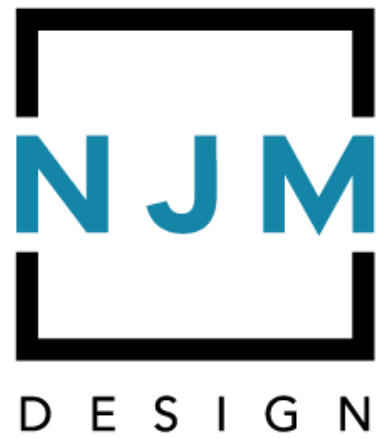


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# Sustainability Management Plan

Project Name: Caulfield Grammar, New Senior School TL174-82  
Jells Rd, Wheelers Hill

Job Number: 9647

Date: 02/12/2025

Revision: 03

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Revision	Issue Date	Document Control	
01	23/07/2025	Prepared by: Kevin Xiao	Reviewed by: -
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# 1 INTRODUCTION

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NJM Design has been commissioned to prepare a Sustainability Management Plan (SMP) that outlines the initiatives that have been incorporated into the design for the proposed school building at Caulfield Grammar, New Senior School TL174-82 Jells Rd, Wheelers Hill. This development includes a wide range of holistic sustainability measures which have been carefully integrated into the design of the development so that the residents will have the opportunity to reduce their ecological footprint without compromising their quality of life.

## 1.1 STATUTORY FRAMEWORK

The Monash City Council encourages the inclusion of Environmentally Sustainable Development (ESD) initiatives within the design process of new developments, which will result in more sustainable buildings within the community.

### 1.1.1 Environmentally Sustainable Development – 15.01-2L

This report outlines how the development has incorporated key sustainable building aspects into the design process, referencing the specific objectives of 15.01-2L. These objectives cover the following categories:

- Energy performance
- Water resources
- Indoor Environment Quality
- Stormwater Management
- Transport
- Waste Management
- Urban Ecology

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## 2 DOCUMENT EVIDENCE

The items below are required to be marked on the plans and specified in the ESD table within the town planning drawing sets.

Items to be included in the Sustainability initiatives table:

Sustainability initiatives	Notes
General	The project will align with the Sustainability Management Plan report prepared by NJM Design for all Sustainability initiatives.
Management	<ul style="list-style-type: none"> <li>- A building user guide will be provided to the occupants.</li> <li>- Separate utility meters (water, electricity etc.) will be provided for all individual commercial tenants. All major common area services will be separately sub-metered.</li> </ul>
Water Efficiency	<ul style="list-style-type: none"> <li>- The development to be provided with rainwater tanks. Refer to WSUD Plan.</li> <li>- Rainwater tanks connected to the toilets.</li> <li>- Native or drought-tolerant species to be used for landscaped areas. Watering will not be required after an initial period when plants are getting established.</li> </ul> <p><b>This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which infringes any copyright</b></p> <p>WELS rating for water fittings/fixtures</p> <ul style="list-style-type: none"> <li>▪ Toilets – 5 Star</li> <li>▪ Urinals – waterless Star</li> <li>▪ Taps (bathroom and kitchen) – 6 Star</li> <li>▪ Showerhead – 4 Star (<math>\geq 4.5</math> but <math>\leq 6.0</math>)</li> <li>▪ Dishwasher – 5 Star</li> </ul>
Stormwater	Refer to WSUD Report/Plan
Energy	<ul style="list-style-type: none"> <li>- Commitment to meeting section J energy efficiency requirement of NCC 2022</li> <li>- The maximum illumination power density (W/m<sup>2</sup>) of the development will meet the requirements in NCC 2022</li> <li>- All electric development</li> <li>- Heating and cooling system within one Star of the most efficient equivalent capacity unit available, or CoP &amp; EER of the most efficient equivalent capacity unit available.</li> <li>- Hot water system within one Star of the best available, or 85% or better than the most efficient equivalent capacity unit</li> </ul>
Indoor Environment Quality	<ul style="list-style-type: none"> <li>- Commitment to Outside Air Fan in office providing O/A rates 100% above minimum from AS1668, and O/A provision to ensure CO<sub>2</sub> concentration remains below 500ppm.</li> </ul>
Waste	<ul style="list-style-type: none"> <li>- Provision of bins system including general waste, recycling, FOGO and glass.</li> </ul>

### 3 ESD ASSESSMENT TOOLS

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There are a number of calculators and modelling programs available to help assess proposed developments against benchmarks set by the Victorian State Government, City Councils and the Building Code of Australia. This report has utilised the Built Environment Sustainability Scorecard (BESS) system which covers the overall sustainability of the project and STORM, which analyses stormwater treatment onsite.

#### 3.1 BUILT ENVIRONMENT SUSTAINABILITY SCORECARD (BESS)

BESS is designed to support the 'Sustainable Design Assessment in the Planning Process' framework adopted by Victorian councils to ensure that sustainability is addressed within a proposed development. It assesses projects against a benchmark in 9 environmental categories where points are awarded for various design strategies implemented within the project.

The overall BESS score (shown as a percentage figure) represents a percentage improvement over a benchmark project which is created from the project information inputted into the BESS tool by the user and is based on minimum requirements of the National Construction Code (NCC) and Minimum Energy Performance Standards.

#### 3.2 STORM

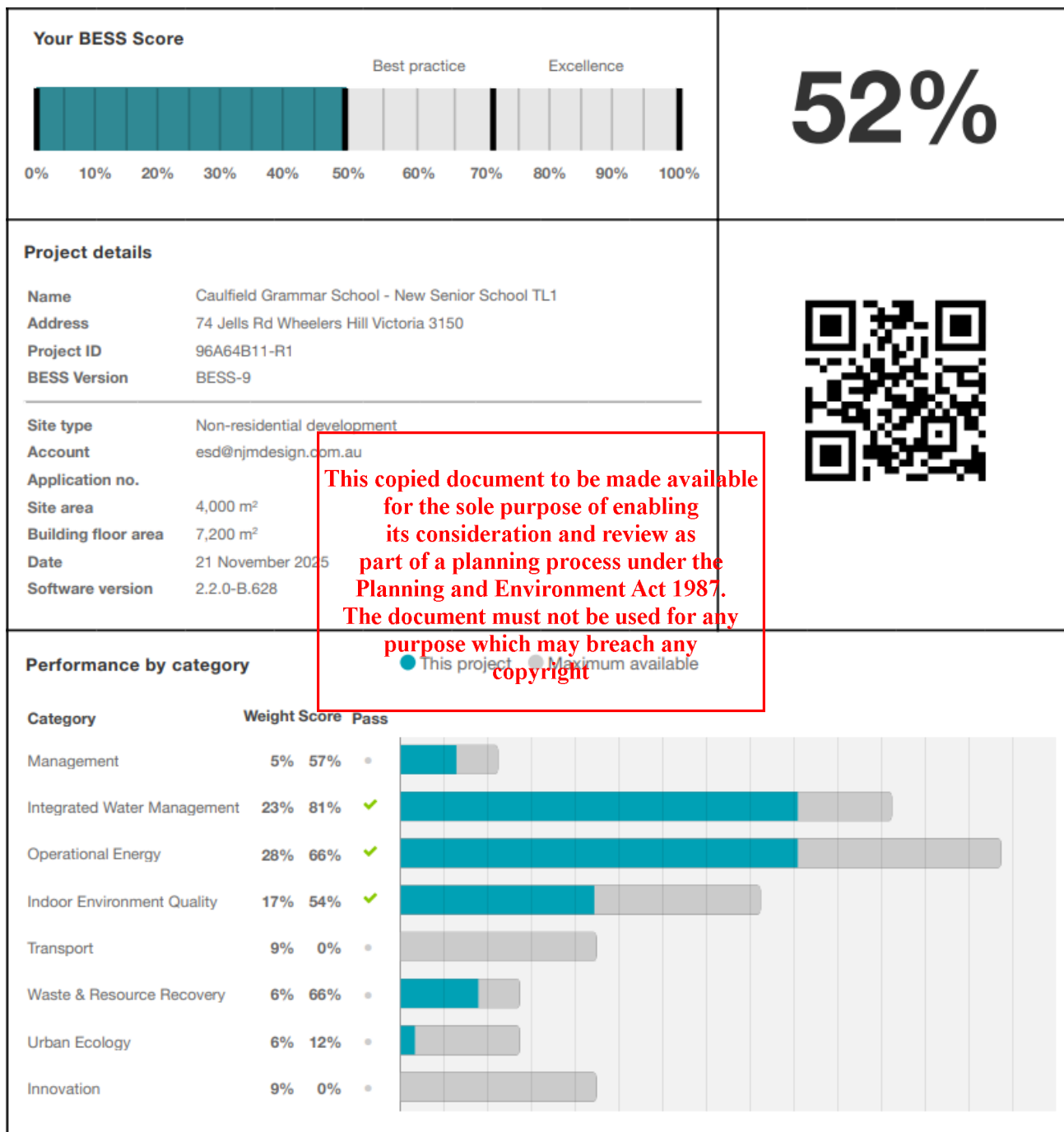
Stormwater Treatment Objective – Relative Measure (STORM) was developed by Melbourne Water to simplify the analysis of stormwater treatment methods within a development. The calculator assesses Water Sensitive Urban Design (WSUD) measures on project sites and delivers a percentage result, determining whether best practice targets have been achieved. A score of 100% or higher means the treatment features meet all objectives.

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## 4 ESD ACHIEVEMENTS

The following table outlines the scores achieved in each assessment tool used. This development has achieved a 'Pass' score in each of the mandatory category (Water, Energy, Stormwater, IEQ).



