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PALM LAKE WORKS PTY LTD

17 WEINAM + 57 HAMILTON ST, REDLAND BAY QLD

SUSTAINABILITY REPORT

MARCH 2022

CONFIDENTIAL

Queensland Government

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17 Weinam + 57 Hamilton St, Redland Bay QLD
Sustainability Report

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REV	DATE	DETAILS
01	11/03/2022	Issued for comment

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Reviewed by:	Ben Gibbs	08/03/2022	
Approved by:	Ben Gibbs	11/03/2022	

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1 INTRODUCTION

1.1 PROJECT BACKGROUND

Palm Lake Works is currently seeking development approval to develop a new residential complex located at the corner of 17 Weinam + 57 Hamilton St in Redland bay QLD, as shown in Figure 1-1. The proposed development consists of 1 basement car park floor, 5 residential floors, 6 townhouses and recreation and occupant amenities in the center.

Figure 1-1 17 Weinam + 57 Hamilton Streets

The project scheme is required to demonstrate the capacity of achieving 5 Star Green Star certification as per the Economic Development Queensland (EDQ) requirements. Hence, this document sets a strategy and guidance for the design team to target the following sustainability related ratings:

- 5 Star Green Star Buildings for the two residential towers (not applicable for townhouses);
- National Construction Code (NCC) 2019 Section J Energy Efficiency Compliance:
  - Residential (Class 2 for sole occupancies) NatHERS Compliance with Queensland Development Code Part 4.1 Building Sustainability; and
  - Residential (Class 1A for townhouses) NatHERS Compliance with Queensland Development Code Part 4.1 Building Sustainability; and
  - Non-residential (Class 2) Section J compliance using the DTS method for common areas.

2 GREEN STAR

2.1 GREEN STAR FRAMEWORK

The Green Star certification is an established industry framework to develop, verify and assure sustainability in buildings, interiors and communities in Australia. The 17 Weinam + 57 Hamilton St project is targeting a 5 Star rating under the Green Star Buildings V1 tool which aims to meet current and future demands on the built environment with aspirational benchmarks for design, construction, and operational performance. It also considers the impacts against the key megatrends of the next decade, and to ensure it responds to the strategic goals of governments, tenants, investors, developers and building owners.

Figure 2: Green Star Buildings Mega Trends

This rating addresses sustainability holistically through design and construction covering eight categories representing the issues that will define the next decade of the built environment.

Responsible
Recognises activities that ensure the building is designed, procured, built and handed over in a responsible manner.

Places
Supports the creation of safe, enjoyable, integrated and comfortable places.

Healthy
Promotes actions and solutions that improve the physical and mental health of occupants.

People
Encourages solutions that address the social health of the community.

Resilient
Encourages solutions that address the capacity of the building to bounce back from short-term shocks and long-term stresses

Nature
Encourages active connections between people and nature and rewards creating biodiverse green spaces in cities.

Positive
Encourages a positive contribution to key environmental issues of carbon, water and the impact of materials.

Leadership
Recognises projects that set a strategic direction, build a vision for industry or enhance the industry's capacity to innovate.

2.2 PATHWAY

The 17 Weinam + 57 Hamilton St project has set a target of achieving a minimum 5 Star Green Star Buildings V1 as outlined by the Green Building Council of Australia (GBCA) rating tool.

The Green Star rating is determined by comparing the number of points achieved out of the total available points. The rating scale shown below details the percentage thresholds for the Star ratings awarded.

- Legal compliance – The building is compliant with legislation (NCC 2019);
- Good Practice – The building meets the Minimum Expectations of good practice – energy and water efficient, good indoor environment quality, and built to operate well;
- 4 Star – reflects a Best Practice environmental performer. It builds on the Minimum Expectations to deliver a building that is either net zero carbon in operations or a higher performer in energy, water, and health related issues **(15 out of 100 points);**
- 5 Star – demonstrates Australian Excellence by being a high environmental performer that addresses social issues relevant to the building owner **(35 out of 100 points);** and
- 6 Star – showcases World Leadership. It has been built to be a highly efficient building fully powered by renewables that addresses a significant number of environmental and social issues and contributes to the community **(70 out of 100 points)**

A summary of the Green Star pathway and points targeted for each category is outlined in Table 2.1 below. The further detailed proposed Green Star pathway for the project is provided in Appendix A. The following sections of this report outline the key sustainability initiatives to be included in the design of the 17 Weinam + 57 Hamilton St project that will enable the achievement of the 5 Star target.

Table 2.1 17 Weinam + 57 Hamilton St Green Star Summary Points

Category	Core Points Available	Targeted
Responsible	17	3
Healthy	14	6
Resilient	8	3
Positive	30	13
Places	8	4
People	9	5
Nature	14	2
Leadership*	Unlimited	0
Total	100	36

*The Leadership category is uncapped in terms of total number of points that can be awarded. Many of these points will result from achieving innovation and Leadership Challenges that are introduced by the GBCA. As this tool has only recently been released the full details of these challenges have not been made available. The project team will review these challenges once available and potentially increase the total number of targeted points.

