spill, improving energy efficiency and reducing the impact on surrounding dwellings
- Potential for bike parking facilities for users and visitors
- Plan to transition away from fossil fuels by considering future use of heat pumps to meet domestic hot water demand

Inclusion or otherwise of these features remain under review as the design progresses.

Green Star Credit List

Project Name	Hands Oval		
Project Number	2022_065		
Version	Buildings V1.1		
Target Rating	4 Stars	15 Points	
Buffer	10%		
Client	Client		
Local Council	City of Bunbury		
Building Owner	City of Bunbury		
Building Tenant	Tenant		

ESD Consultant	FCDS	GFA (m ²)	1,964.2
Project Manager	Perkins	Site Area (m ²)	26,415m ²
Architect	CCN	Type	Public Assembly
Quantity Surveyor	QS	UFA	493.6
ICA	FCDS	Car Bays	150
Building Surveyor	TECON	Occupants	6

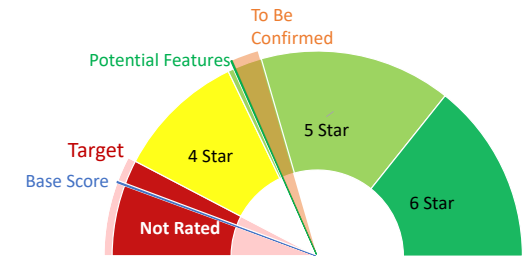
Project Team		
Main Contractor	Perkina	
Discipline	Consultant	Contractor
Mechanical	LCI Mechanical	Mechanical
Electrical	3EM	Electrical
Fire	LCI Fire	Fire Contractor
Hydraulic	LCI Hydraulic	Plumber
Civil	Stantec Civil	Civil
Structural	Stantec Structures	Structure
Facade	Facade Consultant	Facade
Lift	LCI Lift	Lift
Landscape	D&C Landscape	Landscape
Specialists		
Acoustic Engineer	Stantec Acoustics	
Waste Consultant	Encycle	
Transport Planner	Stante Traffic	
Life Cycle Modeller	LCA Analyst	
Climate Change	CCAR	

Target Design Features		
Credit	Points	Comment
H14.1 - Amenity and Comfort	2	Space provides dryer rooms on ground floor for this purpose.
R17.1 - Comprehensive Risk Assessment	2	FCDS can carry out a base level review to identify these risks.
R8.1 - Responsible Systems	1	Air conditioning, lighting and plumbing systems are considered likely to meet product specific EPD (ISO 11400) and Best Practice PVC requirements.
H15.3 - Nature-Inspired Design	1	Integration of nature within the design can be readily accommodated.
P31.2 - Needs Analysis	1	Perkins internal procedures are expected to meet these requirements.
R6.1 - Responsible Structure	3	Majority of steel expected to be locally sourced and compliant.
P25.2 - Improved Water Performance	3	Low flow tapware would meet this requirement.
H11.4 - Daylight - Credit	2	Current design is expected to meet these requirements.
R2.4 - Construction and Demolition Waste Diversion - Exceptional	1	Perkins site management expected to meet this target.
H12.2 - Acoustic Performance	1	Design will incorporate noise separation between spaces as part of the functional requirement of the space.
R19.1 - Heat Island	1	Design is compliant with the provision of a light roof.
R5.1 - Risk and Opportunity Assessment	1	Perkins procurement planning will 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 SKW PV Array.
R20.2 - Demand Response	1	Building is not expected to have a BUS. Compliance would require a solar array. Points are cost based on solar array above.
R20.1 - Active Generation and Storage Systems	1	SKW PV array would meet this requirement and deliver an economically beneficial outcome for the project.
R1.1 - Green Star Accredited Professional	1	FCDS are completing this scope. Sustainable design information will be available through FCDS reporting and development marketing material.

This is FCDS self-assessment of the proposed redevelopment of Hands Oval. 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 classified as follows:
Target Features refers to sustainable design initiatives which are under consideration by the design team.
To be Confirmed credits are features which require further design development to fully assess.

