City of Greater Geelong, Statutory Planning - Date Received 26/08/2026

SUSTAINABILITY MANAGEMENT PLAN (SMP)

Proposed Mixed-Use Development

95 Murradoc Road
Drysdale

FOR

24 June 2026

File 411O

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Issue	Date	Prepared by	Checked by	Status
A	16 March 26	MD	JD	Draft
A	24 June 26	MD	JD	Final

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1. EXECUTIVE SUMMARY

This Sustainability Management Plan (SMP) is intended to support the planning application.

A detailed sustainability review and assessment of the project have been undertaken in accordance with the Sustainable Design Assessment in the Planning Process (SDAPP). The following Key Sustainable Building Categories have been addressed:

1. Water Efficiency
2. Energy Efficiency
3. Stormwater Management
4. Indoor Environment Quality
5. Building Materials
6. Transport
7. Waste Management
8. Urban Ecology
9. Innovation
10. Construction & Building Management

The proposed development will meet the Planning Scheme requirements for the city of Greater Geelong. This will ensure an appropriate level of sustainability for the development and in doing so, will help manage environmental impact, create benefits for the urban realm and provide occupants with a good level of risk reduction against rising utility costs.

The development is within an area already well serviced by infrastructure (community etc.) and will also provide significant sustainability benefits such as the following:

- High efficiency hot water system (Heat Pump with high COP)
- 3 kW solar photovoltaic system per tenancy except for the storage building
- Efficient lighting and mechanical services

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2. INTRODUCTION

to identify and provide sustainability advice in relation to the proposed mixed-use development at 95 Murradoc Road Drysdale.

This report was based on plans provided by Vantage Architecture:

Drawing No.	Description	Revision	Date
TP01	Surrounding uses	-	22 June 2026
TP01	Local context	-	22 June 2026
TP02	Existing streetscape	-	22 June 2026
TP03	Land survey	-	22 June 2026
TP04	Existing site plan	-	22 June 2026
TP05	Demolition plan	-	22 June 2026
TP06	Proposed site plan	-	22 June 2026
TP07	Ground floor plan	-	22 June 2026
TP08	Roof plan	-	22 June 2026
TP09	Elevations	-	22 June 2026
TP10	Materials schedule	-	22 June 2026
TP11	Artist's impressions	-	22 June 2026
TP10 -12	Shadows	-	22 June 2026

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2.1 Site Description

The total subject site is 6119m^2. The development is located within the Greater Geelong City.

An aerial photo showing the location of the site and surrounding is presented below.



2.2 Building Constituents

The proposed development comprises of a restaurant, 2 retail premises, 4 warehouses, 1 office & a storage building:

Level	Use
Ground floor	❖ Carpark, restaurant, retail premises, office, warehouse and storage

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3. KEY ESD INITIATIVES

The following key ESD initiatives have been incorporated into this project:

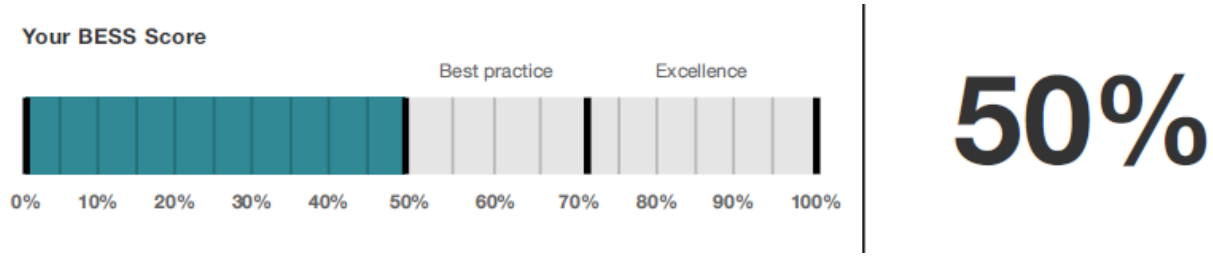
- Energy efficient lighting
- 3 kW solar photovoltaic system per tenant except storage building
- Efficient air conditioning
- Materials selections to be in accordance with ESD principles.

An assessment of sustainable design outcomes of the proposed development has been undertaken with BESS and NCC 2022 Façade Calculator benchmarking tools.

The BESS results are summarised below:

3.1 BESS

BESS score for the development is showed below.