## 5 ESD INITIATIVES & IMPLEMENTATION

### 5.1 MANAGEMENT

Design Requirement	Implementation Stage	Responsibility
<p><b>Thermal Performance Modelling</b></p> <p>A preliminary façade assessment and a preliminary energy modelling have been undertaken in accordance with NCC 2022 Section J requirement.</p>	Planning stage	ESD
<p><b>Building User Guide</b></p> <p>The building user guide will be provided to the occupants and contain the following information:</p> <ul style="list-style-type: none"> <li>- A description of operational and maintenance requirements of the heat and cooling systems and hot water systems for efficient and safe use of these systems</li> <li>- A description of operational and maintenance requirements of building initiatives to reduce energy and water use</li> <li>- A description of operational and maintenance requirements of water sensitive urban design features</li> <li>- A description of operational and maintenance requirements of waste management strategy</li> <li>- Transport facilities including public transport information</li> </ul>	After construction	Project manager/Building manager
<p><b>Metering and Monitoring</b></p> <p>Separate utility meters (water, electricity etc.) will be provided. All major common area services will be separately sub-metered.</p>	Detailed Design	Service engineer

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## 5.2 WATER RESOURCES

Design Requirement	Implementation Stage	Responsibility
<p><b>Potable Water Use Reduction (Interior Uses)</b></p> <p>To improve water efficiency, efficient fixtures and fittings will be installed to ensure a reduction in the total water consumption at the premises.</p> <p>The development is committing to the following fixtures and fittings:</p> <ul style="list-style-type: none"> <li>- Showerheads: 4 Star WELS (&gt;=4.5 but &lt;=6.0L)</li> <li>- Kitchen Taps: 6 Star WELS rating</li> <li>- Bathroom Taps: 6 Star WELS rating</li> <li>- Dishwashers: 5 Star (if provided)</li> <li>- WC: 5 Star WELS rating</li> <li>- Urinal: Waterless</li> </ul>	Detailed Design	Architect
<p><b>Rainwater Collection &amp; Reuse</b></p> <p>Reducing potable (mains) water consumption through a rainwater collection and re-use scheme ensures cost savings and the efficient use of water.</p> <p>Water will be collected across roof area and stored in rainwater tanks. The water will be used to flush all toilets throughout the development.</p> <p>Refer to the Water Sensitive Urban Design section of this report for the full details of stormwater management initiatives.</p>	Detailed Design	Hydraulic Engineer
<p><b>Water Efficient Landscaping</b></p> <p>Water efficiency principles will be employed when landscaping this development. Native or drought-tolerant plants will be installed which do not require watering after an initial period when the plants are getting established.</p>	Town Planning Stage	Landscape Consultant

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### 5.3 ENERGY PERFORMANCE

Design Requirement	Implementation Stage	Responsibility
<p><b>All electric Development</b></p> <p>The development will be all electric and fossil fuel-free. No gas connection will be provided for the development.</p>	Detailed Design	Service Engineer
<p><b>Hot Water System</b></p> <p>Domestic hot water systems are a significant source of greenhouse gas emissions in a development. Every effort should be made to minimise the energy consumption of these items.</p> <p>This project commits to water heating systems within one star of the best available, or 85% or better than the most efficient equivalent capacity unit.</p>	Detailed Design	Architect / ESD Consultant
<p><b>Non-Residential - Thermal Performance</b></p> <p>Prior to the building construction stage of the project, a Section J (NCC 2022) final assessment will occur with the following commitments:</p> <ul style="list-style-type: none"> <li>- All exposed floors and ceilings (forming part of the envelope) demonstrate meeting the required NCC 2022 insulation levels: <ul style="list-style-type: none"> <li>▪ Roof and Ceiling: Total system R value of 3.2</li> <li>▪ Floor (without in-slab heating): Total R value of 2.0</li> </ul> </li> <li>- All wall and glazing demonstrate meeting the required NCC 2022 Façade Calculator: <ul style="list-style-type: none"> <li>▪ A minimum total R-Value of R1.0 where the wall is less than 80% of the area of the wall-glazing construction; or</li> <li>▪ R1.4 where the wall is more than 80% of the area of the wall- glazing construction.</li> <li>▪ High performance double glazing to be provided for windows.</li> </ul> </li> <li>- Heating and cooling systems within one Star of the most efficiency equivalent capacity unit available, or Coefficient of Performance (CoP) &amp; Energy Efficiency Ratios (EER) not less than 85% of the CoP &amp; EER of the most efficient equivalent capacity unit available.</li> </ul> <p>Preliminary J1V3 modelling has been conducted for this project.</p> <p>Refer to Appendix C for details.</p>	Detailed Design	ESD/Mechanical Engineer
<p><b>Non- Residential- Internal Lighting</b></p> <p>The maximum illumination power density (W/m<sup>2</sup>) in at least 90% of the area of the relevant building class meet the requirements in Table J7D3a of the NCC 2022 Vol 1.</p>	Detailed Design	Lighting Designer / Electrical Engineer
<p><b>Renewable Energy Systems - Solar</b></p>		

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Design Requirement	Implementation Stage	Responsibility
A 99 kW PV system has been proposed for this project.	Detailed Design	Lighting Designer / Electrical Engineer

#### 5.4 STORMWATER MANAGEMENT

Design Requirement	Implementation Stage	Responsibility
<b>Stormwater Treatment</b> The construction stormwater pollution reduction strategy is to be adhered to. Refer to WSUD Response for further details.	Construction	Builder
The initiatives outlined in the Water Sensitive Urban Design (WSUD) Response comply with the council's WSUD requirements, as demonstrated by achieving a STORM score of 100%	Detailed Design	Architect/Civil Engineer

#### 5.5 INDOOR ENVIRONMENT QUALITY - IEQ

Design Requirement	Implementation Stage	Responsibility
<p><b>Daylight Access – Non-residential</b> Providing daylight to occupied spaces helps reduce energy consumption, allowing occupants to maintain comfort levels without the use of electric lighting. This is especially important for spaces which will be primarily occupied during the day, which would otherwise need artificial lighting.</p> <p>Adequate daylight access will be provided to regularly used spaces in the development.</p> <p>Based on current design, it is estimated to have at least over 50% of regularly used spaces with daylight factor over 2.</p>	Town Planning Submission	Architect / ESD Consultant
<p><b>Ventilation – Non-Residential</b> Introducing a high volume of outside air to regularly occupied spaces provide improved air quality and passive cooling opportunities. This credit can be achieved by effectively naturally ventilating or introducing fresh air through a mechanically ducted HVAC system.</p> <p>All primary spaces will be provided with O/A fans which will commit to provide 100% increase on O/A provision from AS1668. CO monitor will be provided in the primary spaces to ensure that CO2 concentration in the rooms remains below 500ppm.</p>	Town Planning Submission	Architect / ESD Consultant
<b>Thermal Comfort – Shading</b>		

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Design Requirement	Implementation Stage	Responsibility
<p>Appropriate external shading devices for east, west and north facing glazing provide comfortable indoor spaces and reduce energy consumed for space cooling.</p> <p>At least <b>50%</b> of the east, north and west glazing to regular use floor areas are effectively shaded.</p>	Detailed Design	Architect
<p><b>Volatile Organic Compounds and Formaldehyde</b></p> <p>Volatile Organic Compounds easily evaporate into the air at room temperature. They have an odour and can cause irritation and other health problems for occupants. They are commonly found in paints, sealants, carpets, woods, and furniture. Products with a low VOC and formaldehyde content will be selected so that the associated health issues are averted within this development.</p> <p>Refer to <b>Appendix A: Material Pollutants Limits</b> for further information.</p>	Detailed Design	Architect

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## 5.6 WASTE MANAGEMENT

Design Requirement	Implementation Stage	Responsibility
<p><b>Construction Environment Management</b></p> <p>The builder will identify environmental risks related to construction and include management strategies such as maintaining effective erosion and sediment control measures during construction and operation and ensure that appropriate staging of earthworks.</p>	Construction Stage	Builder
<p><b>Operational Waste – Convenience of Recycling</b></p> <p>To ensure waste avoidance, reuse, and recycling during the operational life of the building.</p> <p>The development will include a waste storage area sized to equally accommodate both recycling and general waste.</p> <p>Furthermore, to encourage recycling practices within the development, recycle bins will be conveniently provided alongside general waste bins at points of disposal such as kitchens and wherever a general waste bin is located.</p>	Town Planning Submission	Architect
<p><b>Operational Waste – Food &amp; Garden Waste</b></p> <p>FOGO bins will be provided for Food &amp; Garden Waste.</p>	Town Planning Submission	Architect

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## 5.7 URBAN ECOLOGY

Design Requirement	Implementation Stage	Responsibility
<p><b>Vegetation</b></p> <p>Adequate percentage of the site will be covered in vegetation, encouraging residents to interact with the vegetated space and limiting the 'heat island' effect.</p>	Town Planning Submission	Architect
<p><b>Communal Spaces</b></p> <p>Adequate common space will be provided for the development.</p>	Town Planning Submission	Architect
<p><b>Light roof colour</b></p> <p>Light colour roof will be provided for the development with a solar absorptance value less than 0.45 to reduce the urban heat island effect.</p>	Town Planning Submission	Architect

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## 5.8 BUILDING MATERIALS

The choice of building materials for a project can have a significant impact on the project’s overall environmental footprint. An overarching objective to select materials based on their environmental footprint has been implemented on this project. Materials will be selected based on the following attributes:

Design Requirement	Implementation Stage	Responsibility
<p><b>Embodied Energy</b></p> <p>Total embodied energy will be considered when selecting materials. High embodied energy materials, such as concrete, aluminium and zinc will be avoided where possible. When these materials are necessary, suppliers that include a percentage of recycled materials must be selected.</p>	Detailed Design	Architect
<p><b>Biodiversity and Habitat Destruction</b></p> <p>All timber used for the project will be from sustainably managed sources. This will be demonstrated through appropriate certification schemes, such as PEFC or FSC.</p>	Detailed Design	Architect
<p><b>End of Life</b></p> <p>Consideration will be given to how materials may be disposed of. Recyclable materials will be chosen wherever possible. Preference will be given to suppliers with end-of-life recycling schemes.</p>	Detailed Design	Architect
<p><b>Toxicity</b></p> <p>Materials which have health risks during manufacture and installation will be avoided where possible. Low VOC products, E0 or E1 wood products, best practice PVC will be selected wherever practical.</p>	Detailed Design	Architect
<p><b>Durability</b></p> <p>Consideration will be given to the life expectancy of materials. Durable materials will be specified for relevant applications.</p>	Detailed Design	Architect
<p><b>Maintenance</b></p> <p>Materials that are easily maintained will be specified. This is likely to increase the life expectancy of the material. Materials that require cleaning agents that have environmental impacts will be avoided.</p>	Detailed Design	Architect

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## 6 WSUD RESPONSE

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Rainwater will be collected across a roof area and stored in rainwater tanks. The water will be used to flush all toilets throughout the development.