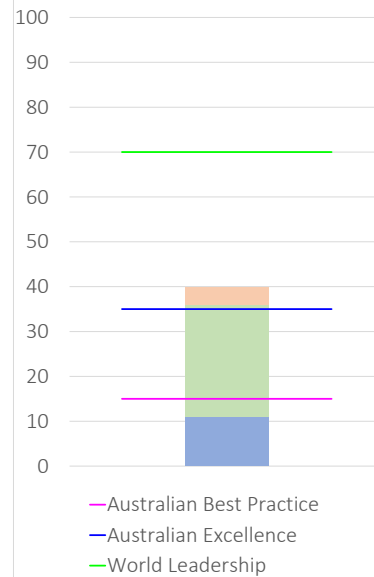
Revision	Date	Reason for Issue
A	23rd September	Initial Review
B	27th September	Perkins Comments
C	1st October	Schematic Design

Rating Achieved

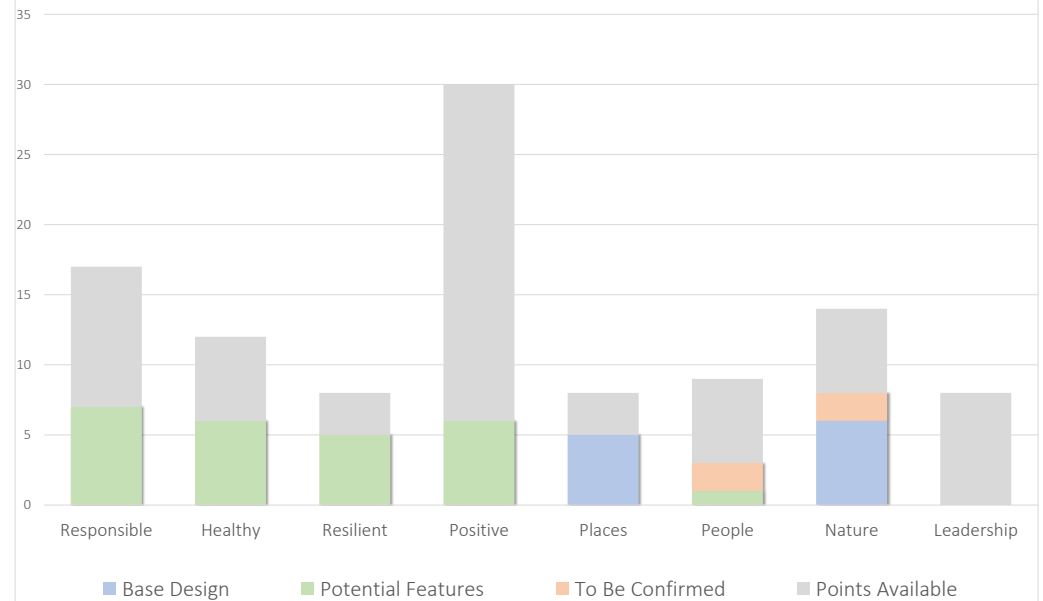


Category	Available Points	Base Design	Potential Features	To Be Confirmed	Not Achieved
Responsible	17	0	7	0	10
Healthy	12	0	6	0	6
Resilient	8	0	5	0	3
Positive	30	0	6	0	24
Places	8	5	0	0	3
People	9	0	1	2	6
Nature	14	6	0	2	6
Leadership	8	0	0	0	8
	98	11	25	4	58
		11.0	36.0	54.0	