2.3 RESPONSIBLE

The Responsible category recognises activities that ensure the building is designed, procured, built and handed over in a responsible manner. The category aims to help builders, owners, and the supply chain on the sustainability journey.

The key credits and sustainability initiatives that the project will be targeting within this category include:

- The building's structure and finishes are to be comprised of responsibly manufactured products.
- Engagement of a Green Star Accredited Professional from the concept design stage to provide advice, guidance and support to the project team and ensure the project team has access to all information covering the Green Star process. WSP have been appointed to fulfil this role.
- 90% of construction and demolition waste is to be diverted from landfill.
- Operational waste is to be separated into specific waste streams and a dedicated and adequately sized waste storage area to be provided.

2.4 HEALTHY

The Healthy category promotes actions and solutions that improve the physical and mental health of occupants.

The key credits and sustainability initiatives that the project will be targeting within this category include:

- Provide daylight access and good lighting levels to all building occupants.
- Provide acoustic comfort to all building occupants through the development of an acoustic comfort strategy and the onsite testing of noise levels to ensure alignment.
- All building paints, adhesives, sealants, carpets and engineered wood products are to be low or non-toxic. Additionally, on-site testing of volatile organic compounds (VOCs) and formaldehyde levels is to occur to ensure compliance.

2.5 RESILIENT

The Resilient category encourages design, collaboration and engagement solutions that address short-term shocks and long-term stresses by improving the capacity of communities, businesses and assets to adjust, respond and thrive in the face of adversity.

The key credits and sustainability initiatives that the project will be targeting within this category include:

- Renewable energy generation via the provision of photovoltaics to the rooftop.
- The site area will include a combination of strategies that reduce the heat island effect including light coloured roofing and extensive landscaping.
- A project-specific climate change risk and adaptation assessment is to be completed for the project during the design development stage. This assessment should follow the approach in Figure 3 and consider the climate variables and hazards in Figure 4.

Figure 3: Climate Risk & Adaptation Approach

DIRECT	INDIRECT	N/A
Extreme Rainfall	Bushfire	Storm Surge & Tide
Average Rainfall	Sea level rise	Sea Surface Temp
Drought		Currents and waves
Extreme Temperature		Bushfire (direct)
Average Temperature		
Solar Radiation		
Extreme Wind		
Storms		

Figure 4: Climate Variables and Hazards

2.6 POSITIVE

Credits within the Positive category aim to make a positive contribution towards better buildings by focusing on the key environmental issues of carbon, water consumption and the impact of materials.

The key credits and sustainability initiatives that the project will be targeting within this category include:

- The project will develop a Zero carbon Action Plan and source all its energy requirements from renewable energy sources and/or purchased carbon offsets.
- The project's upfront carbon emissions are targeted to be at least 20% less and its overall life cycle impact 30% less than those of a reference building.
- The project will target minimum 5.5 Stars NatHERS and Average of 7.0 Star NatHERS across all apartments.

- To reduce reliance on air conditioning, ceiling fans are to be provided to all apartment living areas and bedrooms.
- Water consumption is to be minimized through the installation of efficient water fixtures and the harvesting of rainwater from the rooftop for irrigation.

2.7 PLACES

The Places category supports the creation of safe, enjoyable, inclusive and comfortable places that are integrated into the broader urban fabric and enable communities to connect and thrive.

The key credits and sustainability initiatives that the project will be targeting within this category include:

- The building will be designed to be an enjoyable and inclusive place for residents by providing at least 1.75m^2 of communal space per dwelling. The development is currently significantly above this benchmark, providing approximately 6.7m^2 of communal space per dwelling.
- The building's design will reflect and celebrate the local demographics and history of the area.

2.8 PEOPLE

The People category encourages solutions that address the social health of the community.

The key credits and sustainability initiatives that the project will be targeting within this category include:

- During the construction phase, the builder will implement practices that promote diversity and reduce physical and mental health impacts.
- Through project specific initiatives, 17 Weinam + 57 Hamilton St will contribute towards the following targets:
  - Develop a set of consistent principles for learning and codesigning respectful place-based spaces with Aboriginal and Torres Strait Islander peoples at all project sites.
  - Investigate opportunities to incorporate Aboriginal and Torres Strait Islander supplier diversity within the design.
- The building will be designed and constructed to be inclusive to a diverse range or people different needs.

2.9 NATURE

The Nature category encourages active connections between people and nature and create opportunities to work with planners to deliver new natural corridors and green spaces in cities.

The key credits and sustainability initiatives that the project will be targeting within this category include:

- The building's landscape will enhance the biodiversity of the site by providing external landscape areas for at least 15% of the site area and a diverse range of climate resilient and indigenous plants. According to the plans, the development is currently providing approximately 47% of landscaping, of which 14% deep plantation areas.