Please refer to Appendix 1 for details of the BESS results.

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4. ESD CATEGORIES

4.1 Water Efficiency

Water Efficient Appliances

Design Response/ Performance Commitments	Notes
Water efficient appliances (where appliances are provided by the developer) will be specified a minimum 3 WELS star.	This includes dishwashers and any other appliances using water.

Water Efficient fittings

Design Response/ Performance Commitments	Notes
Water efficient fittings will be specified in accordance with the following minimum performance standard as rated by the Water Efficiency Labelling Scheme (WELS) ❖ Toilets minimum 4-stars WELS rated ❖ Taps minimum 5-stars WELS rated	

Heat Rejection Water

Design Response/ Performance Commitments	Notes
No air-conditioning systems in the building will rely on water-based heat rejection system, thereby avoiding the installation of potential water-consuming system.	

4.2 Energy Efficiency

Building Design

Design Response/ Performance Commitments	Notes
The following sustainable design features have been integrated into the design of the development: ❖ Specification of high-performance glazing to reduce excessive summer heat gain and winter heat loss ❖ Roof colour with a solar absorptance of no more than 0.45 to be used.	

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Insulation

Design Response/ Performance Commitments	Notes
All exposed floors and ceilings (forming part of the envelope) to meet required NCC 2022 levels.	**Walls: R 2.5** **Ceiling: R 5.0**

Preliminary Wall Glazing Assessment

Design Response/ Performance Commitments	Notes
The development meets the glazing energy efficiency requirements of NCC 2022 Section J4D6 based on the following window specifications: <u>All Restaurant Glazing</u> • **U-Value: 4.80 (Double Glazed)** • **SHGC: 0.35** <u>All Mixed-Use building Glazing</u> • **U-Value: 5.80 (Single Glazed)** • **SHGC: 0.51**	Note that the wall glazing construction must not be greater than the U-Value of U 2.0. Total U-Value achieved for restaurant: **U 1.91** Total U-Value achieved for mixed-use building: **U 1.69** Refer to Appendix 3 for the NCC Part J4D6 wall glazing calculators.

Renewable Energy System

Design Response/ Performance Commitments	Notes
The following renewable energy system for the building will be installed: ❖ A 3kW peak solar photovoltaic system for each tenant (except for the storage building) providing renewable energy to offset greenhouse emissions arising from energy usage.	The proposed renewable energy system is predicted to result in equivalent avoided greenhouse emissions of approximately 5.3 tonnes $CO_{2\text{-}e}$ each year Refer to Appendix 4 for details of proposed system capacity and panel numbers.

Heating & Cooling

Design Response/ Performance Commitments	Notes
Heating and cooling systems within one Star (3 star Heating and 3 star Cooling minimum), or Coefficient of Performance (CoP) & Energy Efficiency Ratios (EER) 85% or better than the most efficient equivalent capacity unit)	

Domestic Hot Water

Design Response/ Performance Commitments	Notes
Domestic hot water will be provided by • Water heating system within one Star, or 85% or better than the most efficient equivalent capacity unit available	High efficiency heat pump with high COP to be used.

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Lighting

Design Response/ Performance Commitments	Notes
Energy efficient lighting systems will be installed throughout the development including: ❖ LED lighting to all internal rooms ❖ LED external lighting.	All common areas and external area lighting will be controlled through motion/daylight sensor. This will ensure that lighting only operates when adequate levels of daylight are insufficient or if human activity in common area does not exist. The maximum illumination power density (W/m^2) in at least 90% of the area of the relevant building class will meet the requirements in Table J7D3a of the NCC 2022 Vol 1. Also external lighting will be designed to avoid light spill to the night sky.

4.3 Stormwater Management

Stormwater Quality

Design Response/ Performance Commitments	Notes
The development achieves a Blue Factor STORM score of 145%.	Refer to Appendix 2 for the storm water results and refer to Stormwater Management Strategy

4.4 Indoor Environmental Quality

Daylight Access

Design Response/ Performance Commitments	Notes
The building has good access to natural daylight. The building form layout have been configured to ensure that building have either a north, east or west orientation and therefore receive direct solar access.	

Thermal comfort

Design Response/ Performance Commitments	Notes
The use of single-glazing or better performance glazing together with the use of adequate insulation will maximise energy efficiency. High efficiency inverter drive air-conditioning units will also help in providing comfortable indoors.	