Total Weighted Points



Weighted Points By Category



Ref No.	Title	Aim of Credit	Sub-Element	Credit Criteria Summary	Design Team Actions	Key Stakeholder	Points Available	Base Design	Potential Features	To Be Confirmed	Unlikely Points	Comments
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						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	1		1			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, CCN, City of Bunbury & Perkins						
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.	Perkina	Minimum Requirement		Compliance Targeted			Perkins meets this performance level.
R2.2			Construction and Demolition Waste Diversion		Projects must divert at least 80% of construction and demolition waste from landfill.	Perkina	Minimum Requirement		Compliance Targeted			Perkins intend to achieve this outcome
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.	Perkina	Minimum Requirement		Compliance Targeted			Perkins will maintain a high level of staff engagement and support throughout the project.
R2.4			Construction and Demolition Waste Diversion - Exceptional		Projects must divert at least 90% of construction and demolition waste from landfill.	Perkina	1		1			Perkins site management expected to meet this target
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		Compliance Targeted			FCDs would do this as part of our base scope.
R3.2			Services and maintainability review		Complete a services and maintainability review prior to construction.	FCDs	Minimum Requirement		Compliance Targeted			FCDs will assist with undertaking this review.
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.	FCDs & LCI Mechanical	Minimum Requirement		Compliance Targeted			FCDs will assist with undertaking this review.
R3.4			Building Systems Tuning		Engage a building tuning service provider and tune the building for at least 12 months.	City of Bunbury, FCDs & Perkins	Minimum Requirement	Met				FCDs can undertake this role as part of building tuning.
R3.5			Metering and Monitoring		Provide accessible 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, LCI Mechanical, LCI Hydraulic & 3EM	Minimum Requirement	Met				FCDs can assist with generation of a meter plan and specification.
R3.6			Operation and Maintenance Information		Provide operations and maintenance information for all nominated building systems to the building owner (or designated representative).	FCDs, LCI Mechanical, LCI Hydraulic & 3EM	Minimum Requirement	Compliance Met				Provision of O+M's considered standard practice.
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, LCI Mechanical, LCI Hydraulic & 3EM	Minimum Requirement		Compliance Targeted			FCDs will provide a covering log book to assist with interpretation of the O+Ms and general user interface.
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.	Perkina, FCDs, LCI Mechanical, LCI Hydraulic & 3EM	Minimum Requirement	Compliance Met				Provision of O+M's considered standard practice.
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 (S20M) both must occur.	City of Bunbury, FCDs & Perkins	1					Project requires the use of an ICA and 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.	City of Bunbury, FCDs & Perkins						

Ref No.	Title	Aim of Credit	Sub-Element	Credit Criteria Summary	Design Team Actions	Key Stakeholder	Points Available	Base Design	Potential Features	To Be Confirmed	Unlikely Points	Comments	
R4.1	Operational Waste	Operational waste can be separated and recovered in a safe and easy manner.	Separation of Waste Streams	<p>The project team must demonstrate the building is designed to allow effective management of operational waste by:</p> <ul style="list-style-type: none"> 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.	City of Bunbury, Encycle & CCN	Minimum Requirement	Compliance Met				Requires segregation of mixed recycling, organics and general waste and one other stream. The project currently includes ample waste storage areas on ground and on occupied levels.	
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.	Encycle & CCN	Minimum Requirement	Compliance Met				Ample space is provided to separate all relevant waste streams.	
R4.3			Access to Waste Storage Area		The storage area(s) must have easy and safe access by collection vehicles and cleaning staff	City of Bunbury, Encycle & CCN	Minimum Requirement	Compliance Met					Waste stores are generously sized to cater for three streams and bulky goods.
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	City of Bunbury, Encycle	Minimum Requirement	Compliance Met					Site has good access to bin stores for collection.
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	<p>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.</p>	<p>Undertake a risk and opportunities assessment of its supply chain to identify environmental and social risks and opportunities and</p>	Perkina, FCDS & CCN	1		1			Perkins procurement planning will achieve this outcome.	
R5.2			Responsible Procurement Plan										Develop and implement a plan to mitigate and manage identified risks and drive implementation of identified opportunities.
R6.1	Responsible Structure	The building's structure is comprised of responsibly manufactured products.	Responsible Structure	<p>80% of all structural components (by cost) meet a Responsible Products Value score of at least 10</p> <p>In addition, one of the following is met:</p> <ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Industry specific environmental product declarations (EPO) - 2 Points Product specific environmental product declarations (EPO) - 4 Points ISO14001 certification - 3 Points Reused Product - 15 Points FSC Certified - 10 Points Best Practice PVC Certified - 5 Points Living Product Challenge Declare 	Stantec Structures & CCN	3		3			Majority of steel expected to be locally sourced and compliant	
R6.2			Responsible Structure - Exceptional										
R7.1	Responsible Envelope	The building's envelope is comprised of responsibly manufactured products.	Responsible Envelope	<p>60% of all building envelope components (by cost) meet a Responsible Products Value score of at least 10.</p> <p>In addition, one of the following is met:</p> <ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Industry specific environmental product declarations (EPO) - 2 Points Product specific environmental product declarations (EPO) - 4 Points ISO14001 certification - 3 Points Reused Product - 15 Points FSC Certified - 10 Points Best Practice PVC Certified - 5 Points 	Stantec Structures, Façade Consultant & CCN	2					Building envelope is not currently anticipating improved performance.	
R7.2			Responsible Envelope - Exceptional										
R8.1	Responsible Systems	The building's mechanical, hydraulic, transportation and electrical systems are comprised of responsibly manufactured products.	Responsible Systems	<p>20% of all active building systems (by cost) meet a Responsible Products Value score of at least 6.</p> <p>In addition, one of the following is met:</p> <ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Industry specific environmental product declarations (EPO) - 2 Points Product specific environmental product declarations (EPO) - 4 Points ISO14001 certification - 3 Points Reused Product - 15 Points FSC Certified - 10 Points Best Practice PVC Certified - 5 Points Climate Active Carbon Neutral Certification 	LCI Mechanical, 3EM, LCI Fire, LCI Hydraulic, Stantec Civil & LCI LIT	1		1			Air conditioning, lighting and plumbing systems are considered likely to meet product specific EPO, ISO 114001 and Best Practice PVC requirements.	
R8.2			Responsible Systems - Exceptional										
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	<p>60% of all internal building finishes (by area) meet a Responsible Products Value score of at least 7.</p> <p>In addition, one of the following is met:</p> <ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Industry specific environmental product declarations (EPO) - 2 Points Product specific environmental product declarations (EPO) - 4 Points ISO14001 certification - 3 Points Reused Product - 15 Points FSC Certified - 10 Points Best Practice PVC Certified - 5 Points 	CCN & FCDS	1					Design will target responsible finishes within occupied areas. Requires further design development to confirm.	
R9.2			Responsible Finishes - Exceptional										

