wrap consulting engineering

7-9 Clow Street, Dandenong

SUSTAINABILITY MANAGEMENT PLAN

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DOCUMENT PROPERTIES

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DESCRIPTION: Sustainability Management Plan

PROJECT NAME: 7-9 Clow Street, Dandenong, Victoria 3175

PROJECT NUMBER: 26110

DOCUMENT AMENDMENTS

REVISION	DETAILS	AUTHOR/S	DATE	REVIEWED BY
01	Draft issue	BR	01/04/2026	AK
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CONTENTS

1 INTRODUCTION

This Sustainability Management Plan (SMP) has been prepared to assist the design, construction and operation of the proposed mixed use residential development at 7-9 Clow Street, Dandenong, Victoria 3175 to achieve a range of best-practice sustainable development objectives.

WRAP Engineering have assessed the proposed plans and provided input to the design team.
This SMP captures initiatives necessary to ensure that the development meets the sustainability requirements of the Greater Dandenong City Council, in particular the ESD requirements of the following Planning Clauses:

- 15.01-2L "Building design – Greater Dandenong".
- 53.18 "Storm Water Management in Urban Development"
- 58 "Apartment Developments"

1.1 SITE DESCRIPTION

The site at 7-9 Clow Street, Dandenong is at the Clow St and has an area of approximately 764 m^2.

Figure 1: Aerial view of the site.

1.2 DEVELOPMENT SUMMARY

The proposed development will consist of the following:

- Ground to level 4 podium: Incorporating ground-level services/bicycle parking and car parking across the podium levels.
- Level 5 to 17: Residential apartments.
- Roof: Services plant area, communal Terrace.

1.3 COUNCIL PLANNING REQUIREMENTS

Greater Dandenong City Council expects new developments to be designed, built and maintained at a level that reflects best practice sustainable development outcomes. The ESD response will need to ensure that the design meets sustainability targets in the areas of energy reduction, water use reduction and water sensitive urban design, indoor environment quality, materials selection, transportation, waste management and urban ecology.

Greater Dandenong City Council encourages the implementation of SDAPP to enhance the sustainability of the built environment. For this project, the SDAPP framework on the 10 Key Sustainable Building Categories will be addressed. These categories are as follows:

- Energy Efficiency;
- Water Efficiency;
- Stormwater Management;
- Indoor Environment Quality;
- Building Materials;
- Construction and Waste Management;
- Transport;
- Urban Ecology;
- Building Management; and
- Innovation.

The council's Planning Scheme also encourages the use of relevant ESD tools to assess the proposed development. For this project, the following tools will be used:

- Built Environment Sustainability Scorecard (BESS) – a holistic sustainability assessment tool;
- Bluefactor – a stormwater assessment tool; and
- NatHERS – energy rating tool

This SMP incorporates initiatives to ensure that the council's ESD requirements are satisfied by addressing the Key Sustainable Building Categories, demonstrating that council's Best Practice Standards will be achieved, and using relevant and appropriate ESD assessment tools.

1.4 REFERENCE DOCUMENTATION

This SMP should be read in conjunction with the other relevant documentation included within the development's town planning submission to council. These documents may include the following:

- Architectural documentation by Plus Studio dated 28/04/2026
- Architectural landscape annotations / indicative landscape treatment
- Waste Management Plan
- Traffic engineer's report, transport plan, green travel plan or similar.

2 ESD ASSESSMENT

The following sections outline the ESD assessment which has been completed for the project. The assessment is presented within the Key Sustainable Building Categories, and for each item following information is provided:

1. A short description of the ESD initiative and/or the project's design response.
2. The nominated party responsible for implementation of the initiative; and
3. The stage of the project at which implementation could be demonstrated.

Within this assessment, the level of detail that has been provided is generally in proportion to what is appropriate or practicable at this early stage of design. This is described or explained within each item, with future commitments included as appropriate.

2.1 INDOOR ENVIRONMENT QUALITY

2.1.1 OBJECTIVES

- *To achieve a healthy indoor environment quality for the wellbeing of building occupants.*
- *To provide a naturally comfortable indoor environment will lower the need for building services, such as artificial lighting, mechanical ventilation and cooling and heating devices.*

2.1.2 DEVELOPMENT RESPONSE

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
Volatile Organic Compounds All paints, adhesives and sealants and carpets will not exceed the limits outlined in Appendix A.	Architect Services Engineer	Contract Documentation
Formaldehyde All engineered wood products will have 'low' formaldehyde emissions, certified as E0 or better, or will not exceed the limits outlined in Appendix A.	Architect	Contract Documentation
Daylight Residential Apartments: High-VLT (> 60%) clear double glazing will be specified for the development. A daylight assessment has been completed using the BESS DtS residential daylight pathways and the result is: – 100% of living areas and bedrooms achieve the BESS daylight criteria (Refer to Appendix C). Non-Residential Spaces: High-VLT (> 40%) glazing will be specified for the development. A Green Star daylight assessment has been completed for the project; the non-residential achieve the required daylight factor of 2% to 49% of their floor area. Refer to Appendix C.	Architect	Contract Documentation
External Views All habitable rooms have high-quality external views.	Architect	Design Development
Effective Ventilation 100% of the residential dwellings comply with the BESS natural ventilation requirements. Refer to Appendix D. Commercial tenancies will be provided with 50% extra outdoor air compared to the minimum required by AS 1668:2012.	Architect	Contract Documentation
Thermal Comfort Residential Apartments: The development will include double glazing to all apartments, and it will target an average house energy rating of at least 7 Stars and a minimum house energy rating of at least 6 Stars.	Architect ESD Consultant	Contract Documentation

2.2 ENERGY EFFICIENCY

2.2.1 OBJECTIVES:

- *To ensure the efficient use of energy.*
- *To reduce total operating greenhouse emissions.*
- *To reduce energy peak demand.*
- *To reduce associated energy costs.*

2.2.2 DEVELOPMENT RESPONSE

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
House Energy Ratings The project is targeting the following minimum house energy ratings: - Average Apartment rating: at least 7 Stars - Average Individual Apartment rating: at least 6 Stars - BADS maximum cooling load of 21 MJ/m² for each apartment Preliminary energy rating calculations show that the project is on track to meet these targets; refer to Appendix B for details.	Architect ESD Consultant	Building Permit
Commercial Energy Efficiency The project is targeting the following minimum energy saving strategy: - All floors and ceilings (forming part of the envelope) demonstrate meeting the required NCC2022 insulation levels - All wall and glazing demonstrate meeting or improving upon the NCC2022 facade calculator.	Architect ESD Consultant	Design Development
Heating and Cooling Systems The project will implement heating and cooling systems within one Star of the most efficient equivalent capacity unit available (or equivalent EER/COP).	Services Engineer	Contract Documentation
Energy Efficient Appliances Where domestic appliances are installed or provided by the developer, they will be within one star of the best available and comparable type of appliance, as per the Energy Rating program. This may include dishwashers or washing machines.	Interior Architect	Contract Documentation
Domestic Hot Water The project will implement a centralised air sourced heat pump hot water system.	Services Engineer	Contract Documentation
On-site Renewable Energy The project will install a solar PV array of maximum capacity in consideration of the available roof area and building services plant. The array will be at least 7.7 kW capacity, final sizing to be coordinated during the design development phase.	Architect Services Engineer	Contract Documentation
Artificial Lighting - The lighting design throughout the development will be at least 10% more energy efficient than the BCA requirements. - External and common area lighting systems will use daylight and occupancy sensors to control lighting energy usage.	Services Engineer	Contract Documentation

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
Energy Metering – Electricity All dwellings and tenants will be provided with individual electricity meters. All major base-building systems will be individually sub-metered to allow for effective building tuning.	Services Engineer	Contract Documentation

2.3 WATER EFFICIENCY

2.3.1 OBJECTIVES:

- *To ensure the efficient use of water.*
- *To reduce total operating potable water use.*
- *To encourage the collection and reuse of stormwater.*
- *To encourage the appropriate use of alternative water sources (e.g. grey water).*
- *To minimise associated water costs.*

2.3.2 DEVELOPMENT RESPONSE

<table>
<tr><th>ESD INITIATIVE</th><th>RESPONSIBILITY & IMPLEMENTATION</th><th>PROJECT STAGE</th></tr>
<tr><td>Water Fixtures and Fittings
The following Water Efficiency Labelling Scheme (WELS) star ratings will be specified:
– Toilets: 4 Star;
– Taps (bathroom and kitchen): 6 Star; and
– Showerheads: 4 Star (>6.0 but ≤7.5 L/min).
– Dishwasher: 5-star
– WC: 4-Star</td><td>Architect</td><td>Contract Documentation</td></tr>
<tr><td>Water Efficient Appliances
Where domestic appliances are installed or provided by the developer, they will be within one star of the best available and comparable type of appliance, as per the WELS program. This may include dishwashers or washing machines.</td><td>Architect</td><td>Contract Documentation</td></tr>
<tr><td>Rainwater Collection and Reuse
Rainwater harvesting for non-potable uses will be implemented as a water saving initiative. The details of this system for this development are as follows:

<table>
<tr><th>RWT</th><th>Size</th><th>Catchment</th><th>Re-use</th></tr>
<tr><td>Rainwater Tank</td><td>5kL</td><td>Roof</td><td>Toilet flushing on Level 05 to 11</td></tr>
<tr><td>Dirty Water Tank</td><td>10kL</td><td>Terrace</td><td>Irrigation</td></tr>
</table>
– Rainwater tank location: Lower Ground Level
– Roof catchment area: 295m²
– Terrace catchment area: 369m²

Refer to Appendix E for details.</td><td>Architect
Services Engineer</td><td>Contract Documentation</td></tr>
</table>

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
Landscape Irrigation Landscape design will include a mixture of indigenous, native and exotic species selected for drought tolerance and general hardiness. Refer to architectural landscape annotations / indicative landscape treatment for further details.	Services Engineer Landscape	Contract Documentation
Waterless HVAC All HVAC systems will use air-cooled heat rejection systems.	Services Engineer	Contract Documentation
Fire System Test Water The fire water test system will not expel water for testing, or the fire systems will include temporary storage for 80% of the routine fire protection system test water and maintenance drain-downs for reuse on site.	Services Engineer	Contract Documentation
Water Metering All dwellings will be provided with individual meters, and all major base-building systems will be individually sub-metered to allow for effective building tuning.	Services Engineer	Contract Documentation

2.4 STORMWATER MANAGEMENT

2.4.1 OBJECTIVES:

- *To reduce the impact of stormwater run-off.*
- *To improve the water quality of stormwater run-off.*
- *To achieve best practice stormwater quality outcomes.*
- *To incorporate water sensitive urban design principles.*

2.4.2 DEVELOPMENT RESPONSE

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
Stormwater Pollution Reduction The project will achieve a best practice stormwater pollution reduction outcome by achieving a Bluefactor score of at least 100%. Refer to Appendix E for details.	Architect Services Engineer	Contract Documentation

2.5 BUILDING MATERIALS

2.5.1 OBJECTIVES:

- *To minimise the environmental impacts materials used by encouraging the use of materials with a favourable lifecycle assessment based on the following factors:*
  - *Fate of material*
  - *Recycling/Reuse*
  - *Embodied energy*
  - *Biodiversity*
  - *Human health*
  - *Environmental toxicity*
  - *Environmental responsibility.*