Figure 5: 17 Weinam St Proposed Landscaping

3 NCC SECTION J

3.1 RESIDENTIAL FLOORS

3.1.1 NCC 2019 / QDC

In Queensland, for building Class 1 and 2, the Section J of the BCA is overruled by the Queensland Development Code, which requires:

- All Class 2 apartments individually achieve an energy rating of not less than 4 stars, and collectively achieve an average energy rating of not less than 5 stars, using a calculation method that complies with the ABCB Protocol for House Energy Rating Software.
- All Class 1 townhouses achieve an energy rating of not less than 6 stars (or 5 stars if the dwellings present photovoltaic system).

3.1.2 NATHERS

The Nationwide House Energy Rating Scheme (NatHERS) is a rating scheme that predicts the energy efficiency of a home based on its design and provides a star rating out of ten. NatHERS certification is required across Australia for all new developments containing multiple dwellings.

To achieve credits under the Green Star Buildings tool, the building's energy use must be less than a reference building. The current target for this project is to achieve an average NatHERS rating of 7 stars.

3.2 COMMON AREAS

The common areas of the 17 Weinam + 57 Hamilton St project are to be assessable for Section J under NCC 2019.

The project must demonstrate compliance with parts J1 Building Fabric and J3 Building Sealing of NCC 2019 Section J, by using the Deemed-to-Satisfy method or the Performance Solution pathway, utilising Verification Method JV3.

4 CONCLUSION

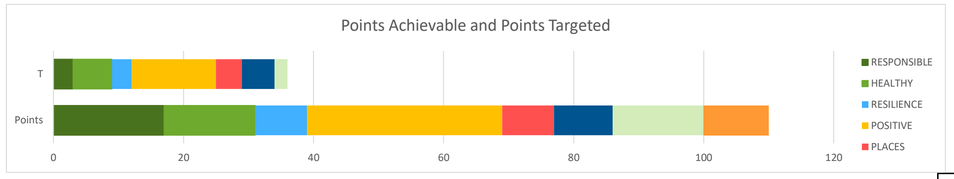
Based on the strategy set out on this report, the 17 Weinam + 57 Hamilton St project is capable of achieving the 5 star Green Star certification, as long as all the outlined sustainability initiatives are incorporated into its design.

APPENDIX A

GREEN STAR PATHWAY

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL
Approval no: DEV2022/1290
Date: 08/03/2023
Queensland Government

Project Name	**17 Weinam Street, Redland Bay QLD**
Revision Date	**3/11/2022**
Stars	**5 Stars (35 points required)**



							Project Nominated Credits				
							110	36	12	54	
Category	**Number**	**Credit**	**Level**	**Pathway**	**Type**	**Criteria**	**Points**	**T**	**TBC**	**NT**	**Credit Implementation Comments**
RESPONSIBLE	**1**	**Industry development**	CA	GSAP		At least one Green Star Accredited Professional (Green Star AP) must be engaged as part of the project team from the time of registration or within one month following.	1	1			
											Services Co-ordination costs associated with Green Star requirements, including Commissioning & Building Tuning
				Financial Transparency		The project team must complete, and include in the submission, the Green Star Financial Transparency Disclosure Template.					
				Marketing		The project's marketing team must complete the Green Star Case Study Template. The Green Star Certification achieved for the project must be prominently displayed in a location that is visible to the public or visitors.					
	2	**Responsible construction**	ME	Construction Management		The builder or head contractor has an environmental management system in place to manage its environmental impacts on site; The builder diverts at least 80% of construction and demolition waste from landfill; and The head contractor provides training on the sustainability targets of the building.	-	-			
			CA	Construction and demolition waste		Diverting at least 90% of its construction and demolition waste from landfill. Compliance with Waste Reporting Criteria.	1	1			Engagement of Waste Contractor that meets Green Star requirements and can process waste to maximise diversion from landfill
	3	**Verification & Handover**	ME	Metering & Monitoring		Provide energy and water sub-meters to relevant systems. Each apartment shall be metered separately. 'Smart Metering' system shall be supplied to each unit	-	-			Comprehensive Metering Strategy to be developed in conjunction with metering and monitoring system for both the common areas and each individual dwelling. Real Utilities to expand their system to enable monitoring of Cold Water and Chilled Water meters. If Real Utilities cannot meet the Green Star Reporting requirements then an alternative provider will be required or additional cost to upgrade Real Utilities System.
				Commissioning and tuning		The project team must perform the following prior to construction: • Set environmental performance targets; • Perform a services and maintainability review; and • Design for airtightness During construction and practical completion: • Commission the building, including air tightness testing; and • Engage building tuning service provider After practical completion: • Tune the building over the next 12 months	-	-			Building Tuning to be undertaken by Building Owner, Contractor and Services Sub-contractors. There is no requirement to engage a Building Tuning provider.
				Building Information		The project team must provide operations and maintenance information for all nominated building systems to the building owner The project team must develop a building log book to present to the building owner (or designated representative) before practical completion of the project	-	-			
			CA	Soft Landings and/or ICA		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 with a total building services value over $20M, both must occur.	1			1	Not Targeted
											Not Targeted
	4	**Responsible Resource Management**	ME	Responsible Resource Management		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.	-	-			Operational Waste Management Plan to be developed
	5	**Responsible procurement**	CA	Procurement plan/strategy		Procurement process must follow ISO 20400 Guidelines and the project must undertake a risk and opportunities assessement. A responsible procurement plan must be developed to mitigate risks and implement opportunitties identified in the assessment.	1			1	Not Targeted
	6	**Responsible structure**	CA	Procurement of products		50% of all structural components by cost must meet the relevant sustainability attributes score of 10.	3			3	Not Targeted
			EP	Procurement of products		10% of all products in the structure by cost have a score of at least 15 or 80% of all products in the structure by cost have a score of at least 10	2			2	Not Targeted
	7	**Responsible envelope**	CA	Procurement of products		30% of all components in the building envelope by cost must meet the relevant sustainability attributes score of 10.	2			2	Not Targeted
			EP	Procurement of products		10% of all products in the building envelope by cost have a score of at least 15 or 60% of all products in the building envelope by cost have a score of at least 10	2			2	Not Targeted
	8	**Responsible systems**	CA	Procurement of products		20% of all mechanical, hydraulic, transportation, and electrical systems by cost meet score of 6.	1			1	Not Targeted
			EP	Procurement of products		5% of all active building systems by cost have a score of at least 11 or 35% of all active building systems by cost have a score of at least 6	1			1	Not Targeted