### 6.1 STATUTORY FRAMEWORK

Melbourne Water recommends that proposed developments provide a Water Sensitive Urban Design Response with the following objectives:

- To improve stormwater discharge quality:
  - 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
- To promote stormwater re-use
- To mitigate the detrimental effect of development on downstream waterways
- To minimise peak stormwater flows and stormwater pollutants
- To reintegrate urban water into the landscape to facilitate benefits such as microclimate cooling, local habitat, and provision of attractive spaces for community use and well-being

A development is required to demonstrate that it meets the objectives of the clause by either:

- Meeting a 100% or higher rating on the STORM rating tool; or
- Meeting the required discharge quality using the MUSIC rating tool

Additionally, adequate maintenance and management procedures are required to ensure the stormwater treatment / reuse measures work as intended.

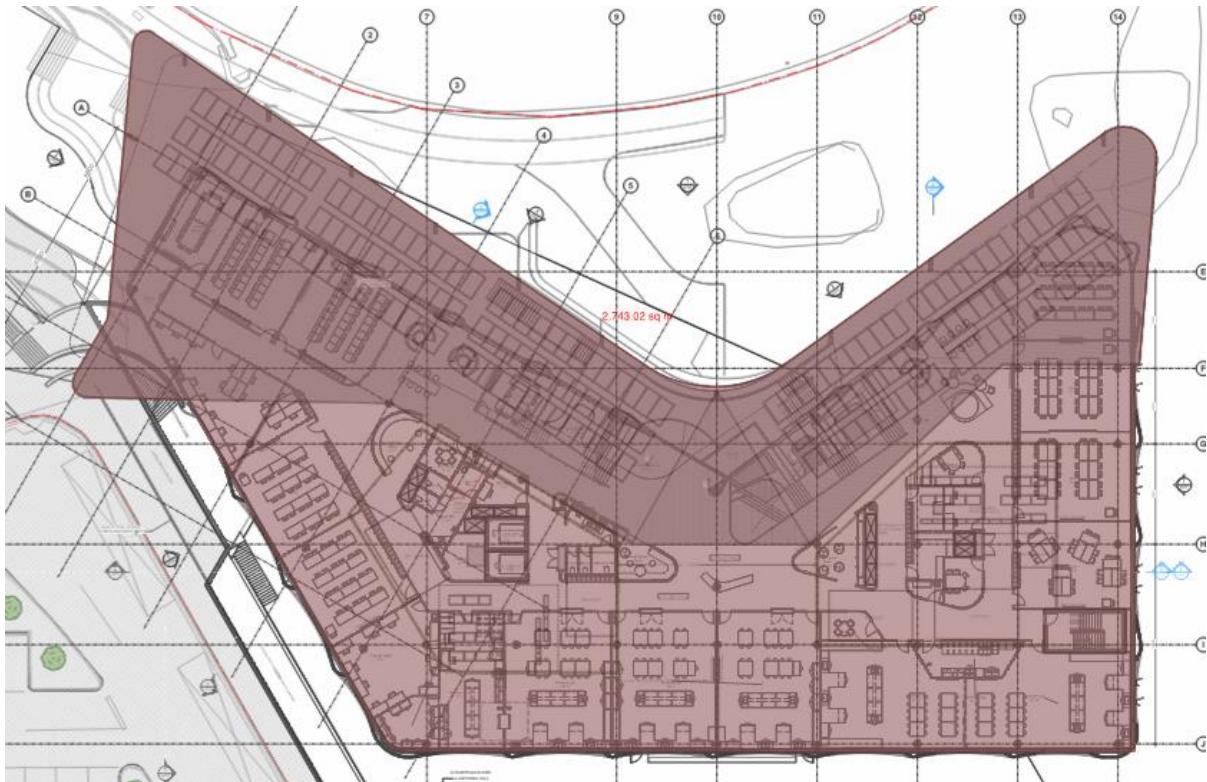
### 6.2 DESIGN DETAILS

Rainwater will be collected across whole roof and stored in rainwater tanks of a minimum capacity of 25,000L. The water will be used to flush all toilets throughout the development.

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### 6.3 RAINWATER HARVESTING



Legend

Description	Quantity	Unit
<span style="display: inline-block; width: 15px; height: 10px; background-color: #8B4513; border: 1px solid black;"></span> Roof to rainwater tank	2,743.02	sq m

### 6.4 STORM ASSESSMENT

A Melbourne Water STORM assessment on the property has been undertaken to demonstrate compliance with best practice stormwater treatment objectives as set out in the Urban Stormwater Best Practice Environmental Management Guidelines (CSIRO, 1997).

Stormwater Treatment Objective – Relative Measure (STORM) was developed by Melbourne Water to simplify the analysis of stormwater treatment methods within a development. The calculator assesses Water Sensitive Urban Design (WSUD) measures on project sites and delivers a percentage result, determining whether best practice targets have been achieved. A score of 100% or higher means the treatment features meet all objectives.

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## STORM Rating Report

TransactionID: 0  
 Municipality: MONASH  
 Rainfall Station: MONASH  
 Address: 74-82 Jells Rd,  
 Wheelers Hill  
 VIC 3150  
 Assessor: NJM Design  
 Development Type: Commercial/Retail  
 Allotment Site (m2): 3,615.02  
 STORM Rating %: 102

Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
Roof to RWT	391.86	Rainwater Tank	3,571.43	100	101.60	54.00
Roof to RWT	391.86	Rainwater Tank	3,571.43	100	101.60	54.00
Roof to RWT	391.86	Rainwater Tank	3,571.43	100	101.60	54.00
Roof to RWT	391.86	Rainwater Tank	3,571.43	100	101.60	54.00
Roof to RWT	391.86	Rainwater Tank	3,571.43	100	101.60	54.00
Roof to RWT	391.86	Rainwater Tank	3,571.43	100	101.60	54.00
Roof to RWT	391.86	Rainwater Tank	3,571.43	50	101.60	54.00

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## 6.5 CONSTRUCTION SITE MANAGEMENT PLAN

The following requirements are to be met during onsite works to prevent excessive pollutants entering the local waterways.

1. Temporary drains are to be installed to minimise overland water flows and prevent erosion, especially in areas where water is likely to pool.
2. Temporary silt fences are to be installed on the lower end of the site to prevent excessive sedimentation from entering the stormwater system
3. Temporary side entry filters to be installed to council stormwater pits to prevent sediment entering the stormwater system at the kerb inlet
4. Stockpiles to be located away from the predominant overland stormwater pathway
5. All site litter to be collected and placed in bins (covered if appropriate) so that it cannot end up in the stormwater systems
6. Waste bins to be provided onsite for workers

## 6.6 MAINTENANCE REQUIREMENTS

The following maintenance measures are required to be undertaken at 6 monthly intervals, when it is evident that a blockage has occurred or after a storm event. The body corporate is to be responsible for the maintenance of the stormwater system.

- Roof and gutters to be cleaned to remove leaves and other debris
- All screens to be checked for blockages and cleaned if necessary
- Sweep, wet vacuum or pressure hose courtyards and laneways to remove accumulated sediment and debris.
- Clear any drainage pipes in the courtyards and laneways that direct water to the stormwater system.

All pumps or specialist equipment to be installed as part of this system are to be maintained in accordance with the manufacturer's specifications.

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## 7 MANAGEMENT, MAINTENANCE & MONITORING

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To ensure that the initiatives outlined in this report are implemented and maintained over time a copy this report will be provided to the building management team.

Inefficiently performing services impact on indoor environment qualities and may increase running costs and greenhouse gas emissions. The building management team will monitor all sustainability initiatives on-site and will schedule regular fine-tuning of building services and their ongoing maintenance, ensuring the building's maximum environmental performance is always achieved.

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## 8 APPENDICES

### 8.1 APPENDIX A: MATERIAL POLLUTANTS LIMITS

Table 1: Maximum Volatile Organic Compound Levels for paints, adhesives, Sealants and Carpets. (Source: Green Building Council Australia)

Product Type/Sub Category	Max TVOC Content (g/L of ready-to-use-product)
General purpose adhesives and sealants	50
Internal 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 adhesives, wood flooring and laminate adhesives and sealants	100
<b>Carpets</b>	0.5mg/m <sup>2</sup> per hour

Table 2: Formaldehyde Emissions Limit for Engineered wood products. (Source: Green Building Council Australia)

Test Protocol	Emission Measurement	Limit/Unit of
AS/NZS 2269:2004, testing procedure AS/NZS 2269:2004 method 10 for Plywood	≤1mg/ L	
AS/NZS 1859.1:2004 - Particle Board, with use of testing procedure AS/NZS 4266.16:2004 method 15	≤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/m <sup>2</sup> hr*	
ASTM D5116 (applicable to high pressure laminates and compact laminates)	≤0.1 mg/m <sup>2</sup> h	
ISO 16000 part 9, 10 and 11 (also known as EN 13419), applicable to high pressure laminates and compact laminates	≤0.1 mg/m <sup>2</sup> hr (at 3 days)	
ASTM D6007	≤0.12mg/m <sup>3</sup> **	
ASTM E1333	≤0.12mg/m <sup>3</sup> ***	
EN 717-1 (also known as DIN EN 717-1)	≤0.12mg/m <sup>3</sup>	
EN 717-2 (also known as DIN EN 717-2)	≤3.5mg/m <sup>2</sup> hr	

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## 8.2 APPENDIX B: BESS ASSESSMENT

