



Oakdale East Industrial Estate – Precinct 2 – Building 2A and Building 2B and Lot C

Sustainability Management Plan

Goodman Property Services (Aust) Pty Ltd

The Hayesbery
1-11 Hayes Road
Rosebery NSW 2018

Prepared by:

SLR Consulting Australia

SLR Project No.: 630.033047.00001

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Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
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1.1	2 July 2026	Dr Neihad Al-Khalidy	Mark Hobday	Dr Neihad Al-Khalidy

Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Goodman Property Services (Aust) Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.



Executive Summary

SLR Consulting Australia Pty Ltd (SLR) has been engaged by Goodman Property Services (Aust) Pty Ltd to prepare a Sustainability Management Plan (SMP) to accompany a State Significant Development Application (SSDA) for the development of a warehouse facility in Precinct 2 at the Oakdale East Industrial Estate (OEIE), at 2-10 Old Wallgrove Road, Horsley Park.

This study addresses the following development:

- **Concept Plan Amendments (Mod 6):** Amendments to State Significant Development Application 37486043 (as modified) in accordance with Section 4.24 of the *Environmental Planning & Assessment Act 1979*
- **Detailed Application (Proposed Works):** State Significant Development Application (SSDA) No. 120888992 based on Industry-specific Secretary's Environmental Assessment Requirements (SEARs) received dated 8 May 2026.

This study has been prepared in accordance with the following Secretary's Environmental Assessment Requirements (SEARs):

- Identification of how ESD principles (as defined in Section 193 of the EP&A Regulation) are incorporated in the design and ongoing operation of the development demonstration of how the development will meet or exceed the relevant industry recognised building sustainability and environmental performance standards
- Demonstration of how the development minimises greenhouse gas emissions (reflecting the Government's goal of net zero emissions by 2050) and consumption of energy, water (including water sensitive design) and material resources
- if Chapter 3 of State Environmental Planning Policy (Sustainable Buildings) 2022 applies:
 - demonstrate how the development has been designed to address the provisions set out in Chapter 3.2(1)
 - provide a NABERS Embodied Emissions Material Form to disclose the amount of embodied emissions attributable to the development in accordance with Section 35BA of the EP&A Regulation.

This Sustainability Management Plan outlines various initiatives that aim to improve the sustainability outcomes of the development. The following initiatives will be further developed as the design progresses and implemented subject to feasibility.

- A PV solar system of at least 3,675 kW has been proposed.
 - The proposed 3,675 kW PV solar system will offset approximately 5,097 MWh/year of energy usage
 - The estimated greenhouse gas CO₂ emission saving is approximately 3,415,141 kgCO₂/annum
- Daylight-controlled LED lighting for the warehouse instead of metal halide, resulting in a considerable energy reduction and reduced maintenance;
- Motion sensors to all LED lights within the warehouse and offices;
- Translucent roof sheeting to warehouse areas. At least 5% of the roof area is dedicated to skylights;



- Roof and external wall insulation to conditioned areas as per NCC requirements;
- High performance glazing to conditioned areas as per NCC requirements;
- Passive solar design for external outdoor areas;
- Efficient air conditioning system;
- Power sub-metering to enable continued review of power consumption for the offices and warehouse;
- Selection of endemic and low-maintenance landscaping species;
- 40 kL rainwater tanks for rainwater harvesting and re-use for landscape irrigation and toilet flushing;
- Low flow fixtures and fittings, including taps and shower heads;
- Low VOC paints, carpet, and sealant for all offices;
- 5% of total parking spaces are dedicated to electric cars with charging stations proposed;
- Low carbon construction materials, including at least 10% replacement of cement with fly ash;
- Upfront carbon emissions are to be at least 10% less than those of a reference building; and
- Other measures as detailed in this report.

By implementing all energy efficiency measures described in Section 5 of this report, the proposed building will likely achieve a 194.6% GHG emission reduction when compared with 2022 NCC Reference Building.

By implementing the water efficiency measures outlined in this report, the project is likely to achieve 48% reduction in water consumption compared to a Green Star baseline.

A detailed response to SEARS requirements is summarised in the table below.

Table 1 Response to SEARS Requirements

Item for inclusion	Action and Report Location
• Identification of how ESD principles (as defined in Section 193 of the EP&A Regulation) are incorporated in the design and ongoing operation of the development demonstration of how the development will meet or exceed the relevant industry recognised building sustainability and environmental performance standards	Section 5 and Section 6 detail how the project exceeds relevant industry recognised building sustainability and environmental performance standards through the implementation of best design principal and a wide range of ESD initiatives including renewable energy to offset the site energy use and reduce peak demand on electricity supply infrastructure. Section 5.1 details how ESD principle as defined in clause 7 (4) of Schedule 2 of the Environmental Planning and Assessment Regulation 2000 (reproduced in Clause 193 of the 2022 revision of the regulation) and up to date legislation are being incorporated in the design, construction, and operation phases of the project.



Item for inclusion	Action and Report Location
	In terms of Precautionary Principle, the project does not present threat of serious or irreversible environmental damage. The project conducted all required environmental studies and incorporated adaptability and resilience measures in the design. Inter-generational equity, the health, diversity and productivity of the environment are enhanced for the benefit of future generations via the commitment to a large 3,675 kW PV solar installation and 5-star Green Star rating (Australian Excellence Development). Other initiatives include sustainable materials, reduced waste, reduction in heat island effect, etc. Refer Section 5.1 for all other initiatives. From a conservation of biological diversity and ecological integrity perspective, the project satisfies all environmental and statutory provisions requirements and will maintain the existing ecological structures (species and ecosystems, etc) for the proposed site and provide additional native vegetation planting and reduced stormwater runoff the site. The proposed ESD initiatives will help achieve significant reductions in the energy, waste and water required by the development.
Demonstration of how the development minimises greenhouse gas emissions (reflecting the Government's goal of net zero emissions by 2050) and consumption of energy, water (including water sensitive design) and material resources	The project is targeting a 5 Star Green Star rating using Buildings rating tool and entering an Agreement to Rate the office spaces under NABERS Energy rating. By implementing all energy efficiency measures described in Section 5, including the proposed PV solar system, the project will significantly minimise greenhouse gas emissions, reflecting the goal of achieving net zero emissions. The proposed 3,675 kW PV solar system will offset approximately 5,097 MWh/year of energy usage By implementing all water efficiency measures described in Section 6, including 5-star rated toilets, urinals, and taps and the proposed rainwater harvesting facility, the proposed development will reduce its potable water demand by approximately 48%. The project is also targeting to reduce the embodied carbon emissions by 10% from Green Star baseline by using material such concrete with SCM replacement and low carbon steel.



Item for inclusion	Action and Report Location
- if Chapter 3 of State Environmental Planning Policy (Sustainable Buildings) 2022 applies: a. demonstrate how the development has been designed to address the b. provisions set out in Chapter 3.2(1) - Provide a NABERS Embodied Emissions Material Form to disclose the amount of embodied emissions attributable to the development in accordance with Section 35BA of the EP&A Regulation.	The following design considerations have been implemented to address Chapter 3.2.(1) of SEPP 2022: - The project is committed to entering a NABERS Agreement to Rate for the office components and targeting 5.5-star NABERS Energy and 3-star NABERS Water ratings. - More than 90% of the predicted construction waste arising from the development will be diverted from landfill. Refer Section 5.1, Page 23. - The reliance on artificial lighting and mechanical ventilation has been reduced via Translucent roof sheeting to warehouse areas, passive design, outdoor seating area and control systems. - The peak demand for electricity is significantly reduced via a proposed 3,675 kW PV solar system. - To enable effective review of energy usage by the project, sub-metering will be arranged in accordance with the Goodman Metering Strategy, typically organised by function or local area. for example: HVAC/Mechanical services, Safety systems, Lighting, Office areas, General Power, Specialised plant/machinery zones, and Solar generation - The Monitoring strategy in line with Green Star requirement will be provided. The Quantity Surveyor has prepared a signed NABERS Embodied Emissions Material Report for the current stage of the project

The project is committed to achieve a 5-Star Green Star Rating using the Green Building Council of Australia (GBCA) Buildings Rating Tool.

Building tuning will be conducted by the builder. Subject to feasibility SLR recommends, that quarterly reviews of actual building energy and water consumption be carried out once the warehouses are operational to check the actual energy usage and energy savings and verify that all systems are performing at their optimum efficiency. This will provide an opportunity for the systems to be tuned to optimise time schedules to best match occupant needs and system performance while satisfying the sustainability target for the project.

In conclusion, it is envisaged that the sustainability initiatives outlined in this report will assist the developer in addressing the SEARs requirements and will contribute to efficient outcomes in design, construction, and operation.



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1.0 Introduction

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- **Detailed Application (Proposed Works):** State Significant Development Application (SSDA) No. 120888992 based on Industry-specific Secretary's Environmental Assessment Requirements (SEARs) received dated 8 May 2026.

The proposed development is being undertaken by Goodman Property Services (Aust) Pty Ltd (Applicant) on behalf of BGMG 14 Pty Ltd (ACN 661 888 884) as trustee of BGMG 1 Oakdale East Trust No.2 (Owner). The development is located at 2-10 Old Wallgrove Road, Horsley Park (the Site). The folio identifier number is Lot 109 of Deposited Plan 1293112.

The below further outlines the respective works the Development Applications seek approval for.

1.1 Concept Plan approval Amendments | State Significant Development Application No 37486043, Mod 6

As part of the proposed works under SSD No. 120888992, the following amendments are proposed to the Concept approval and Stage 1 Infrastructure works approved under SSDA 37486043:

- Amendment to approved Masterplan and Subdivision plan to accommodate revised Precinct 2-5 layout which will consolidate Precincts 2, 4 and 5, resulting in a total of three (3) precincts. (Precinct 1, 2 and 3).
- Amendment of Stage 2 infrastructure scope to accommodate revised and consolidated Precinct 2-5 layout.
- Amendment of Development Controls, including those prescribed under Condition A9 & A10 of the consent, specifically:
 - Building Height
 - Maximum GLA
- Increase maximum permissible vehicle from a 30 m super B-double to a 36.5m B-triple (Condition D14)

This application, inclusive of the amendments to the Concept approval under SSD 37486043, seeks to facilitate the development of Building 2A, 2B & Lot 2C and associated Internal infrastructure changes.