2.5.2 DEVELOPMENT RESPONSE

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
Timber At least 95% of solid (not engineered) timber used in the project will be reused or will be from FSC or PEFC certified forests.	Contractor	Construction
Insulation All insulants will have zero ozone depletion potential (ODP).	Contractor	Construction
Refrigerants All HVAC refrigerants used in the development will be selected to have an Ozone Depletion Potential (ODP) of zero.	Services Engineer	Contract Documentation

2.6 TRANSPORT

2.6.1 OBJECTIVES:

- *To minimise car dependency.*
- *To ensure that the built environment is designed to promote the use of public transport, walking and cycling.*

2.6.2 DEVELOPMENT RESPONSE

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
Active Transport Facilities The development will include the following facilities to support active transport: - secure bicycle parking spaces for use by residents – one per dwelling (78). - 16 secure bicycle parking spaces for use by non-residents/visitors.	Architect	Contract Documentation
Electric Vehicle Charging EV charging infrastructure to support future charging bays.	Services Engineer	Contract Documentation
Access to Public Transport The development is located in Dandenong, with a 'Excellent Transit' access to trains and buses. It scores a Transit Score of 70 out of 100.	n/a	
Walking Access to Amenities The development has "Walker's Paradise" access to local amenities achieving a Walk Score of 96 out of 100.	n/a	

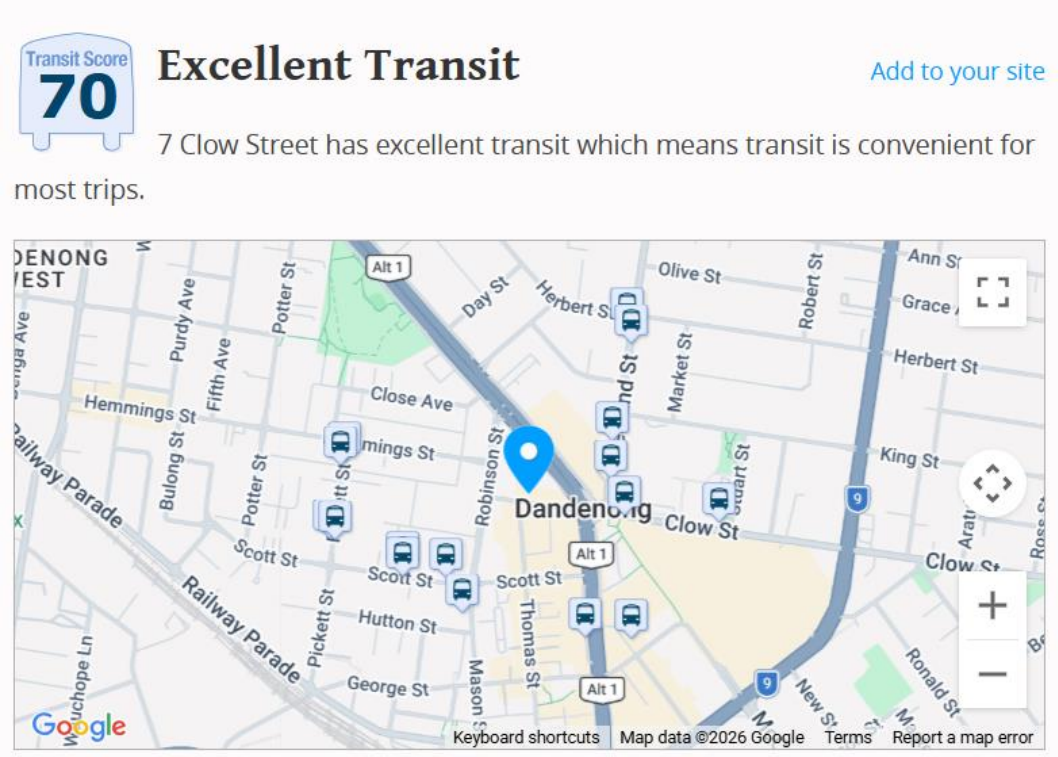


Figure 2 Public transport access

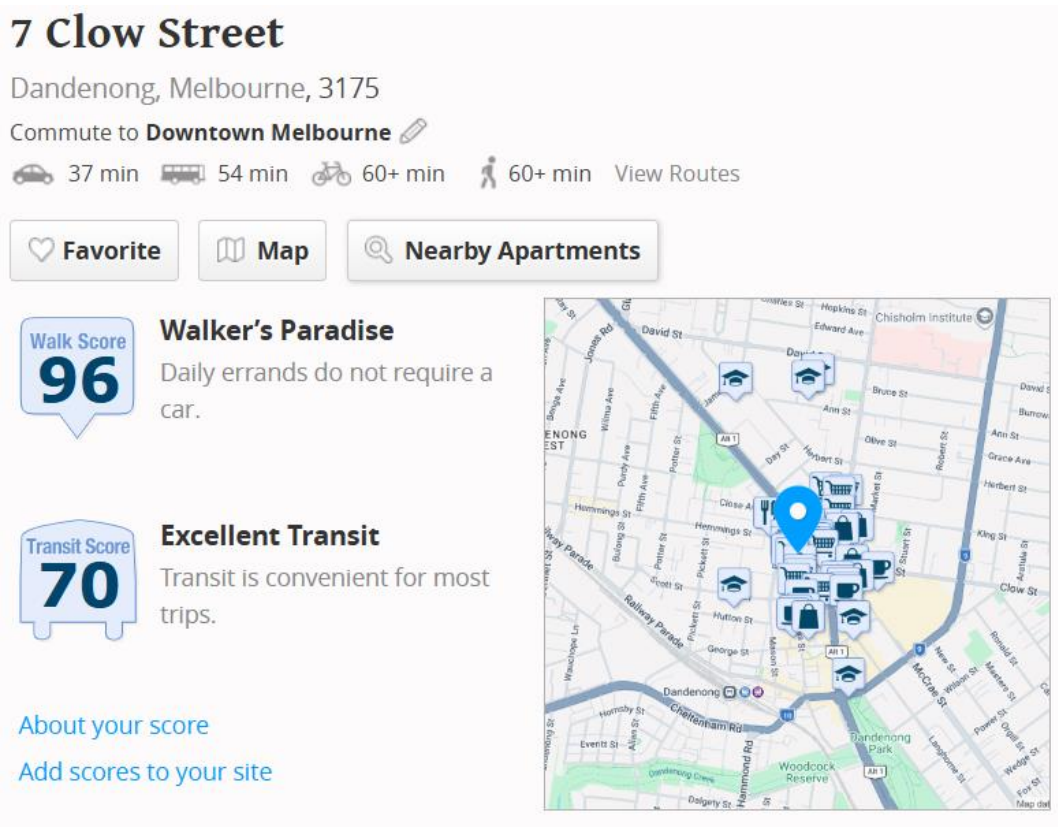


Figure 3: Walk Score and Transit Score for the site location

2.7 WASTE MANAGEMENT

2.7.1 OBJECTIVES:

- *To ensure waste avoidance, reuse and recycling during the design, construction and operation stages of development.*
- *To ensure long term reusability of building materials.*
- *To meet Councils' requirement that all multi-unit developments must provide a Waste Management Plan in accordance with the Guide to Best Practice for Waste Management in Multi-unit Developments 2010, published by Sustainability Victoria.*

2.7.2 DEVELOPMENT RESPONSE

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
Construction Waste Management The contractor will prepare a construction waste management plan for the project and will divert at least 80% of all demolition and construction waste from landfill.	Contractor	Construction
Operational Waste A dedicated storage area will be provided for the collection of recyclable waste, e-waste and organic waste located in a convenient location. Recycling facilities will be separated from general waste and organic waste but will be located next to it.	Architect	Contract Documentation

2.8 URBAN ECOLOGY

2.8.1 OBJECTIVES:

- *To protect and enhance biodiversity.*
- *To provide sustainable landscaping.*
- *To protect and manage all remnant indigenous plant communities.*
- *To encourage the planting of indigenous vegetation.*

2.8.2 DEVELOPMENT RESPONSE

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
Vegetation At least 15% of the site area will be covered by vegetation. This includes vegetation at ground level and within planters on upper levels including terraces. Refer to the architectural plans for further details.	Landscape	Contract Documentation

2.9 CONSTRUCTION AND BUILDING MANAGEMENT

2.9.1 OBJECTIVES:

- *To encourage a holistic and integrated design and construction process and ongoing high performance.*

2.9.2 DEVELOPMENT RESPONSE

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
Construction Environmental Management The contractor will prepare and implement a Best Practice project specific EMP at the start of construction. The EMP will be developed in accordance with the NSW Environmental Management Systems Guidelines or equivalent.	Contractor	Construction
Building User Guide Prior to occupancy, a Building User Guide (BUG) will be developed for use by the residents. The BUG will use non-technical language help facilitate more sustainable behaviour by building occupants and more efficient use of the building systems.	Developer	Construction
Building Information Prior to occupancy, a package of building information will be developed and handed over to the building manager. This will include as-built drawings, operations and maintenance manuals, and supplier and warranty details.	Contractor	Construction
Building Commissioning and Tuning A comprehensive building commissioning and tuning plan will be implemented for all major building services.	ICA	Construction onwards

3 BESS ASSESSMENT

A summary of the BESS results is presented below. For full details of the project's BESS assessment, please refer to the online portal.

BESS, 7-9 Clow Street Dandenong 7-9 Clow St, Dandenong 3175

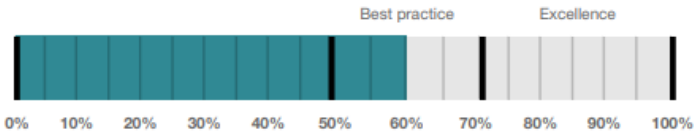
BESS Report

Built Environment Sustainability Scorecard

This BESS report outlines the sustainable design commitments of the proposed development at 7-9 Clow St Dandenong Victoria 3175. 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 Dandenong 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

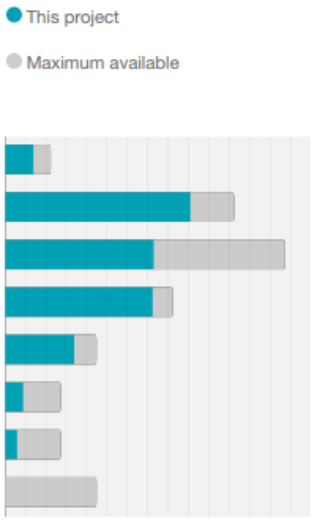


60%

Project details

Name	7-9 Clow Street Dandenong
Address	7-9 Clow St Dandenong Victoria 3175
Project ID	32E2F329-R1
BESS Version	BESS-10
Date	27 April 2026
Software version	2.3.0-B.650
Site type	Mixed use development
Account	admin@wrapengineering.com.au
Application no.	
Site area	764 m²
Building floor area	4,829 m²

Performance by category



Category	Weight	Score	Pass
Management	5%	62%	
Integrated Water Management	23%	81%	✓
Operational Energy	28%	53%	✓
Indoor Environment Quality	17%	88%	✓
Transport	9%	76%	
Waste & Resource Recovery	6%	33%	
Urban Ecology	6%	22%	
Innovation	9%	0%	