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Mechanical Ventilation

Design Response/ Performance Commitments	Notes
50% increase in outdoor air is available to regular use areas compared to the minimum required by AS 1668.2:2012 for all buildings. The ventilation systems designed to achieve, to monitor and to maintain 800 ppm of CO2 concentrations for all buildings.	

Acoustics

Design Response/ Performance Commitments	Notes
The use of single-glazing or better windows and adequate insulation will buffer excessive noise generated by traffic, neighbours and hard surfaces.	

Volatile Organic Compounds

Design Response/ Performance Commitments	Notes
All internal painted surfaces, adhesives and sealant will meet the Total Volatile Organic Compound (TVOC) Content.	Low VOC paints, sealant and adhesives will be specified in accordance with the VOC limits set out in the Indoor Pollutant Credit of the Green Star Design & As Built.

4.5 Building Materials

Concrete

Design Response/ Performance Commitments	Notes
Concrete used should be specified with the absolute amount of Portland cement across all concrete mixes, which at the same time will reduce embodied energy by substituting it with industrial waste product(s) or oversized aggregate as follows: ❖ 30% for in situ concrete ❖ 20% for precast concrete ❖ 10% for stressed concrete Non-structural concrete will not use natural aggregate.	Note that this is subject to meeting structural requirements and project management constraints

Timber

Design Response/ Performance Commitments	Notes
All timber used in the development will be recycled or from accredited sustainably harvested plantation sources (FSC or AFS)	Note that this is subject to meeting structural requirements and project management constraints

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Engineered Wood

Design Response/ Performance Commitments	Notes
Engineered wood products include particleboard, plywood, Medium Density Fibreboard (MDF), Laminated Veneer Lumber (LVL), High-Pressure Laminate (HPL), Compact Laminate and decorative overlaid wood panels to meet the maximum total indoor pollutant emission limits. (Formaldehyde Limits <= 1mg/L)	

Flooring

Design Response/ Performance Commitments	Notes
Flooring will be selected from Ecospecifier or will have GECA or ISO14001 Certification	Carpet and flooring to meet the maximum total indoor pollutant emission limits (Total VOC < 0.5 mg/m2/hr).

Paint, Sealant and Adhesives

Design Response/ Performance Commitments	Notes
All internal painted surfaces, adhesives and sealant will meet the Total Volatile Organic Compound (TVOC) Content.	Low VOC paints, sealant and adhesives will be specified in accordance with the VOC limits set out in the Indoor Pollutant Credit of the Green Star Design & As Built.

4.6 Sustainable Transport

Cyclist Facilities

Design Response/ Performance Commitments	Notes
The following bicycle facility will be provided: ❖ A minimum of 12 bicycle spaces	The bike parking facility available meets the ratios set out in Clause 52.34 of the Greater Geelong Planning Scheme.

Electric Vehicle Infrastructure

Design Response/ Performance Commitments	Notes
❖ A minimum of 2 EV charging infrastructure and cabling (with or without the charger unit) to the parking that can support Level 2 (Mode 3) 32 Amp EV car charging. ❖ The EV infrastructure does not adversely impact the site's maximum demand	

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4.7 Waste Management

Operational Waste Management

Design Response/ Performance Commitments	Notes
The following waste management facilities will be provided in the development: Bins storage area will be provided to the proposed development	

Construction Waste Minimisation

Design Response/ Performance Commitments	Notes
A target recycling rate of 80% of construction and demolition waste has been adopted for the construction phase of the development to minimise the volume of waste to landfill. This will be achieved by the development of a comprehensive waste minimisation strategy including: ❖ Separation of all commercially viable recyclable waste streams ❖ Training in waste minimisation for all site staff and contractors to form part of site induction training. ❖ Record keeping of landfill waste and recyclable stream volumes to track performance against the 80% recyclable target.	A dedicated recycling contractor will be engaged to facilitate separation of commercially viable recyclable waste streams in accordance with the target adopted.

4.8 Urban Ecology

Landscape

Design Response/ Performance Commitments	Notes
Landscaping has been integrated into the building design	This feature enhances the ecological value of the development. Note: Water efficient/drought tolerant plants will be selected

4.9 Innovation

Design Response/ Performance Commitments	Notes
N/A	N/A

4.10 Construction & Building Management

Metering

Design Response/ Performance Commitments	Notes
In addition, tenancy meters for utilities, the following meters will be installed to provide information in	The information collected from these meters will be used by the Owner's Corporation manager to assess the function and efficacy of central

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relation to centralised building systems and common area energy consumption: ❖ Common area lighting meters ❖ Power meter ❖ Solar photovoltaic system	systems during commissioning and ongoing operation.