1.2 Detailed Application, State Significant Development Application No. 120888992

The SSDA seeks approval for the construction, fit-out, operation and use of 2 warehouse buildings and associated internal site infrastructure works to accommodate the proposed building layouts. Specifically, this includes:

- Warehouses and Distribution Building – Building 2A



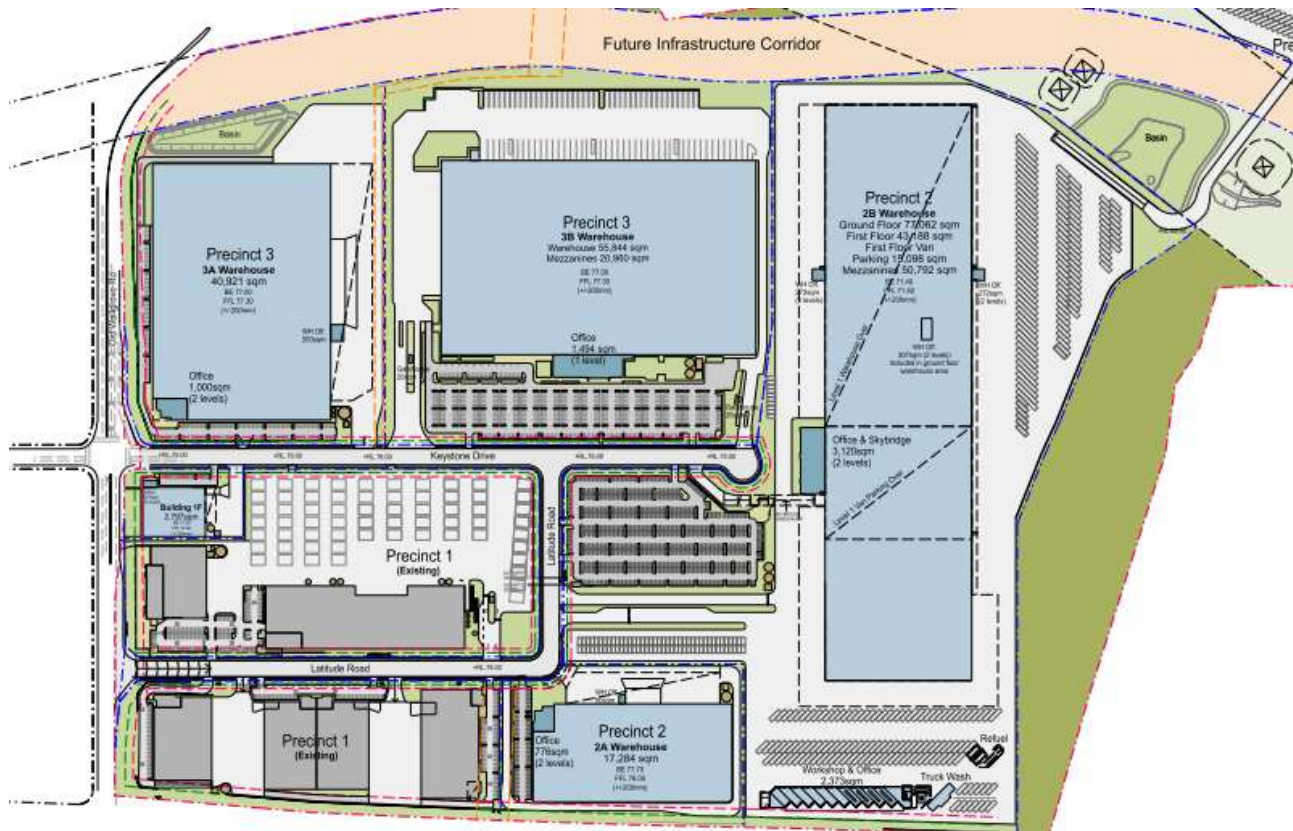
- 24/7 warehouse and distribution use.
- Construction, operation, fit-out (warehouse racking and office fit-out) and use of approximately 18,110 m² warehouse with ancillary office GLA. Proposed ridge height of 14.6m (excluding rooftop plant and solar).
- Includes hard stand, dock offices, loading bays, landscaping, electric vehicle charging, solar panels and signage.
- Warehouses and Distribution Building – Building 2B & Lot 2C
 - 24/7 warehouse and distribution use for an automated mail and parcel processing and sorting facility.
 - Construction, operation, fit-out (office and warehouse) and use of approximately 142,157 m² of warehouse and office GLA across two levels spanning a proposed ridge height of 25.0m (excluding rooftop plant, roof access stairs and solar).
 - Warehouse fit-out includes automation and sortation equipment along with associated mezzanine structures.
 - Building 2B will include hardstand, heavy rigid parking, guardhouses, dock offices, loading bays, landscaping, electric vehicle charging, goods collection lockers, solar panels six lithium-ion battery energy storage systems (BESS) external to the main warehouse building and fleet workshop, weighbridges, fleet workshop, dock temperature control with external units, emergency generators, refuelling bay, truck wash and signage.
 - Dangerous goods (DGs) are proposed to be stored at the site, which are below the threshold quantities under Chapter 3 of the *State Environmental Planning Policy (Resilience and Hazard) 2021*
 - Ground Improvements to Warehouse 2B building footprint (i.e. pilling), including a 200mm thick layer of Cement Treated Fine Crushed Rock (CTFCR) placed under the entire warehouse footprint.
 - Ground Improvements to Warehouse 2B building footprint (i.e Pilling)
- Internal Estate Infrastructure
 - Bulk Earthworks to Precinct 2 (formally Precinct 2, 4 & 5)
 - Approximately 550,000m³ fill importation required as either virgin excavated natural material (VENM), excavated natural material (ENM) or Resource Recovery Order under Section 286A of the *Protection of the Environment Operations Act 1997* (PoEO Act 1997)
 - Importation proposed to be 24 hours, 7 days a week during the Fill Importation program
 - Export any unsuitable material (i.e Topsoil and clay)
 - Retaining Walls (including importation of Engineered backfill)
 - Construction and associated Easement to Drain of Stage 1 stormwater discharge line through Building 2B to Basin C
 - Stage 1 road and servicing amendments to reflect revised Precinct 2, 4 & 5 building layout
 - Noise barriers
 - Lead-in services including additional 11kv feeder via the extension of HV feeders from existing Endeavour Energy switching stations within Roberts Road and Capicure Drive



- **Other**
 - Expansion and on-going management of DA 347.1/2021 Containment Cell
 - Subdivision of Precinct 2, 4 & 5 to suit revised precinct plan and ultimate lot layout

The Master Plan is shown in **Figure 1**.

Figure 1 Oakdale Easte Estate Master Plan – Master Plan



1.3 Related Applications/Activities

- Fairfield City Council Development Application DA 347.1/2021 (as modified) – Rehabilitation Works
 - A Fairfield City Council Development Application DA 347.1/2021 (as modified) has previously been approved over the site facilitating Bulk Earthworks and Rehabilitation (including an initial Containment Cell) Works at the Site to provide relative levels suitable for future industrial development.
- These levels are:
 - Precinct 2 (western portion): BE 77.5
 - Precinct 2 (eastern portion): BE 71.5
 - Precinct 3: BE 77.0
 - Precinct 4: BE 70.0



- Proposed SSD 120888992 assumes these levels and works in respect of assessment of environmental impacts previously assessed in accordance with Clause 4.63 (a) Environmental Planning & Assessment Act 1979. Further re-assessment is therefore not required.
- DA 347.1/2021 assessed the Environmental Impacts associated with the required rehabilitation to achieve the above Bulk Earthworks levels.
- Notwithstanding, DA 347.1/2021 (as modified) is currently unable to be fulfilled as the consent approves a shortfall of:
 - Fill importation required to achieve the above FCC approved rehab levels
 - Contamination cell size required to fulfill rehabilitation obligations under the Fairfield City Council consent and associated Rehabilitation Action Plan.
 - SSD-120888992 assess and seeks approval to address these shortfalls as part of the Environmental Impact Assessment.

1.4 Objectives of the Study

The objective of this Sustainability Management Plan is to identify and recommend relevant design features that will contribute to sustainable design, construction and operational outcomes for the development.

A detailed response to the Secretary's Environmental Assessment Requirements (SEARs) is provided in **Table 1** of the current study.



2.0 SUSTAINABILITY MANAGEMENT GUIDELINES AND LEGISLATION

2.1 National Construction Code 2022 - Building Code of Australia

The Building Code of Australia (BCA) is produced and maintained by the Australian Building Codes Board (ABCB) on behalf of the Australian Government with the aim of achieving nationally consistent, minimum necessary standards of relevant health and safety, amenity and sustainability objectives efficiently. The BCA contains mandatory technical provisions for the design and construction of BCA class buildings.

Volume 1, Section J of the BCA outlines energy efficiency provisions required for BCA class buildings (including Class 7b Warehouses and Class 5 Offices). There are 9 subsections, J1 to J9, that focus on separate aspects of energy efficiency and the relevant subsections for the development are as follows:

- J1 - Energy efficiency performance requirement
- J4 - Building Fabric (i.e. the ability of the roof, walls and floor to resist heat transfer)
- J5 - Building Sealing (i.e. how well parts of a building are sealed to ensure comfortable indoor environments are efficiently maintained)
- J6 - Air Conditioning and Ventilation Systems (i.e. the efficiency and energy saving features of heating, ventilation and air-conditioning systems)
- J7 - Artificial Lighting and Power (i.e. power allowances for lighting and electric power saving features)
- J8 - Hot Water Supply (i.e. the efficiency and energy saving features of hot water supply)
- J9 - Energy monitoring and on-site distributed energy resources

2.2 Sustainability Management Plan Requirements

The sustainability management plan is prepared in accordance with the following SEARs requirement:

- Identification of how ESD principles (as defined in Section 193 of the EP&A Regulation) are incorporated in the design and ongoing operation of the development demonstration of how the development will meet or exceed the relevant industry recognised building sustainability and environmental performance standards
- Demonstration of how the development minimises greenhouse gas emissions (reflecting the Government's goal of net zero emissions by 2050) and consumption of energy, water (including water sensitive design) and material resources
- If Chapter 3 of State Environmental Planning Policy (Sustainable Buildings) 2022 applies:
 - demonstrate how the development has been designed to address the provisions set out in Chapter 3.2(1)
 - provide a NABERS Embodied Emissions Material Form to disclose the amount of embodied emissions attributable to the development in accordance with Section 35BA of the EP&A Regulation.
- In addition, if the development includes large commercial development types (offices with a net lettable area of at least 1,000 m²), provide:



- A NABERS Agreement to Rate that demonstrates the large commercial areas of the development are capable of achieving the standards for water use specified in Schedule 3 of SEPP (Sustainable Buildings) 2022. A separate agreement is required for each large commercial use.
- A NABERS Agreement to Rate or Commitment Agreement that demonstrates the large commercial areas of the development are capable of achieving the standards for energy use specified in Schedule 3 of SEPP (Sustainable Buildings) 2022. A separate agreement is required for each large commercial area.

3.0 DESCRIPTION OF THE PROJECT

The documentation used in this report is listed in **Table 2**.

Table 2 Project Documentation Sources

	Filename
Master Plan	Project No 26180, OAK Masterplan Combined Set dated 30 th June 2026
Site Warehouse 2A Plans and Elevations,	Project No 26180, Lot 2A Drawings dated 21 st May 2026 and 30 th June 2026
Site Warehouse 2B Plans and Elevations,	Project No 26180, Lot 2B Combined Package dated 30 th June 2026

Goodman Property is seeking development approval from Fairfield City Council for Precinct 2 at the Oakdale East Estate.

The proposed Concept Plan approval seeks approval for:

- Building 2A - GLA:
 - Warehouse - 17,267 m²
 - Office - 735 m²
 - Dock Office – 46 m²
- Building 2B:
 - Warehouse - 120,250 m²
 - Main Office (Ground and Level 1) - 3,226 m²
 - Dock Offices - 544 m²
 - Workshop and Office - 2373 m²
- 14.6m ridge height to be adopted;
- 25m cantilevered awnings over hardstand;
- 3m awnings over the recessed docks;
- Speculative facilities - i.e. no customer;
- Ambient warehouses (no temp control);
- Generic fit-out to be included on plans within DA;
- Solar will be installed to the facilities;



- Overall building areas are outlined in **Table 3**.

	Precinct 2
Warehouse 2A	17,267 m²
Warehouse 2B	120,250 m²
Office and Dock Office - 2A	781 m²
Office and Dock Office - 2B	3,874 m²
Workshop 2B	2,373 m²
Carparking 2A	79
Carparking 2B	646
Bike parking – 2A	18
Bike parking – 2B	48

Figure 2 Oakdale East Estate: Precinct 2– Site Plan

The site plan for Warehouse 2A shows a large rectangular building with a total area of 17,267 m² and a price of R1 78,000. The building is divided into several sections: a 20m loading area, a 20m storage area, and a 20m office area. The plan also shows a truck exit, car entry/exit, and a truck entry. A fire services area is located in the top right corner. The plan includes dimensions for the building and surrounding areas, as well as a north arrow.