Project composition

APPENDIX A – VOC & FORMALDEHYDE LIMITS

VOC LIMITS – PAINTS, ADHESIVES & SEALANTS

PRODUCT CATEGORY	MAX. TVOC (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
Acoustic sealants, architectural sealant, waterproofing membranes and sealant, fire retardant sealants and adhesives	250
Structural glazing adhesive, wood flooring and laminate adhesives and sealants	100

VOC LIMITS – CARPETS

COMPLIANCE OPTIONS	COMPLIANCE CRITERIA
A – PRODUCT CERTIFICATION	The product is certified under a recognised Product Certification Scheme (listed on the GBCA website http://new.gbca.org.au/product-certification-schemes/) or other recognised standards. The certificate must be current at the time of project registration or submission and list the relevant product name and model.
B – LABORATORY TESTING	ASTM D5116: - Total VOC limit: 0.5mg/m^2 per hour, & - 4-PC limit: 0.05mg/m^2 per hour ISO 16000 / EN 13419: - TVOC at three days: 0.5mg/m^2 per hour ISO 10580 / ISO/TC 219 (Document N238): - TVOC at 24 hours: 0.5mg/m^2 per hour

FORMALDEHYDE LIMITS

TEST PROTOCOL	EMISSION LIMIT/ UNIT OF MEASUREMENT
AS/NZS 2269:2004, testing procedure AS/NZS 2098.11:2005 method 10 for Plywood	≤1mg/ 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 1859.2:2004 - MDF, with use of testing procedure AS/NZS 4266.16:2004 method 16	≤1mg/ L
AS/NZS 4357.4 - Laminated Veneer Lumber (LVL)	≤1mg/ L
Japanese Agricultural Standard MAFF Notification No.701 Appendix Clause 3 (11) - LVL	≤1mg/ L
JIS A 5908:2003- Particle Board and Plywood, with use of testing procedure JIS A 1460	≤1mg/ L
JIS A 5905:2003 - MDF, with use of testing procedure JIS A 1460	≤1mg/ L
JIS A1901 (not applicable to Plywood, applicable to high pressure laminates and compact laminates)	≤0.1 mg/m²hr
ASTM D5116 (applicable to high pressure laminates and compact laminates)	≤0.1 mg/m²hr
ISO 16000 part 9, 10 and 11 (also known as EN 13419), applicable to high pressure laminates and compact laminates	≤0.1 mg/m²hr (at 3 days)
ASTM D6007	≤0.12mg/m³
ASTM E1333	≤0.12mg/m³
EN 717-1 (also known as DIN EN 717-1)	≤0.12mg/m³
EN 717-2 (also known as DIN EN 717-2)	≤3.5mg/m²hr

APPENDIX B – PRELIMINARY HOUSE ENERGY RATINGS

OVERVIEW

Preliminary house energy ratings have been undertaken for a sample representative selection of apartments within the development. These sample energy ratings have been prepared in order to estimate the thermal energy efficiency of the development against the applicable targets, using the thermal performance construction specifications which are anticipated for the project.

HOUSE ENERGY RATING TARGETS

The following regulatory targets apply for this project:

1. NCC 2022 requirements:
   - 6 Star minimum rating
   - 7 Star average rating
2. BADS maximum cooling load
   - Climate zone 62 - 21MJ/m² per annum

BASIS OF ASSESSMENT – THERMAL CONSTRUCTION DETAILS

The following primary thermal construction details have been assumed in this preliminary assessment. Note:"R_M" means the R-value of the added insulation material.

BUILDING ELEMENT	THERMAL CONSTRUCTION DETAIL
Roof & External Ceiling	R_M 6.0 added insulation
External Walls	R_M 2.7 added insulation
Partition Wall	R_M 2.0 added insulation
Floor above car park or terrace	R_M 2.0 added insulation
Glazing	**Aluminium Window Frames:** Awning – Total U Value ≤ 3.42; SHGC = 0.39 Sliding – Total U Value ≤ 3.21; SHGC = 0.39 Fixed – Total U Value ≤ 2.92; SHGC = 0.39

HOUSE ENERGY RATING RESULTS

The following table presents a summary of the house energy rating results for the sample apartments tested.

Table 1 NatHERS results

	Dwelling	Heating (MJ/m²yr)	Cooling (MJ/m²yr)	Total (MJ/m²yr)	Rating
L05	L05.T01	69.6 MJ/m²	9.4 MJ/m²	79.0 MJ/m²	7.2
	L05.T02	75.0 MJ/m²	15.2 MJ/m²	90.1 MJ/m²	6.8
	L05.T03	46.0 MJ/m²	13.6 MJ/m²	59.6 MJ/m²	7.9
	L05.T04	64.1 MJ/m²	16.6 MJ/m²	80.8 MJ/m²	7.2
	L05.T05	56.0 MJ/m²	15.2 MJ/m²	71.2 MJ/m²	7.5
	L05.T06	40.3 MJ/m²	8.4 MJ/m²	48.6 MJ/m²	8.4
L11	L11. T01	78.8 MJ/m²	9.9 MJ/m²	88.7 MJ/m²	6.9
	L11. T02	86.4 MJ/m²	17.3 MJ/m²	103.7 MJ/m²	6.3
	L11. T03	55.2 MJ/m²	15.5 MJ/m²	70.7 MJ/m²	7.5
	L11. T04	76.7 MJ/m²	19.4 MJ/m²	96.1 MJ/m²	6.6
	L11. T05	70.1 MJ/m²	16.7 MJ/m²	86.8 MJ/m²	6.9
	L11. T06	50.0 MJ/m²	9.2 MJ/m²	59.2 MJ/m²	7.9
L17	L17. T01	85.8 MJ/m²	9.2 MJ/m²	95.1 MJ/m²	6.6
	L17. T02	90.9 MJ/m²	16.0 MJ/m²	106.9 MJ/m²	6.2
	L17. T03	65.2 MJ/m²	14.5 MJ/m²	79.7 MJ/m²	7.2
	L17. T04	83.5 MJ/m²	18.0 MJ/m²	101.5 MJ/m²	6.4
	L17. T05	63.2 MJ/m²	17.9 MJ/m²	81.1 MJ/m²	7.1
	L17. T06	52.2 MJ/m²	10.2 MJ/m²	62.5 MJ/m²	7.9

	Heating	Cooling	Total	Rating
Average	67.2 MJ/m²	14.0 MJ/m²	81.2 MJ/m²	7.1
Minimum	40.3 MJ/m²	8.4 MJ/m²	48.6 MJ/m²	6.2
Maximum	90.9 MJ/m²	19.4 MJ/m²	106.9 MJ/m²	8.4

WHOLE OF HOME

The Whole of Home (WoH) approach is integral to the assessment process under NCC 2022. WoH considers the entire home's energy performance, including heating, cooling, lighting, and other operational energy uses. This holistic perspective ensures that all elements of the home work together to achieve optimal energy efficiency and sustainability outcomes.

By incorporating WoH principles, the SMP ensures that the home not only meets the specific requirements of NCC 2022 but also achieves a higher standard of overall sustainability and energy efficiency. This comprehensive approach supports the creation of comfortable, healthy, and environmentally responsible living spaces.

Table 2 WoH minimum requirements

WoH REQUIREMENTS	
Category	**Minimum NCC WoH Requirements**
Heating ZERL Star Rating	3.0 Star
Cooling ZERL Star Rating	3.0 Star
Hot Water	Centralised hot water heat pump
Cooking Stove Top	Electric Induction
Cooking Oven	Induction
Lighting Density	4 W/m²
Solar Array Capacity per Dwelling	0.1kW

The Whole of Home (WoH) minimum requirements outlined in Table 2 must be met to achieve the WoH scores detailed in Table 1. Currently, the Nationwide House Energy Rating Scheme (NatHERS) does not provide a Deemed-to-Satisfy (DtS) pathway that includes centralized heat pump hot water systems. However, any documented system with a higher Coefficient of Performance (COP) than electric storage systems will meet the current WoH rating criteria. This approach ensures that more efficient systems, such as those with higher COPs, are recognized and incentivized for their superior performance in reducing energy consumption and improving overall home efficiency.

The solar photovoltaic (PV) capacity allocated for the project has been strategically divided across all apartments to contribute to the WoH rating. This distribution ensures that each apartment benefits from the renewable energy generated, reducing overall energy consumption and enhancing the building's sustainability profile. By sharing the solar PV capacity, the project maximizes the efficiency and impact of the solar energy system, further supporting the achievement of the required WoH scores as outlined in Table 2.

CONCLUSION

The results of the preliminary house energy rating assessment presented above indicate that the development is on track to meet the relevant regulatory targets as well as the BADS energy efficiency targets along with Whole of Home requirements.

NOTE

This preliminary house energy rating assessment is prepared only for the purpose for demonstrating that the development, as currently designed, is on track to meet the relevant regulatory targets as outlined by the BCA and the Greater Dandenong City Council. This assessment is carried out assuming at least one window in all voids/ light courts and each of the other habitable rooms are operable.

There is still significant design development to occur, which may affect the final house energy ratings that the development achieves. The results achieved in this preliminary assessment, and the construction inputs and assumptions used, do not represent the final details that will occur at the time of building permit.

As such, the construction details used within the assessment are not to be interpreted as a commitment to the final detailing that the development will use. The developer and design and construction teams reserve the right to modify the construction detailing as appropriate, within the general commitment that the development will meet the house energy rating performance targets as outlined in the “House Energy Rating Targets” section above.

APPENDIX C – DAYLIGHT ASSESSMENT

NON-RESIDENTIAL DAYLIGHT

A daylight assessment of the building's non-residential primary spaces has been completed in accordance with the GBCA *Green Star Daylight Hand and Views Calculation Guide*, to estimate the areas which will receive a daylight factor of at least 2%.