Ref No.	Title	Aim of Credit	Sub-Element	Credit Criteria Summary	Design Team Actions	Key Stakeholder	Points Available	Base Design	Potential Features	To Be Confirmed	Unlikely Points	Comments		
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.	LO Mechanical	Minimum Requirement	Compliance Met				Building is expected to meet ventilation requirements.		
H10.1			Provision of Outdoor Air		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.	City of Bunbury, Perkins, CCN & LCI Mechanical						Ducted kitchen exhausts will be provided to improve indoor air quality for occupants.		
H10.2			Exhaust or Elimination of pollutants		Provide adequate access to both sides of all moisture and debris-catching components for maintenance within the air distribution system and	LO Mechanical						Compliance Targeted	Ducted fan coil units with MERV filtration and shallow coils can achieve this outcome.	
H10.3			Ventilation System Attributes		The building's ventilation systems allow for easy maintenance, and high levels of outdoor air are provided.	LO Mechanical						1	Design is expected to meet the requirements of AS 1668.4 for all occupied spaces. CO2 control for occupied areas is under consideration	
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 Meet the requirements of AS 1668.4 2012.	LO Mechanical								
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.	<ul style="list-style-type: none"> 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 > 50; 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 maximum of 3 MacAdam Ellipses. 	3EM	Minimum Requirement	Compliance Targeted				Lighting designers will select good quality fittings with appropriate spacing and diffusion.		
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 standardised 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.	CCN & FCDS						Lighting designers will complete modelling of the occupied space for overall performance requirements.		
H11.3			Daylight		<ul style="list-style-type: none"> Maximise the number of occupants that are in or near daylight 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 daylight spaces; Maximise daylight to spaces that prioritise learning, healing, and living; Provide building occupants with unrestricted access to daylight indoor common spaces. 	CCN & FCDS						Compliance is expected based on strong passive design basis and functional need to control glare.		
H11.4			Daylight - Credit		For non-residential buildings, at least 40% of the principle averaged across the building must receive high levels of daylight with no less than 20% on any floor or tenancy (whichever is smaller).	CCN & FCDS						2	2	Current design is expected to meet these requirements.
H11.5			Artificial Lighting		The building provides either or both best practice Artificial Lighting and best practice access to daylight. <ul style="list-style-type: none"> The walls within the field of view of occupants in regularly occupied spaces must have an average surface reflectance value of 0.70 and an average surface illuminance of at least 50% of the horizontal illuminance levels required for task. 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. 	3EM						2	Compliance is not expected, additional cost is more significant than the perceived benefit	
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 greater than the upper range value and (Schools and Commercial Tenancies) no less than 5 dB below the lower range value relevant to the activity type in each space as recommended in AS/NZS 2107.	Stantec Acoustics, LO Mechanical & CCN	Minimum Requirement	Compliance met				Credit will require the selection of high efficiency air conditioning units as well as internal lining to ductwork.		
H12.2			Acoustic separation		Address noise transmission between enclosed spaces within the nominated area either by sound privacy or insulation.	Stantec Acoustics & CCN						1	Design will include strong noise separation between spaces as part of the functional requirement of the space.	
H12.3			Impact Noise Transfer		The building is designed and tested to achieve minimum acoustic performance requirements aligned with the Acoustic Comfort Strategy.	Stantec Acoustics & CCN						2	Noise separation between levels is important for project success.	
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.	Stantec Acoustics & CCN						0	Expected to be achieved for this project where require.	