Warehouse 2B

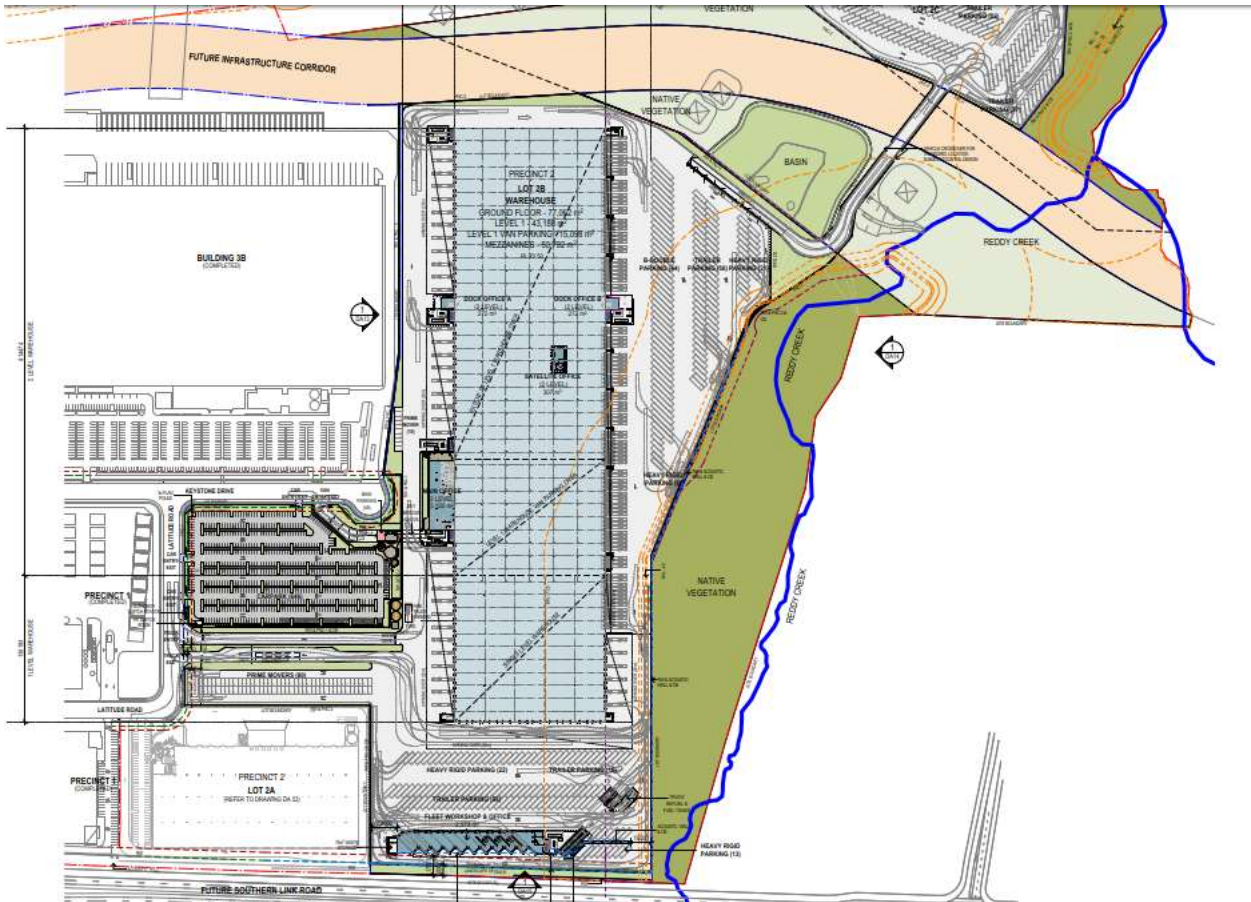
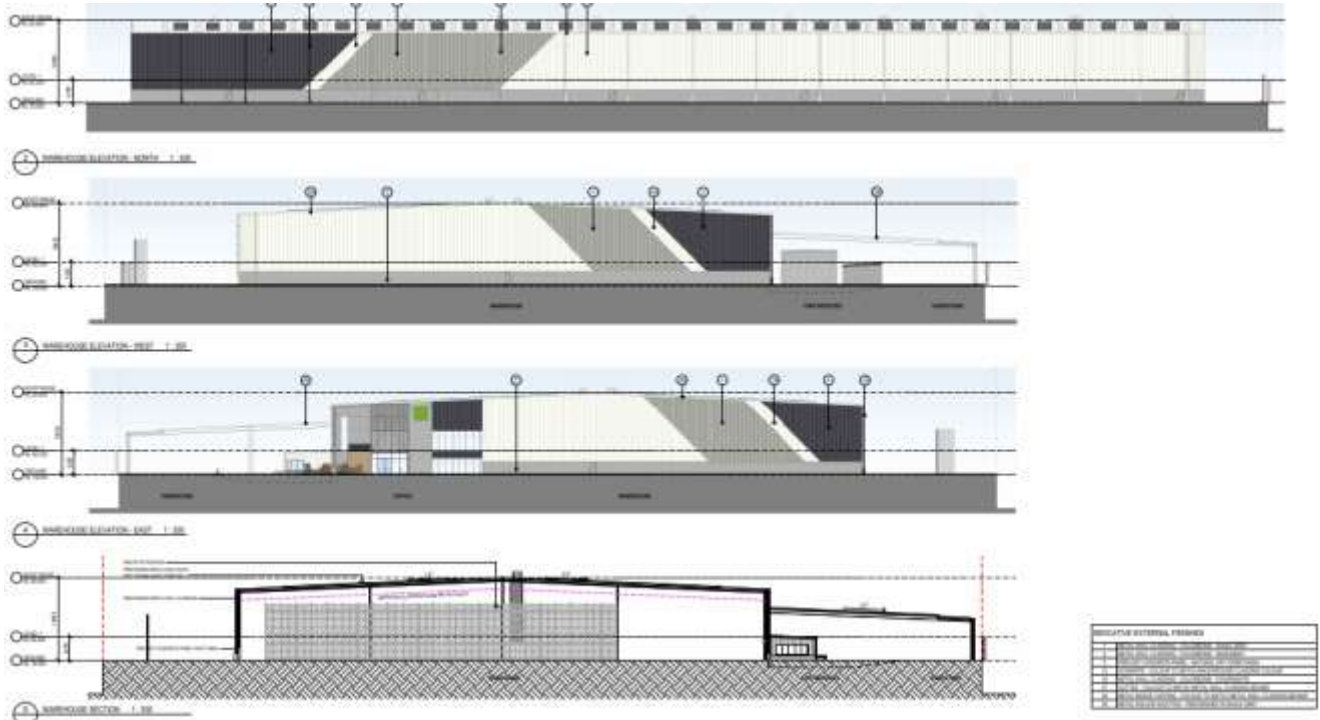