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# BESS Report

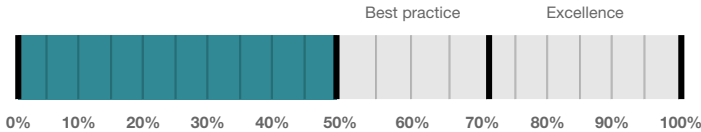
Built Environment Sustainability Scorecard



This BESS report outlines the sustainable design commitments of the proposed development at 74 Jells Rd Wheelers Hill Victoria 3150. 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 Monash 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



# 52%

## Project details

Name	Caulfield Grammar School - New Senior School TL1
Address	74 Jells Rd Wheelers Hill Victoria 3150
Project ID	96A64B11-F2
BESS Version	BESS-9
Site type	Non-residential development
Account	esd@njmdesign.com.au
Application no.	
Site area	4,000 m <sup>2</sup>
Building floor area	7,200 m <sup>2</sup>
Date	02 December 2025
Software version	2.3.0-B.635

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## Performance by category

● This project ● Maximum available

Category	Weight	Score	Pass
Management	5%	57%	●
Integrated Water Management	23%	81%	✓
Operational Energy	28%	66%	✓
Indoor Environment Quality	17%	53%	✓
Transport	9%	0%	●
Waste & Resource Recovery	6%	66%	●
Urban Ecology	6%	12%	●
Innovation	9%	0%	●

## Buildings

Name	Height	Footprint	% of total footprint
Building 1	3	2,680 m <sup>2</sup>	100%

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## Dwellings & Non Res Spaces

### Non-Res Spaces

Name	Quantity	Area	Building	% of total area
<b>Public building</b>				
Non-Residential Space 1	1	7,200 m <sup>2</sup>	Building 1	100%
<b>Total</b>	<b>1</b>	<b>7,200 m<sup>2</sup></b>	<b>100%</b>	

## Supporting Evidence

Shown on Floor Plans		Response	Status
Credit	Requirement		
Management 3.3	Annotation: Sub-meters to be provided to all major common area services (list each)	This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright	-
Integrated Water Management 2.1	Location of any stormwater management systems, rainwater tanks, raingardens, buffer strips		-
Integrated Water Management 3.1	Annotation: Water Efficient Use of Water		-
Operational Energy 4.2	Location and size of solar photovoltaic system		-
Waste & Resource Recovery 2.1	Location of food and garden waste facilities		-
Waste & Resource Recovery 2.2	Location of recycling facilities		-
Urban Ecology 1.1	Location and size of communal spaces		-

### Supporting Documentation

Credit	Requirement	Response	Status
Management 2.3a	Section J glazing assessment		-
Management 2.3b	Preliminary modelling report		-
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 3.7	Average lighting power density and lighting type(s) to be used		-
Operational Energy 4.2	Specifications of the solar photovoltaic system(s)		-
Indoor Environment Quality 1.4	A short report detailing assumptions used and results achieved.		-

## Credit summary

### Management Overall contribution 4.5%

		<b>57%</b>
1.1 Pre-Application Meeting		0%
2.3 Thermal Performance Modelling - Non-Residential		100%
3.2 Metering - Non-Residential		N/A <span>⚡ Scoped Out</span>
One Tenant		
3.3 Metering - Common Areas		100%
4.1 Building Users Guide		100%

### IWM Overall contribution 22.5%

		<b>81%</b> <span>✔ Pass</span>
1.1 Potable Water Use		61% <span>✔ Achieved</span>
2.1 Stormwater Treatment		100% <span>✔ Achieved</span>
3.1 Water Efficient Landscaping		100%
4.1 Building Systems Water Use		0%

### Operational Energy Overall contribution 27.5%

		<b>66%</b> <span>✔ Pass</span>
1.1 Thermal Performance Rating - Non-Residential		19%
2.1 Greenhouse Gas Emissions		100%
2.2 Peak Demand		0%
2.6 Electrification		100%
2.7 Energy consumption		100%
3.1 Carpark Ventilation		N/A <span>⚡ Scoped Out</span>
No Carpark in Scope		
3.2 Hot Water - Non-Residential		100%
3.7 Internal Lighting - Non-Residential		100%
4.1 Combined Heat and Power (cogeneration / trigeneration)		N/A <span>⚡ Scoped Out</span>
No cogeneration or trigeneration system in use.		
4.2 Renewable Energy Systems - Solar		100%
4.4 Renewable Energy Systems - Other		N/A <span>⚡ Scoped Out</span>
No other (non-solar PV) renewable energy is in use.		

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**IEQ Overall contribution 16.5%**

		<b>Minimum required 50%</b>	<b>53%</b>	<b>✓ Pass</b>
1.4 Daylight Access - Non-Residential			50%	✓ Achieved
2.3 Ventilation - Non-Residential			50%	✓ Achieved
3.4 Thermal comfort - Shading - Non-Residential			66%	
3.5 Thermal Comfort - Ceiling Fans - Non-Residential			0%	
4.1 Air Quality - Non-Residential			100%	

**Transport Overall contribution 9.0%**

			<b>0%</b>	
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			0%	
2.2 Car Share Scheme			0%	
2.3 Motorbikes / Mopeds			0%	

**Waste & Resource Recovery Overall contribution 66%**

			<b>66%</b>	
1.1 Construction Waste - Building Re-Use			0%	
2.1 Operational Waste - Food & Garden Waste			100%	
2.2 Operational Waste - Convenience of Recycling			100%	

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**Urban Ecology Overall contribution 5.5%**

			<b>12%</b>	
1.1 Communal Spaces			100%	
2.1 Vegetation			0%	
2.2 Green Roofs			0%	
2.3 Green Walls and Facades			0%	
3.2 Food Production - Non-Residential			0%	

**Innovation Overall contribution 9.0%**

			<b>0%</b>	
1.1 Innovation			0%	

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## Credit breakdown

### Management Overall contribution 4.5%

	57%
--	-----

<b>1.1 Pre-Application Meeting</b>	0%
------------------------------------	----

Score Contribution	This credit contributes 42.9% 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

<b>2.3 Thermal Performance Modelling - Non-Residential</b>	100%
--	------

Score Contribution	This credit contributes 28.6% towards the category score.
--------------------	---

Criteria	Has a preliminary facade assessment been undertaken in accordance with NCC2022 Section J4D6?
Question	Criteria Achieved ?
Public building	Yes

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Criteria	Has a preliminary facade assessment been undertaken in accordance with either NCC2022 Section J4D6 or NCC2019 Section J4D6?
Question	Criteria Achieved ?
Public building	Yes

<b>3.2 Metering - Non-Residential</b>	N/A <span style="color: orange;">◆</span> Scoped Out
---------------------------------------	--

This credit was scoped out	One Tenant
----------------------------	------------

<b>3.3 Metering - Common Areas</b>	100%
------------------------------------	------

Score Contribution	This credit contributes 14.3% towards the category score.
Criteria	Have all major common area services been separately submetered?
Question	Criteria Achieved ?
Public building	Yes

<b>4.1 Building Users Guide</b>	100%
---------------------------------	------

Score Contribution	This credit contributes 14.3% 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% <span style="color: green;">✔</span> Pass
--	--	---

Do you have a reticulated third pipe or an on-site water recycling system?:	No	
Are you installing a swimming pool?:	No	
<b>Stormwater profile</b>		
Which stormwater modelling software are you using?:	Melbourne Water STORM tool	
STORM score achieved:	100	
Flow:	-	
Total Suspended Solids:	-	
Total Phosphorus:	-	
Total Nitrogen:	-	
<b>Rainwater tank profile</b>		
What is the total roof area connected to the rainwater tank?: Rainwater Tank 1	2,200 m <sup>2</sup>	
Tank Size: Rainwater Tank 1	25,000 Litres	
Irrigation area connected to tank: Rainwater tank 1	0.0 m <sup>2</sup>	
Is connected irrigation area a water efficient garden?: Rainwater Tank 1	No	
Other external water demand connected to tank?: Rainwater Tank 1	0.0 Litres/Day	
<b>Fixtures, fittings &amp; connections profile</b>		
Building:	Building 1	
Showerhead:	4 Star WELS (>= 6.0 but <= 7.5)	
Bath:	Scope out	
Kitchen Taps:	>= 6 Star WELS rating	
Bathroom Taps:	>= 6 Star WELS rating	
Dishwashers:	>= 5 Star WELS rating	
WC:	>= 5 Star WELS rating	
Urinals:	Waterless urinal	
Washing Machine Water Efficiency:	>= 5 Star WELS rating	
Which non-potable water source is the dwelling/space connected to?:	237291	
Non-potable water source connected to Toilets:	Yes	
Non-potable water source connected to Laundry (washing machine):	No	
Non-potable water source connected to Hot Water System:	No	
<b>1.1 Potable Water Use</b>		
		61% <span style="color: green;">✔</span> Achieved

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Score Contribution	This credit contributes 31.2% 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	31287 kL		
Output	Proposed (excluding rainwater and recycled water use)		
Project	19817 kL		
Output	Proposed (including rainwater and recycled water use)		
Project	18508 kL		
Output	% Reduction in Potable Water Consumption		
Project	40 %		
Output	% of connected demand met by rainwater		
Project	52 %		
Output	How often does the tank overflow?		
Project	Very Often		
Output	Opportunity for additional rainwater connection		
Project	8822 kL		
<b>2.1 Stormwater Treatment</b>		100%	✓ Achieved
Score Contribution	This credit contributes 56.2% towards the category score.		
Criteria	Has a water management plan been demonstrated?		
Output	Yes		
Project	0.000000		
Output	0.000000		
Project	0.000000		
<b>3.1 Water Efficient Landscaping</b>		100%	
Score Contribution	This credit contributes 6.2% towards the category score.		
Criteria	Will water efficient landscaping be installed?		
Question	Criteria Achieved ?		
Project	Yes		
<b>4.1 Building Systems Water Use</b>		0%	
Score Contribution	This credit contributes 6.2% 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	-		

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**Operational Energy Overall contribution 27.5%**

	Minimum required 50%	66% <span style="color: green;">✔</span> Pass
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**Project profile**