Under this assessment methodology, there is a requirement that the project must specify glazing with Visible Light Transmission (VLT) at least 40%. **For this project, glazing with a higher VLT (at least 40%) will be specified, hence the results for this assessment presented below are deemed to be conservative compared to the real daylight factor outcome which will be achieved.**

SPACE TYPE /LEVEL	NOMINATED FLOOR AREA (m^2)	DAYLIGHT COMPLIANT AREA (m^2)
Retail/ Ground	80	39
Overall Compliance	**49%**	

Images of the Green Star Daylight "zone of compliance" levels are presented below:

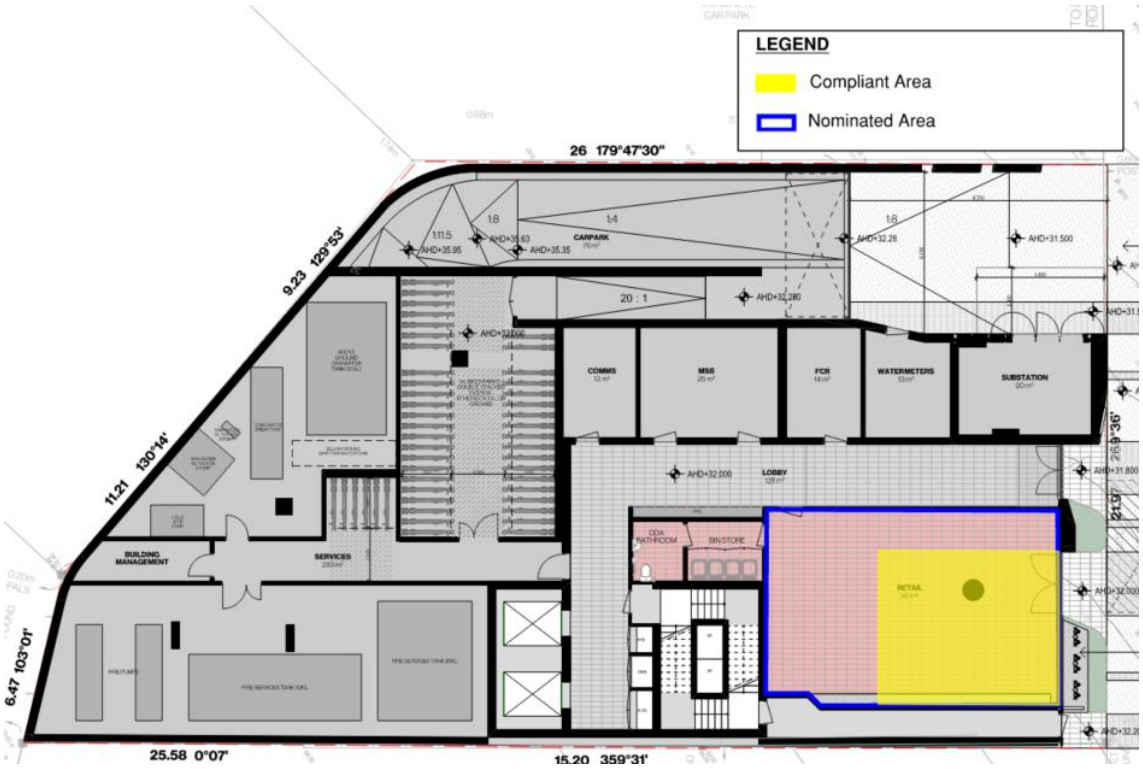


Figure 4 Non-residential daylight compliant area for ground level

RESIDENTIAL DAYLIGHT

A preliminary daylight assessment has been completed for the proposed project to the residential floor layouts, as per the architectural set provided by the architects.

A project can demonstrate compliance with BESS with one or a combination of the following options:

1. Deemed-to-satisfy (DtS)
2. BESS built-in-calculator
3. Daylight modelling

Each dwelling within the development has been assessed for daylight amenity using BESS Deemed-to-satisfy. BESS requires 80% compliance for both living rooms and bedrooms comply with daylight requirements.

The overall results combined with both the provisions achieves the following results for the project.

% LIVING ROOMS – ACHIEVING DAYLIGHT COMPLIANCE	**100%**
% BEDROOMS – ACHIEVING DAYLIGHT COMPLIANCE	**100%**

The detail of the assessment is shown below.

DAYLIGHT BESS DEEMED-TO-SATISFY

For the Deemed-to-satisfy pathway, the spaces within the apartments have been assessed to comply with the following requirements:

- All living areas and bedrooms less than 8m deep (5m if facing south)
- All living areas and bedrooms have a floor-to-ceiling height of at least **2.7m**
- All glazing to living areas achieve at least 60% Visible light transmittance
- All living areas have an external facing window (not into a courtyard, light well or other major obstruction)
- Buildings comply with the following separation distance requirements as per below:

Building separation to adjacent properties

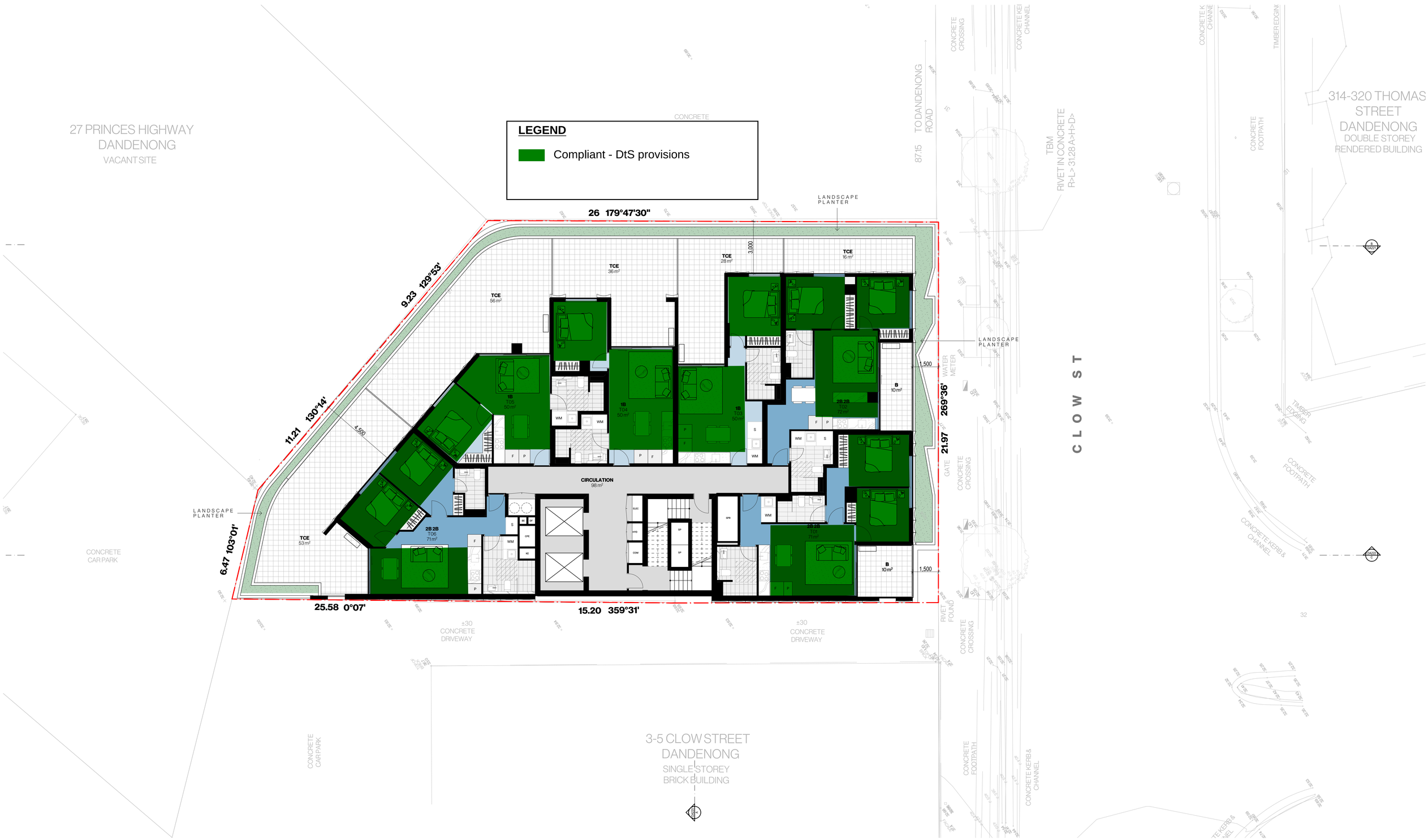
Building Height	Living/Main balcony outlook to boundary line	Bedroom outlook to boundary line
Up to 4 storeys / 12 metres	6 metres	3 metres
5-8 storeys / up to 25 metres	9 metres	4.5 metres
9+ storeys / over 25 metres	12 metres	6 metres

Building separation to a lane

Building Height	Living/Main balcony outlook	Bedroom outlook
2 storeys / 9 metres	0 metres (from boundary)	0 metres (from boundary)
3-8 storeys / up to 25 metres	6 metres (from lane centre line)	3 metres (from lane centre line)
9+ storeys / over 25 metres	9 metres (from lane centre line)	6 metres (from lane centre line)

The results of this assessment are provided below for the Deemed-to-satisfy pathway.

RESIDENTIAL DAYLIGHT	LIVING AREAS	BEDROOMS
Quantity	78	117
Compliant	78	117
Overall Compliance	**100%**	**100%**



DEVELOPMENT APPLICATION

REV	DATE	REVISION DESCRIPTION	BY	CHK

PROJECT

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<CONSULTANT CONTACT NAME 2>
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NORTH POINT

SCALE
1:100 @ A1 Size

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PLUS STUDIO®

PROJECT TITLE
CLOW STREET
BUNURONG
7-9 CLOW ST, DANDENONG, VIC

DRAWING TITLE
LEVEL 05

APPROVED	CHECKED	DRAWN

PROJECT NUMBER
14148

DRAWING NUMBER
DA105

STAGE
TOWN PLANNING

REVISION

DEVELOPMENT APPLICATION

REV	DATE	REVISION DESCRIPTION	BY	CHK

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NORTH POINT

SCALE
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7-9 CLOW ST, DANDENONG, VIC

DRAWING TITLE
LEVEL 06-17

APPROVED	CHECKED	DRAWN

PROJECT NUMBER
14148

DRAWING NUMBER
DA106

STAGE
TOWN PLANNING

REVISION

APPENDIX D – EFFECTIVE NATURAL VENTILATION

Each dwelling within the development has been assessed for effective ventilation against the BESS criteria for cross-ventilation or single-sided ventilation. The results of this assessment are presented below.

TOTAL NUMBER OF APARTMENTS	78
NO. APARTMENTS – EFFECTIVE NATURAL VENTILATION	78
% APARTMENTS – EFFECTIVE NATURAL VENTILATION	100%
BESS COMPLIANCE ACHIEVED	**YES**

DEVELOPMENT APPLICATION

REV	DATE	REVISION DESCRIPTION	BY	CHK

PROJECT

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DRAWING TITLE
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APPROVED	CHECKED	DRAWN

PROJECT NUMBER
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DRAWING NUMBER
DA105

STAGE
TOWN PLANNING

REVISION

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BUNURONG
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DRAWING TITLE
LEVEL 06-17

APPROVED	CHECKED	DRAWN

PROJECT NUMBER
14148

DRAWING NUMBER
DA106

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APPENDIX E – STORMWATER ASSESSMENT

OVERVIEW

Under clause 53.18 of the Greater Dandenong City Council Planning Scheme, "Storm Water Management (Water Sensitive Urban Design)", the proposed development is required to demonstrate, as part of its town planning application, its ability to meet the water quality performance objectives as set out in the Urban Stormwater Best Practice Environmental Management Guidelines, Victorian Stormwater Committee 1999.

In response to this, the Water Sensitive Urban Design Response proposed for this development has been assessed using the Bluefactor software.

The preliminary stormwater treatment proposed for this development achieves best practice performance objectives outlined in the Urban Stormwater Best Practice Environmental Management Guidelines (CSIRO 1999) to achieve the objectives of the State Environment Protection Policy (Water of Victoria).

General considerations and potential maintenance activities for the proposed WSUD response have been outlined in this report. The final detailing of the systems will be agreed with the civil and hydraulic design consultants.

General measures to be considered by the building contractor to minimise stormwater pollution during construction have also been included.

BASIS OF ASSESSMENT

Clause 53.18 of the Greater Dandenong City Council Planning Scheme aims to achieve improved stormwater quality. The policy is based on the best practice performance objectives outlined in the Urban Stormwater Best Practice Environmental Management Guidelines (CSIRO 1999) to achieve the objectives of the State Environment Protection Policy (Water of Victoria). These performance objectives are:

- Suspended solids - 80% retention of typical urban annual load
- Total Nitrogen – 45% retention of typical urban annual load
- Total Phosphorus – 45% retention of typical urban annual load
- Litter – 70% reduction of typical urban annual load.