Commissioning & Maintenance

Design Response/ Performance Commitments	Notes
All energy and water management systems set out in this report will be commissioned in accordance with the manufacturer's specifications. Ongoing maintenance and regular monitoring of building systems will be undertaken by building management staff to ensure effective and efficient ongoing operation of all centralised building systems set out in this report including the rainwater harvesting system.	

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5. IMPLEMENTATION STRATEGY

The ESD initiatives set out in this report will be coordinated by the Project Manager in conjunction with the following project design team members:

- Architect
- Project Manager.
- Thermal Performance Assessor/ESD consultant
- Building Services Consultant
- Builder
- Developer
- Waste Management Consultant

An implementation schedule is set out in the following table:

ESD Initiative Implementation Schedule				
#	**Initiative**	**Requirement**	**Responsibility**	**Stage**
1	**Coordination of Initiatives**	Full implementation.	Project Manager	All
2	**Energy Assessment**	Part J assessment	Thermal Performance Assessor/ESD consultant	Design Development
3	**Heating & Cooling**	Specification of units in accordance with nominated MEPS star ratings.	Building Services Engineer	Design Development
4	**Energy Efficient Appliances and pumps**	Specification of energy efficient appliances	Architect/ Developer	Design Development
5	**Lighting**	Specification of nominated energy efficient lighting types and automated controls.	Building Services Engineer	Design Development
6	**Domestic Hot Water Heating**	Heat pump	Building Services Engineer	Design Development
7	**Solar Photovoltaic system and EV charging infrastructure**	Specification and design of solar PV system EV charging infrastructure	Building Services Engineer	Design Development
8	**Water Efficiency**	Specify fixture in accordance with nominated WELS star ratings.	Architect	Design Development

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ESD Initiative Implementation Schedule				
#	**Initiative**	**Requirement**	**Responsibility**	**Stage**
9	**Operational Waste Management**	Provide layout for storage areas. Specify bins and associated waste management equipment.	Waste Management Consultant	Design Development
10	**Construction Waste Minimisation**	Prepare construction waste minimisation plan.	Builder/ Waste contractor	Design Development
11	**Environmentally Preferable Materials**	Specify materials in accordance with nominated schedule.	Architect	Design Development
12	**Metering**	Specify meters in accordance with nominated schedule.	Building Services Engineer	Design Development
13	**Commissioning & Maintenance**	Commission & tune all equipment in accordance with performance standards & targets.	Builder/owner corporation	Construction/ occupancy

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6. CONCLUSION

This report presents the environmentally sustainable design (ESD) principles, strategies and mechanism of the proposed development at 95 Murradoc Road Drysdale. Integrated passive and active sustainable design will aid in the delivery of an energy efficient, water efficient and healthy building.

In terms of performance outcomes, the analysis presented in this report demonstrates that the proposed development meets the standard of commercial building envelope energy efficiency required to satisfy the Building Code of Australia. Furthermore, the combination of design features and services initiatives exceeds Best Practice Standard of the BESS assessment

Accordingly, the sustainable design outcomes detailed in this report are consistent with current industry practice for a development of this scale.

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Appendix 1: BESS

BESS, 95 Murradoc Road Drysdale 95 Murradoc Rd, Drysdale 3222

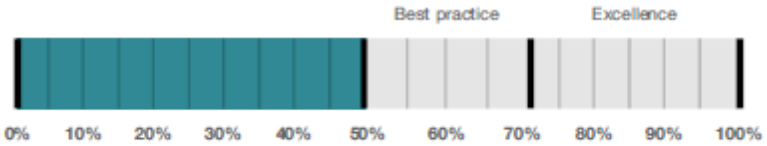
BESS Buildings Report

Built Environment Sustainability Scorecard

This BESS report outlines the sustainable design commitments of the proposed development at 95 Murradoc Rd Drysdale Victoria 3222. The BESS report and accompanying documents and evidence are submitted in response to the requirement for a Sustainable Design Assessment or Sustainability Management Plan at Greater Geelong City Council.