Ref No.	Title	Aim of Credit	Sub-Element	Credit Criteria Summary	Design Team Actions	Key Stakeholder	Points Available	Base Design	Potential Features	To Be Confirmed	Unlikely Points	Comments	
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.	CCN, LO Mechanical, 3EM, LO Fire, LO Hydraulic, Stattec Civil & LO Lift	Minimum Requirement		Compliance Targeted			The design team will select products with low VOC content and general toxicity.	
			Engineered wood products		Use low emission formaldehyde composite or engineered wood products	CCN			Compliance Targeted			The design team will review formaldehyde content for all wood products.	
			No lead, asbestos and PCBs		Undertake comprehensive site survey for Lead, PCB's and asbestos. Take appropriate remediation action where relevant.	City of Bunbury			Compliance Targeted			The building site is to be surveyed and decontaminated where required.	
			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 & City of Bunbury			1	
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 at least 10m ² and 1m ² per 10 regular occupants or staff dedicated room(s) to promote either inclusivity, mindfulness or exercise for regular occupants. Room must be classified as either parent room, relaxation / meditation / prayer room or exercise room. Room must meet light quality, acoustic comfort and Design for Inclusion (where targeted) credits.	CCN	2	2			Space provides orayer rooms on ground floor for this purpose.		
Healthy	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 and	CCN	1	Compliance met				Design easily complies with the requirement for views.	
			Plants		Indoor plants must be provided in the nominated spaces. One or more plants in pots with a soil surface area totalling at least 500cm ² for every 15m ² of the primary spaces is required. Plants are to be supported by an ongoing 2 year maintenance plan or	CCN & City of Bunbury						This element is considered very expensive. Would require multiple pot plants plus maintenance	
			Nature-Inspired Design		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.	CCN						1	Integration of nature within the design can be readily accommodated.
			Interaction		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).	City of Bunbury & CCN						1	5% Of Usable area is ~360m ² , there extensive nature play around the facility, including a new play area.