Figure 3 Oakdale East Estate: Precinct 2 – Warehouse Elevations

Warehouse 2A



Warehouse - 2B, West Elevation

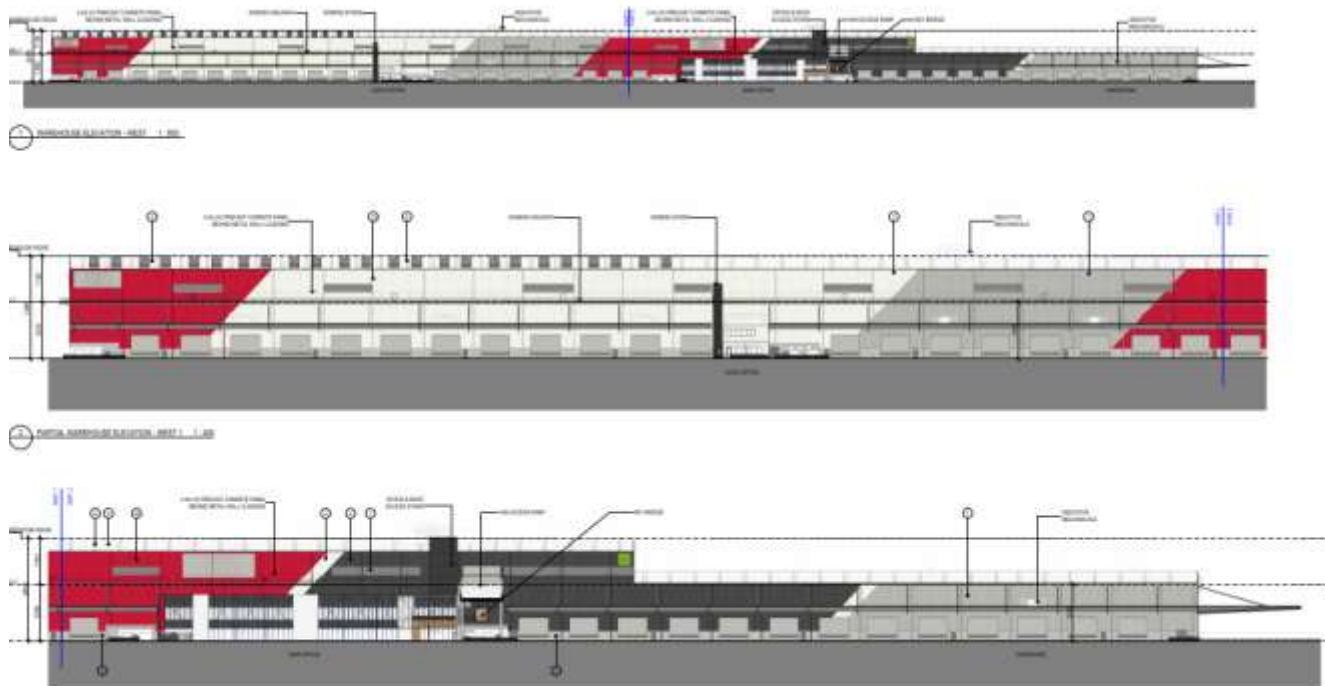


Figure 4 Oakdale East Estate: Precinct 2 – Office Elevations

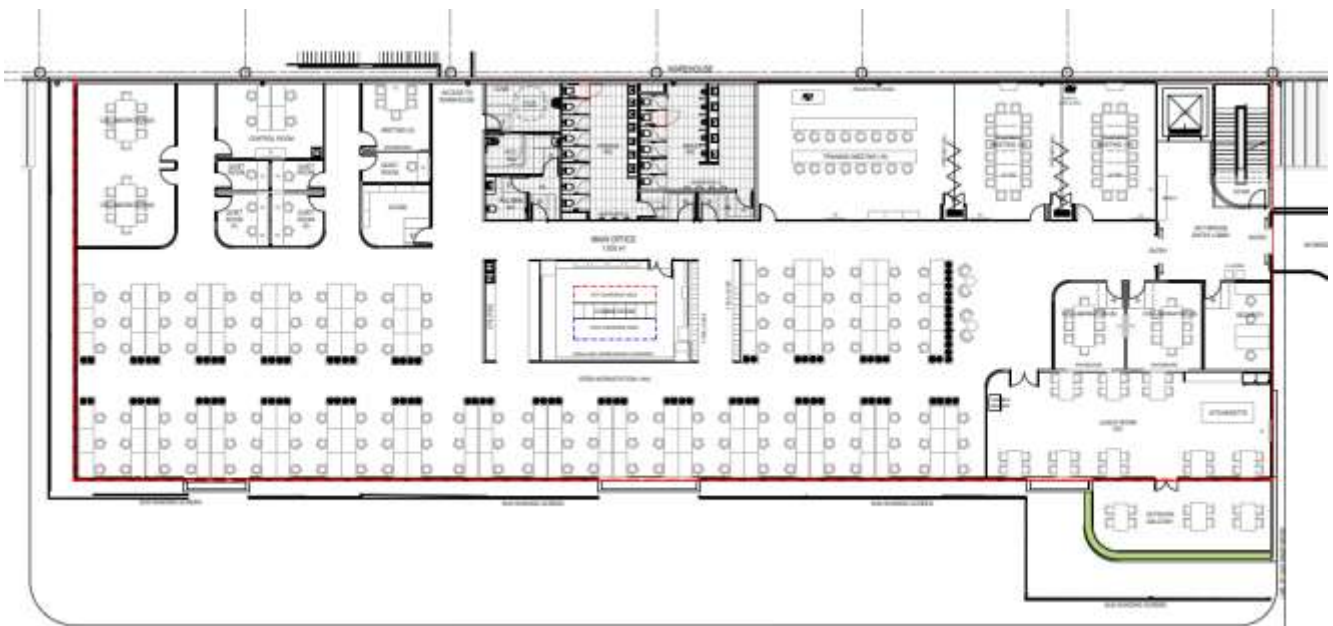
Offices 2A-1



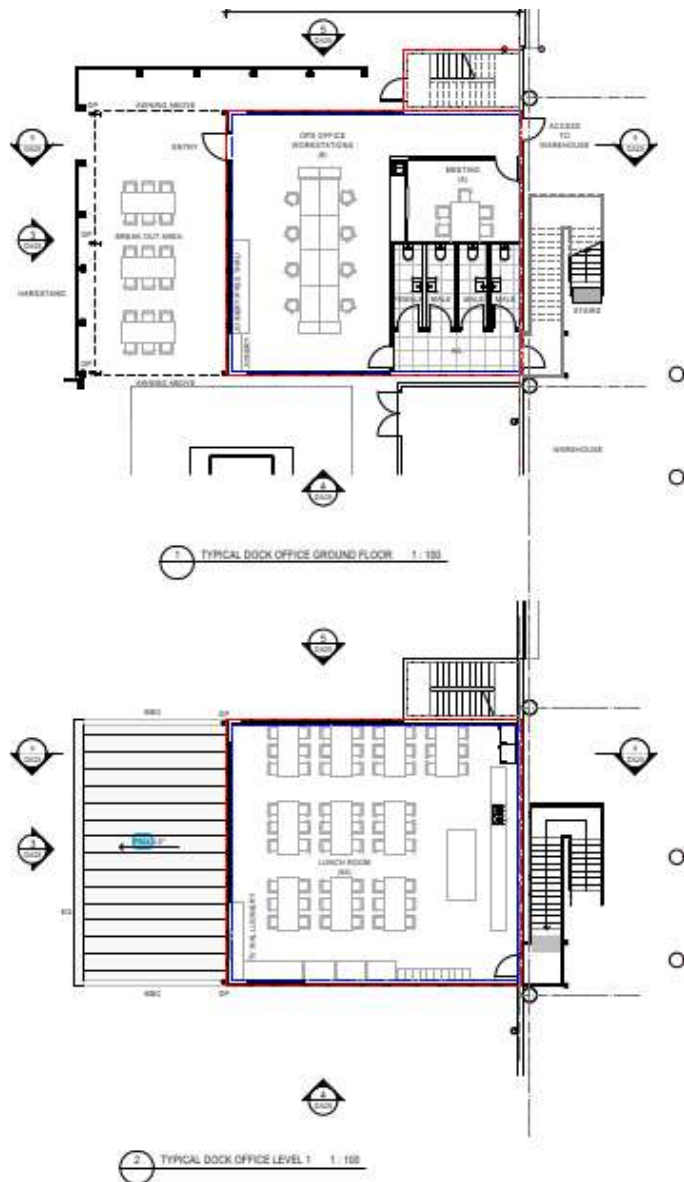
Office 2B, Main Office 7 Skybridge Ground Floor Plan



Main Office & Skybridge Level 1 Floor Plan



Typical Dock Offices



4.0 OPERATIONAL ENERGY MANAGEMENT

Ineffective energy management for industrial and commercial premises can lead to unnecessary growth in greenhouse gas emissions and natural resource consumption. Effective energy management reduces costs using energy efficiency measures and improves environmental outcomes locally, regionally, and globally.

Effective energy management is achieved through the implementation of a Sustainability Management Plan (SMP) for the operational life of the Project.

4.1 Identified Major Energy Use Components

The major energy use components of the Project Site are identified below based on information available in the Project Design Brief.

- Lighting (include natural and artificial lighting and shading);
- Air Conditioning; and
- Power.

4.2 Energy Sources

The main source of energy for the proposed site is electricity.

5.0 SUSTAINABILITY INITIATIVES

Energy Efficiency measures have been recommended and approved for project implementation and have informed the sustainability assessment of this project – they are listed in **Table 4**.



Table 4 ESD Assessment Summary

Category	Objective	Proposed Target	Proposed Strategy	Commitment	Comment
Design & Management	Documentation of design intent and expected outcomes. Appropriate commissioning.	Communicate sustainability initiatives and operation to building users. Commissioning and building tuning required by contractors and reviewed for 12 months after completion.	Provision of Building Users Guide. Investigate costs and viability of commissioning and building tuning requirements and appointing an independent commissioning agent. Independent consultant to perform quarterly tuning of fire, mechanical, electrical, hydraulic services.	✓ ✓	Building User Guide that enables building users to optimise the building's environmental performance will be developed A sub-contractor will be engaged to maintain the facility in accordance with the operations and maintenance manuals during the 12-month defects liability period.
Façade Performance	Optimised façade performance.	Achieve minimum performance requirements under NCC Section J4. Reduce heat gain through the warehouse façade.	Meet or exceed NCC Section J4 façade performance for conditioned spaces. Light coloured roofing and appropriate insulation to reduce solar heat gain into the warehouse.	✓ ✓ ✓	NCC Section J report needs to be prepared by a qualified ESD consultant. This warehouse will comply with all the requirements in line with Section J and Green Star requirements Light colour Colourbond – Dover white roof finish proposed.



Category	Objective	Proposed Target	Proposed Strategy	Commitment	Comment
			Performance glazing in office spaces appropriate to the window size and orientation.	✓	As per the project NCC Section J report. Insulation proposed to warehouse roof and walls.
Occupant Comfort	Consider design with due regard to occupant satisfaction in accessibility, usability, Indoor air quality and public space utility.	High level of occupant satisfaction. Provide external as well as internal comfort.	Use of Low VOC paints, carpets and sealants. Consider Landscaping and dense planting. Consider occupant user control eg A/C systems, lighting etc.	✓ ✓ ✓	Low VOC paints, carpet and sealant will be used for the offices in accordance with the Green Star requirements. Refer proposed landscaping, Architectural Drawings. Selection of endemic and low maintenance landscaping species. AC and lighting control is provided to offices.
Minimising Transport Impact	Consider location with links to public transport and employee services. Consider location to reduce operational transport.	Reward drivers of fuel-efficient vehicles by providing spaces for small cars and or motorbikes. Provide alternatives to single-occupancy vehicles.	Consider providing 5% for electrical cars and 10% of total parking spaces for small cars and motorbikes where possible. The site is located within close proximity (<5km) to	✓ ✓	5% of total parking spaces are dedicated for electrical cars with charging stations proposed. 18 bike parking spaces for 2A and 48 bike parking spaces for 2B.



Category	Objective	Proposed Target	Proposed Strategy	Commitment	Comment
	Consider the impact of industrial trucks on local traffic.	Reduce operational fuel consumption through close proximity to major arterial roads. Reduce the impact of operational traffic on local communities.	both the M7 and M4 motorways. The roads linking the site to the motorways are predominantly used for industrial traffic, as such the traffic is unlikely to impact on local areas.	✓	Car Park numbers and provision for disabled parking are provided be in accordance with Consent Authority requirements.
Optimising IEQ	Optimise natural light to work environment. Optimise fresh air ventilation. Consider Thermal Comfort of occupants. Consideration of noise transference in space planning. Minimise use of materials that emit volatile organic compounds. Create a pleasant working environment.	Daylight: Daylight Factor (DF) of at least 2% at finished floor level under a uniform sky for at least 60% of the GLA. Thermal comfort: 95% of office areas have PMV levels between -1 and +1 for 98% of the year; Warehouse spaces include passive thermal comfort strategies. Finishes: 95% of all paints, adhesives & sealants and all carpet and flooring to be low-VOC finishes; use low-	Daylight: rationalised glazing to offices; high-performance glass. Thermal comfort: Office envelope and HVAC system designed to meet thermal comfort requirements. Provide sufficient roof and wall insulation to the air-conditioned spaces; Finishes: Specify and track correct finishes and wood products. Provide pleasant indoor and outdoor breakout spaces with sufficient daylight. Lighting: Good light fixtures and well-designed layout.	✓ ✓ ✓ ✓	High-performance glazing in all air-conditioned areas to satisfy Section J requirements. Refer Section 5.5 of this report for proposed set up temperatures. Insulation as per the NCC requirements. Low VOC finishes and low-formaldehyde wood products will be used. Refer to Architectural Drawings.



Category	Objective	Proposed Target	Proposed Strategy	Commitment	Comment
		formaldehyde wood products. Electric lighting levels: 95% of GLA has a lighting system that is flicker free and has a maintained illuminance of no more than 25% above those recommended in AS1680.2.4, 2.1 and 0.1. Reduce visual glare.	Ventilation: Consider increased fan and duct sizing. Provide sufficient shading and blinds with rationalised glazing for visual and thermal comfort.	✓ ✓ ✓	LED lighting and lighting controls in warehouses and offices. Adequate ventilation will be supplied in accordance with AS1668. Shading elements and awnings are shown on the Architectural Drawings
Minimising Energy Use	Consider passive design to minimise energy use such as orientation, ventilation, shading and floor plate design. Appropriate sizing of plant and equipment in heating and cooling, lighting, control systems, Building management systems and renewable energy sources.	Target a 20% reduction in Greenhouse gas emissions. Energy sub-metering for all major uses greater than 100kVa; linked to monitoring system. High efficiency warehouse lighting and controls. Reduce energy for water heating.	Roof Insulation, External Wall Insulations, Reduced Glazing area and associated heat loss in winter. Consider office air conditioning temperature set-points for an increased comfort band. Provide energy efficient T5 lighting, with zoning and automatic controls where reasonable.	✓ ✓ ✓ ✓	Awning Shown on the Architectural Drawing. Insulation as per the NCC requirements. Refer Section 5 Design brief sets the temperature - Refer Section 5.5 of this report. LED lighting in warehouse and offices. Lighting controls to warehouse and offices.