Note that where a Sustainability Management Plan is required, the BESS report must be accompanied by a report that further demonstrates the development's potential to achieve the relevant environmental performance outcomes and documents the means by which the performance outcomes can be achieved.

Your BESS Score

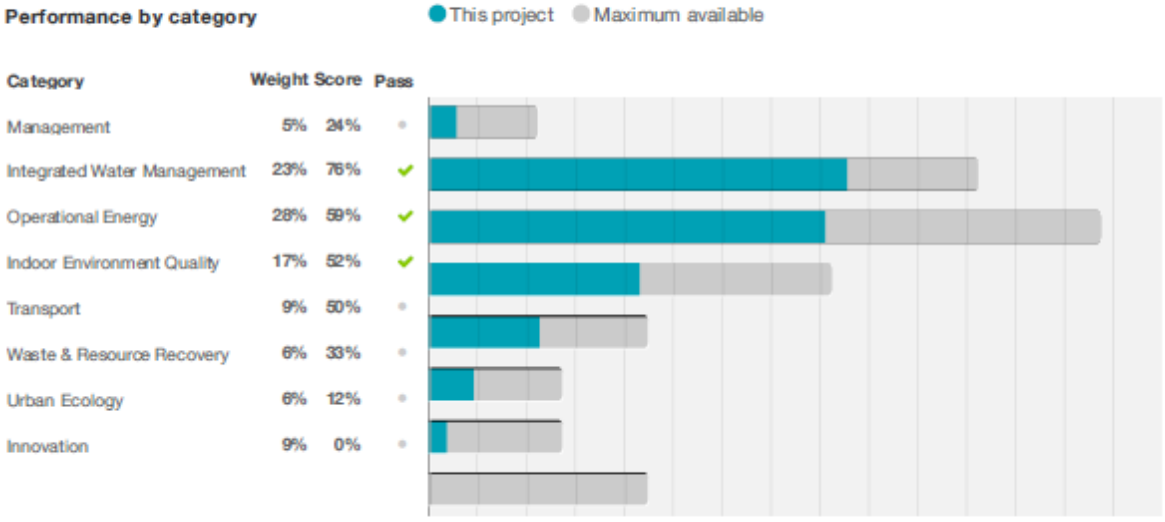


50%

Project details

Name	95 Murradoc Road Drysdale
Address	95 Murradoc Rd Drysdale Victoria 3222
Project ID	A4BF8CD8-R1
BESS Version	BESS-10
Date	24 June 2026
Software version	2.3.0-B.654
Site type	Non-residential development
Account	info@nedesign.net.au
Application no.	
Site area	6,119 m²
Building floor area	2,360 m²

Performance by category



The Built Environment Sustainability Scorecard is an initiative of the Council Alliance for a Sustainable Built Environment (CASBE).
For more details see www.bess.net.au

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Appendix 2: Stormwater Results

BLUE FACTOR.

95 Murradoc Rd, Drysdale VIC 3222, Australia
14 April 2026 4:49 p.m.

95 Murradoc Road, Drysdale

The proposed stormwater treatments provide 'deemed to comply' compliance with the minimum planning requirement for total nitrogen but does not comply with all the relevant objectives for management of stormwater flows on-site.

145% SCORE

Project details

Name	V2: 95 Murradoc Road, Drysdale
Project ID	70756B3D
Street address	95 Murradoc Rd, Drysdale VIC 3222, Australia
Municipality	Greater Geelong
Site area	6161 m^2
Planning Number	

Flow and pollutant load reductions

Item	Result	Target	
Mean annual runoff volume harvested or evapotranspired (%)	4%	>32%	✗
Mean annual runoff volume infiltrated or filtered (%)	31%	>3%	✓
Total suspended solids (%)	80%	>80%	✓
Total phosphorus (%)	69%	>45%	✓
Total nitrogen (%)	65%	>45%	✓
Total gross pollutants (%)	83%	>70%	✓

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Water treatment

Configuration 1

- **Lot 1 - Hardstand** Paved, 894m2
- **Lot 1 - Roof** 280m2
- **CP** Paved, 740m2
- **Lot 2 - Roof** 1680m2
- **Lot 2 - Paved** 2567m2
- **Raingarden 1** Area: 70 m^2, Extended detention depth: 0.1 m, Submerged zone depth: 0 m, Site soil type: Sandy loam