Use the BESS Deem to Satisfy (DTS) method for Non-residential No spaces?:	
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	99.0 kW peak
Orientation (which way is the system facing)?: Solar Photovoltaic system 1	North
Inclination (angle from horizontal): Solar Photovoltaic system 1	30.0 Angle (degrees)



**Non-residential buildings profile**

Heating, Cooling & Comfort Ventilation Electricity	160,472 kWh
Reference fabric and Reference services:	
Heating, Cooling & Comfort Ventilation Electricity	54,824 kWh
Proposed fabric and Reference services:	
Heating, Cooling & Comfort Ventilation Electricity	56,401 kWh
Proposed fabric and Proposed services:	
Heating Wood	0.0 MJ
Reference fabric and Reference services:	
Heating Wood	0.0 MJ
Proposed fabric and Reference services:	
Heating Wood	0.0 MJ
Proposed fabric and Proposed services:	
Hot Water Electricity - Reference:	10,000 kWh
Hot Water Electricity - Proposed:	9,000 kWh
Lighting Electricity - Reference:	80,186 kWh
Lighting Electricity - Proposed:	72,000 kWh
Peak Thermal Cooling Load Reference:	0.0 kW
Peak Thermal Cooling Load Proposed:	0.0 kW

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<b>1.1 Thermal Performance Rating - Non-Residential</b>			19%
Score Contribution	This credit contributes 36.4% towards the category score.		
Criteria	What is the % reduction in heating and cooling energy consumption against the reference case (NCC2022 Section J)?		
Output	Total Improvement		
Public building	2 %		
<b>2.1 Greenhouse Gas Emissions</b>			100%
Score Contribution	This credit contributes 9.1% 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)		
Public building	134,673 kg CO2		
Output	Proposed Building with Proposed Services (Actual Building)		
Public building	51,667 kg CO2		
Output	% Reduction in GHG Emissions		
Public building	61 %		
<b>2.2 Peak Demand</b>			0%
Score Contribution	This credit contributes 4.5% towards the category score.		
Criteria	What is the % reduction in the maximum (hour) demand against the benchmark?		
<b>2.6 Electrification</b>			100%
Score Contribution	This credit contributes 13.6% towards the category score.		
Criteria	Is the development all-electric?		
Question	Criteria Achieved?		
Project	Yes		
<b>2.7 Energy consumption</b>			100%
Score Contribution	This credit contributes 18.2% towards the category score.		
Criteria	What is the % reduction in annual energy consumption against the benchmark?		
Output	Reference Building with Reference Services (BCA only)		
Public building	613,699 MJ		
Output	Proposed Building with Proposed Services (Actual Building)		
Public building	235,444 MJ		
Output	% Reduction in total energy		
Public building	61 %		
<b>3.1 Carpark Ventilation</b>			N/A  Scoped Out
This credit was scoped out		No Carpark in Scope	
<b>3.2 Hot Water - Non-Residential</b>			100%

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Score Contribution	This credit contributes 4.5% towards the category score.
Criteria	What is the % reduction in annual energy consumption (gas and electricity) of the hot water system against the benchmark?
Output	Reference
Public building	36,000 MJ
Output	Proposed
Public building	32,400 MJ
Output	Improvement
Public building	9 %
<b>3.7 Internal Lighting - Non-Residential</b>	100%
Score Contribution	This credit contributes 9.1% 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 ?
Public building	Yes
<b>4.1 Combined Heat and Power (cogeneration / trigeneration)</b>	N/A  Scoped Out
No cogeneration or trigeneration system in use.	
This credit was scoped out	No cogeneration or trigeneration system in use.
<b>4.2 Renewable Energy Systems - Solar</b>	100%
Score Contribution	This credit contributes 4.5% 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
Public building	129,002 kWh
Output	% of Building's Energy
Public building	93 %
<b>4.4 Renewable Energy Systems - Other</b>	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.

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**IEQ Overall contribution 16.5%**

		<b>Minimum required 50%</b>	<b>53%</b>	<b>✔ Pass</b>
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<b>1.4 Daylight Access - Non-Residential</b>		50%	✔ Achieved
--	--	-----	------------

Score Contribution	This credit contributes 35.3% towards the category score.
Criteria	What % of the nominated floor area has at least 2% daylight factor?
Question	Percentage Achieved?
Public building	50 %

<b>2.3 Ventilation - Non-Residential</b>		50%	✔ Achieved
--	--	-----	------------

Score Contribution	This credit contributes 35.3% towards the category score.
Criteria	What % of the regular use areas are effectively naturally ventilated?
Question	Percentage Achieved?
Public building	-

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?
Public building	40 %

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Criteria	What percentage of regular use areas in tenancies have ceiling fans designed to achieve, to monitor and control the temperature of the space?
Question	Percentage Achieved?
Public building	0 %

<b>3.4 Thermal comfort - Shading - Non-Residential</b>		66%	
--	--	-----	--

Score Contribution	This credit contributes 17.6% towards the category score.
Criteria	What percentage of east, north and west glazing to regular use areas is effectively shaded?
Question	Percentage Achieved?
Public building	50 %

<b>3.5 Thermal Comfort - Ceiling Fans - Non-Residential</b>		0%	
---	--	----	--

Score Contribution	This credit contributes 5.9% towards the category score.
Criteria	What percentage of regular use areas in tenancies have ceiling fans?
Question	Percentage Achieved?
Public building	-

<b>4.1 Air Quality - Non-Residential</b>		100%	
--	--	------	--

Score Contribution	This credit contributes 5.9% towards the category score.
--------------------	--

Criteria	Do all paints, sealants and adhesives meet the maximum total indoor pollutant emission limits?
Question	Criteria Achieved ?
Public building	Yes
Criteria	Does all carpet meet the maximum total indoor pollutant emission limits?
Question	Criteria Achieved ?
Public building	Yes
Criteria	Does all engineered wood meet the maximum total indoor pollutant emission limits?
Question	Criteria Achieved ?
Public building	Yes

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**Transport Overall contribution 9.0%**

	0%
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**1.4 Bicycle Parking - Non-Residential** 0%

Score Contribution	This credit contributes 22.2% 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 ?
Public building	No
Question	Bicycle Spaces Provided ?
Public building	-

**1.5 Bicycle Parking - Non-Residential Visitor** 0%

Score Contribution	This credit contributes 11.1% 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 ?
Public building	No
Question	Bicycle Spaces Provided ?
Public building	-

**1.6 End of Trip Facilities - Non-Residential** 0%  Disabled

Credit 1.4 must be complete first.

This credit is disabled

**2.1 Electric Vehicle Infrastructure** 0%

Score Contribution	This credit contributes 22.2% towards the category score.
Criteria	Are facilities provided for the charging of electric vehicles?
Question	Criteria Achieved ?
Project	No

**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 22.2% 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

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**Waste & Resource Recovery Overall contribution 5.5%**

		66%
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<b>1.1 Construction Waste - Building Re-Use</b>		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	
<b>2.1 Operational Waste - Food &amp; Garden Waste</b>		100%
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	Yes	
<b>2.2 Operational Waste - Convenience of Recycling</b>		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	

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**Urban Ecology Overall contribution 5.5%**

		12%
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<b>1.1 Communal Spaces</b>		100%
----------------------------	--	------

Score Contribution	This credit contributes 12.5% towards the category score.	
Criteria	Is there at least the following amount of common space measured in square meters : * 1m <sup>2</sup> for each of the first 50 occupants * Additional 0.5m <sup>2</sup> for each occupant between 51 and 250 * Additional 0.25m <sup>2</sup> for each occupant above 251?	
Question	Common space provided	
Public building	317 m <sup>2</sup>	
Output	Minimum Common Space Required	
Public building	317 m <sup>2</sup>	

<b>2.1 Vegetation</b>		0%
-----------------------	--	----

Score Contribution	This credit contributes 50% 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		

<b>2.2 Green Roofs</b>		0%
------------------------	--	----

Score Contribution	This credit contributes 12.5% towards the category score.	
Criteria	Does the development incorporate a green roof?	
Question	Criteria Achieved ?	
Project	No	

<b>2.3 Green Walls and Facades</b>		0%
------------------------------------	--	----

Score Contribution	This credit contributes 12.5% towards the category score.	
Criteria	Does the development incorporate a green wall or green façade?	
Question	Criteria Achieved ?	
Project	No	

<b>3.2 Food Production - Non-Residential</b>		0%
--	--	----

Score Contribution	This credit contributes 12.5% towards the category score.	
Criteria	What area of space per occupant is dedicated to food production?	
Question	Food Production Area	
Public building	-	
Output	Min Food Production Area	
Public building	180 m <sup>2</sup>	

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**Innovation Overall contribution 9.0%**

	0%
--	----

<b>1.1 Innovation</b>	0%
-----------------------	----

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

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### 8.3 APPENDIX C: PRELIMINARY SECTION J ASSESSMENT

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# Section J Compliance Report – J1V3 Assessment

Project Name:	Wheelers Hill Campus 74-82 Jells Rd, Wheelers Hill
Job Number:	9647
Date:	21/11/2025
Revision	01

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Revision	Issue Date	Document Control	
01	21/11/2025	Prepared by: Rishitha Baddepudi	Reviewed by: Kevin Xiao

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## 1 EXECUTIVE SUMMARY

The following report has been prepared to demonstrate compliance of the proposed school development at Wheelers Hill Campus 74-82 Jells Rd, Wheelers Hill with Section J of the NCC 2022 (Volume 1). The project falls in Climate Zone 6.

Section J4 has been assessed using J1V3 verification method of assessment, while sections J5-J9 have been assessed using the Deemed-to-Satisfy method assessment.

Building/Area	NCC Class	Verification Method
School	Class 9B	J1V3 Verification Method – J1 Deemed-to-Satisfy (DtS) – J5-J9

## 2 INTRODUCTION

Part J4 of the NCC 2022 (Volume 1) has been assessed using J1V3 verification method. This method of assessment allows the benefits of the passive thermal design attributes of the development to be used to determine the most energy efficient and aesthetically pleasing glazing to be selected.