Category	Objective	Proposed Target	Proposed Strategy	Commitment	Comment
	Reduce reliance on connection to grid electricity and gas.	Integrated building management. Consider renewable energy generation for a portion of energy consumption and/or consider future-proofing the building for future installation. Reduce urban heat island effect and heat load through the roof by providing a highly reflective roof. Reduce office equipment load from 20W/m² to 15W/m². Optimise insulation for energy and thermal comfort.	Consider LED lighting strategies and advanced controls. Consider a solar hot water system or a heat pump. Sub-metering: install appropriate metering; develop metering and tracking strategy to allow for self-assessment, problem-solving and ongoing improvements during operations Use roofing material that has a high Solar Reflective Index Investigate the current insulation design and determine proposed options.	✓ ✓ ✓	Solar hot water or heat pump system. Sub meters for major energy/water uses. Colourbond metal deck which has a light colour is proposed.
Choosing Materials	With consideration to energy inputs in manufacture. Toxicity. Consequential impacts – rain forest timbers.	Reduce steel and cement in the internal slab (10% reduction in embodied energy). Reduce embodied energy in concrete and plasterboard elements.	Jointless fibre-reinforced slab. Use pre-cast concrete panels with recycled content.	✓ ✓	The development will strive to achieve 10% cement replacement with SCMs To minimise the environmental impacts of materials used by encouraging the use of



Category	Objective	Proposed Target	Proposed Strategy	Commitment	Comment
	Regional or local manufacturer employment support.	Consider 95% of timber to be AFS or FSC certified. Reduce emissions associated with insulation and refrigerant. Reduce environmental impact of materials for tiling, awning.	Goodman is offsetting the embodied carbon generated from this development.		materials with a favourable lifecycle assessment based on the following factors will be evaluated and considered based on feasibility: Fate of material Recycling / re-use Embodied energy Biodiversity Human health Environmental toxicity Environmental responsibility.
Minimising Waste	By clever design. Contracted to builder as a requirement on site for construction waste. During the life of the building. And in dealing with building end of life options.	Reduce construction waste going to landfill by 90%. Reduce operational waste going to landfill. Consider a design that can be disassembled at the end of the building's life.	Contractor is to develop and implement a Waste Management Plan and track all waste going offsite to show that 90% of all construction waste is re-used or recycled. Waste storage and recycling facilities to be provided for different operational recycling streams such as paper, glass, plastics,	✓ ✓	In line with Goodman Waste Management strategy, 90% of the construction waste will be diverted from landfill. Refer project Waste Management Plan. Goodman will provide appropriate waste collection areas to encourage waste



Category	Objective	Proposed Target	Proposed Strategy	Commitment	Comment
			metals, food waste etc. Consider operational waste plans and training for staff to provide incentive to reduce waste.		segregation at source, efficient collection by waste contractors and efficient waste management by tenants.
Water Conservation and Reuse	Monitoring of meters to track use.	Reduce potable water in internal fixtures.	Water efficient sanitary taps and toilets.	✓	Low flow fixtures and fitting including taps and shower heads.
	Timely maintenance of fixtures and fittings.	Reduce potable water for irrigation.	Water efficient and drought tolerant landscaping.	✓	Selection of endemic and low maintenance landscaping species.
	Water sensitive landscape design.	Water efficient operation of appliances.	Water and energy efficient dishwasher.		40 kL Rainwater tanks have been proposed for rainwater harvesting and re-use for landscape irrigation and flushing of toilets.
	Source potable water alternatives such as rainwater harvesting, grey and black water treatment.	Utilise rainwater and/or recycled water.	Rainwater collection for toilets and irrigation.	✓	
Land Use and Ecology Impact	Consider local biodiversity impacts of flora and fauna.	Encourage biodiversity. Reduce light pollution from the site.	Install indigenous planting appropriate to the area and the adjacent biodiversity lots.	✓	Selection of endemic and low maintenance landscaping species
	Look to specialist advice on land in development.	Consider reducing impact of stormwater flows off the site into the natural watercourses including Ropes Creek adjacent to the site.	Design external lighting to avoid emitting light into the night sky or beyond the site boundary. Consider integrated stormwater management to minimise the impact on	✓	LED lights have been proposed for all uses and external lighting design will be developed to minimise light pollution without compromising on the functional use of the space.



Category	Objective	Proposed Target	Proposed Strategy	Commitment	Comment
			receiving waters of flow volumes and pollution content, eg bioswales, bio retention, OSD tanks and treatment. Consider permeable concrete/paving for staff parking areas and footpaths, etc.	✓ ✓ ✓	The warehouse sustainability objectives include: Reduce the impact of stormwater runoff and improve quality of stormwater runoff Incorporate water sensitive urban design principles.
Renewables	Supply renewable electricity to the building.	Reduce carbon footprint for the project site Reduce the peak electricity demand for the building	Provisions of on-site renewable energy systems	✓	At least 3,675 kW (425 kW for 2A and 3,250 kW for 2B/2C) of PV system has been proposed the rooftop of the warehouses.



5.1 Comparison of Baseline and Proposed Energy Use

An NCC Sections J Deem-to-Satisfy compliant building is used as the baseline building for energy consumption savings. NCC Section J provides the minimum requirement for energy efficiency, and it is predicted that the proposed development will have more than 194.6% energy reduction - refer **Section 5.6** for the energy saving calculations. The reduction has been enabled via:

- On site PV solar system;
- All luminaires shall be low energy LED type;
- Warehouse lighting is generally to be zonally controlled via motion sensor;
- Office lighting shall be controlled via dual technology infrared/ultrasonic sensor;
- Daylight harvesting function to office with external windows; and
- Efficient air conditioning system for offices.

All building information and associated parameters are listed in the following sections of this report.

The Energy Simulation Program used in this study is the IES computer program Virtual Environment 2022 (VE). The program is based on the ASHRAE response factor and the modifications included utilising Australian weather data and including building materials more appropriate to those used in Australia and enabling the input of metric data.

- SLR supports a perpetual license of the Energy Simulation Software package IES <VE>;
- IES <VE> has passed the BESTEST (ASHRAE Standard 140) external validation process;
- The weather data from ACADS-BSG NSW_Richmond_88Test Reference Year (TRY) is used for the modelling;
- IES<VE> assesses U-Value, SHGC, and shade coefficient when evaluating the effect of glazing;
- Detailed warehouse operating schedules are not available at this stage, however it is understood a 24-hour operation is proposed. 24-hour operating profiles for occupancy, lighting, air conditioning and equipment were therefore adopted for the office areas; and
- At least 3,675 kW of PV system has been proposed the rooftop of the warehouse.

The developed 3D model for energy modelling is shown in **Figure 5** and **Figure 6**:



Figure 5 Proposed Warehouses in IES Model (Northwest)

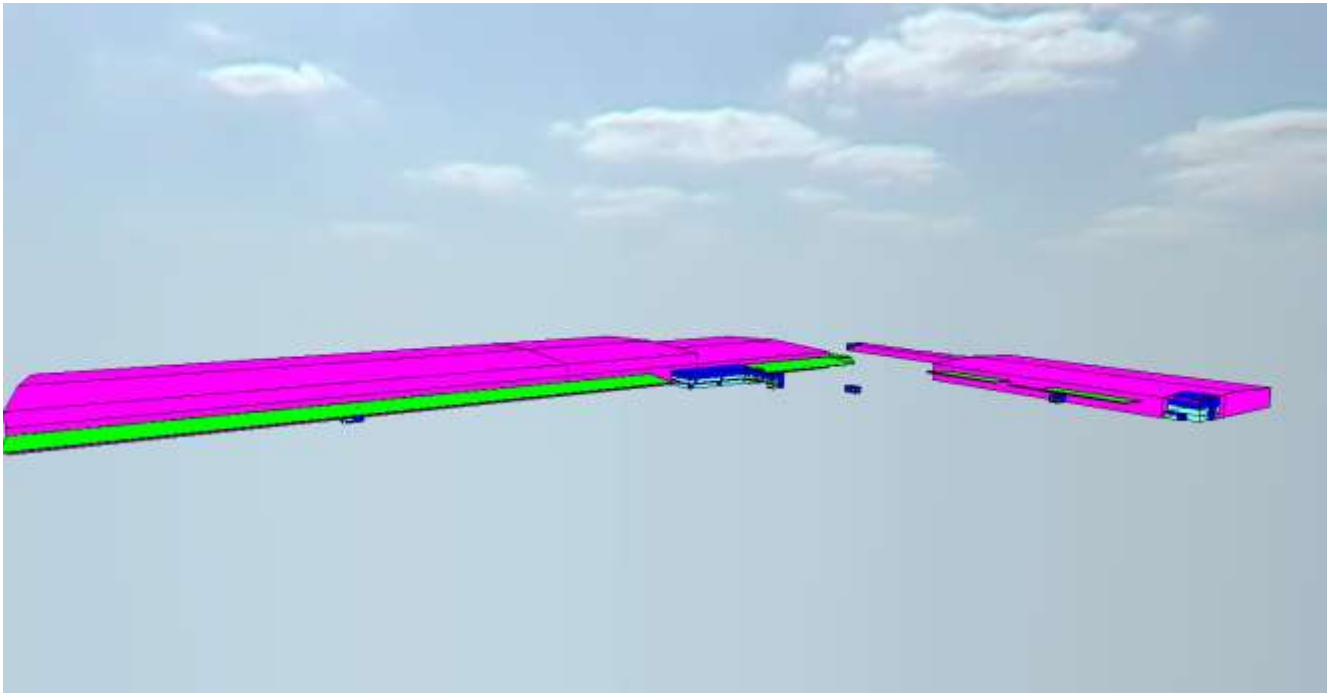
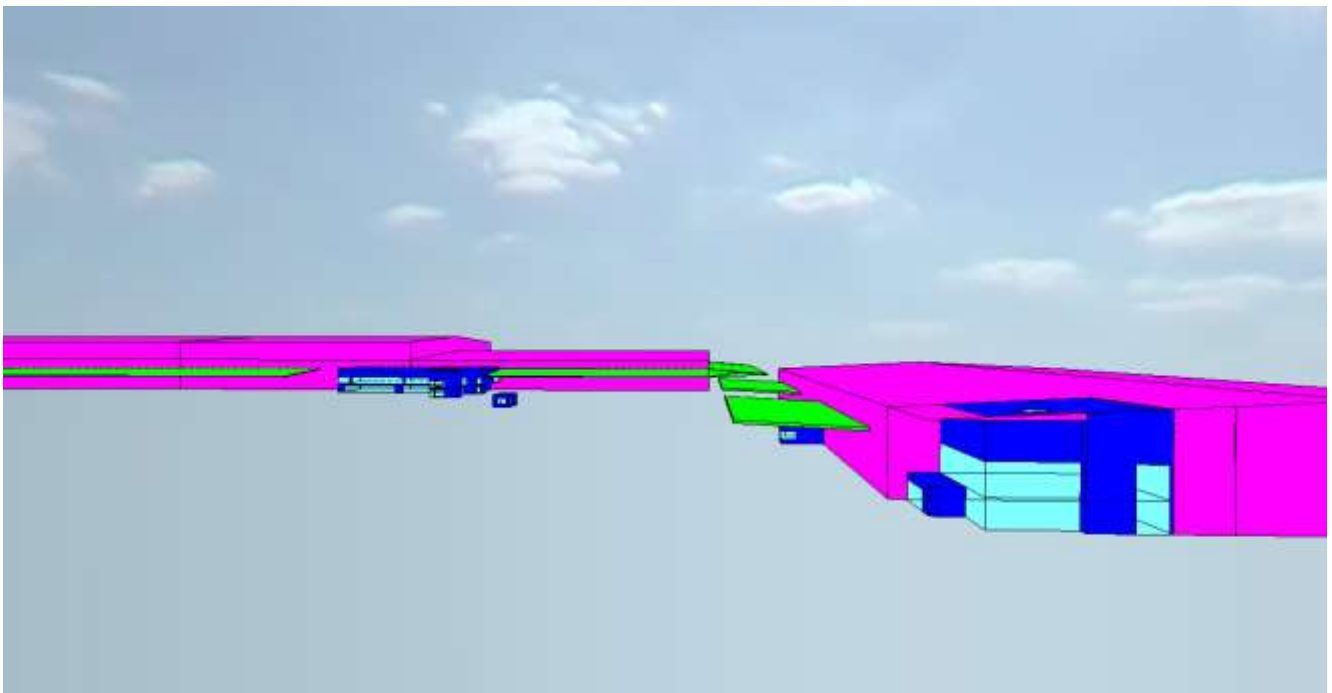


Figure 6 Proposed Warehouses in IES Model (West)



5.1.1 Artificial Lighting

In Section J7 of the NCC, the requirement for the total lighting power load within the proposed spaces of a building is to be no greater than a maximum illumination power load, measured in Watts (W). The maximum allowable building illumination power load is based on the total illumination power load calculated for each space.