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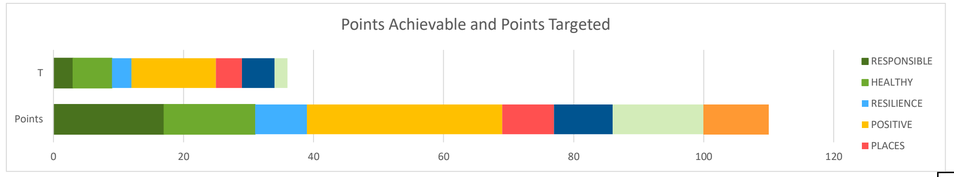

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							110	36	12	54	
Category	**Number**	**Credit**	**Level**	**Pathway**	**Type**	**Criteria**	**Points**	**T**	**TBC**	**NT**	**Credit Implementation Comments**
	9	**Responsible finishes**	CA	Procurement of products		40% of all internal building finishes by cost must meet the relevant sustainability attributes score of 7	1	1			
			EP	Procurement of products		10% of all internal building finishes by cost have a score of at least 12 or 60% of all internal building finishes by cost have a score of at least 7	1			1	Not Targeted
							17	**3**	**0**	**14**	
	10	**Clean air**	ME	Ventilation System Attributes		The building ventilation systems must be designed to comply with ASHRAE Standard 62.1:2013 or AS 1668:2012 (whichever is greater) regarding minimum separation distances between pollution sources and outdoor air intakes AND All new and existing ductwork that serves the building must be cleaned prior to occupation in accordance with a recognised Standard.	-	-			
				Provision of outdoor air	R	Outdoor air is provided at a rate 50% greater than the minimum required by AS 1668.2:2012 to each space in regularly occupied areas, or CO2 concentrations are maintained at or below 800ppm at all times during the default occupancy period. The system must continuously measure the concentration of CO2 within the breathing zone of each space during occupancy hours and be able to adjust accordingly for each space. CO2 sensors shall be located so that they provide accurate representative readings of the CO2 concentrations in occupied spaces. Project teams must provide detailed drawings and justification for the chosen locations of the CO2 monitoring systems. CO2 sensors must be located in each individually controlled supply air zone so that they provide accurate representative readings of the CO2 concentrations in occupied spaces.					The 50% improvement in Outside Air Rates applies to all occupied areas in the project.
					R	Residential: Ducted Outdoor air is provided at a rate as per AS1668.2:2012					
				Exhaust of elimination of pollutants		It must be demonstrated that pollutants from printing and photocopying equipment, cooking processes and equipment are limited from the nominated area by either: • Removing the source of pollutants; or • Exhausting the pollutants directly to the outside.					
			CA	Ventilation System Attributes		Any mechanical ventilation system within the building, whether existing or new, must provide adequate access to both sides of all moisture and debris-catching components for maintenance within the air distribution system.	2			2	Not Targeted
				Provision of outdoor air		Outdoor air is provided at a rate 100% greater than the minimum required by AS 1668.2:2012, or CO2 concentrations are maintained below 700ppm within each space in the regularly occupied area, at all times during the design occupancy period. Sensors are to be installed consistent with the Minimum Expectation (ME) requirements of this credit.					Not Targeted

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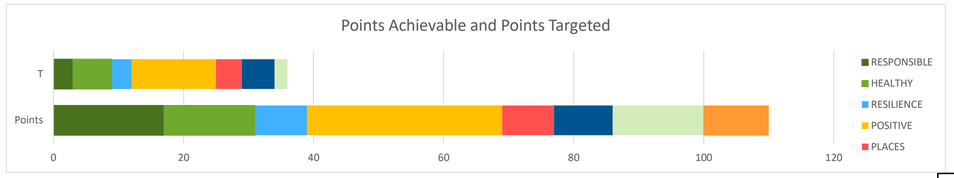