Catchments

- **Lot 1 - Hardstand** Paved, 894m2
- **Lot 1 - Roof** 280m2
- **CP** Paved, 740m2
- **Lot 2 - Roof** 1680m2

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Lot 2 - Paved 2567m2

Treatments



Raingarden 1 Area: 70 m^2, Extended detention depth: 0.1 m, Submerged zone depth: 0 m, Site soil type: Sandy loam **145%**

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Appendix 3: Façade Calculator

Façade

Report

Calculator

Project Summary

Date
16/03/2026

Name
Jonathan Duverge

Company
Northern Environmental Design

Position
Director

Building Name / Address
95 Murradoc Road Drysdale
Proposed Restaurant

Building State
VIC

Climate Zone
Climate Zone 6 - Mild temperate

Building Classification
Class 6 - restaurants, cafes, bars

Storeys Above Ground
1

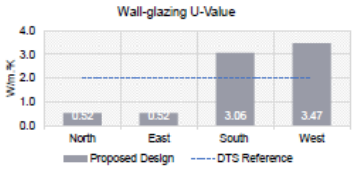
Tool Version
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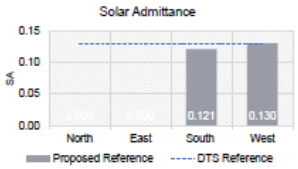
The summary below provides an overview of where compliance has been achieved for Specification S37 - Calculation of U-Value and solar admittance - Method 1 (Single Aspect) and Method 2 (Multiple Apects).

Compliant Solution =
Non-Compliant Solution =

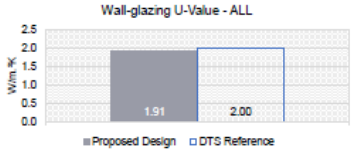
	Method 1 North	Method 1 East	Method 1 South	Method 1 West	Method 2 All
Wall-glazing U-Value (W/m².K)	0.52	0.52	3.06	3.47	1.91
Solar Admittance			0.12	0.13	
AC Energy Value					15

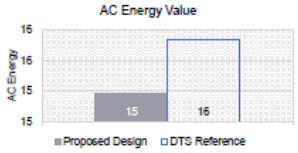
Method 1





Method 2





Project Details

	North	East	South	West
Glazing Area (m²)	0	0	20	36
Glazing to Façade Ratio	0%	0%	59%	69%
Glazing References			W1	W1
Glazing System Types			Fixed	Fixed
Glass Types			Double Glazed Unit - no low-E coating	Double Glazed Unit - no low-E coating
Frame Types			Aluminium	Aluminium
Average Glazing U-Value (W/m².K)			4.80	4.80
Average Glazing SHGC	0.00	0.00	0.35	0.35
Shading Systems	Horizontal	Horizontal	Horizontal	Horizontal
Wall Area (m²)	33.75	52.25	13.75	16.25
Wall Types	Wall	Wall	Wall	Wall
Methodology	Wall			
Wall Construction	Lightweight wall + R 2.5	Lightweight wall + R 2.5	Lightweight wall + R 2.5	Lightweight wall + R 2.5
Wall Thickness	150	150	150	150
Average Wall R-value (m².K/W)	1.92	1.92	1.92	1.92
Solar Absorptance	0.5	0.5	0.5	0.5

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Façade

Report

Calculator

Project Summary

Date
16/03/2026

Name
Jonathan Duverge

Company
Northern Environmental Design

Position
Director

Building Name / Address
95 Murradoc Road Drysdale
Proposed Mixed-Use Development

Building State
VIC

Climate Zone
Climate Zone 6 - Mild temperate

Building Classification
Class 5 - office building

Storeys Above Ground
1

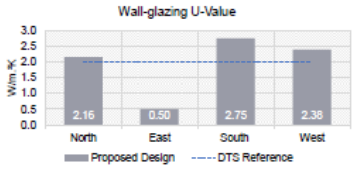
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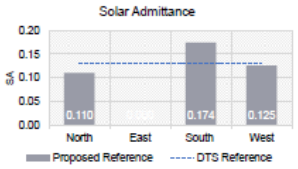
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Non-Compliant Solution =

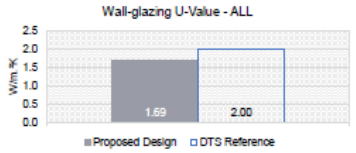
	Method 1				Method 2
	North	East	South	West	All
Wall-glazing U-Value (W/m².K)	2.16	0.50	2.75	2.38	1.69
Solar Admittance	0.11		0.17	0.13	
AC Energy Value					163