For artificial lighting, the aggregate design illumination power load must not exceed the sum of the allowances. This may be obtained by multiplying the area of each space by the maximum illumination power density (as found in Table J7D3a of the NCC Volume One). The maximum illumination density for a storage warehouse is 4 W/m² as per Table J7D3a of the NCC Volume One.

The proposed warehouses will adopt the following energy efficiency measures to reduce the lighting energy consumptions:

Office lighting

- LED fitting for offices.
- Occupancy sensors to low occupancy areas, e.g., offices, toilets, and lunchrooms.

Warehouse lighting

- LED fitting for warehouse.
- Occupancy sensors to low occupancy areas.

Outside lighting

- LED external lighting for all outside areas.
- External lighting will be controlled via daylight sensor (photocell).

Electrical lighting is the major energy reduction component for warehouses with a large footprint.

The lighting calculation for NCC reference building is based on the maximum illumination power density specified within NCC Table J7D3a as below:

- Warehouse = 4 W/m² for high activity storage.
- Offices = 4.5 W/m² to lit 200 lux or more.
- Workshop = 9 W/m². This applies to general workshop areas where tasks require higher illuminance levels and more powerful lighting.

The electrical lighting layout of the proposed building was not provided during the preparation of this report. It is assumed the maximum design lighting power density will be achieved as below:

- Warehouse = 2 W/m²
- Offices = 4 W/m²
- Workshop 9 W/m²

Therefore, the proposed building will likely achieve a 45% reduction in lighting energy compared with the reference building. A detailed calculation is shown in **Appendix A**.

5.1.2 Building Fabric Requirements

Parts J4 of the BCA Section J contain the requirements of the Deemed-to-Satisfy compliance of the building fabric. The purpose of this subsection is to ensure that the building fabric will provide sufficient thermal insulation to minimise heating and cooling loads placed on the building and the commensurate energy consumption HVAC systems servicing internal building spaces.

All fabrics of the proposed building shall comply with NCC Section J. A Project Section J report will need to be submitted with the application for a Construction Certificate.



The reference and proposed building fabric data and other modelling assumptions are shown below:

Table 5 Reference Dynamic Modelling Inputs for the Conditioned Office Areas

Item	Description		
Climate Data	Weather data from NSW_Richmond_88_Test Reference Year (TRY)		
External wall	All external walls have a total R-value of R2.8		
Internal wall	All internal walls to unconditioned space have a total R-value of R2.1		
Glazing	Glazing system (glass and frame) with U value & Solar Heat Gain Coefficient as per reference wall glazing system building code calculations:		
	Description	Glazing Properties	
		U-Value	SHGC
	Main office – 2A	5.8	0.25
	All other offices	5.8	0.4
Roof	Concrete/Metal roof with insulation, Total R-value= R3.7		
Floor	Concrete Floors with carpet overlay / tiles		
Permeability	No more than 5 m3/hr.m² at 50 Pa reference pressure		
Lighting Density	As per NCC 2022 Table J7D3a for different classification of building		
Lighting hours	24hrs		
Equipment density	Equipment load in the model is 11W / m² as per 2022 NCC Table S35C2l		
Equipment schedule	24hrs		
Occupant density	As per Table D1.13 of the 2022 NCC		
Occupancy Schedule	Schedule used within this study assume a 24hr occupancy, 7 days per week with a continuous occupancy rate of 70%.		
HVAC System type	HVAC efficiencies in the reference building are modelled in accordance with NCC Section J and Minimum Energy Performance Standards (MEPS)		
HVAC Hours	24hrs		
HVAC Control	Space temperature summer indoor conditions 22.0±1.5°CBD Space temperature summer indoor conditions 21.0±1.5°CBD		
Document References	The reference buildings were modelled in IES <VE> as per the architectural drawings, dated May 2026		

Table 6 Proposed Dynamic Modelling Input for the Conditioned Office Areas

Item	Description		
Climate Data	Weather data from NSW_Richmond_88_Test Reference Year (TRY)		
External wall	All external walls have a total R-value of R2.8		
Internal wall	All internal walls to unconditioned space have a total R-value of R2.1		
Glazing	Glazing system (glass and frame) with U value & Solar Heat Gain Coefficient as per reference wall glazing system building code calculations:		
	Description	Glazing Properties	
		U-Value	SHGC



Item	Description		
	Main office	4.0	0.4
Roof	Concrete/Metal roof with insulation, Total R-value= R3.7		
Floor	Concrete Floors with carpet overlay / tiles		
Permeability	No more than 5 m3/hr.m² at 50 Pa reference pressure		
Lighting Density	As per NCC 2022 Table J7D3a for different classification of building		
Lighting hours	24hrs		
Equipment density	Equipment load in the model is 11W / m² as per 2022 NCC Table S35C2I		
Equipment schedule	24hrs		
Occupant density	As per Table D1.13 of the 2022 NCC		
Occupancy Schedule	Schedule used within this study assume a 24hr occupancy, 7 days per week with a continuous occupancy rate of 70%.		
HVAC System type	HVAC efficiencies for heating and cooling as follows: EER: 4.0; CoP: 4.0		
HVAC Hours	24hrs		
HVAC Control	Space temperature summer indoor conditions 22.0±1.5°CBD Space temperature summer indoor conditions 21.0±1.5°CBD		
Document References	The reference buildings were modelled in IES <VE> as per the architectural drawings, dated May 2026		



5.1.3 Mechanical Air-Conditioning

The mechanical service design is not available at this stage. Performance reverse cycle package units will be to offices with individual controls. There will also be air conditioning in the warehouse, but just to the southern dock face to provide conditioned air into the back of the trailers.

The air conditioning will be designed according to BCA/NCC section J, other statutory authorities, and applicable Australian standards.

As per the mechanical specification of the Goodman's Tenant Base Building Specification, air conditioning to be designed to the BCA/NCC section J and other statutory authorities and applicable Australian standards.

Air-conditioning temperature control and set point – refer Table 7

Table 7 AC Unit Temperature Control Range

Space Type	Temperature Control Range (°C)
Offices	22.5±1.5°CBD

Air-conditioning energy efficiency requirements

NCC Section J6D12 has specified the minimum energy efficiency ratios requirements for package air conditioning equipment.

Table 8 BCA Unitary Plant Requirement

Office Equipment	Minimum Energy Efficiency Ratio	
	NCC Requirement	Proposed System ¹
Cooling	2.9	4
Heating	2.9	4

Note 1: Detailed Mechanical design is not available at this stage. It is assumed that the proposed package system will achieve the performance requirements above.

When the airflow rate of a mechanical ventilation system is more than 1000L/s, the system must have a variable speed fan when its supply air quantity is capable of being varied.

Details of NCC Section J6 certification demonstrating compliance will need to be submitted with the application for a Construction Certificate.



5.1.4 Domestic Hot Water (DHW)

The BCA specifies that hot water systems must be at least 80% thermal efficient. The solar hot water reticulation system shall be provided to all faucet fittings, equipment, and apparatus within the development. Hot water will be generated from the roof-mounted solar water packaged plant.

With the installation of water-efficient fixtures, the hot water consumption will be decreased, and thus, the domestic hot water usage will also decrease. If the domestic hot water usage is less than the energy required to heat the water also decreases.

The energy simulation in this analysis assumes that both the reference and proposed buildings use the same hot water system for DHW. The actual energy consumption will be reduced once solar hot water, or an electrical heat pump is adopted for the proposed building.

5.1.5 Minimization of Greenhouse Gas Emission

The predicted Total Annual Energy Consumption of the NCC Reference Building and the Proposed Building is summarised in **Table 9**. For both buildings, temperatures lie within the specified range 16°CDB to 27°C for 100% of the plant operation time.

The annual energy consumption of the proposed building may be reduced by the amount of energy obtained from:

- an on-site renewable energy source; or
- another process as reclaimed energy.

The reference building uses:

- a. The Deemed-to-Satisfy (DtS) Provision such as J4 Building Fabrics, J4D6 External glazing;
- b. A solar absorptance of 0.6 for the external walls and 0.7 for roofs;
- c. The maximum lamp power density without any increase for control device illumination power density adjustment factor;
- d. Air-conditioning with the conditioned space temperature within the specified range B for 98% of the plant operation time;
- e. The profiles for occupancy air-conditioning, lighting and internal heat gains for people, hot meals, equipment and hot water supply systems of Specifications JV; and
- f. Infiltration values:
 - a. for the perimeter zone depth equal to the floor-to-ceiling height when pressuring plant is operating, 1.0 air change per hour and
 - b. for the whole building, when the pressuring plant is not operating, 1.5 air change per hour.
- g. Both the proposed and the reference building will use the same annual energy consumption calculation method and building features such as:
 - a. location, adjacent structures, building form
 - b. internal heat gains including people, lighting, appliances, meals and other electric power loads
 - c. and other features as specified in NCC JV3



The predicted Total Energy Consumed annually by the reference building and the proposed building with the reference services is summarised in **Table 9**.

- The proposed building is likely to achieve a 45% lighting energy reduction when compared with reference building. Refer **Section 5.3**

The developer is considering at least 3,675 kW PV solar system to be installed on the roof of the warehouses to significantly reduce the carbon footprint for the proposed development.

- The proposed 3,675 kW PV solar system will offset approximately 5,097 MWh/year of energy usage
- The estimated greenhouse gas CO2 emission saving is approximately 3,415,141 kgCO2/annum

Table 9 Comparison of Annual Energy Consumption Between the Reference and Proposed Building

Electricity Usage	Reference Building (MWh)	Proposed Building (MWh)
Heating	58.88	35.09
Cooling	134.46	92.1
Auxiliary	55.80	52.62
Lighting	2923.7	1608.5
Equipment ¹	assumed identical	assumed identical
DHW ²	7.4	5.7
Lift	41.3	41.3
Pumps	27.4	27.4
Warehouse Ventilation Fans	82.4	82.4
PV System	-	-5,097
Total	3331.49	-3,152.11

Note 1: This item is a specific to a tenant's Fitout -hence assumed to be the same for the Reference and Proposed Buildings

Note 2: Heat pump hot water system is considered for the proposed development

By implementing all lighting energy efficiency measures described in Section 5 of this report, the proposed building will likely achieve a 194.6% GHG emission reduction when compared with 2022 NCC Reference Building.



6.0 WATER CONSUMPTION

It is proposed that the Project will have a number of sustainable water-saving measures, including:

- Rainwater reuse and reticulation system – Rainwater will be harvested from the roof and reused for irrigation and toilet flushing. The reticulation will be a separate system to the domestic cold water with domestic water top-up in the event of insufficient rainfall;
- Use of water-saving plumbing devices; and
- Water-sensitive landscape design.

Further to above sustainable water measures, the following items will be considered during the detailed design stage:

- Water efficient sanitary taps and toilets – install higher WELS Rating sanitary fixtures such as 5 stars for water taps, urinals and toilet.
- Water and energy-efficient dishwashers with minimum 5-star WELS water rating.