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Category	**Number**	**Credit**	**Level**	**Pathway**	**Type**	**Criteria**	**Points**	**T**	**TBC**	**NT**	**Credit Implementation Comments**
HEALTHY	11	**Light quality**	ME	Lighting Comfort		Lighting within the building must meet the following criteria: •All lighting must be flicker-free; •Light sources must have a minimum Colour Rendering Index (CRI) average R1 to R8 of 85 or higher, and have a CRI R9 of 50 or higher; •Light sources must meet best practice illuminance levels for each task within each space type with a maintained illuminance that meets the levels recommended in AS/NZS 1680.1:2006 series applicable to the project type and including maintenance; •The maintained Illuminance values must achieve a uniformity of no less than that specified in Table 3.2 of AS/NZS 1680.1:2006, with a maintenance factor method as defined in AS/NZS 1680.4.; and •All light sources must have a minimum of 3 MacAdam Ellipses.	-	-			Best Practice Selection of luminaires.
				Glare		Bare light sources must be fitted with baffles, louvers, translucent diffusers, ceiling design, or other means that obscures the direct light source from all viewing angles of occupants, including occupants looking directly upwards.	-	-			Best Practice Selection of luminaires.
				Daylight		95% of all apartments, the living rooms and all bedrooms have access to a view and daylight A narrative describing the building's daylight, view and glare control strategy;	-	-			
			CA	Daylight	R	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.	1		2		
				Artificial lighting		The artificial lighting solution must address the quality of light in the space, provide highlights and contrast, and seek to avoid excessive lighting or overly uniform solutions. •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, and; •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. The illuminance values must be calculated in accordance with AS/NZS 1680 series for the relevant task. Where unknown, a conservative estimate can be used.	1	2			
			EP	Daylight and artificial lighting		Achieves both Credit achievements criteria	2		2		Not Targeted
	12	**Acoustic Comfort**	ME	Acoustic Comfort		An Acoustic Comfort Strategy is prepared to describe how the building and acoustic design aims to deliver acoustic comfort to the building occupants.	-		-		Acoustic Consultant to provide details of acoustic comfort strategy
			CA	Internal Noise		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	2	2			
					R	In residential dwellings the internal ambient noise levels can exclude those services under the direct control of the occupant such as air-conditioning units and switchable exhaust fans (e.g. toilet, kitchen hoods and laundries). In buildings with sleeping areas (e.g. residential, hotel, hospitals, etc), to achieve the Internal Noise performance requirements of this credit, noise levels must not exceed recommended Sleep Disturbance criteria as defined in the NSW EPA Road Noise Policy 2011: Up to two noise events per night: maximum internal noise levels below 70 dB LAmax; and All other events: maximum internal noise levels below 55 dB LAmax					
				Acoustic Separation		The project must address noise transmission between enclosed spaces within the nominated area.					Not Targeted
					R	All walls and floors (excluding riser walls) separating enclosed spaces must exceed the minimum NCC requirements by 5points (excluding impact noise) Party walls separating open plan kitchens (where joinery units are fixed) from another open plan kitchen/living room shall be discontinuous in construction (discontinuous in accordance with the National Construction Code); and Entry doors must have perimeter and threshold seals.					Not Targeted
				Impact Noise Transfer		Impact noise transfer measured in accordance with ISO 16283-2 through a floor where: Floors are located above nominated areas; or Adjacent spaces belonging to different tenancies which share a floor must not exceed dB LnT, -w:55 for floors above residential accommodation spaces and 60 for all other spaces					

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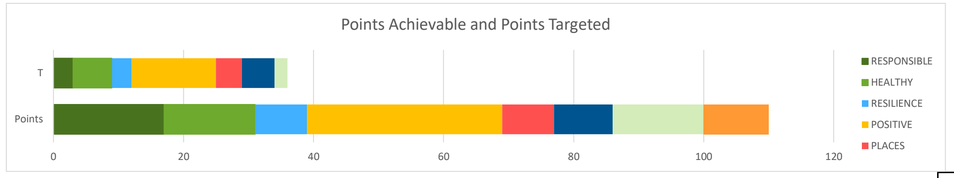