The assessment requires a reference case building to be modelled, based on NCC 2022 Section J Deemed-to-Satisfy (DtS) provisions, which the proposed building is then compared against (with the proposed glazing and insulation) to determine the comparative difference in energy consumption of the two models.

As per the NCC 2022, verification using a reference building:

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- (a) For a Class 3, 5, 6, 7, 8 or 9 building or common area of a Class 2 building, compliance with J1P1 is verified when—
    - (i) it is determined that the annual greenhouse gas emissions of the proposed building are not more than the annual greenhouse gas emissions of a reference building when—
      - (A) the proposed building is modelled with the proposed services; and
      - (B) the proposed building is modelled with the same services as the reference building; and
    - (ii) in the proposed building, a thermal comfort level of between a Predicted Mean Vote of -1 to +1 is achieved across not less than 95% of the floor area of all occupied zones for not less than 98% of the annual hours of operation of the building; and
    - (iii) the building complies with the additional requirements in Specification 33.
  - (b) The annual greenhouse gas emissions of the proposed building may be offset by—
    - (i) renewable energy generated and used on site; and
    - (ii) another process such as reclaimed energy, used on site.
  - (c) The calculation method used for (a) and (b) must comply with—
    - (i) ANSI/ASHRAE Standard 140; and
    - (ii) Specification 34.

Results from the J1V3 dynamic thermal and energy modelling are detailed below. The proposed building when modelled with the DtS services:

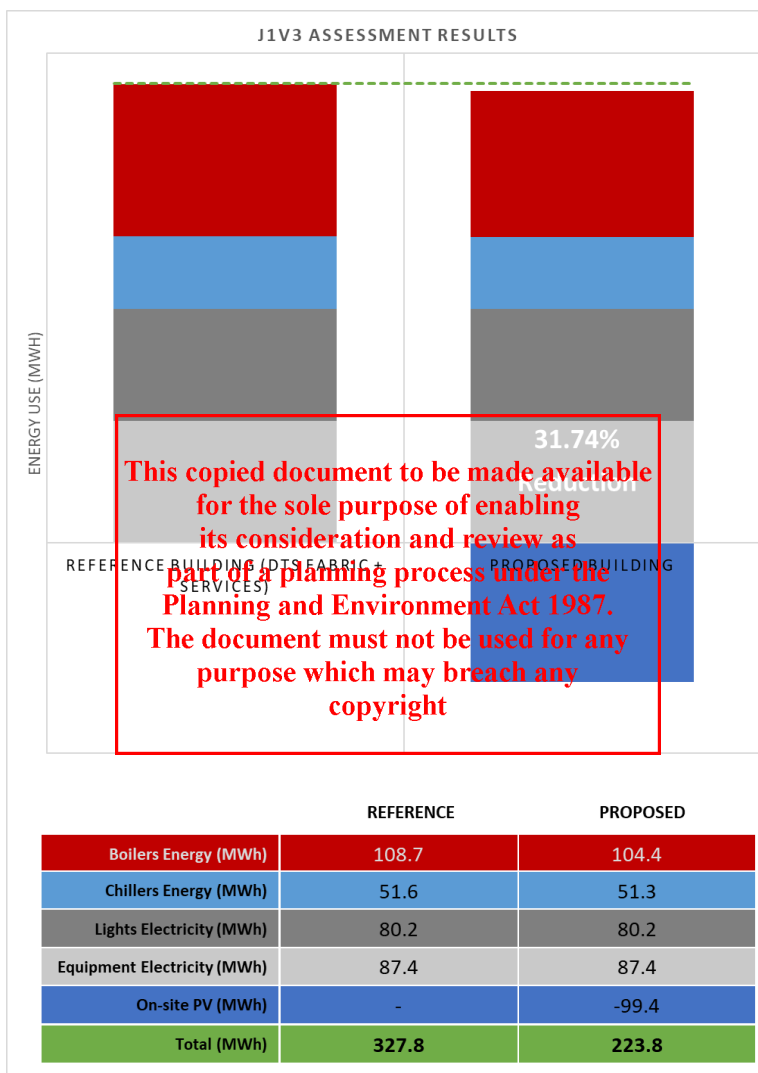
- (a) Consumed less energy and therefore had lower annual greenhouse gas emissions than the reference building, as well as meeting thermal comfort and Specification 33 requirements;
- (b) Does not require offset from renewable or reclaimed energy; and
- (c) Was calculated in accordance with ANSI/ASHRAE Standard 140 and Specification 34

As the assessment meets all requirements of verification method J1V3, **compliance has been confirmed.**

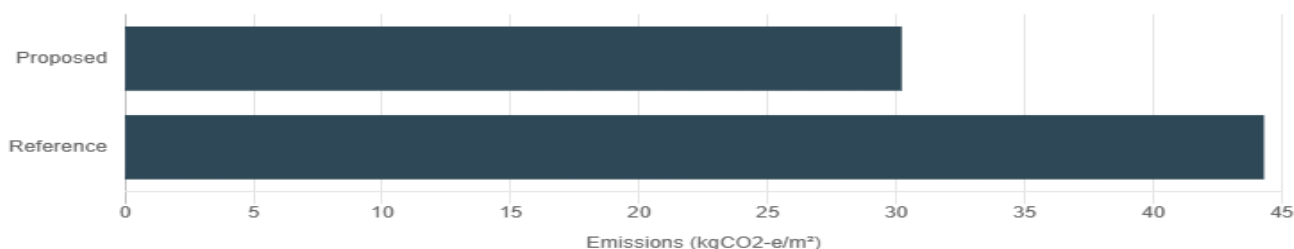
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For the purpose of this assessment, it is conservatively assumed that the HVAC equipment performs at the minimum DtS performance efficiencies.

Compliance is subject to confirmation from the contractor that all as-installed details pertaining to the thermal performance and energy efficiency of the building are within the performance requirements as detailed in this report. It is the responsibility of the contractor, architect and building surveyor to ensure the final construction incorporates a compliant solution.



**Building Emissions:** To meet the acceptance criteria, annual Supplied Energy emissions must be less than 44.25 kgCO<sub>2</sub>-e/m<sup>2</sup>. Based on a treated floor area of 7445.22 m<sup>2</sup>, the simulated building achieved 30.21 kgCO<sub>2</sub>-e/m<sup>2</sup>, meeting the acceptance criteria.



## 2.1 SCOPE OF THE ASSESSMENT

The scope and method of the assessment is as follows:

NCC Reference	Description / Notes
J4 Building Fabric	Compliance is displayed through J1V3 modelling. The building fabric and glazing requirements are detailed within this report.
J5 Building Sealing	The requirements within Part J5 do not affect the J1V3 thermal modelling parameters. Compliance requirements have been reported separately within this document.
J6 Air conditioning and ventilation systems	The requirements of Part J6 will be assessed against the DtS provisions and a report demonstrating compliance will be appended to this report as an appendix.
J7 Artificial lighting and power	The requirements of Part J7 will be assessed against the DtS provisions and a report demonstrating compliance will be appended to this report as an appendix.
J8 Heated Water Supply and Swimming Pool and Spa Pool Plant	A heated water supply system for food preparation and sanitary purposes must be designed and installed in accordance with Part B2 of NCC Volume Three – Plumbing Code of Australia.
J9 Facilities for energy monitoring and on-site distributed energy resources	Energy metering facility will be provided for each building tenant.

## 2.2 SOURCES OF INFORMATION

This assessment has used the following sources of information:

- Architectural drawings issued by DesignInc, dated 16 Oct 2025
- National Construction Code - NCC-BCA 2022 (Volume 1).
- Australian Building Codes Boards (ABCB) facade calculator.

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## 2.3 LIMITATIONS

This assessment has been based on and limited to the sources and information detailed above and has only addressed minimum compliance with the regulations specified. The report does not provide any advice on achieving environmental best practice or optimising the design for energy efficiency or cost. Any alterations to building form, fabric or services will require approval by this office and potentially additional modelling in order to display J1V3 compliance.

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## 2.4 J1V3 ASSESSMENT

### 2.4.1 Project Description

The applicable components of the proposed building are classified as Class 9B.

### 2.4.2 Climate Zone

The project is located in Climate Zone 6.

### 2.4.3 Assessment Scope

The scope of this report is to provide a compliance assessment of the Wheelers Hill Campus 74-82 Jells Rd, Wheelers Hill development, with Part J4 of the NCC-BCA 2022 (Volume 1). Compliance via J1V3 Verification using a reference building has been assessed.

This building lies within climate zone 6, and the assessment has been carried out on this basis.

### 2.4.4 Simulation Software

The building has been modelled using EnergyPlus engine version 22.2 which complies with the ABCB 'Protocol for Building Energy Analysis Software for Class 3, 5, 6, 7, 8 and 9 Buildings'. It is an analysis software tested in accordance with ASHRAE Standard 140-2001 using the International Energy Agency BESTEST.

### 2.4.5 Building Orientation

Accurate building orientation was confirmed using online map data. This allows verification of the north point direction on the architectural drawings so that precise facade orientation information can be entered into the façade calculator and modelling inputs.

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## 3 SECTION J COMPLIANCE REQUIREMENTS

The proposed building information below has been taken from current architectural drawings. Performance parameters noted for the proposed building below must be included within construction documentation to achieve J1V3 compliance.

### 3.1 SECTION J4: BUILDING FABRIC

Thermal insulation must be installed to create a thermal envelope surrounding the conditioned spaces to separate them from adjacent external or unconditioned areas. All the insulation must be installed in accordance with NCC-BCA 2022 (Volume 1) Section J clause J4D3 as follows.