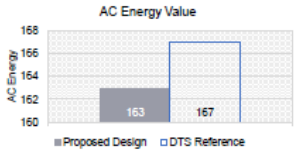
Method 1





Method 2





Project Details

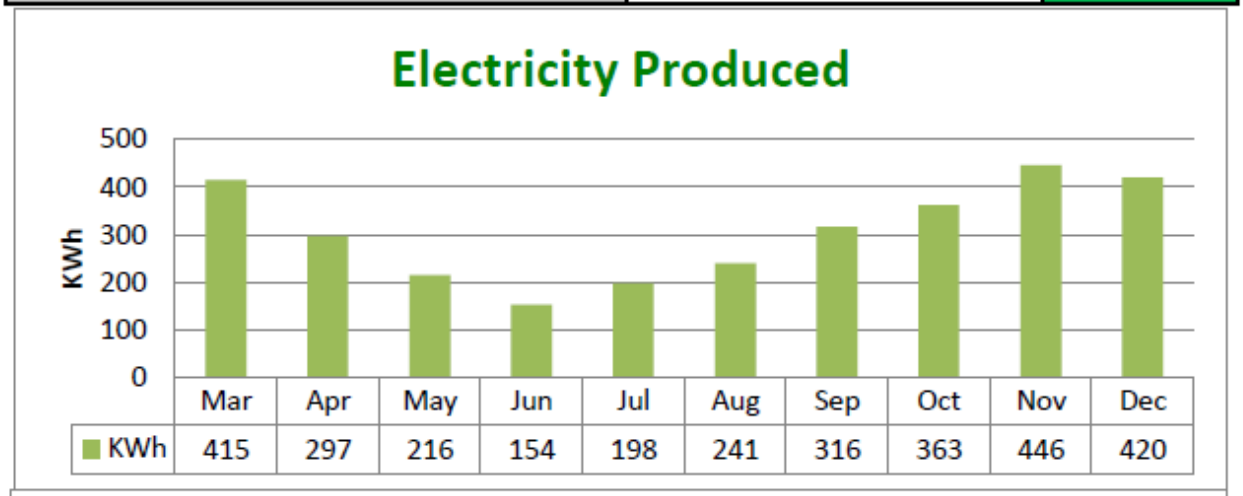
	North	East	South	West
Glazing Area (m²)	40.8	0	55.2	187.2
Glazing to Façade Ratio	31%	0%	42%	36%
Glazing References	W1 W2		W1 W2	W1 W2
Glazing System Types	Fixed		Fixed	Fixed
Glass Types	Single Glazing - low-E coating		Single Glazing - low-E coating	Single Glazing - low-E coating
Frame Types	Aluminium		Aluminium	Aluminium
Average Glazing U-Value (W/m².K)	5.80		5.80	5.80
Average Glazing SHGC	0.51	0.00	0.51	0.51
Shading Systems	Horizontal	Horizontal	Horizontal	Horizontal
Wall Area (m²)	89.4	472.8	75	338.8
Wall Types	Wall	Wall	Wall	Wall
Methodology	Wall			
Wall Construction	Concrete panel + (MS) R 2.5	Concrete panel + (MS) R 2.5	Concrete panel + (MS) R 2.5	Concrete panel + (MS) R 2.5
Wall Thickness	240	240	240	240
Average Wall R-value (m².K/W)	2.01	2.01	2.01	2.01
Solar Absorptance	0.5	0.5	0.5	0.5