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	13	**Exposure to toxins**	ME	Low VOC Products		The building's paints adhesives, sealants, carpets, and engineered wood products are low or non-toxic. Occupants are not exposed to banned or highly toxic materials in the building.	-	-	-	-	
			CA	VOC level testing		Onsite test meeting following limits: TVOC = 0.27ppm; Formaldehyde = 0.02ppm.	2	2			
	14	**Amenity and comfort**	CA	Amenities		Provide a quiet room, exercise room and/or a parents room (with support for lactation activities) for occupants at rate of 1m² for every 10 people with individual rooms no smaller than 10m²	2			2	Not Targeted
	15	**Connection to nature**	CA	Views, plants, nature design		At least 60% of the nominated area has a clear line of sight to a high quality internal or external view. 5% of the buildings floor area or site area (whichever is greater) is utilised for connection to nature including green walls and roof gardens.	1		1		
			EP	Allocation to nature		At least 60% of the nominated area has a clear line of sight to a high quality internal or external view. In primary occupied spaces at a rate of one or more plants, in pots with a soil surface area totalling at least 500cm2 , every 15m2 of the nominated area. the building's design incorporates at least five biophilic design strategies. 5% of the buildings floor area or site area (whichever is	1			1	Not Targeted
							14	**6**	**5**	**5**	
RESILIENCE	**16**	**Climate change resilience**	ME	Climate Change Pre-screening		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.	-	-	-	-	
			CA	Comprehensive climate assessment		Comprehensive project-specific climate change risk and adaptation assessment must be developed for the project. High and extreme risks designed out.	1	1			
	17	**Operations resilience**	CA	Broad resilience assessment		The building's design and future operational plan addresses any high or extreme system-level interdependency risks. The building's design maintains a level of survivability and design purpose in a blackout.	2			2	Not Targeted
	18	**Community resilience**	CA	Community needs assessment		Review of key vulnerabilities within the community it is located and take steps to build community resilience through external consultation	1	1			
	19	**Heat Resilience**	CA	Heat Resilience		At least 75% of the whole site area comprises of one or a combination of strategies that reduce the heat island effect.	1	1			
	20	**Grid optimisation**	CA	Peak energy demand		The building is designed to reduced maximum demand by 10% with • Provides active generation and storage systems and the infrastructure to deliver an appropriate demand response strategy. The system (generation or storage) must incorporate switch gear and transfer switches to enable it to operate in the event of grid outage or grid demand response event; or • Has reduced its electricity consumption through passive design.	3			3	Not Targeted
							8	**3**	**0**	**5**	
	21	**Upfront carbon emissions**	ME	Improvement over reference		Emits 10% less upfront carbon emissions compared to a standard building	-	-	-	-	Embodied Energy minimised via Green Star Concrete, reduced embodied energy in steel, efficient Structural design to reduce Steel Mass
			CA			Emits 20% less upfront carbon emissions compared to a standard building	3	3			
			EP			Emits 40% less upfront carbon emissions compared to a standard building and remaining upfront carbon emissions are offset.	3			3	No offsetting allowed. 40% reduction must be achieved via material selection, construction and design. Credit to be revisited.
			ME		R	5 Star NatHERS minimum and Average of 6.5 Stars. And compliance with: • Domestic Hot Water demand • Pool Covers • Energy efficiency Requirements	-	-			

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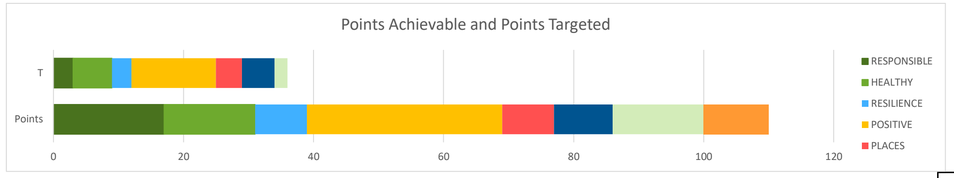

							Project Nominated Credits				
							110	36	12	54	
Category	**Number**	**Credit**	**Level**	**Pathway**	**Type**	**Criteria**	**Points**	**T**	**TBC**	**NT**	**Credit Implementation Comments**
POSITIVE	**22**	**Energy use**	CA	Improvement over reference	R	5.5 Star NatHERS minimum and Average of 7.0 Stars. And compliance with: • Domestic Hot Water demand • Pool Covers • Energy efficiency Requirements • Building Services (4 out of 9)	3	3			
			EP			6 Star NatHERS minimum and Average of 8.0 Stars. And compliance with: • Domestic Hot Water demand • Pool Covers • Energy efficiency Requirements • Building Services (6 out of 9)	3			3	Not Targeted
	23	**Energy Source**	ME	Zero Carbon Action Plan		The project team must develop a Zero Carbon Action Plan for the building. The plan must be signed off by the building owner or developer and included in any operational documents for the building.	-	-	-	-	
			CA			100% of the building's electricity must come from renewables. On-site or off-site renewables are acceptable.	3	3			
			EP			99% of energy consumed by the building comes from renewables. Energy is defined as all electricity consumed, as well as any fuels burned on-site, or off-site, for power, heating, cooling and cooking	3			3	Not Targeted
	24	**Other carbon sources**	CA	No refrigerants or offsets		Eliminates or offsets emissions from refrigerants. Emissions are assumed to be the refrigerant charge multiplied by its Global Warming Potential. The emissions must be offset at 100%. This includes fridges/freezers provided as part of a residential fitout package.	2	2			
			EP	Other carbon sources not captured		The building owner eliminates or offsets additional emissions not captured in the rest of the Positive category e.g. construction equipment on site. This includes where fridges or freezers are provided as part of a fitout package in a residential setting. There are two pathways available: • Eliminates high-GWP refrigerants from the building. Refrigerants must have a GWP of 10 or less; or • Offsets 100% of carbon emissions from refrigerants.	2		2		
	25	**Water use**	ME	Water use	R	Multi-unit residential buildings use 10% less potable water compared to a reference building	-	-			
			CA		R	Multi-unit residential buildings use 40% less potable water compared to a reference building.	3			3	Not Targeted
			EP		R	Each unit in an apartment building uses 60% less potable water compared to a reference building.	3			3	Not Targeted
	26	**Life Cycle Impacts**	CA	Life Cycle Assessment		Comparative life cycle assessment (LCA) must be conducted for the project. The project demonstrates a 30% reduction in life cycle impacts when compared to standard practice.	2	2			
							30	**13**	**2**	**15**	