Ref No.	Title	Aim of Credit	Sub-Element	Credit Criteria Summary	Design Team Actions	Key Stakeholder	Points Available	Base Design	Potential Features	To Be Confirmed	Unlikely Points	Comments	
Resilient	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 will complete the base checklist as part of our base scope.	
			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 Design Team	1				Detailed analysis of the site would require qualified professional to complete.		
	Operations Resilience	The building can respond to acute shocks and chronic stresses that can affect its operations over time.	Comprehensive Risk Assessment	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 resilience including key shocks and stresses, such as infrastructure failure, health pandemic, water security, increasing energy costs and rising cyber dependency and	CCAR						FCDs can carry out a base level review to identify these risks.	
			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 and	CCAR supported by Whole Design Team	2		2			Design includes ~30kW peak solar power	
			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 Design Team						Design includes potential for generator connection	
	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. Undertake at least one community capacity building activity prior to or during construction.	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.	CCAR supported by Whole Design Team	1					Community resilience is beyond the scope of this project.	
	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	CCN & DMC Landscape	1		1			Design is compliant with the provision of a light roof.	
	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		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.	LCI Mechanical & 3EM	1		1				30kW PV array would meet this requirement and deliver an economically beneficial outcome for the project.
			Demand Response	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.	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.	LCI Mechanical & 3EM	1		1			Building is not expected to have a BMS. Compliance would require a solar array. Points and cost based on solar array above.	
			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 & CCN	1						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	Potential 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 Calculator and demonstrate that the building's upfront carbon emissions are at least 10% less than those of a reference building.	GS, LCA Analyst & CCN	Minimum Requirement	Met			FCDS can assist with completion of the basic LCA calculator.	
				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, City of Bunbury&CCN	3			LCA Analysis for the site will be undertaken by qualified professional.		
				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, Perkins, City of Bunbury&CCN	3			Design team will utilize 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 comparison to BCA Section 3 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 NABERS rating stated in the code, or - 6.5 star NABERS rating.	FCDS	Minimum Requirement	Met			FCDS can confirm energy consumption meets these criteria.	
				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 30kW PV Array.		
				Emissions Reduction		Complete building modelling and demonstrate that the building's energy use is at least 30% less than a reference building.	FCDS	3			Compliance with this credit requires an uneconomic PV Array.		
	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 requirements, 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, LCI Hydraulic, LCI Fire, LCI Mechanical, Perkins & City of Bunbury	Minimum Requirement	Compliance Not Met			Site does not meet minimum compliance due to use of gas for water heating.	
				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, LCI Hydraulic, LCI Fire, LCI Mechanical, Perkins & City of Bunbury	3			Cost of offsetting energy consumption considered reasonably small but outside the scope of this project		
				100% Renewable Energy		In addition to the above, where the building includes infrastructure which can use fossil fuels to power building systems, the applicant must demonstrate how it will not use fossil fuels during the building operation.	FCDS, LCI Hydraulic, LCI Fire, LCI Mechanical, Perkins & City of Bunbury	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 refrigerants 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.	LCI Mechanical	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.	City of Bunbury	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	Compliance Met				Design will include best practice low-flow tapware
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, LCI Hydraulic & CCN		Met			FCDS can undertake performance modelling if required.	
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, LCI Hydraulic & CCN	3	3		Low flow tapware would meet this requirement		
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, LCI Hydraulic & CCN	3			Credit requires grey water or large scale rainwater reuse.		
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				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	Potential Features	To Be Confirmed	Unlikely Points	Comments			
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)	CCN	Minimum Requirement	Compliance Met				Current design meets these requirements			
P27.2			Lockers		One locker must be provided for every eight staff occupants. The lockers must be secure and located in the changing rooms.	CCN	Minimum Requirement	Compliance Met				Current design meets these requirements			
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.	CCN	Minimum Requirement	Compliance Met				Current design meets 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 lit * Weather Protected * Separated from Vehicles * Signposted * Secure * Access connected to relevant cyclist storage and	City of Buryburly & CCN	3						Bike parks are not currently shown on planning. Recommended future inclusion	
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 charging and parking * EV load management system and	City of Buryburly & 3BM								Provision of 8 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 comparison to a reference building. Includes reduced vehicle emissions, increase active transport and reduction in trip kilometres. And	Perkins & Stants Traffic								Preparation of a transport plan will require appointment of professional if attempting formal certification
P27.6			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								Project does not meet walkability requirements.
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 . and	CCN	2	2				Project is almost entirely for public use.			
P28.2			Activation Strategy	Develop and fund an activation strategy to ensure placemaking continues after practical completion. The strategy must address target activities, funding, timing of activation, facilitators/suppliers, encouragement, future implementation.	CCN & City of Buryburly										
P29.2	Contribution to Place	The building's design makes a positive contribution to the quality of the public environment.	Independent Design Review	The building's design contributes to the liveability of the wider urban context and enhances the public realm.	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.	CCN & City of Buryburly	2	2				Council design reviews are considered to meet these requirements.			
P30.2	Culture Heritage and Identity	The building reflects local culture, heritage and identity	Independent Design Review	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.	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.	CCN & City of Buryburly	1	1				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	Potential Features	To Be Confirmed	Unlikely Points	Comments
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.	Perkina	Minimum Requirement		Compliance Targeted			0
P31.2			Needs Analysis		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, and	Perkina						
P31.3			Physical and Mental Health Impacts	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 head contractor must introduce programs and solutions to address at least five of the following: <ul style="list-style-type: none"> • 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 fulfillment at work or mindful meditation, and 	Perkina	1		1			
P31.4			Evaluating Effectiveness	Provide an evaluation report to the client and sub-contractors including programs and initiatives delivered and whether they delivered the intended outcomes.	Perkina							
P32.1	Indigenous Inclusion	The building celebrates Aboriginal and Torres Strait Islander people, culture and heritage.	Reconciliation Action Plan		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, or	CCN & City of Bunbury						Outside of the scope of this project.
P32.2			Inclusion of Indigenous Design	The building's design and construction celebrates Aboriginal and Torres Strait Islander people, culture and heritage by undertaking one or both of the following: <ul style="list-style-type: none"> • Playing an active role in the organisational Reconciliation Action Plan; and • Incorporating design elements using the Indigenous Design and Planning principles. 	Demonstrate that the Australian Indigenous Design Charter are incorporated within the design. As a minimum, ensure the following are addressed: <ul style="list-style-type: none"> • 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). 	CCN & City of Bunbury	2					
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		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.	City of Bunbury						Outside of the scope of this project.
P33.2			Employment Opportunities Strategies	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.	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.	City of Bunbury	2					
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.	City of Bunbury	1					
P34.1	Design for Inclusion	The building is welcoming to a diverse population and is welcoming to their needs.	Accessible Navigation		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: <ul style="list-style-type: none"> • Equal access to the building: Provide equitable, appealing, safe, and secure access in a manner that does not segregate or stigmatise users through all principal entrance points and main thoroughfares inside and outside the building; • Diverse wayfinding: Introduce visual, physical, olfactory, and auditory solutions to help individuals navigate the site in a safe and enjoyable manner; and • Inclusive spaces: Introduce internal and external spaces for a diverse range of users, including parents, family restrooms, emergency rooms, quiet rooms and social interaction rooms. These rooms must be accessible to all users. 	CCN	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 treatment, adaptive strategies, gender, size, and physical appropriate facilities.	CCN	1					

