

Memorandum

Date: 29.06.2022
Project: Fitzpatrick Industrial Estate, Erskine Park
Document Reference: SY221485-SEME01-2
Client Reference: Fitzpatrick Investments
22-24 Junction Street
Forest Lodge NSW 2037

Ecologically Sustainable Development Statement

The intent of this memo is to outline the Sustainability aspirations of the new industrial development at Lockwood Road Erskine Park and demonstrate compliance with the Ecologically Sustainable Development (ESD) objectives as requested by Penrith Council.

We understand that Penrith City Council DCP conditions that developments be developed in a sustainable manner. This nominates a specific commitment to achieving not less than a 4 Star Green Star rating for industrial developments over the value over \$1 million. Noting this condition Northrop has completed a review of the project to benchmark the current development design against this rating standard to provide comfort to the council that the project is committed to achieving equivalence to this rating level.

As part of the sustainability aspiration the development has looked to invest directly in measures across the project and will continue to consider key initiatives across the detailed design process including but not limited to:

- A strong commitment to energy efficiency with the project design to demonstrate a greenhouse gas emissions reduction compared to the code-compliant base case, this can be seen in the use of highly efficient lighting throughout the warehouse areas and the minimal use of air-conditioning within the facility;
- An efficient façade performance; designed to minimise heat gains into the building while promoting the entry of daylight into internal spaces;
- Low impact materials selections with the project through the use of certified materials where applicable including the steel throughout;
- An optimised air conditioning system to provide a good provision of outside air while maintaining thermal comfort in all occupied conditioned spaces;
- Provision of a 198kW onsite energy generation plant (99kW solar PV system for each tenant) and allowance for expansion of this within the roof structure;
- The use of highly efficient water fixtures and fittings
- Provisions for rainwater tanks to serve irrigation and toilet flushing which will typically show a 75% reduction in potable water use within an industrial facility.
- Implementation of a Climate Resilience and adaptation measures such as a greater than 2-degree roof tilt and provisioning of space for future mechanical and electrical needs. This resilience is shown specifically in the design of the projects super awning which drains away from the building to avoid extreme live loads associated extreme rainfall.

The development will also aim to incorporate the following Green Star credits from the Green Star Buildings rating tool which forms part of the pathway to exceed the target of a 4 Star Green Star for Buildings v1b benchmark.

	Credit	Benchmark
Responsible	Responsible construction	The site will have an environmental management plan. The builder will have an environmental management system (ISO14001 accredited). 80% of Construction and demolition waste will be recycled and sustainability training will be provided to construction workers.
	Verification & handover	The building will be commissioned and tuned. And appropriate metering installed.
	Operational waste	The building will have appropriate spaces for waste management and an appropriately sized loading dock. These can be seen on the updated plans.
Healthy	Clean air	The ventilation system will have appropriate filtration. Point source pollutants will be exhausted directly outside (printers, kitchens). And the building will aim to provide at least 50% additional outside air compared to AS1668 within the offices.
	Light quality	Glare will be managed. Light fittings will be of good quality. Lighting levels will align to AS1168. And through the provision of translucent roof lighting daylight provided throughout the building.
	Acoustic Comfort	Internal noise levels from services and the outside will be limited through an acoustic comfort strategy.
	Exposure to toxins	To support internal comfort all the paints, adhesives, sealants, and carpets will be low VOC. Engineered wood will be low formaldehyde. And no lead, asbestos and PCBs will be installed in the building.
Resilient	Climate change resilience	The project has done a pre-screening assessment and delineated design choices to mitigate key climate risks this includes roof loads, use of reflective Zincalume roofing and provisioning of space around mechanical plant for future expansion.
Positive	Upfront carbon emissions	The building is expected to achieve 10% less upfront carbon emissions compared to a standard building from materials through a strong focus on materials minimisation in the structural design.
	Energy use	The building will achieve at least a 10% lower energy consumption than one built to minimums of the National Construction Code 2019. This will be achieved through good lighting design throughout and good control of the VRF air-conditioning systems.