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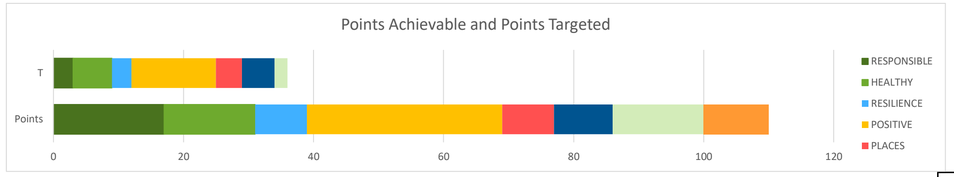

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PLACES	**27**	**Movement and Place**	ME	End of trip facilities	R	N/A for residential	N/A	N/A	N/A	N/A	N/A for residential projects
			CA	Cyclist Facilities		The building's access must prioritise walking and cycling options. This means the building's 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.	3		3		EV Charging Strategy and Green Travel plan to be developed to enable credit requirements to be met
					R	In a residential building, the access points must connect to the relevant cycling storage facilities. If these are at a unit level, the project team must show how the access won't be blocked by strata at a later date.					
				Sustainable Transport plan		Project must prepare and implement a Sustainable Transport Plan and be reflected in building's design. The building's design and location prioritises walking, cycling, and transport options that reduce the need for private fossil fuel powered vehicles.					
	28	**Enjoyable places**	CA	Provision of communal 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.	2	2			Activation Strategy to be developed
					R	1.75 m2 / dwelling (minimum of 250 m2) of communal space. For multi-unit residential projects, public space may not be desired by residents. Some developments may provide communal/shared spaces for residents and visitors, but not completely public spaces. This is acceptable for residential projects only.					84 Units therefore 147m² required as a minimum. Current drawings show 563m2 of communal open spaces.
	29	**Contribution to place**	CA	Contribution to place		The building must provide an urban context report that outlines the urban context of the development and the design responses. The report must include: Urban context analysis: – Assessment and analysis of the local setting and wider urban context. This must include physical, social, cultural and economic factors; – Outline any planned changes to the local area (for example if located in a growth zone) and the project's design response to those. This may include Local or State Government's vision for the area; and – Identify any local challenges which the building can contribute to address. Design responses: – Demonstration of the design responses to the urban context analysis; and – Demonstration that the that the public space is not negatively impacted by the proposed design.	2	2			
	30	**Culture, Heritage and Identity**	CA	Culture, Heritage and Identity		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.	1			1	Not Targeted
							8	**4**	**3**	**1**	

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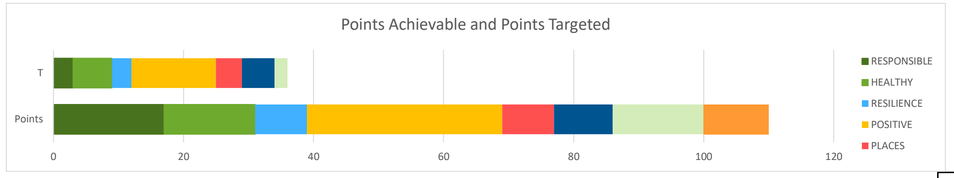

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PEOPLE	**31**	**Inclusive Construction Practices**	ME	High quality staff support		During the building's construction, the head contractor provides gender inclusive facilities and protective equipment. The head contractor also installs policies on-site to increase awareness and reduces instances of discrimination, racism and bullying.	-	-	-	-	
			CA			Promote positive mental and physical health outcomes of the site activities and culture of site workers, through programs and solutions on site that address at least 5 areas	1	1			
	32	**Indigenous Inclusion**	CA	Indigenous Inclusion		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; or Incorporating design elements using the Indigenous Design and Planning principle	2	2			
	33	**Procurement and Workforce Inclusion**	CA	Procurement of goods and services		Direct at least 2% of project's CAPEX to the procurement of goods, services and construction provided by Aboriginal businesses; Social enterprises; and/ or Disability enterprises	2	2			
			EP	Procurement of goods and services		Direct at least 4% of project's CAPEX to the procurement of goods, services and construction provided by Aboriginal businesses; Social enterprises; and/ or Disability enterprises	1			1	
	34	**Design for inclusion**	CA	Designing for inclusion		To be compliant, 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). This applies to common spaces, bathroom facilities and amenities provided within the building. This must include: • Equal access to the building: Provide equitable, appealing, safe, and secure access in a manner that does not segregate or stigmatise users through all principal entrance points and main thoroughfares inside and outside the building; • Diverse wayfinding: Introduce visual, physical, olfactory, and auditory solutions to help individuals navigate the site in a safe and enjoyable manner; and • Inclusive spaces: Introduce internal and external spaces for a diverse range of users, including parents, family restrooms, emergency rooms, quiet rooms and social interaction rooms. These rooms must be accessible to all users.	2		2		
			EP	Community engagement		project team must consult with distinct community types to develop a needs analysis that will influence the project.	1			1	Not Targeted
							9	**5**	**2**	**2**	