By installing 5-star rated toilets, urinals, and taps, along with the proposed 40 kL rainwater harvesting system, the development is expected to reduce potable water demand by approximately 48%, assuming the rainwater tank supplies 70% of toilet and urinal flushing.

The final size of the rainwater harvesting system will be confirmed during the detailed design stage as the hydraulic and civil engineering design progresses.

The quantities of each water fittings are assumed from the drawing and listed in **Appendix B**.



7.0 MONITORING AND REPORTING

Once the project is completed, all committed sustainability-related measures need to be commissioned and tuned to ensure all services operate to their full potential and as designed.

As specified within the Tenant Base Building Specification, the building tuning will be provided by service contractors and overseen by an independent assessor, at least once a month within the Defects Liability Period (DLP) period to ensure that services are operating effectively and efficiently. Monthly reports to be provided to the tenant for DLP.

7.1 Energy Metering and Monitoring

As per Goodman Metering Strategy wherein submetering is often arranged by function or local area, e.g. HVAC/Mechanical services, Safety, Lighting, Office, General Power, Specialised plant/machinery area, Solar generation.

Electrical equipment should be maintained to Australian Standards to ensure unnecessary energy wastage is minimised. Roof access system is proposed for third party access to roof for carry out necessary maintenance as required.

In accordance with the Goodman's Industrial Building Specification, a Building Users' Guide is to be developed for the Project. The Building Users' Guide provides details regarding the everyday operation of a building and should include energy minimisation initiatives such as natural ventilation strategies, user comfort control, maintenance of air conditioning units and other electrical devices to ensure maximum operating efficiency, and lighting zoning strategies.

An effective Building Users' Guide will ensure that:

- Facility managers understand in detail their responsibilities for the efficient operation of the facility and any additional building tuning necessary to continuously improve energy management.
- Maintenance contractors understand how to service the systems to maintain reliable operations and maximum energy efficiency.
- Employees understand energy minimisation procedures and working limitations required to maintain design performance for energy efficiency.
- Future fit-out / refurbishment designers understand the design basis for the building and the systems so that these are not compromised in any changes.

7.2 Roles and Responsibilities

It is the responsibility of the facility manager to routinely check energy savings procedures are undertaken correctly (i.e. lighting turned off while areas of the development are not in use). The facility manager should also ensure all monitoring and audit results are well documented and carried out as specified in the Energy Management Plan.



8.0 Green Star Assessment and Certification

Green Star is a comprehensive environment quality and resource system for buildings. Green Star evaluates separately the environmental initiatives of design, projects and/or buildings based on a number of criteria, including energy and water efficiency, indoor environment quality and resource conservation.

Green Star was created to:

- Establish a common language and standard of measurement for green buildings;
- Promote integrated, whole-building design;
- Identify building life-cycle impacts;
- Raise awareness of green building benefits;
- Recognise environmental leadership; and
- Transform the built environment to reduce the environmental impact of development.

8.1 Rating Tool

The current project is intending to achieve a 5-star rating under Green Star Buildings tool.

8.2 Green Star Rating Scale

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

Figure 7 Green Star Rating Scale



In keeping with its position that Green Star recognises and rewards market leaders, the GBCA only certifies projects that achieve a Green Star rating of 4, 5 or 6 Stars.

8.3 Green Star Credits and Weightings

Green Star rating tools include seven separate environmental impact categories, which have different weighting attached to each category as seen in figure below:



Figure 8 Green Star Categories and Weightings



The categories are divided into credits, each of which addresses an initiative that improves or has the potential to improve a design, project or building’s environmental performance. Each credit category has an environmental weighting. The number of points allocated to each issue is effectively a weighting between issues within a credit category.

- As Built certified ratings must be achieved within 24 months of practical completion.
- As Built certified ratings do not expire.

8.4 Indicative Green Star rating

The project is committed to achieve a 5-Star Green Star using the Green Building Council of Australia (GBCA) Buildings Rating Tool.

Through initial assessments of the proposed development, the project team has targeted Green Star points outlined in **Table 10**. Targeting and meeting requirements for these points would result in an Australian Excellence 5-Star rating. Refer **Appendix D** for targeted points.

A detailed assessment will be carried out during the detailed design stage once the building services design is progressed.



Table 10 Targeted Green Star Credits for the Proposed Development

5 Star Green Star – Buildings Rating Tool		
	Available Points	Targeted Points
Responsible	17	5
Healthy	14	7
Resilient	8	1
Positive	30	21
Places	8	3
People	9	1
Nature	14	0
Total Excluding Innovation Points	100	38
Leadership	10	0
	Total	38



9.0 NABERS Rating

To meet the requirements of Section 3.3 of Chapter 3 of the *State Environmental Planning Policy (Sustainable Buildings) 2022*, a NABERS Agreement to rate will be entered into for the office component of the development, ensuring:

- Efficient energy performance in line with the minimum 5.5-star NABERS Energy target for office buildings.
- Responsible water usage aligned with NABERS Water standards.

This supports the policy's goal of delivering measurable sustainability outcomes in large commercial developments.



10.0 CONCLUSIONS

SLR Consulting Australia Pty Ltd (SLR) has been engaged by Goodman Property Services (Aust) Pty Ltd to prepare a Sustainability Management Plan (SMP) to accompany a State Significant Development Application (SSDA) for the development of a warehouse facility in Precinct 2 at the Oakdale East Industrial Estate (OEIE), at 2-10 Old Wallgrove Road, Horsley Park.

This study addresses the following development:

- **Concept Plan Amendments (Mod 6):** Amendments to State Significant Development Application 37486043 (as modified) in accordance with Section 4.24 of the *Environmental Planning & Assessment Act 1979*
- **Detailed Application (Proposed Works):** State Significant Development Application (SSDA) No. 120888992 based on Industry-specific Secretary's Environmental Assessment Requirements (SEARs) received dated 8 May 2026.

This study has been prepared in accordance with the following Secretary's Environmental Assessment Requirements (SEARs):

- Identification of how ESD principles (as defined in Section 193 of the EP&A Regulation) are incorporated in the design and ongoing operation of the development demonstration of how the development will meet or exceed the relevant industry recognised building sustainability and environmental performance standards
- Demonstration of how the development minimises greenhouse gas emissions (reflecting the Government's goal of net zero emissions by 2050) and consumption of energy, water (including water sensitive design) and material resources
- if Chapter 3 of State Environmental Planning Policy (Sustainable Buildings) 2022 applies:
 - demonstrate how the development has been designed to address the provisions set out in Chapter 3.2(1)
 - provide a NABERS Embodied Emissions Material Form to disclose the number of embodied emissions attributable to the development in accordance with Section 35BA of the EP&A Regulation.

This Sustainability Management Plan outlines various initiatives that aim to improve the sustainability outcomes of the development. The following initiatives will be further developed as the design progresses and implemented subject to feasibility.

- A PV solar system of at least 3,675 kW has been proposed.
 - The proposed 3,675 kW PV solar system will offset approximately 5,097 MWh/year of energy usage
 - The estimated greenhouse gas CO₂ emission saving is approximately 3,415,141 kgCO₂/annum
- Daylight-controlled LED lighting for the warehouse instead of metal halide, resulting in a considerable energy reduction and reduced maintenance;
- Motion sensors to all LED lights within the warehouse and offices;
- Translucent roof sheeting to warehouse areas. At least 5% of the roof area is dedicated to skylights;
- Roof and external wall insulation to conditioned areas as per NCC requirements;
- High performance glazing to conditioned areas as per NCC requirements;



- Passive solar design for external outdoor areas;
- Efficient air conditioning system;
- Power sub-metering to enable continued review of power consumption for the offices and warehouse;
- Selection of endemic and low-maintenance landscaping species;
- 40 kL rainwater tanks for rainwater harvesting and re-use for landscape irrigation and toilet flushing;
- Low flow fixtures and fittings, including taps and shower heads;
- Low VOC paints, carpet, and sealant for all offices;
- 5% of total parking spaces are dedicated to electric cars with charging stations proposed;
- Low carbon construction materials, including at least 10% replacement of cement with fly ash;
- Upfront carbon emissions are to be at least 10% less than those of a reference building; and
- Other measures as detailed in this report.

By implementing all energy efficiency measures described in Section 5 of this report, the proposed building will likely achieve a 194.6% GHG emission reduction when compared with 2022 NCC Reference Building.

By implementing the water efficiency measures outlined in this report, the project is likely to achieve 48% reduction in water consumption compared to a Green Star baseline.

A detailed response to SEARS requirements is summarised in the table below.

Table 11 Response to SEARS Requirements

Item for inclusion	Action and Report Location
• Identification of how ESD principles (as defined in Section 193 of the EP&A Regulation) are incorporated in the design and ongoing operation of the development demonstration of how the development will meet or exceed the relevant industry recognised building sustainability and environmental performance standards	Section 5 and Section 6 detail how the project exceeds relevant industry recognised building sustainability and environmental performance standards through the implementation of best design principal and a wide range of ESD initiatives including renewable energy to offset the site energy use and reduce peak demand on electricity supply infrastructure. Section 5.1 details how ESD principle as defined in clause 7 (4) of Schedule 2 of the Environmental Planning and Assessment Regulation 2000 (reproduced in Clause 193 of the 2022 revision of the regulation) and up to date legislation are being incorporated in the design, construction, and operation phases of the project. In terms of Precautionary Principle, the project does not present threat of serious or irreversible environmental damage. The project conducted all required environmental studies and incorporated adaptability and resilience measures in the design.



Item for inclusion	Action and Report Location
	Inter-generational equity, the health, diversity and productivity of the environment are enhanced for the benefit of future generations via the commitment to a large 3,675 kW PV solar installation and 5-star Green Star rating (Australian Excellence Development). Other initiatives include sustainable materials, reduced waste, reduction in heat island effect, etc. Refer Section 5.1 for all other initiatives. From a conservation of biological diversity and ecological integrity perspective, the project satisfies all environmental and statutory provisions requirements and will maintain the existing ecological structures (species and ecosystems, etc) for the proposed site and provide additional native vegetation planting and reduced stormwater runoff the site. The proposed ESD initiatives will help achieve significant reductions in the energy, waste and water required by the development.
Demonstration of how the development minimises greenhouse gas emissions (reflecting the Government's goal of net zero emissions by 2050) and consumption of energy, water (including water sensitive design) and material resources	The project is targeting a 5 Star Green Star rating using Buildings rating tool and entering an Agreement to Rate the office spaces under NABERS Energy rating. By implementing all energy efficiency measures described in Section 5, including the proposed PV solar system, the project will significantly minimise greenhouse gas emissions, reflecting the goal of achieving net zero emissions. The proposed 3,675 kW PV solar system will offset approximately 5,097 MWh/year of energy usage By implementing all water efficiency measures described in Section 6, including 5-star rated toilets, urinals, and taps and the proposed rainwater harvesting facility, the proposed development will reduce its potable water demand by approximately 48%. The project is also targeting to reduce the embodied carbon emissions by 10% from Green Star baseline by using material such concrete with SCM replacement and low carbon steel.
- if Chapter 3 of State Environmental Planning Policy (Sustainable Buildings) 2022 applies: c. demonstrate how the development has been designed to address the	The following design considerations have been implemented to address Chapter 3.2.(1) of SEPP 2022: The project is committed to entering a NABERS Agreement to Rate for the office components and targeting 5.5-star NABERS Energy and 3-star NABERS Water ratings.