	Energy source	The building will produce a Zero Carbon Action Plan and avoid the use of fossil fuels where possible.
	Water use	The building will aim to reduce potable water use by at least 15% when compared to a reference building, this is being achieved through fixtures selection and the inclusion of the rainwater tank. With this tank providing rainwater to toilets this is expected to improve to a 75% reduction in potable water demand.
Places	Movement and place	There will be showers, lockers and change rooms in the building to support active transport to and from the site.
People	Inclusive construction practices	There will be provisions for providing gender appropriate facilities and personal protective equipment throughout construction.
Nature	Impacts to nature	Ecologically sensitive areas of the site will be protected

The detail of the ESD pathway will be further developed as part of the design process and will deliver on the outcomes noted above. We note that based on the current design the physical attributes of the project can achieve the nominated 4 Star benchmark aligning to Industry Best Practice in sustainability specific points noted as achievable are included in Appendix A.

The measured included within the design show a strong commitment to a social, environmental, and economic sustainability of the project in line with the aims of the council's DCP requirements and the latest industry standards.

Should there be any queries, please do not hesitate to contact the undersigned.

Yours faithfully,



Ian Van Eerden

Senior Sustainability Engineer | Green Star Accredited Professional

Date	Rev	Issue	Author	Verifier
29.06.2022	1	Preliminary Issue	I. Van Eerden	R.McShane

Appendix A: Green Star Pathway

Project	<i>Fitzpatric Industrial Estate, Erskine Park</i>
Targeted Rating	<i>4 Stars - Best Practice</i>

Project Score
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Code	Credit	Minimum Expectation	Credit Achievement	Exceptional Performance	Total points available	Pathway	Summary of Credit Requirements
Responsible					17		
1	Industry Development		1		1	1	Credit Achievement: Green Star Accredited Professional (Sustainability Consultant), Disclose the cost of sustainable building practices to the GBCA, and market the building sustainability achievements
2	Responsible Construction	●	1		1	1	Minimum Expectation: Builder or head contractor has an environmental management system in place to manage its environmental impacts on site. Head contractor provides training on the sustainability targets of the building. Credit Achievement: Builder diverts at least 90% of construction and demolition waste from landfill.
3	Verification and Handover	●	1		1	●	Minimum Expectation: Metering and monitoring, commissioning and tuning commitment, operations and maintenance information, building user information, airtightness testing. Credit Achievement: Independent commissioning agent (ICA) OR Soft Landings
4	Operational Waste	●			0	●	Minimum Expectation: Separation of waste streams, dedicated waste storage area and signoff by a waste specialist
5	Responsible Procurement		1		1		Credit Achievement: Builder to follow ISO20400 Sustainable Procurement Guidance which includes a risk and opportunity assessment and a responsible procurement plan, with at least one identified supply chain risk and opportunity addressed
6	Responsible Structure		3	2	5		Credit Achievement: 80% of all products in the structure (by cost) meet a responsible products value score of at least 10
7	Responsible Envelope		2	2	4		Credit Achievement: 60% of all building envelope components (by cost) meet a responsible products value score of at least 10
8	Responsible Systems		1	1	2		Credit Achievement: 20% of all active building systems (by cost) meet a responsible products value score of at least 6
9	Responsible Finishes		1	1	2	1	Exceptional Performance: 10% of all internal building finishes (by cost) meet a Responsible Products Value of at least 12 or 20% of all internal building finishes (by cost) have an average Responsible Products Value of at least 9
						3	
Healthy					14		