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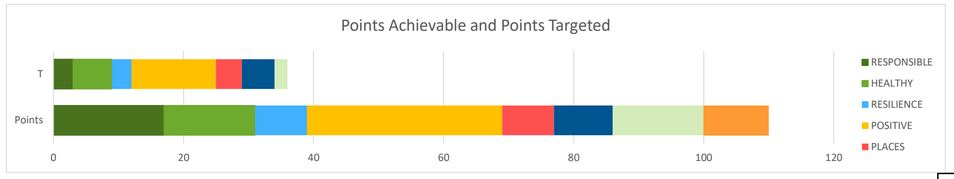

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Category	**Number**	**Credit**	**Level**	**Pathway**	**Type**	**Criteria**	**Points**	**T**	**TBC**	**NT**	**Credit Implementation Comments**
NATURE	**35**	**Impacts to nature**	ME	Impacts to nature		The building was not built on, or significantly impacted, a site with a high ecological value and managing light pollution complying with AS requirements. If the project site is adjacent to the above, or within 100 meters, or the site contains the above and these are being protected, the construction and future operations of the site takes measures to reduce their impact to the above as follows: – Both the Waterways Protection Credit Achievement and the Credit Achievement for this credit is met, and – The light pollution impacts are managed, and – Where the site is next to a wetland (as above), by also putting in place Wetland Protection Measures.	-	-	-	-	
				Light Pollution to Neighbouring Bodies	R	For Class 2 buildings (residential), the compliance is for columns 4 and 5 as per Table 2.1 of AS 4282:1997					
				Light Pollution to Night Sky		no external luminaire on the project has a ULOR that exceeds 5%, relative to its actual mounted orientation.					
				Wetland Management Plan		The site-specific Wetland Management Plan must be prepared by a qualified Ecologist or other qualified professional and include requirements for ongoing quarterly monitoring, annual reporting and management of the wetland ecosystem for a minimum of five years. The plan must be exhibited to the public on the applicant's website, or the local council's offices or library, for a minimum of 24 months.					No Wetland
			CA	Ecological report		Ecological impacts, consider community and local stakeholder expectations, and address impacts to nature from light, noise, water, vegetation and any other relevant issues. Buildings design and construction conserves s 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.	2			2	Not Targeted
	36	**Biodiversity enhancement**	CA	Landscape selection and provision		External landscape at a ratio of either 15% of the site area or at a ratio of 1:500 of GFA, whichever is larger. Greater than 60% of plants must be indigenous	2	2			Current drawings show 47% of site area of landscaping and 14% deep plantation.
			EP			External landscape at a ratio of either 30% of the site area or at a ratio of 1:300 of GFA, whichever is larger. Greater than 80% of plants must be indigenous	2			2	Not Targeted
	37	**Nature connectivity**	CA	Wildlife movement		Provide either landscaping or infrastructure to promote movement. Each conservation area must be at least 185m2. Connect to green/blue grid	2			2	Not Targeted
	38	**Nature Stewardship**	CA	Nature Stewardship		Restore offsite biodiversity equivalent to the total GFA of the development, or site area, whichever is greater. Offsite area must be same ecological value.	2			2	Not Targeted
	39	**Waterway protection**	CA	Waterway protection		Demonstrate an annual average flow reduction (ML/yr) of 40% compared to pre-development levels and meets specified pollution targets.	2			2	Not Targeted
			EP	Waterway protection		Demonstrate an annual average flow reduction (ML/yr) of 80% compared to pre-development levels and meets specified pollution targets.	2			2	Not Targeted
							14	**2**	**0**	**12**	
LEADERSHIP	**40**	**Market Transformation**	CA	Market Transformation		The project demonstrates: How a building solution or process is considered leading in their targeted sector, nationally or globally; or That the technology or process is not commonly used within Australia's building industry; or globally, depending on the context of the innovation claimed.	5		TBC		Market Transformation Leadership Credits to be submitted for GBCA approval; Additional credits to be workshopped.
	41	**Leadership Challenges**	CA	Leadership Challenges		Meet the requirements of the following innovation challenges identified by the GBCA	5		TBC		Review once Leadership Challenge Credits are released by GBCA
							10	**0**	**0**	**0**	