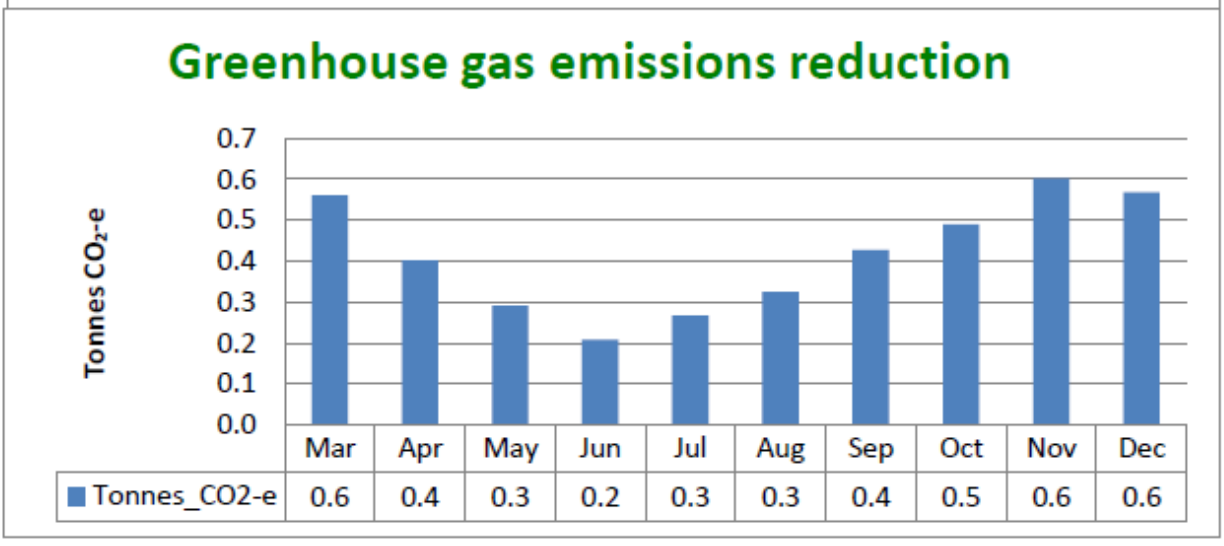
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Appendix 4: Solar Photovoltaic System

Site Location: Melbourne
Latitude: 37.67°S
Longitude: 144.83°E
Weather Data: IWEC
Array tilt: 37.67°

Photovoltaic System		
Electricity gas emissions factor, NG [2]	kg_CO2-e/kWh	1.35
Overall DC-to-AC derate factor		0.77
PV capacity required	kWe	3.0
Typical panel collector	W	400
Number of panels required	rounded up	8
Expected electricity produced	KWh/day	11.0
Annual expected electricity produced	KWh/yr	3,926
Greenhouse gas emissions reduction	tonnes_CO_2-e/yr	5.3





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Appendix 5: VOC and Formaldehyde Limits

Product Category	***Max TVOC content grams per litre (g/L) of ready to use product***
General purpose adhesives and sealants	50
Interior wall and ceiling paint, all sheen levels	16
Trim, varnishes and wood stains	75
Primers, sealers and prep coats	65
One and two pack performance coatings for floors	140
Acoustics sealants, architectural sealant, waterproofing membranes and sealant, fire retardant sealants and adhesives	250
Structural glazing adhesive, wood flooring and laminate adhesives and sealant	100

Table: Maximum TVOC limits for Paints, Adhesives and Sealants

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Test Protocol	***Emission limit/Unit of Measurement***
AS/NZS 2269:2004, testing procedure AS/NZS 2098.11:2005 method 10 for plywood	<=1 mg/L
AS/NZS 1859.1:2004- Particle Board,with use of testing procedure AS/NZS 4266.16:2004 method 16	<=1.5 mg/L
AS/NZS 4357.4 – Laminated Venneer Lumber (LVL)	<=1 mg/L
Japanese Agricultural Standard MAFF Notification No.701 Appendix Clause 3 (11) -LVL	<=1 mg/L
JIS A 5908:2003- Particle Board and Plywood, with use of testing procedure JIS A 1460	<=1 mg/L
JIS A 5905:2003- MDF, with use of testing procedure JIS A 1460	<=1 mg/L
JIS A 1901 (not applicable to Plywood, applicable to high pressure laminates and compact laminates	<=0.1 mg/m^2hr*
ASTM D5116 (applicable to high pressure laminates and compact laminates)	<=0.1 mg/m^2hr
ISO 16000 part 9, 10 and 11 (also known as EN 13419), (applicable to high pressure laminates and compact laminates)	<=0.1 mg/m^2hr (at 3 days)
ASTM D6007	<=0.12 mg/m^3**
ASTM E1333	<=0.12 mg/m^3***
EN 717-1 (also known as DIN EN 717-1)	<=0.12 mg/m^3
EN 717-2 (also known as DIN EN 717-2)	<=3.5 mg/m^2hr

Table: Formaldehyde Emission Limit values for Different Testing Protocols