#### 3.1.1 Thermal Construction – General

- 1) Where required, insulation must comply with AS/NZS 4859.1 and be installed so that it:
  - (a) Abuts or overlaps adjoining insulation other than at supporting members such as studs, noggins, joists, furring channels and the like where the insulation must be against the member; and
  - (b) Forms a continuous barrier with ceilings, walls, bulkheads, floors or the like that inherently contribute to the thermal barrier; and
  - (c) Does not affect the safe or effective operation of a service or fitting.
- 2) Where required, reflective insulation must be installed with:
  - (a) The necessary airspace to achieve the required R-Value between a reflective side of the reflective insulation and a building lining or cladding; and
  - (b) The reflective insulation closely fitted against any penetration, door or window opening; and
  - (c) The reflective insulation adequately supported by framing members; and
  - (d) Each adjoining sheet of roll membrane being:
    - i. Overlapped not less than 50 mm; or
    - ii. Taped together.
- 3) Where required, bulk insulation must be installed so that:
  - (a) It maintains its position and thickness, other than where it is compressed between cladding and supporting members, water pipes, electrical cabling or the like; and
  - (b) In a ceiling, where there is no bulk insulation or reflective insulation in the wall beneath, it overlaps the wall by not less than 50 mm.
- 4) Roof, ceiling, wall and floor materials, and associated surfaces are deemed to have the thermal properties listed in Specification 36.
- 5) The required Total R-Value and Total System U-Value, including allowance for thermal bridging, must be—
  - (a) calculated in accordance with AS/NZS 4859.2 for a roof or floor; or
  - (b) determined in accordance with Specification 37 for wall-glazing construction; or
  - (c) determined in accordance with Specification 39 or Section 3.5 of CIBSE Guide A for soil or sub-floor spaces.

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### 3.1.2 Proposed Building Fabric and Insulation

Building Element	Thermal Insulation/Construction Requirement	Minimum Total Construction R-value
External Walls (Part of the thermal envelope)	Minimum added insulation: <b>R2.5</b> Refer to Appendix E – Part J4D6: Walls – Proposed Building	<b>R1.4</b> Total wall system (Considering thermal bridging)
Internal Walls (Part of the thermal envelope)	Minimum added insulation: <b>R2.5</b> Refer to Appendix E – Part J4D6: Walls – Proposed Building	<b>R1.4</b> Total wall system (Considering thermal bridging)
Internal Partitions	No added insulation required Refer to Appendix E – Part J4D6: Walls – Proposed Building	<b>R0.4</b> Total wall system (Considering thermal bridging)
Roof	Minimum added insulation of <b>R4.0</b> See Appendix G – Part J4D4: Roof and Ceiling Insulation for required insulation locations.	<b>R3.2</b> (Maximum external surface solar absorptance of 0.45)
Exposed Ceiling	Minimum added insulation of <b>R4.0</b> See Appendix C – Part J4D4: Roof and Ceiling Insulation for required insulation locations.	<b>R3.2</b> (Maximum external surface solar absorptance of 0.45)
Floors	Concrete slab on ground:  No added insulation See Appendix F – Part J4D7: Floor Insulation for required insulation locations.	<b>R2.0</b>
	Suspended floor above unconditioned and below exposed spaces:  Minimum added insulation of <b>R2.0</b> See Appendix F – Part J4D7: Floor Insulation for required insulation locations.	<b>R2.0</b>

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### 3.1.3 Proposed Glazing

The window and glazing types proposed and modelled in the J1V3 assessment are as per the facade specification with AFRC whole window system thermal performance specifications as follows:

Windows/Glazed Doors Location	Whole Window System Performance	
	Maximum U-value	SHGC
External Glazing	2.8	0.30 ± 10%

If alternative glazing is to be used, please provide thermal performance information to NJM prior to finalising the assessment for construction. The proposed building must be assessed with the proposed glazing to confirm that it results in a compliant solution.

All glazing or window performance parameters refer to the AFRC whole of window performance, including the effect of the frame and the glass.

#### **Glazing Disclaimer:**

The currently assessed window and glazing specifications detailed above are performance-based nominations only. It is the architect and contractor’s responsibility to ensure that the final product selections comply with these performance criteria.

The contractor must engage a façade specialist or the window supplier to provide AFRC testing data to confirm that the window performance criteria noted above are satisfied for all external glazed elements.

Our advice relating to glazing selection is performance based. The performance criteria considered are those which affect NCC-BCA Section J compliance, i.e. U-value and SHGC only. The ESD performance requirements provided should be presented to a manufacturer along with installation details and details of other performance requirements (e.g. structural, acoustic) to determine a suitable glazing specification.

### 3.1.4 Proposed Floors in Contact with Ground

The thermal performance requirements for all floors (or floor area where works are being done) that form part of the building envelope are detailed below. Based on J4D7(2), in climate zone 6, a slab-on-ground that does not have in-slab heating or cooling system is considered to achieve a Total R-Value of R2.0.

Building Element	Construction	NCC Requirement (Total R-value)	Minimum Added Insulation (R-value)
Ground Floor	Concrete slab on ground	R2.0	NIL

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### 3.2 SECTION J5: BUILDING SEALING

Building sealing requirements do not affect the J1V3 modelling inputs. Part J5 requirements relevant to the currently proposed design are outlined below and must be demonstrated by the contractor.

#### Windows and Doors

All edges of external windows should be fitted with a seal to restrict air infiltration.

External swing doors (except fire and smoke doors) must be fitted with a draft protection device on the bottom edge and seals to restrict air infiltration on the other three edges. For all other edges of openable doors this can be a foam or rubber compression strip, fibrous seal or the like.

Entrance doors that do not lead into an airlock must be self-closing.

#### Exhaust Fans

All miscellaneous exhaust fans must be fitted with a self-closing damper or the like. For this development compliance should be covered by the mechanical engineer's design and signoff.

#### Construction of Roofs, Walls and Floors

Roofs, ceilings, walls, floors, and any opening such as a window frame, door frame roof light frame or the like located on the external fabric must be constructed to minimise air leakage. Therefore, they must be either:

- Enclosed by internal lining systems that are close fitting at ceiling, wall and floor junctions; or
- Sealed by caulking, skirting, architraves, cornices or the like.

### 3.3 SECTION J6: AIR-CONDITIONING AND VENTILATION SYSTEMS

NJM will provide a design compliant with the Section J6 requirements. A report to the building surveyor detailing our calculations will be appended to this report as an appendix.

### 3.4 SECTION J7: ARTIFICIAL LIGHTING AND POWER

NJM will provide a design compliant with the Section J7 requirements. A report to the building surveyor detailing our calculations will be appended to this report as an appendix.

### 3.5 SECTION J8: HEATED WATER SUPPLY AND SWIMMING POOL AND SPA POOL PLANT

A heated water supply system for food preparation and sanitary purposes must be designed and installed in accordance with Part B2 of NCC Volume Three – Plumbing Code of Australia.

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### 3.6 SECTION J9: FACILITIES FOR ENERGY MONITORING

#### 3.6.1 J9D3: Facilities for energy monitoring

- (a) A building or sole-occupancy unit with a floor area of more than 500m<sup>2</sup> must have an energy meter configured to record the time-of-use consumption of gas and electricity.
- (b) A building with a floor area of more than 2,500m<sup>2</sup> must have energy meters configured to enable individual time-of-use energy consumption data recording, in accordance with (c), of the energy consumption of –
  - (i) air-conditioning plant including, where appropriate, heating plant, cooling plant and air handling fans; and
  - (ii) artificial lighting; and
  - (iii) appliance power; and
  - (iv) central hot water supply; and
  - (v) internal transport devices including lifts, escalators, and travelators where there is more than one serving the building; and
  - (vi) on-site renewable energy equipment; and
  - (vii) on site battery systems; and
  - (viii) other ancillary plant.
- (c) Energy meters required by (b) be interlinked by a communication system that collates the time-of-use energy consumption data to a single interface monitoring system where it can be stored, analysed, and reviewed.
- (d) The provisions of (b) do not apply to a Class 2 building where the total floor area of the common areas is less than 500 sqm; or individual sole-occupancy units with a floor area of less than 2500 sqm.

#### 3.6.2 J9D4: Facilities for electric vehicle charging equipment.

- (a) Subject to (b), a carpark associated with a Class 2, 3, 5, 6, 7b, 8 or 9 building must be provided with electrical distribution boards dedicated to electric vehicle charging—
  - (i) in accordance with Table J9D4 in each storey of the carpark; and
  - (ii) labelled to indicate use for electric vehicle charging equipment.
- (b) Electrical distribution boards dedicated to serving electric vehicle charging in a carpark must—
  - (i) be fitted with a charging control system with the ability to manage and schedule charging of electric vehicles in response to total building demand; and
  - (ii) when associated with a Class 5 to 9 building, have capacity for each circuit to support an electric vehicle charger able to deliver a minimum of 12 kWh from 9:00 am to 5:00 pm daily; and
  - (iii) be sized to support the future installation of a 7 kW (32 A) type 2 electric vehicle charger in—
    - A) 20% of car parking spaces associated with a Class 3, 7b, 8 or 9 building; and
  - (iv) contain space of at least 36 mm width of DIN rail per outgoing circuit for individual sub-circuit electricity metering to record electricity use of electric vehicle charging equipment; and
  - (v) be labelled to indicate the use of the space required by (f) is for the future installation of metering equipment.

**J9D4 does not apply to a stand-alone Class 7a building.**

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### 3.6.3 J9D5: Facilities for solar photovoltaic and battery systems

- (a) The main electrical switchboard of a building must—
- (i) contain at least two empty three-phase circuit breaker slots and four DIN rail spaces labelled to indicate the use of each space for—
    - A) a solar photovoltaic system\*<sup>\*</sup>; and
    - B) a battery system<sup>\*\*</sup>; and
  - (ii) be sized to accommodate the installation of solar photovoltaic panels producing their maximum electrical output on at least 20% of the building roof area\* <sup>\*\*</sup>.
- (b) At least 20% of the roof area of a building must be left clear for the installation of solar photovoltaic panels, except for buildings—
- (i) with installed solar photovoltaic panels on—
    - A) at least 20% of the roof area; or
    - B) an equivalent generation capacity elsewhere on-site; or
  - (ii) where 100% of the roof area is shaded for more than 70% of daylight hours; or
  - (iii) with a roof area of not more than 55 m<sup>2</sup>; or
  - (iv) where more than 50% of the roof area is used as a terrace, carpark, roof garden, roof light or the like.