The policy also aims to promote use of Water Sensitive Urban Design (WSUD) strategies as well as stormwater re-use, minimise peak stormwater flows and pollutants, and mitigate the detrimental effect of development on downstream waterways.

In accordance with the requirements outlined in Clause 53.18, the application must address the following:

- Site layout plan showing location of proposed stormwater treatment measures;
- A report outlining how the application achieves the objectives of the policy;
- Design details, such as cross sections, to assess the technical effectiveness of the proposed stormwater treatment measures;
- A Site Management Plan which details how the site will be managed through construction; and
- A maintenance programme setting out future operational and maintenance arrangements.

PERFORMANCE MEASUREMENT TOOL

The Water Sensitive Urban Design Response proposed for this development has been assessed using the Bluefactor software.

DEVELOPMENT RESPONSE – WSUD

A summary of the development's WSUD response is presented below:

CATCHMENT AREA	AREA	TREATMENT TYPE
Roof	295m²	5kL RWT (RWT-1) re-use to toilets from lower ground floor to level 11.
Planter	39m²	No treatment
Other Impervious	369m²	10kL RWT (RWT-2) re-use for irrigation.

Figure 5 Site total stormwater catchment area

WSUD ASSESSMENT RESULTS

Based on the stormwater treatment details described above, the development achieves a Bluefactor score of 105%.

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7-9 Clow St, Dandenong VIC 3175, Australia
27 April 2026 3:22 p.m.

BLUE FACTOR

7-9 Clow street, Dandenong VIC 3175, Australia

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.

105% SCORE

Project details

Name	7-9 Clow street, Dandenong VIC 3175, Australia
Project ID	0309C1D9
Street address	7-9 Clow St, Dandenong VIC 3175, Australia
Municipality	Greater Dandenong
Site area	764 m^2
Planning Number	

Flow and pollutant load reductions

Item	Result	Target	
Mean annual runoff volume harvested or evapotranspired (%)	39%	>27%	✓
Mean annual runoff volume infiltrated or filtered (%)	0%	>9%	✗
Total suspended solids (%)	68%	>80%	✗
Total phosphorus (%)	60%	>45%	✓
Total nitrogen (%)	47%	>45%	✓
Total gross pollutants (%)	90%	>70%	✓

RAINWATER TANK DESIGN & INSTALLATION CONSIDERATIONS

Rainwater tanks provide flow retention capacity and storage for reuse. They reduce stormwater run-off, decrease the demand of potable water and allow particle settlement within the tank, thus treating rainwater. General considerations for rainwater tank systems design and potential maintenance activities include:

- Incorporating a first flush device to the rainwater collection system. First flush devices divert the initial most polluted portion of water runoff.
- Automated switches to divert water supply from the tank to mains need to be incorporated.
- Connection to toilets ensure water tanks are run down on a daily basis, leaving spare capacity for new rainwater collection.

STORMWATER RUNOFF TREATMENT DURING THE CONSTRUCTION STAGE

Stormwater management in the construction stage will be required to minimise the likelihood of contaminating stormwater discharge from the site and reducing the velocity of the flows generated from the development as it is being constructed.

Stormwater management will form a part of the contractor's EMP, and it will need to specifically address the following objectives:

1. Prevent discharge of contaminated stormwater;
2. Prevent impact on offsite surface or groundwater due to construction works; and
3. Slow down stormwater flows during heavy rainfall.

The EMP should consider the following specific items in relation to stormwater management:

- Storage of materials, chemicals and construction waste must be well clear of site drainage lines or other infrastructure;
- Immediate clean-up of chemical spills;
- Soil and dust containment;
- Regular cleaning of roadways and other impervious surfaces;
- Install sediment or silt traps around stormwater drain points;
- Prevent stormwater from adjacent properties entering the site;
- Capping/bunding of piles of contaminated materials or soil;
- Inspect and clean all sediment filters and traps after heavy rains; and
- Regularly evaluate site stormwater management systems for effectiveness.

More information is available from Melbourne Water booklet "*Keeping Our Stormwater Clean – A Builder's Guide*".

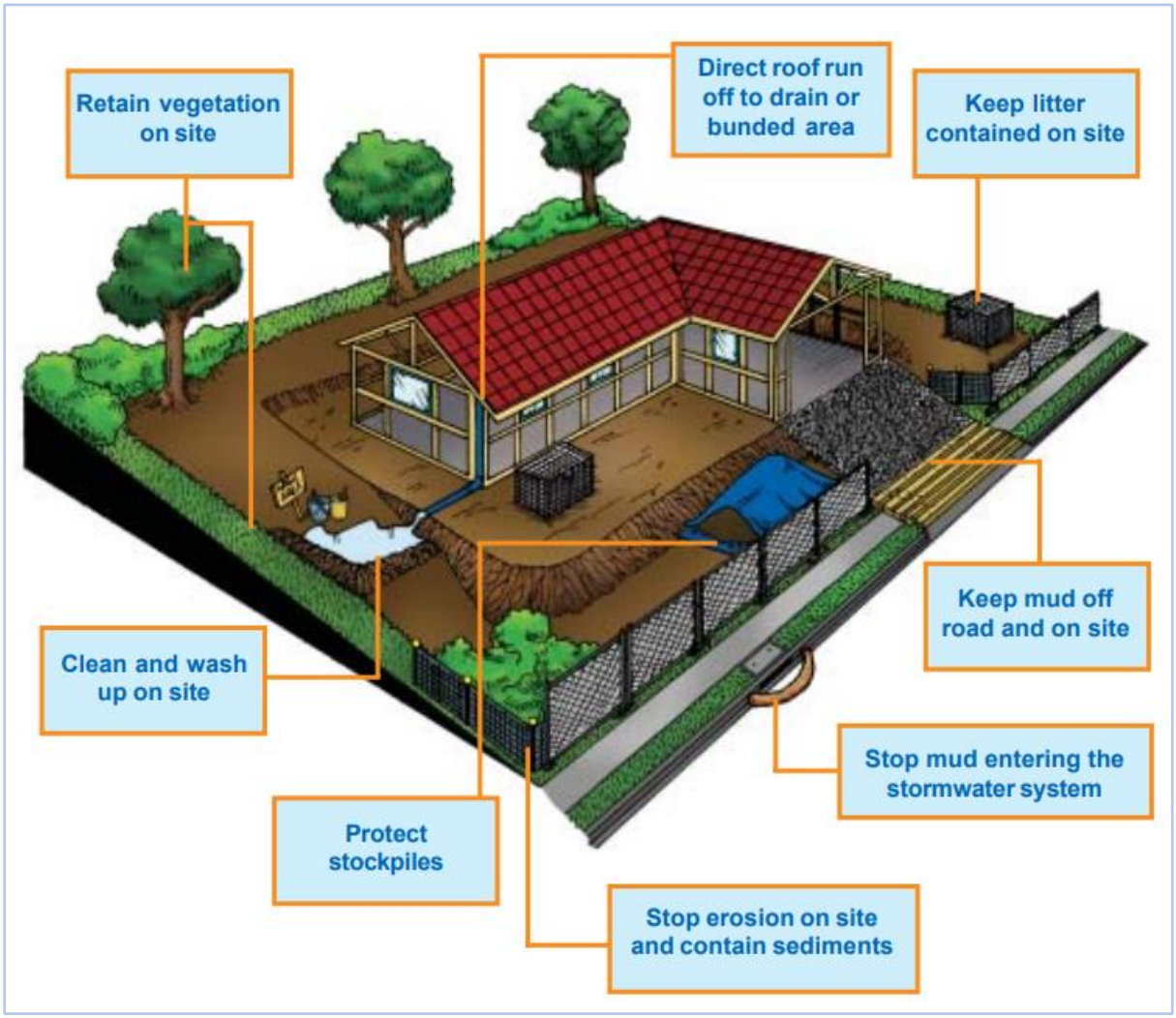


Figure 6: Site stormwater management considerations. Source: Melbourne Water – Keeping Our Stormwater Clean: A Builder's Guide

STORMWATER MAINTENANCE PROGRAMME

The proposed rainwater harvesting system will be maintained in accordance with the manufacturer's requirements. The building owner, body corporate or facility manager will be responsible for undertaking the routine maintenance and ensuring that the system is operating as designed.

The following specific maintenance activities will be required as a minimum:

- Roof and other rainfall collection areas are to be inspected regularly, at minimum every 3 months, to ensure they are kept free of pollutants, leaves and other debris;
- First flush devices should be cleaned at least every 6 months; and
- Routine maintenance as specified by the manufacturers for the hardware; pumps, tanks and filters.

Sludge layers and biofilms can be formed in the tank's walls. If water colour and smell become an issue, professional tank cleaners should be engaged.

APPENDIX F – SECTION J ASSESSMENT

OVERVIEW

A preliminary Section J assessment has been undertaken for the retail and common areas within the development. These calculations have been prepared in order to estimate compliance against the ncc2022 targets, using the Section J calculations.

PROJECT REQUIREMENTS

The following regulatory targets apply for this project:

1. NCC 2022 requirements:
    a. Deemed-to-Satisfy provisions of parts J4 – Building Fabric and Part J5 – Building Sealing
2. The assessment assumes the following in climate zone 6:
    - Class 6: Retail

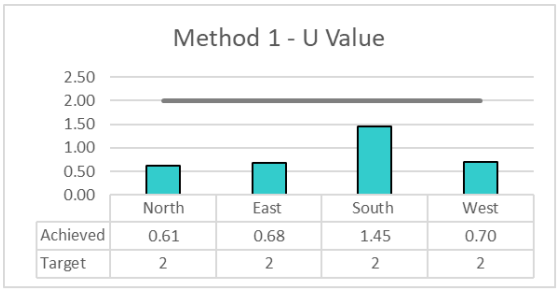
BUILDING FABRIC

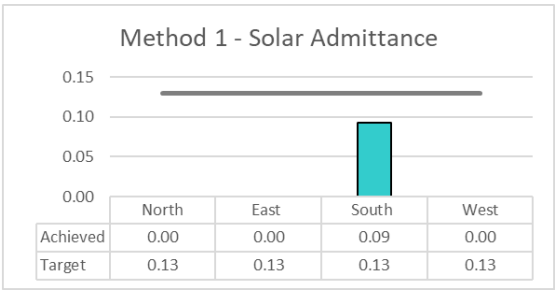
The following table provides a summary of the required construction detailing and minimum total thermal insulative requirements for the different façade elements within the building:

Lightweight framed walls shall incorporate a minimum 9 mm thermal break.

BUILDING ELEMENT	THERMAL CONSTRUCTION DETAIL
Roof	R_M 3.5
External Walls	R_M 2.5
Partition Wall	R_M 2.5
External Windows and Glazed Doors	U Value 3.5 W/m².K, SHGC 0.5

RESULTS





CONCLUSION

The results of the preliminary Section J assessment presented above indicate that the development is on track to achieve compliance with DTS requirements.