Code	Credit	Minimum Expectation	Credit Achievement	Exceptional Performance	Total points available	Pathway	Summary of Credit Requirements
10	Clean Air	●	2		2	●	Minimum Expectation: Minimum separation distances between pollution sources and outdoor air intakes, all new and existing ductwork cleaned prior to occupation, elimination or exhaust systems for printing/photocopy equipment/cooking processes. Credit Achievement: Adequate maintenance access to ventilation equipment, 100% improvement in outdoor air rates
11	Light Quality	●	2	2	4	●	Minimum Expectation: Lighting systems are designed for visual comfort, glare is eliminated, daylighting systems exceed standards. Credit Achievement: Lighting solution provides high quality illumination, daylight levels at least 40% of the regularly occupied areas receive high levels of daylight.
12	Acoustic Comfort	●	2		2	●	Minimum Expectation: Acoustic comfort strategy prepared to describe how building and acoustic design aims to deliver comfort to the building occupants. Credit Achievement: The building achieves maximum internal noise levels, provides acoustic separation, minimises impact noise transfer and is designed with reverberation control.
13	Exposure to Toxins	●	2		2	●	Minimum Expectation: The building's paints, adhesives, sealants and carpets and low VOC or non-toxic. Credit Achievement: On-site tests verify the building has low VOC and formaldehyde levels.
14	Amenity and Comfort		2		2		Credit Achievement: The building has dedicated amenity rooms to act as a parent room, relaxation room, or an exercise room
15	Connection to Nature		1	1	2	1	Credit Achievement: The building provides views, includes indoor plants and incorporates nature-inspired design.
						1	

Resilient

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16	Climate Change Resilience	●	1		1	1	Minimum Expectation: Climate change pre-screening checklist and risks shared. Credit Achievement: The project team develops a project-specific climate change risk and adaptation assessment.
17	Operations Resilience		2		2	2	Credit Achievement: Review of acute shocks and stresses, plan in place to address high or extreme system-level interdependency risks, building design maintains a level of survivability and design purpose in a blackout.
18	Community Resilience		1		1		Credit Achievement: Needs analysis of the community, shocks and stresses identified and plan developed to manage these
19	Heat Resilience		1		1		Credit Achievement: At least 75% of the whole site area comprises one or a combination of strategies that reduce the heat island effect
20	Grid Resilience		3		3		Credit Achievement: Active generation or storage systems are provided; or infrastructure in place to provide a demand response strategy; or electricity consumption reduced through passive design.
						3	

Positive

30

Code	Credit	Minimum Expectation	Credit Achievement	Exceptional Performance	Total points available	Pathway	Summary of Credit Requirements
21	Upfront Carbon Emissions	●	3	3	6	●	Minimum Expectation: Upfront carbon emissions are at least 10% less than reference building. Credit Achievement: Upfront carbon emissions are 20% less than reference building and demolition works are offset. Exceptional Performance: Upfront carbon emissions are at least 40% less than those of a reference building and demolition works are offset. Note that 6 Star rating must meet Credit Achievement.
22	Energy Use	●	3	3	6	3	Minimum Expectation: The building's energy use is at least 10% less than a reference building. Credit Achievement: The building's energy use is at least 20% less than a reference building. Exceptional Performance: The building's energy use is at least 30% less than a reference building. Note that 6 Star rating must meet Credit Achievement.
23	Energy Source	●	3	3	6	●	Minimum Expectation: The building provides a Zero Carbon Action Plan. Credit Achievement: 100% of the building's electricity comes from renewable energy. Exceptional Performance: 100% of the building's energy comes from renewables. Note that 6 Star rating must meet Exceptional Performance.
24	Other Carbon Emissions		2	2	4		Credit Achievement: The building owner eliminates or offsets emissions from refrigerants. Exceptional Performance: All other emissions not captured in the positive category are eliminated or offset. Note that 6 Star rating must meet Credit Achievement.
25	Water Use	●	3	3	6	6	Minimum Expectation: The building has water efficient fixtures or uses 15% less potable water compared to a reference building. Credit Achievement: The building uses 45% less potable water compared to a reference building and has infrastructure for recycled water connection. Exceptional Performance: The building uses 76% less potable water compared to a reference building.
26	Life Cycle Impacts		2		2		Credit Achievement: The project demonstrates a 30% reduction in life cycle impacts when compared to standard practice.
						9	
Places					8		