Ref No.	Title	Aim of Credit	Sub-Element	Credit Criteria Summary	Design Team Actions	Key Stakeholder	Points Available	Base Design	Potential Features	To Be Confirmed	Unlikely Points	Comments	
Nature	Impacts to Nature	Ecological value is conserved and protected.	N35.1	Impacts to Nature - Minimum Requirements		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	Compliance Met				Site meets base requirements
			N35.2	Light Pollution to Neighbouring Bodies	The building was not built on, or significantly impacted, a site with a high ecological value.	Demonstrate that all outdoor lighting on the project complies with AS 4282:1997 Control of the obtrusive effects of outdoor lighting.	3EM		Compliance Targeted			Specialist sports lighting design intended to meet this requirement.	
			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.	3EM & D&C Landscape		Compliance Targeted			Specialist sports lighting design intended to meet this requirement.	
			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.	City of Bunbury & D&C Landscape		Compliance Met			Site is not close to a wetland	
			N35.5	Ecological Value	<ul style="list-style-type: none"> 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 to 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 and	City of Bunbury & D&C Landscape		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 pollution, habitat connectivity, water quality, migration and two other local issues.	City of Bunbury & D&C Landscape						Project is not considered high ecological value.	
Nature	Biodiversity Enhancement	The building's landscape enhances the biodiversity of the site.	N36.1	Landscape Area		Provide landscaping over 15% of the site area or 0.2% of the GFA - whichever is Greater.	D&C Landscape	2					Excessive requirement for most projects. Compliance is problematic due to species diversity requirements.
			N36.2	Diversity of Species	<ul style="list-style-type: none"> 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. 	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.	D&C Landscape						
			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.	D&C Landscape						
			N36.4	Increased Landscape Area		Provide landscaping over 30% of the site area or 0.333% of the GFA - whichever is Greater.	D&C Landscape						
			N36.5	Increased Diversity of Species	<ul style="list-style-type: none"> A greater area of landscaping is provided; and The landscaping includes critically endangered and/or endangered plant species native to the bioregion. 	Landscape must be > 80% indigenous and achieve diversity of: * <10% Plant single species * <20% Plants single genus * <30% Plants single family. Provide 1 nesting tree per 250m2 of landscaped area.	D&C Landscape						

Ref No.	Title	Aim of Credit	Sub-Element	Credit Criteria Summary	Design Team Actions	Key Stakeholder	Points Available	Base Design	Potential Features	To Be Confirmed	Unlikely Points	Comments	
Nature	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 182m ²	2					Project provides a green space connection	
	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
	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 project.	City of Bunbury	2				Could be considered by City of Bunbury	
	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 and Total Suspended Solids (TSS) 85% Gross Pollutants 90% Total Nitrogen 45% Total Phosphorus 65%	Stantec Civil	2					Local infiltration of stormwater will meet this requirement.
	N39.2			Water Pollution									
	N39.3			Run Off Volume			The building demonstrates an annual average flow reduction (ML/yr) of 80% compared to pre-development levels and	Stantec Civil					
N39.4	Water Pollution			The building demonstrates an annual average flow reduction (ML/yr) of 80% compared to pre-development levels and meets specified pollutants targets.			Stantec Civil	2		2		TBC based on civil design. Would require filtration of stormwater from car parks and roof.	