Item for inclusion	Action and Report Location
d. provisions set out in Chapter 3.2(1) provide a NABERS Embodied Emissions Material Form to disclose the amount of embodied emissions attributable to the development in accordance with Section 35BA of the EP&A Regulation.	- More than 90% of the predicted construction waste arising from the development will be diverted from landfill. Refer Section 5.1, Page 23. - The reliance on artificial lighting and mechanical ventilation has been reduced via Translucent roof sheeting to warehouse areas, passive design, outdoor seating area and control systems. - The peak demand for electricity is significantly reduced via a proposed 3,675 kW PV solar system. - To enable effective review of energy usage by the project, sub-metering will be arranged in accordance with the Goodman Metering Strategy, typically organised by function or local area. for example: HVAC/Mechanical services, Safety systems, Lighting, Office areas, General Power, Specialised plant/machinery zones, and Solar generation - The Monitoring strategy in line with Green Star requirement will be provided. The Quantity Surveyor has prepared a signed NABERS Embodied Emissions Material Report for the current stage of the project

The project is committed to achieve a 5-Star Green Star Rating using the Green Building Council of Australia (GBCA) Buildings Rating Tool.

Building tuning will be conducted by the builder. Subject to feasibility SLR recommends, that quarterly reviews of actual building energy and water consumption be carried out once the warehouses are operational to check the actual energy usage and energy savings and verify that all systems are performing at their optimum efficiency. This will provide an opportunity for the systems to be tuned to optimise time schedules to best match occupant needs and system performance while satisfying the sustainability target for the project.

In conclusion, it is envisaged that the sustainability initiatives outlined in this report will assist the developer in addressing the SEARs requirements and will contribute to efficient outcomes in design, construction, and operation.



Appendix A Energy Saving Lighting Design Recommendations

BCA Lighting Requirements Oakdale East - Princt 2								
BCA Comply Building	BCA Requirements (W/m2)		Area	Operating Hrs	Lighting Control			Total Annual Energy Consumption (kWh)
2A & 2B	Warehouse 2A	4	17,267	Monday to Sunday 24 hours	Motion Detector, Daylight Sensor	0.9	0.6	325824
	Offices 2A	4.5	781	Monday to Sunday 24 hours	Motion Detector	0.9	1	27632
	Warehouse 2B	4	120,250	Monday to Sunday 24 hours	Motion Detector, Daylight Sensor	0.9	0.6	2269089
	Offices 2B	4.5	3,770	Monday to Sunday 24 hours	Motion Detector	0.9	1	133386
	Workshop 2B	9	2,373	Monday to Sunday 24 hours	Motion Detector	0.9	1	167917
			144441				Total	2923848
							kWh/m2	20.24

BCA Lighting Requirements Oakdale East - Princt 2								
BCA Comply Building	BCA Requirements		Area	Operating Hrs	Lighting Control			Total Annual Energy Consumption (kWh)
2A & 2B	Warehouse 2A	2	17,267	Monday to Sunday 24 hours	Motion Detector, Daylight Sensor	0.9	0.6	162912
	Offices 2A	4	781	Monday to Sunday 24 hours	Motion Detector	0.9	1	24562
	Warehouse 2B	2	120,250	Monday to Sunday 24 hours	Motion Detector, Daylight Sensor	0.9	0.6	1184544
	Offices 2B	4	3,770	Monday to Sunday 24 hours	Motion Detector	0.9	1	118565
	Workshop 2B	9	2,373	Monday to Sunday 24 hours	Motion Detector	0.9	1	167917
			144441				Total	1608501

Appendix B Water Saving Calculation

WATER SAVINGS CALCULATION OAKDALE East, Warehouse 2A & 2B

Table B1 - Number of fixtures

Area	Toilets	Urinal	Basins	showers
Amenities	69	18	74	9
Total	69	18	74	9
Assume 70% of toilet water usage is supplied by rainwater				
Fraction not supplied	0.3			

Table B2 - Results

No water saving measures		Max water usage rate ¹
Toilet	Adopt 3* Average Flush Usage in Table C3	276 L/s
Tap	Adopt 3* Tap Usage in Table C3	666 L/s
Urinal	Adopt 3* Urinal Usage in Table C3	36 L/s
Water reuse measures (4*) with RWH		Max water usage rate ¹
Toilet	Adopt 4* Average Flush Usage in Table C3	241.5 L/s
Tap	Adopt 4* Tap Usage in Table C3	555 L/s
Urinal	Adopt 4* Urinal Usage in Table C3	27 L/s
Water reuse measures (5*) with RWH		Max water usage rate ¹
Toilet	Adopt 5* Average Flush Usage in Table C3	207 L/s
Tap	Adopt 5* Tap Usage in Table C3	444 L/s
Urinal	Adopt 5* Urinal Usage in Table C3	18 L/s
	3* with RWH	4* with RWH 5* with RWH
Improvement Percent	22	35 48

Calculation Notes

¹ Water usage rate per use = Number of items in Table C1 x Usage rate in Table C3

² Assume total water usage is proportional to max water usage rate

³ Improvement percentage = % difference between 3* rated fixtures max water usage rate with no rainwater harvesting and design fixture max water usage rate with 70% of toilet and urinal flushing

Appendix C Net Zero Statement

In alignment with the NSW Government's targets to reduce greenhouse gas emissions by 70% by 2035 (compared to 2005 levels) and achieve net zero emissions by 2050, the proposed development demonstrates a strong commitment to sustainability and energy efficiency.

In accordance with Section 35C (2) of the *Environmental Planning and Assessment Regulation 2021*, and consistent with *Planning Circular PS 23-001*, the development incorporates a range of design and operational measures that support the transition to net zero emissions.

Building Envelope Initiatives

- Translucent roof sheeting to warehouse areas.
- R3.2 roof insulation and R2.8 wall insulation for air-conditioned office areas.
- High-performance glazing or NCC-compliant glazing.
- Passive solar design for outdoor areas.
- Use of materials with high SRI values for roofing and terrace pavements including Light-coloured Colorbond roofing (Dover White) to reduce thermal load.

Building Systems and Energy Efficiency

- 3,675 kW PV solar system, offsetting approx. 5,097 MWh/year and reducing CO₂ emissions by 3,415,141 kg/year.
- Daylight-controlled LED lighting in warehouse areas.
- Motion sensors for all LED lighting.
- Efficient HVAC systems for office areas.
- Solar hot water or electric heat-pump systems.
- Power sub-metering for ongoing energy monitoring.

NABERS Commitment Agreement

To meet the requirements of Section 3.3 of Chapter 3 of the *State Environmental Planning Policy (Sustainable Buildings) 2022*, a NABERS Commitment Agreement will be entered into for the office component of the development, ensuring:

- Efficient energy performance in line with the minimum 5.5-star NABERS Energy target for office buildings.
- Responsible water usage aligned with NABERS Water standards.
- Independent design review and modelling during the design phase to validate performance targets.

This supports the policy's goal of delivering measurable sustainability outcomes in large commercial developments.

Additional Net-Zero Considerations

- Full electrification of appliances and equipment.
- Use of Greenpower from renewable sources (solar, wind, hydro or biomass).

Embodied Carbon Consideration

- Use of low-carbon materials (e.g. recycled steel, low-carbon concrete)
- At least 15% cement replacement with fly ash to reduce embodied energy
- Embodied carbon offsets provided by Goodman for the development

Waste Management and Circular Economy

- 90% of the predicted construction waste arising from development will be re-used (on-site or at another development) or recycled off-site. Refer project Waste
- Initiatives include recycling, reuse of materials, and minimisation of landfill contributions.

Transport and Mobility

- 5% of total parking spaces are dedicated for electrical cars with charging stations proposed.
- 60 Bike parking spaces.

These contribute to indirect emissions reductions and support net-zero goals

Monitoring and Reporting Framework

- Post-construction commissioning and tuning of all sustainability measures
- Facility manager to oversee energy-saving procedures and maintain audit records
- A Building Users' Guide will be developed, detailing:
 - Natural ventilation strategies
 - User comfort controls
 - Maintenance protocols for HVAC and electrical systems
 - Lighting zoning for energy efficiency
- NABERS third-party certification for the office component
- 5 Star Green Star third party certification using the buildings rating tool.

As the design progresses, SLR Consulting will undertake detailed energy modelling to refine building services and optimise performance in line with net-zero objectives.

Conclusion

In summary, this Net Zero Statement demonstrates a clear pathway for the development to achieve its target of achieving net-zero emissions by 2050 as set by NSW Climate and Energy Action operational energy goals. The project is well-positioned to significantly reduce its environmental impact and align with evolving sustainability standards. These efforts not only contribute to long-term cost savings and energy resilience but also underscore the project's role as a forward-thinking model for sustainable development in the region.

Yours sincerely,



Dr Neihad Al-Khalidy, ME Mech, PhD
SLR Consulting Australia
Technical Director – Accredited Green Star and NABERS Professional
MIEAust CPEng; NER

Appendix D Targetted Green Star Points



Submission planner

Oakdale East Precinct 2

Summary

Climate Positive Pathway

Registering from / certified		Desired Green Star rating	5 Star
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Scoring

Minimum expectations met	Yes	Total points targeted	38
Core points targeted	38	Green Star rating targeted	5 Star
Leadership points targeted	0	Climate Positive Pathway met	No

Credit		Minimum Expectation	Credit Achievement	Exceptional Performance	Total points available	Targeted performance level	Total points targeted
Responsible					17		
1	Industry Development		1		1	Credit Achievement	1
2	Responsible Construction	•	1		1	Credit Achievement	1
3	Verification and Handover	•	1		2	Credit Achievement	1
4	Operational Waste	•			0	Minimum Expectation	0
5	Responsible Procurement		1		1		0
6	Responsible Structure		3	2	5		0
7	Responsible Envelope		2	2	4		2
8	Responsible Systems		1	1	2		0
9	Responsible Finishes		1	1	2		0
						Total	5
Healthy					14		

10	Clean Air	•	2		2	Minimum Expectation	0
11	Light Quality	•	2	2	4	Credit Achievement	2
12	Acoustic Comfort	•	2		2	Minimum Expectation	0
13	Exposure to Toxins	•	2		2	Credit Achievement	2
14	Amenity and Comfort		2		2		2
15	Connection to Nature		1	1	2		1
						Total	7

Resilient

8

16	Climate Change Resilience	•	1		1	Credit Achievement	1
17	Operations Resilience		2		2		0
18	Community Resilience		1		1		0
19	Heat Resilience		1		1		0
20	Grid Resilience		3		3		0
						Total	1

Positive

30

21	Upfront Carbon Emissions	•	3	3	6		0
22	Energy Use	•	3	3	6	Exceptional Achievement	6
23	Energy Source	•	3	3	6	Exceptional Performance	6
24	Other Carbon Emissions		2	2	4	Exceptional Performance	4
25	Water Use	•	3	3	6	Credit Achievement	3
26	Life Cycle Impacts		2		2		2
						Total	21

Places8						
27	Movement and Place	•	3		3Credit Achievement	3
28	Enjoyable Places		2		2	0
29	Contribution to Place		2		2	0
30	Culture, Heritage and Identity		1		1	0
					Total	3
People9						
31	Inclusive Construction Practices	•	1		1Credit Achievement	1
32	Indigenous Inclusion		2		2	0
33	Procurement and Workforce Inclusion		2	1	3	0
34	Design for Inclusion		2	1	3	0
					Total	0
Nature141						
35	Impacts to Nature	•	2		2Minimum Expectation	0
36	Biodiversity Enhancement		2	2	4	0
37	Nature Connectivity		2		2	0
38	Nature Stewardship		2		2	0
39	Waterway Protection		2	2	4	0
					Total	0
Leadership0						

40	Market Transformation				0		0
41	Leadership Challenges				0		0
						Total	0