Code	Credit	Minimum Expectation	Credit Achievement	Exceptional Performance	Total points available	Pathway	Summary of Credit Requirements
27	Movement and Place	●	3		3	●	Minimum Expectation: The building includes showers and changing facilities which are accessible, inclusive and in a safe and protected space. Credit Achievement: In addition the building's access prioritises cycling and bicycle parking, a sustainable transport plan has been prepared, EV charging capabilities are provided, fossil fuel vehicle use is reduced and the design and location encourage walking.
28	Enjoyable Places		2		2		Credit Achievement: The building delivers memorable, beautiful, vibrant communal or public places when people want to gather and participate in the community and the spaces are inclusive, safe, flexible and enjoyable.
29	Contribution to Place		2		2		Credit Achievement: The building's design contributes to the liveability of the wider urban context and enhances the public realm; or independent reviews are held during the development of the design.
30	Culture, Heritage and Identity		1		1		Credit Achievement: The building's design reflects and celebrates local demographics and identities, the history of the place, and any hidden or minority entities; or this celebration was arrived through meaningful engagement with community groups early in the design process.

People	9
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31	Inclusive Construction Practices	●	1		1	●	Minimum Expectation: During construction head contractor provides gender inclusive facilities onsite including PPE. The head contractor also installs policies on-site to increase awareness and reduces instances of discrimination, racism and bullying. Credit Achievement: In addition policies and programs are relevant to construction workers on site, head contractor provides high quality staff support on-site to reduce at least five key physical and mental health impacts, and the effectiveness of the interventions is evaluated.
32	Indigenous Inclusion		2		2		Credit Achievement: The project team plays an active role in the organisational Reconciliation Action Plan; or The building's design and construction incorporates design elements using the Indigenous design and planning strategies and principles.
33	Procurement and Workforce Inclusion		2	1	3		Credit Achievement: The project implements a social procurement plan. At least 2% of the building's total contract value has been directed to generate employment opportunities for disadvantaged and under-represented groups. Exceptional Performance: The target achieved for contract value is increased to 4%
34	Design for Inclusion		2	1	3	2	Credit Achievement: The building is designed and constructed to be inclusive to a diverse range of people with different needs. Exceptional Performance: In addition engagement with target groups has informed the inclusive design.
						2	

Nature	14
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35	Impacts to Nature	●	2		2	●	Minimum Expectation: Building was not building on a site with high ecological value. The building's light pollution is minimised. There is on-going monitoring, reporting and management of the site's wetland ecosystem. Credit Achievement: In addition the buildings' design and construction conserves existing natural soil, hydrogeological flows and vegetation elements. If deemed necessary by an Ecologist, at least 50% of existing site with high biodiversity is retained.
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Code	Credit	Minimum Expectation	Credit Achievement	Exceptional Performance	Total points available	Pathway	Summary of Credit Requirements
36	Biodiversity Enhancement		2	2	4		Credit Achievement: The building's site includes an appropriate landscaped area (15% of site or 1:500 of the GFA). The landscaping includes a diversity of species and prioritises the use of climate-resilient and indigenous plants. The project team develops a site-specific Biodiversity Management Plan and provides it to the building owner or building owner representative. Exceptional Performance: In addition a greater area of landscaping is provided., The landscaping includes critically endangered plant species native to the bioregion.
37	Nature Connectivity		2		2		Credit Achievement: The site must be built to encourage species connectivity through the site, and to adjacent sites. If the project sits within a blue or green grid strategy it must contribute to the goals of the strategy.
38	Nature Stewardship		2		2		Credit Achievement: Areas of restoration or protection are provided. Restoration or protection activities are beyond the development's boundary. The building owners undertakes activities to protect or restore biodiversity at scale. The actions occur beyond legislated requirements.
39	Waterway Protection		2	2	4		Credit Achievement: The project demonstrates a reduction in average annual stormwater discharge of 40% across the whole site. Specified pollution targets are met. Exceptional Performance: The reduction target achieved is 80%.

Leader Leadership					0		
40	Market Transformation				0	TBD	Project implements a building solution or process is considered leading in their targeted sector, nationally or globally.
41	Leadership Challenges				0	TBD	Project meets a leadership challenge developed by the GBCA
							18

Green Star Buildings Certification Pathway

The diagram below details the ratings awarded by Green Star Buildings.



Minimum Expectations are not rewarded with points; therefore, to achieve a rating, the project must accumulate points in addition to the Minimum Expectations.