APPENDIX G – BESS ASSESSMENT

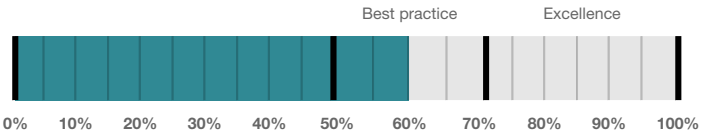
BESS Report

Built Environment Sustainability Scorecard

This BESS report outlines the sustainable design commitments of the proposed development at 7-9 Clow St Dandenong Victoria 3175. 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 Dandenong 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

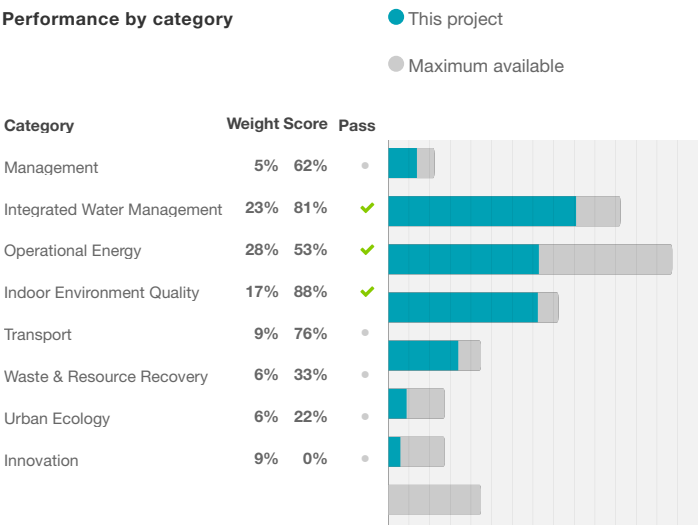


60%

Project details

Name	7-9 Clow Street Dandenong
Address	7-9 Clow St Dandenong Victoria 3175
Project ID	32E2F329-R1
BESS Version	BESS-10
Date	27 April 2026
Software version	2.3.0-B.650
Site type	Mixed use development
Account	admin@wrapengineering.com.au
Application no.	
Site area	764 m²
Building floor area	4,829 m²

Performance by category



Project composition

Buildings

Name	Height	Footprint	% of total footprint
Building 1	18	690 m²	100%

Dwellings & Non Res Spaces

Dwellings

Name	Quantity	Area	Building	% of total area
Apartment				
Group 12	6	71.0 m²	Building 1	8%
Group 8	6	72.0 m²	Building 1	8%
Group 7	6	71.0 m²	Building 1	8%
Group18	5	71.0 m²	Building 1	7%
Group 14	5	72.0 m²	Building 1	7%
Group 13	5	71.0 m²	Building 1	7%
Group 11	6	50.0 m²	Building 1	6%
Group 10	6	50.0 m²	Building 1	6%
Group 9	6	50.0 m²	Building 1	6%
Group 17	5	50.0 m²	Building 1	5%
Group 16	5	50.0 m²	Building 1	5%
Group 15	5	50.0 m²	Building 1	5%
Group24	1	71.0 m²	Building 1	1%
Group23	1	50.0 m²	Building 1	1%
Group22	1	50.0 m²	Building 1	1%

Group21	1	50.0 m²	Building 1	1%
Group20	1	71.0 m²	Building 1	1%
Group19	1	71.0 m²	Building 1	1%
Group 6	1	71.0 m²	Building 1	1%
Group 5	1	50.0 m²	Building 1	1%
Group 4	1	50.0 m²	Building 1	1%
Group 3	1	50.0 m²	Building 1	1%
Group 2	1	72.0 m²	Building 1	1%
Group 1	1	71.0 m²	Building 1	1%
Total	**78**	**4,731 m²**	**97%**	

Non-Res Spaces

Name	Quantity	Area	Building	% of total area
Shop				
Retail	1	98.0 m²	Building 1	2%
Total	**1**	**98 m²**	**2%**	

Supporting Evidence

Shown on Floor Plans

Credit	Requirement	Response	Status
Management 3.1	Annotation: Individual utility meters to be provided to all individual dwellings		-
Management 3.2	Annotation: Individual utility meters to be provided to all individual commercial tenancies		-
Management 3.3	Annotation: Sub-meters to be provided to all major common area services (list each)		-
Integrated Water Management 2.1	Location of any stormwater management systems (rainwater tanks, raingardens, buffer strips)		-
Operational Energy 4.2	Location and size of solar photovoltaic system		-
Indoor Environment Quality 2.1	Dwellings meeting the requirements for being 'naturally ventilated'		-
Transport 1.1	Location of residential bicycle parking spaces		-
Transport 1.2	Location of residential visitor bicycle parking spaces		-
Transport 1.3	Residential bicycle parking spaces at ground level		-
Transport 2.1	Location of electric vehicle charging infrastructure		-
Waste & Resource Recovery 2.2	Location of recycling facilities		-
Urban Ecology 2.1	Location and size of vegetated areas		-

Supporting Documentation

Credit	Requirement	Response	Status
Management 2.2	Preliminary NatHERS assessments		-
Management 2.3a	Section J glazing assessment		-
Integrated Water Management 2.1	STORM report or MUSIC model		-
Operational Energy 1.1	Energy Report showing calculations of reference case and proposed buildings		-
Operational Energy 3.6	Average lighting power density and lighting type(s) to be used		-
Operational Energy 3.7	Average lighting power density and lighting type(s) to be used		-

Credit	Requirement	Response	Status
Operational Energy 4.2	Specifications of the solar photovoltaic system(s)		-
Indoor Environment Quality 1.1	If using an alternative daylight modelling program, a short report detailing assumptions used and results achieved.		-
Indoor Environment Quality 1.2	If using an alternative daylight modelling program, a short report detailing assumptions used and results achieved.		-
Indoor Environment Quality 1.4	A short report detailing assumptions used and results achieved.		-
Indoor Environment Quality 2.1	A list of naturally ventilated dwellings		-

Credit summary

Management Overall contribution 4.5%

62%

1.1 Pre-Application Meeting	0%
2.2 Thermal Performance Modelling - Multi-Dwelling Residential	100%
2.3 Thermal Performance Modelling - Non-Residential	50%
3.1 Metering - Residential	100%
3.2 Metering - Non-Residential	100%
3.3 Metering - Common Areas	100%
4.1 Building Users Guide	100%

IWM Overall contribution 22.5%

81% ✔ **Pass**

1.1 Potable Water Use	44%	✔ Achieved
2.1 Stormwater Treatment	100%	✔ Achieved
3.1 Water Efficient Landscaping	N/A	Scoped Out
		Not applicable
4.1 Building Systems Water Use	100%	

Operational Energy Overall contribution 27.5%

	Minimum required 50%	53%	Pass

1.1 Thermal Performance Rating - Non-Residential	37%	
1.2 Thermal Performance Rating - Residential	0%	✔ Achieved
2.1 Greenhouse Gas Emissions	1%	
2.2 Peak Demand	100%	
2.6 Electrification	100%	
2.7 Energy consumption	100%	
3.1 Carpark Ventilation	0%	
3.2 Hot Water - Non-Residential	100%	
3.4 Clothes Drying	0%	
3.6 Internal Lighting - Apartments	100%	
3.7 Internal Lighting - Non-Residential	100%	
4.1 Combined Heat and Power (cogeneration / trigeneration)	N/A	Scoped Out
No cogeneration or trigeneration system in use.		
4.2 Renewable Energy Systems - Solar	97%	
4.4 Renewable Energy Systems - Other	N/A	Scoped Out
No other (non-solar PV) renewable energy is in use.		

IEQ Overall contribution 16.5%

	Minimum required 50%	88%	Pass

1.1 Daylight Access - Living Areas	100%	✔ Achieved
1.2 Daylight Access - Bedrooms	100%	✔ Achieved
1.3 Winter Sunlight	0%	
1.4 Daylight Access - Non-Residential	42%	✔ Achieved
1.5 Daylight Access - Main Living Areas	N/A	Scoped Out
Spatial daylight autonomy metric not in use		
1.6 Daylight Access - Secondary Habitable Rooms	N/A	Scoped Out
Spatial daylight autonomy metric not in use		
2.1 Ventilation - Natural - Apartments	100%	
2.3 Ventilation - Non-Residential	33%	✔ Achieved
3.4 Thermal comfort - Shading - Non-Residential	0%	
3.5 Thermal Comfort - Ceiling Fans - Non-Residential	0%	
4.1 Air Quality - Non-Residential	100%	

Transport Overall contribution 9.0%

76%

1.1 Bicycle Parking - Residential	100%
1.2 Bicycle Parking - Residential Visitor	100%
1.3 Bicycle Parking - Convenience Residential	100%
1.4 Bicycle Parking - Non-Residential	0%
1.5 Bicycle Parking - Non-Residential Visitor	0%
1.6 End of Trip Facilities - Non-Residential	0% ⊘ Disabled
	Credit 1.4 must be complete first.
2.1 Electric Vehicle Infrastructure	100%
2.2 Car Share Scheme	0%
2.3 Motorbikes / Mopeds	0%

Waste & Resource Recovery Overall contribution 5.5%

33%

1.1 Construction Waste - Building Re-Use	0%
2.1 Operational Waste - Food & Garden Waste	0%
2.2 Operational Waste - Convenience of Recycling	100%

Urban Ecology Overall contribution 5.5%

22%

1.1 Communal Spaces	0%
2.1 Vegetation	50%
2.2 Green Roofs	0%
2.3 Green Walls and Facades	0%
2.4 Balconies, Courtyards & Roof terraces	0%
3.1 Food Production - Residential	0%
3.2 Food Production - Non-Residential	0%

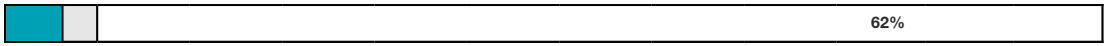
Innovation Overall contribution 9.0%

0%

1.1 Innovation	0%

Credit breakdown

Management Overall contribution 4.5%



1.1 Pre-Application Meeting	0%
Score Contribution	This credit contributes 37.5% towards the category score.
Criteria	Has an ESD professional been engaged to provide sustainability advice from schematic design to construction? AND Has the ESD professional been involved in a pre-application meeting with Council?
Question	Criteria Achieved ?
Project	No
2.2 Thermal Performance Modelling - Multi-Dwelling Residential	100%
Score Contribution	This credit contributes 24.5% towards the category score.
Criteria	Have preliminary NatHERS ratings been undertaken for all thermally unique dwellings?
Question	Criteria Achieved ?
Apartment	Yes
2.3 Thermal Performance Modelling - Non-Residential	50%
Score Contribution	This credit contributes 0.5% towards the category score.
Criteria	Has a preliminary facade assessment been undertaken in accordance with NCC2022 Section J4D6?
Question	Criteria Achieved ?
Shop	Yes
Criteria	Has preliminary modelling been undertaken in accordance with either NCC2022 Section J (Energy Efficiency), NABERS or Green Star?
Question	Criteria Achieved ?
Shop	No
3.1 Metering - Residential	100%
Score Contribution	This credit contributes 12.2% towards the category score.
Criteria	Have utility meters been provided for all individual dwellings?
Question	Criteria Achieved ?
Apartment	Yes
3.2 Metering - Non-Residential	100%
Score Contribution	This credit contributes 0.3% towards the category score.
Criteria	Have utility meters been provided for all individual commercial tenants?
Question	Criteria Achieved ?
Shop	Yes
3.3 Metering - Common Areas	100%

Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Have all major common area services been separately submetered?
Question	Criteria Achieved ?
Apartment	Yes
Shop	Yes

4.1 Building Users Guide 100%

Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Will a building users guide be produced and issued to occupants?
Question	Criteria Achieved ?
Project	Yes

IWM Overall contribution 22.5%

81% ✔ Pass

Do you have a reticulated third pipe or an on-site water recycling system?:	No
Are you installing a swimming pool?:	No

Stormwater profile	
Which stormwater modelling software are you using?:	Blue Factor
Blue Factor score achieved?:	100
Flow:	-
Total Suspended Solids:	-
Total Phosphorus:	-
Total Nitrogen:	-

Rainwater tank profile	
What is the total roof area connected to the rainwater tank?:	
Rainwater Tank 1	295 m²
Rainwater Tank 2	369 m²
Tank Size:	
Rainwater Tank 1	5,000 Litres
Rainwater Tank 2	10,000 Litres
Irrigation area connected to tank:	
Rainwater Tank 1	0.0 m²
Rainwater Tank 2	112 m²
Is connected irrigation area a water efficient garden?:	
Rainwater Tank 1	No
Rainwater Tank 2	No
Other external water demand connected to tank?:	
Rainwater Tank 1	0.0 Litres/Day
Rainwater Tank 2	0.0 Litres/Day

Fixtures, fittings & connections profile	
Building: All	Building 1
Showerhead: All	4 Star WELS (>= 6.0 but <= 7.5)
Bath: All	Scope out
Kitchen Taps: All	>= 6 Star WELS rating
Bathroom Taps: All	>= 6 Star WELS rating
Dishwashers: All	>= 5 Star WELS rating
WC: All	>= 4 Star WELS rating
Urinals: All	Scope out
Washing Machine Water Efficiency: All	Occupant to Install

Which non-potable water source is the dwelling/space connected to?:	
Group 1	Rainwater Tank 1
Group 2	
Group 3	
Group 4	
Group 5	
Group 6	
Group 7	
Group 8	
Group 9	
Group 10	
Group 11	
Group 12	
Group 13	-
Group 14	
Group 15	
Retail	
Group 16	
Group 17	
Group18	
Group19	
Group20	
Group21	
Group22	
Group23	
Group24	

Non-potable water source connected to Toilets:	
Group 1	Yes
Group 2	
Group 3	
Group 4	
Group 5	
Group 6	
Group 7	
Group 8	
Group 9	
Group 10	
Group 11	
Group 12	
Group 13	No
Group 14	
Group 15	
Retail	
Group 16	
Group 17	
Group18	
Group19	
Group20	
Group21	
Group22	
Group23	
Group24	
Non-potable water source connected to Laundry (washing machine): All	No
Non-potable water source connected to Hot Water System: All	No

1.1 Potable Water Use	44%	✔ Achieved

Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	What is the reduction in total potable water use due to efficient fixtures, appliances, rainwater use and recycled water use? To achieve points in this credit there must be >25% potable water reduction.
Output	Reference
Project	8053 kL
Output	Proposed (excluding rainwater and recycled water use)
Project	6032 kL
Output	Proposed (including rainwater and recycled water use)
Project	5757 kL
Output	% Reduction in Potable Water Consumption
Project	28 %
Output	% of connected demand met by rainwater
Project	57 %
Output	How often does the tank overflow?
Project	Very Often
Output	Opportunity for additional rainwater connection
Project	3341 kL

2.1 Stormwater Treatment 100% ✔ Achieved

Score Contribution	This credit contributes 60% towards the category score.
Criteria	Has best practice stormwater management been demonstrated?
Output	Min Blue Factor Score
Project	100
Output	Blue Factor Score
Project	100

3.1 Water Efficient Landscaping N/A ✣ Scoped Out

Not applicable

This credit was scoped out	Not applicable

4.1 Building Systems Water Use 100%

Score Contribution	This credit contributes 6.7% towards the category score.
Criteria	Where applicable, have measures been taken to reduce potable water consumption by >80% in the buildings air-conditioning chillers and when testing fire safety systems?
Question	Criteria Achieved ?
Project	Yes

Operational Energy Overall contribution 27.5%

		Minimum required 50%	**53%**	✔ **Pass**

Project profile	
Use the BESS Deem to Satisfy (DtS) method for Non-residential spaces?:	Yes
Are you installing any renewable energy system(s) (other than solar photovoltaic)?:	No
Energy Supply:	All-electric
Solar Photovoltaic system profile	
System Size (lesser of inverter and panel capacity): Solar Photovoltaic system 1	7.7 kW peak
Orientation (which way is the system facing)?: Solar Photovoltaic system 1	North
Inclination (angle from horizontal): Solar Photovoltaic system 1	10.0 Angle (degrees)
Which Building Class does this apply to?: Solar Photovoltaic system 1	Apartment
Dwellings profile	
Building: All	Building 1
Below the floor is:	
Group 1 Group 2 Group 3 Group 4 Group 5 Group 6	Ground or Carpark
Group 7 Group 8 Group 9 Group 10 Group 11 Group 12 Group 13 Group 14 Group 15 Group 16 Group 17 Group18 Group19 Group20 Group21 Group22 Group23 Group24	Another Occupancy

Above the ceiling is:	
Group 1	Another Occupancy
Group 2	
Group 3	
Group 4	
Group 5	
Group 6	
Group 7	
Group 8	
Group 9	
Group 10	
Group 11	
Group 12	
Group 13	
Group 14	
Group 15	
Group 16	
Group 17	
Group18	
Group19	Outside
Group20	
Group21	
Group22	
Group23	
Group24	

Exposed sides:	
Group 1	2
Group 3	
Group 5	
Group 7	
Group 9	
Group 11	
Group 13	
Group 15	
Group 17	
Group19	
Group21	
Group22	
Group23	
Group 2	3
Group 4	
Group 6	
Group 8	
Group 10	
Group 12	
Group 14	
Group 16	
Group18	
Group20	
Group24	

NatHERS Annual Energy Loads - Heat:	
Group 1	69.6 MJ/sqm
Group 2	75.0 MJ/sqm
Group 3	46.0 MJ/sqm
Group 4	64.1 MJ/sqm
Group 5	56.0 MJ/sqm
Group 6	40.3 MJ/sqm
Group 7 Group 13	78.8 MJ/sqm
Group 8 Group 14	86.4 MJ/sqm
Group 9 Group 15	55.2 MJ/sqm
Group 10 Group 16	76.7 MJ/sqm
Group 11 Group 17	70.1 MJ/sqm
Group 12 Group18	50.0 MJ/sqm
Group19	85.8 MJ/sqm
Group20	90.9 MJ/sqm
Group21	65.2 MJ/sqm
Group22	83.5 MJ/sqm
Group23	63.2 MJ/sqm
Group24	52.2 MJ/sqm

NatHERS Annual Energy Loads - Cool:	
Group 1	9.4 MJ/sqm
Group 2 Group 5	15.2 MJ/sqm
Group 3	13.6 MJ/sqm
Group 4	16.6 MJ/sqm
Group 6	8.4 MJ/sqm
Group 7 Group 13	9.9 MJ/sqm
Group 8 Group 14	17.3 MJ/sqm
Group 9 Group 15	15.5 MJ/sqm
Group 10 Group 16	19.4 MJ/sqm
Group 11 Group 17	16.7 MJ/sqm
Group 12 Group18 Group19	9.2 MJ/sqm
Group20	16.0 MJ/sqm
Group21	14.5 MJ/sqm
Group22	18.0 MJ/sqm
Group23	17.9 MJ/sqm
Group24	10.2 MJ/sqm

NatHERS star rating:	
Group 1 Group 4 Group21	7.2
Group 2	6.8
Group 3 Group 12 Group18 Group24	7.9
Group 5 Group 9 Group 15	7.5
Group 6	8.4
Group 7 Group 11 Group 13 Group 17	6.9
Group 8 Group 14	6.3
Group 10 Group 16 Group19	6.6
Group20	6.2
Group22	6.4
Group23	7.1
Type of Heating System: All	Reverse cycle space
Heating System Efficiency: All	3 Stars (2019 MEPS)
Type of Cooling System: All	Refrigerative space
Cooling System Efficiency: All	3 Stars (2019 MEPS)
Type of Hot Water System: All	Electric Heat Pump Band 2
Is the hot water system shared by multiple dwellings?: All	Yes
% Contribution from solar hot water system: All	0 %
Clothes Line: All	No drying facilities
Clothes Dryer: All	Occupant to install

Non-residential Deemed-to-Satisfy profile	
Do all exposed floors and ceilings (forming part of the envelope) demonstrate a minimum 10% improvement in required NCC2022 insulation levels (total R-value upwards and downwards)?:	Yes
Does all wall and glazing demonstrate meeting the required NCC2022 facade calculator (or better than the total allowance)?:	Yes
Are heating and cooling systems within one Star of the most efficient equivalent capacity unit available, or Coefficient of Performance (CoP) & Energy Efficiency Ratios (EER) not less than 85% of the CoP & EER of the most efficient equivalent capacity unit available?:	Yes

Are water heating systems within one star of the best available, or 85% or better than the most efficient equivalent capacity unit?:	Yes

1.1 Thermal Performance Rating - Non-Residential	37%
Score Contribution	This credit contributes 0.9% towards the category score.
Criteria	What is the % reduction in heating and cooling energy consumption against the reference case (NCC2022 Section J)?

1.2 Thermal Performance Rating - Residential	0% ✔ Achieved
Score Contribution	This credit contributes 17.2% towards the category score.
Criteria	What is the average NatHERS rating?
Output	Average NATHERS Rating (Weighted)
Apartment	7.0 Stars

2.1 Greenhouse Gas Emissions	1%
Score Contribution	This credit contributes 17.4% towards the category score.
Criteria	What is the % reduction in annual greenhouse gas emissions against the benchmark?
Output	Reference Building with Reference Services (BCA only)
Apartment	113,241 kg CO2
Output	Proposed Building with Proposed Services (Actual Building)
Apartment	105,674 kg CO2
Output	% Reduction in GHG Emissions
Apartment	6 %

2.2 Peak Demand	100%
Score Contribution	This credit contributes 0.1% towards the category score.
Criteria	What is the % reduction in the instantaneous (peak-hour) demand against the benchmark?

2.6 Electrification	100%
Score Contribution	This credit contributes 17.5% towards the category score.
Criteria	Is the development all-electric?
Question	Criteria Achieved?
Project	Yes

2.7 Energy consumption	100%
Score Contribution	This credit contributes 23.4% towards the category score.
Criteria	What is the % reduction in annual energy consumption against the benchmark?
Output	Reference Building with Reference Services (BCA only)
Apartment	1,045,480 MJ
Output	Proposed Building with Proposed Services (Actual Building)
Apartment	487,728 MJ
Output	% Reduction in total energy
Apartment	53 %

3.1 Carpark Ventilation	0%

Score Contribution	This credit contributes 5.8% towards the category score.
Criteria	If you have an enclosed carpark, is it: (a) fully naturally ventilated (no mechanical ventilation system) or (b) 40 car spaces or less with Carbon Monoxide monitoring to control the operation and speed of the ventilation fans?
Question	Criteria Achieved ?
Project	No

3.2 Hot Water - Non-Residential 100%

Score Contribution	This credit contributes 0.1% towards the category score.
Criteria	What is the % reduction in annual energy consumption (gas and electricity) of the hot water system against the benchmark?

3.4 Clothes Drying 0%

Score Contribution	This credit contributes 5.7% towards the category score.
Criteria	What is the % reduction in annual energy consumption (gas and electricity) from a combination of clothes lines and efficient driers against the benchmark?
Output	Reference
Apartment	26,750 kWh
Output	Proposed
Apartment	26,750 kWh
Output	Improvement
Apartment	0 %

3.6 Internal Lighting - Apartments 100%

Score Contribution	This credit contributes 5.7% towards the category score.
Criteria	Is the maximum illumination power density (W/m2) in at least 90% of the relevant building class at least 20% lower than required by clause J7D3(1)(a) and Table J6.2a of the NCC 2022 Vol 1 (Class 2-9)?
Question	Criteria Achieved ?
Apartment	Yes

3.7 Internal Lighting - Non-Residential 100%

Score Contribution	This credit contributes 0.2% towards the category score.
Criteria	Does the maximum illumination power density (W/m2) in at least 90% of the area of the relevant building class meet the requirements in Table J7D3a of the NCC 2022 Vol 1?
Question	Criteria Achieved ?
Shop	Yes

4.1 Combined Heat and Power (cogeneration / trigeneration) N/A Scoped Out

No cogeneration or trigeneration system in use.

This credit was scoped out	No cogeneration or trigeneration system in use.

4.2 Renewable Energy Systems - Solar 97%

Score Contribution	This credit contributes 5.8% towards the category score.
Criteria	What % of the estimated energy consumption of the building class it supplies does the solar power system provide?
Output	Solar Power - Energy Generation per year
Apartment	9,331 kWh
Output	% of Building's Energy
Apartment	6 %

4.4 Renewable Energy Systems - Other N/A Scoped Out

No other (non-solar PV) renewable energy is in use.

This credit was scoped out	No other (non-solar PV) renewable energy is in use.

IEQ Overall contribution 16.5%

	Minimum required 50%	88%	✔ Pass

What metric do you want to use for daylight to apartments?:	Daylight factor
Daylight Factor: use the BESS Deemed to Satisfy (DtS) method?:	Yes

Dwellings Deemed-to-Satisfy profile

Are all living areas and bedrooms less than 8m deep (5m if south facing)?:	Yes
Do all living areas and bedrooms have a floor-to-ceiling height of at least 2.7m?:	Yes
Does all glazing to living areas achieve at least 60% Visible Light Transmittance (VLT)?:	Yes
Do all living areas have an external facing window (not into a courtyard, light well or other major obstruction)? :	Yes
Does the building(s) comply with the requirements of the building separation tables?:	Yes

1.1 Daylight Access - Living Areas	100%	✔ Achieved

Score Contribution	This credit contributes 28% towards the category score.
Criteria	What % of living areas achieve the daylight criteria?
Output	Calculated percentage
Apartment	100 %

1.2 Daylight Access - Bedrooms	100%	✔ Achieved

Score Contribution	This credit contributes 28% towards the category score.
Criteria	What % of bedrooms achieve the daylight criteria?
Output	Calculated percentage
Apartment	100 %

1.3 Winter Sunlight	0%

Score Contribution	This credit contributes 9.7% towards the category score.
Criteria	Do 70% of dwellings receive at least 3 hours of direct sunlight in all Living areas between 9am and 3pm in mid-winter?
Question	Criteria Achieved ?
Apartment	No

1.4 Daylight Access - Non-Residential	42%	✔ Achieved

Score Contribution	This credit contributes 1.2% towards the category score.
Criteria	What % of the nominated floor area has at least 2% daylight factor?
Question	Percentage Achieved?
Shop	42 %

1.5 Daylight Access - Main Living Areas	N/A	✣ Scoped Out
		Spatial daylight autonomy metric not in use

This credit was scoped out	Spatial daylight autonomy metric not in use

1.6 Daylight Access - Secondary Habitable Rooms		N/A	Scoped Out
			Spatial daylight autonomy metric not in use
This credit was scoped out	Spatial daylight autonomy metric not in use		

2.1 Ventilation - Natural - Apartments		100%	
Score Contribution	This credit contributes 28% towards the category score.		
Criteria	What % of dwellings are effectively naturally ventilated?		
Question	Percentage Achieved?		
Apartment	100 %		

2.3 Ventilation - Non-Residential		33%	✔ Achieved
Score Contribution	This credit contributes 1.2% towards the category score.		
Criteria	What % of the regular use areas are effectively naturally ventilated?		
Question	Percentage Achieved?		
Shop	-		
Criteria	What increase in outdoor air is available to regular use areas compared to the minimum required by AS 1668.2:2012?		
Question	Percentage Achieved?		
Shop	50 %		
Criteria	What CO2 concentrations are the ventilation systems designed to achieve, to monitor and to maintain?		
Question	Value		
Shop	-		

3.4 Thermal comfort - Shading - Non-Residential		0%
Score Contribution	This credit contributes 0.6% towards the category score.	
Criteria	What percentage of east, north and west glazing to regular use areas is effectively shaded?	
Question	Percentage Achieved?	
Shop	0 %	

3.5 Thermal Comfort - Ceiling Fans - Non-Residential		0%
Score Contribution	This credit contributes 0.2% towards the category score.	
Criteria	What percentage of regular use areas in tenancies have ceiling fans?	
Question	Percentage Achieved?	
Shop	0 %	

4.1 Air Quality - Non-Residential		100%
Score Contribution	This credit contributes 0.2% towards the category score.	

Criteria	Do all paints, sealants and adhesives meet the maximum total indoor pollutant emission limits?
Question	Criteria Achieved ?
Shop	Yes

Criteria	Does all carpet meet the maximum total indoor pollutant emission limits?
Question	Criteria Achieved ?
Shop	No carpet

Criteria	Does all engineered wood meet the maximum total indoor pollutant emission limits?
Question	Criteria Achieved ?
Shop	Yes

Transport Overall contribution 9.0%

76%

1.1 Bicycle Parking - Residential	100%
Score Contribution	This credit contributes 21.8% towards the category score.
Criteria	How many secure and undercover bicycle spaces are there for residents?
Question	Bicycle Spaces Provided ?
Apartment	78
Output	Min Bicycle Spaces Required
Apartment	78

1.2 Bicycle Parking - Residential Visitor	100%
Score Contribution	This credit contributes 21.8% towards the category score.
Criteria	How many secure bicycle spaces are there for visitors?
Question	Visitor Bicycle Spaces Provided ?
Apartment	16
Output	Min Visitor Bicycle Spaces Required
Apartment	16

1.3 Bicycle Parking - Convenience Residential	100%
Score Contribution	This credit contributes 10.9% towards the category score.
Criteria	Are bike parking facilities for residents located at ground or entry level?
Question	Criteria Achieved ?
Apartment	Yes

1.4 Bicycle Parking - Non-Residential	0%
Score Contribution	This credit contributes 0.5% towards the category score.
Criteria	Have the planning scheme requirements for employee bicycle parking been exceeded by at least 50% (or a minimum of 2 where there is no planning scheme requirement)?
Question	Criteria Achieved ?
Shop	No
Question	Bicycle Spaces Provided ?
Shop	-

1.5 Bicycle Parking - Non-Residential Visitor	0%
Score Contribution	This credit contributes 0.2% towards the category score.
Criteria	Have the planning scheme requirements for visitor bicycle parking been exceeded by at least 50% (or a minimum of 1 where there is no planning scheme requirement)?
Question	Criteria Achieved ?
Shop	No
Question	Bicycle Spaces Provided ?
Shop	-

1.6 End of Trip Facilities - Non-Residential	0% ⊘ Disabled
	Credit 1.4 must be complete first.

This credit is disabled	Credit 1.4 must be complete first.

2.1 Electric Vehicle Infrastructure	100%
Score Contribution	This credit contributes 22.3% towards the category score.
Criteria	Are facilities provided for the charging of electric vehicles?
Question	Criteria Achieved ?
Project	Yes

2.2 Car Share Scheme	0%
Score Contribution	This credit contributes 11.1% towards the category score.
Criteria	Has a formal car sharing scheme been integrated into the development?
Question	Criteria Achieved ?
Project	No

2.3 Motorbikes / Mopeds	0%
Score Contribution	This credit contributes 11.1% towards the category score.
Criteria	Are a minimum of 5% of vehicle parking spaces designed and labelled for motorbikes (must be at least 5 motorbike spaces)?
Question	Criteria Achieved ?
Project	No

Waste & Resource Recovery Overall contribution 5.5%

33%

1.1 Construction Waste - Building Re-Use	0%
Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	If the development is on a site that has been previously developed, has at least 30% of the existing building been re-used?
Question	Criteria Achieved ?
Project	No

2.1 Operational Waste - Food & Garden Waste	0%
Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	Are facilities provided for on-site management of food and garden waste?
Question	Criteria Achieved ?
Project	No

2.2 Operational Waste - Convenience of Recycling	100%
Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	Are the recycling facilities at least as convenient for occupants as facilities for general waste?
Question	Criteria Achieved ?
Project	Yes

Urban Ecology Overall contribution 5.5%

		22%

1.1 Communal Spaces		0%
Score Contribution	This credit contributes 11.1% towards the category score.	
Criteria	Is there at least the following amount of common space measured in square meters : * 1m² for each of the first 50 occupants * Additional 0.5m² for each occupant between 51 and 250 * Additional 0.25m² for each occupant above 251?	
Question	Common space provided	
Apartment	0.0 m²	
Shop	0.0 m²	
Output	Minimum Common Space Required	
Apartment	89 m²	
Shop	9 m²	
2.1 Vegetation		50%
Score Contribution	This credit contributes 44.5% towards the category score.	
Criteria	How much of the site is covered with vegetation, expressed as a percentage of the total site area?	
Question	Percentage Achieved ?	
Project	15 %	
2.2 Green Roofs		0%
Score Contribution	This credit contributes 11.1% towards the category score.	
Criteria	Does the development incorporate a green roof?	
Question	Criteria Achieved ?	
Project	No	
2.3 Green Walls and Facades		0%
Score Contribution	This credit contributes 11.1% towards the category score.	
Criteria	Does the development incorporate a green wall or green façade?	
Question	Criteria Achieved ?	
Project	No	
2.4 Balconies, Courtyards & Roof terraces		0%
Score Contribution	This credit contributes 10.9% towards the category score.	
Criteria	Is there a tap and floor waste on every balcony and courtyard (including any roof terraces)?	
Question	Criteria Achieved ?	
Apartment	No	
3.1 Food Production - Residential		0%

Score Contribution	This credit contributes 10.9% towards the category score.
Criteria	What area of space per resident is dedicated to food production?
Question	Food Production Area
Apartment	-
Output	Min Food Production Area
Apartment	33 m²

3.2 Food Production - Non-Residential	0%

Score Contribution	This credit contributes 0.2% towards the category score.
Criteria	What area of space per occupant is dedicated to food production?
Question	Food Production Area
Shop	-
Output	Min Food Production Area
Shop	3 m²

Innovation Overall contribution 9.0%

	0%

1.1 Innovation	0%
Score Contribution	This credit contributes 100% towards the category score.
Criteria	What percentage of the Innovation points have been claimed (10 points maximum)?

Disclaimer

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