The requirements marked with ‘\*’ do not apply to a building with solar photovoltaic panels installed on at least 20% of the roof area.

The requirements marked with ‘\*\*’ do not apply to a building with battery systems installed.

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## 4 J1V3 MODELLING

The below table details the modelling input parameters used as the basis of this assessment for both the reference and proposed buildings.

Item	NCC 2022 Reference Building	Proposed Building
Climate Data	AUS_VIC_Scoresby.Res.Inst.958670_TMYx.2007-2021	As per reference building.
Operating Conditions	As per NCC 2022 Specification 34: Heating 24°C in conditioned areas	As per reference building.
	As per NCC 2022 Specification 34: Cooling 24°C in conditioned areas	As per reference building.
Plant Operating Profile	Operation schedule as per NCC 2022 Specification 35.	As per reference building.
Internal Gains - People	<p>Internal gains from people as per NCC 2022 Table S35C2n:</p> <ul style="list-style-type: none"> <li>Sensible heat gain: 55 W/person</li> <li>Latent heat gain: 85 W/person</li> </ul> <p>Maximum occupancy for each space as per NCC 2022 Table D2D18:</p> <ul style="list-style-type: none"> <li>Office: 10 m<sup>2</sup>/person</li> <li>Childcare Room: 4 m<sup>2</sup>/person</li> <li>Ancillary spaces (corridors, storage, toilets, stairwells, lift, etc.): no occupancy</li> </ul> <p>Occupancy schedule as per NCC 2022 Specification 35.</p>	As per reference building.
Internal Gains - Lighting	<p>Maximum illumination power density for lighting for each space as per NCC 2022 Table J7D3a:</p> <ul style="list-style-type: none"> <li>Office: 4.5 W/m<sup>2</sup></li> <li>Childcare Room: 4.5 W/m<sup>2</sup></li> <li>Storage/service areas: 1.5 W/m<sup>2</sup></li> <li>Toilets: 3 W/m<sup>2</sup></li> <li>Stairwell: 2 W/m<sup>2</sup></li> <li>Lift car: 3 W/m<sup>2</sup></li> </ul> <p>Operation schedule as per NCC 2022 Specification 35.</p>	As per reference building.
Internal Gains - Equipment	<p>Internal sensible heat gain rate for each space as per NCC 2022 S35C2I:</p> <ul style="list-style-type: none"> <li>Childcare Room: 5 W/m<sup>2</sup></li> <li>Ancillary spaces (corridors, storage, toilets, stairwells, lift, etc.): 0 W/m<sup>2</sup></li> </ul> <p>Operation schedule as per NCC 2022 Specification 35.</p>	As per reference building.

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Item	NCC 2022 Reference Building	Proposed Building
Infiltration Values	As per NCC 2022 Specification 34: <ul style="list-style-type: none"> <li>0.35 air changes per hour (ac/h) in conditioned zones when plant is in operation.</li> <li>0.7 air changes per hour (ac/h) for entire building when plant is not in operation.</li> </ul>	As per reference building.
Natural Ventilation	Natural ventilation is not modelled for non-residential building but outside air assigned as per requirements of AS1668.2-2012.	As per reference building.
External Walls	Refer to Appendix D – Part J4D6: Walls and Glazing – Reference Building for details.	See 3.1.2 Proposed Building Fabric and Insulation
Internal Walls	Refer to Appendix D – Part J4D6: Walls and Glazing – Reference Building for details.	See 3.1.2 Proposed Building Fabric and Insulation
Roof/Ceiling	As per DtS requirements. Total construction R-Value of 3.2 and solar absorptance of 0.45.	See 3.1.2 Proposed Building Fabric and Insulation
Floor	As per DtS requirements. Concrete slab on ground (ground floor) and suspended slab floor above external or non-conditioned spaces (first floor) – Total construction R-Value of 2.0.	See 3.1.2 Proposed Building Fabric and Insulation
External Shading	Shading was incorporated in the reference model and subsequently selected the glazing values for reference calculator	As per reference building.
Glazing	Whole of window performance. Refer to Appendix D – Part J4D6: Walls and Glazing – Reference Building for details.	See 0 Proposed Proposed <i>Glazing</i>
PV	NIL	99 kW

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## 5 MODEL IMAGES

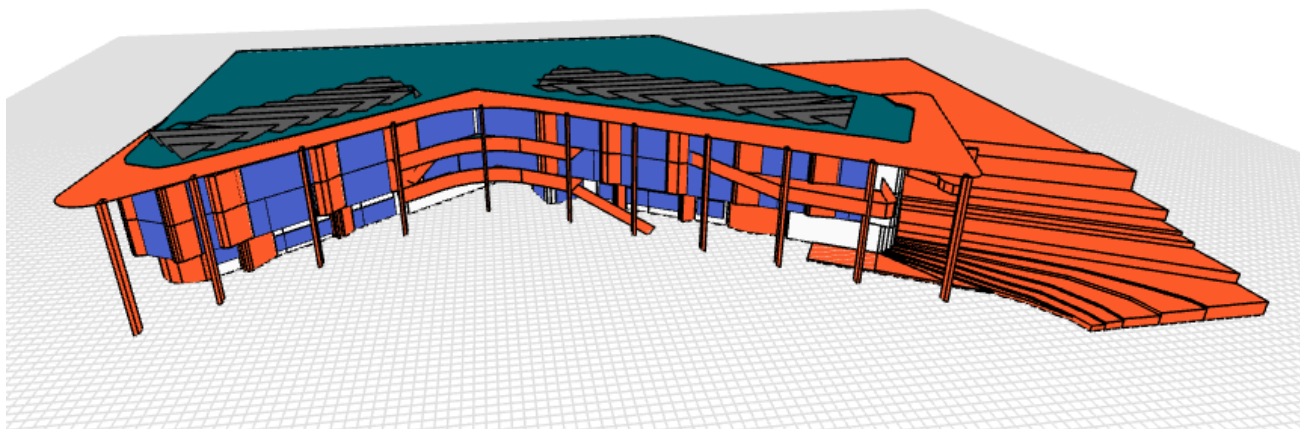


Figure 1: North view.

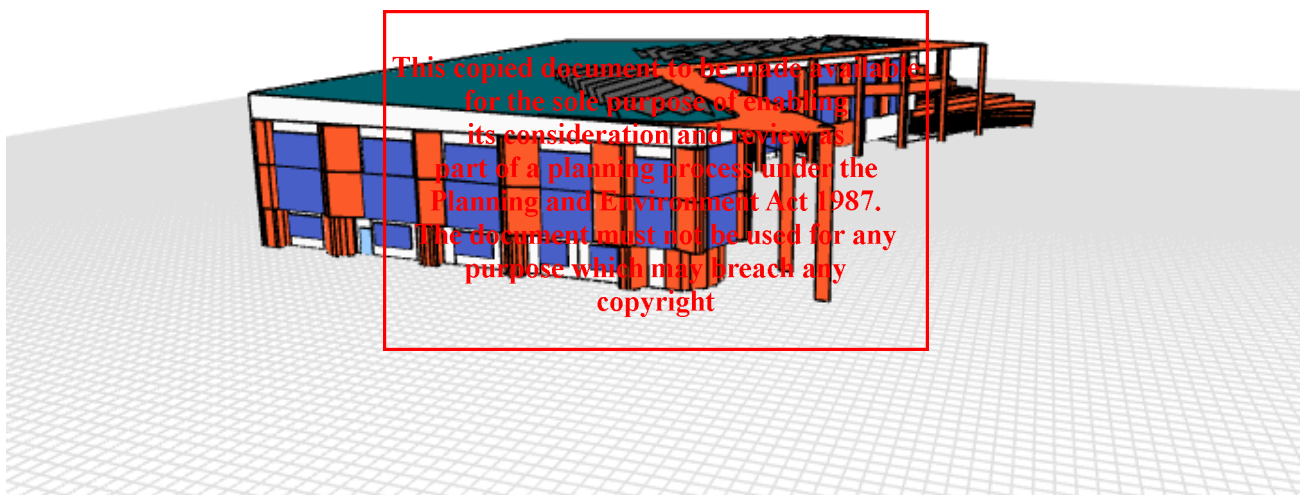


Figure 2: East view.

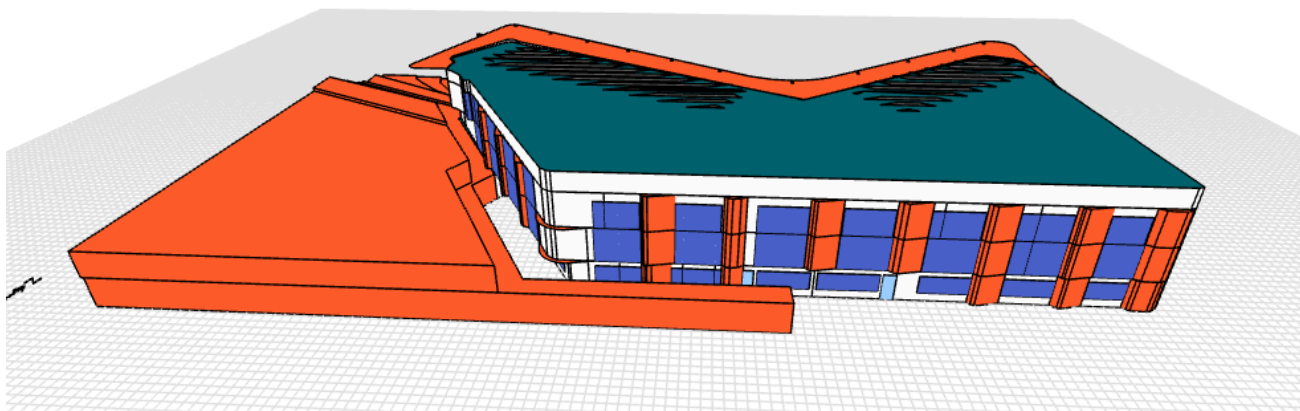


Figure 3: South view.

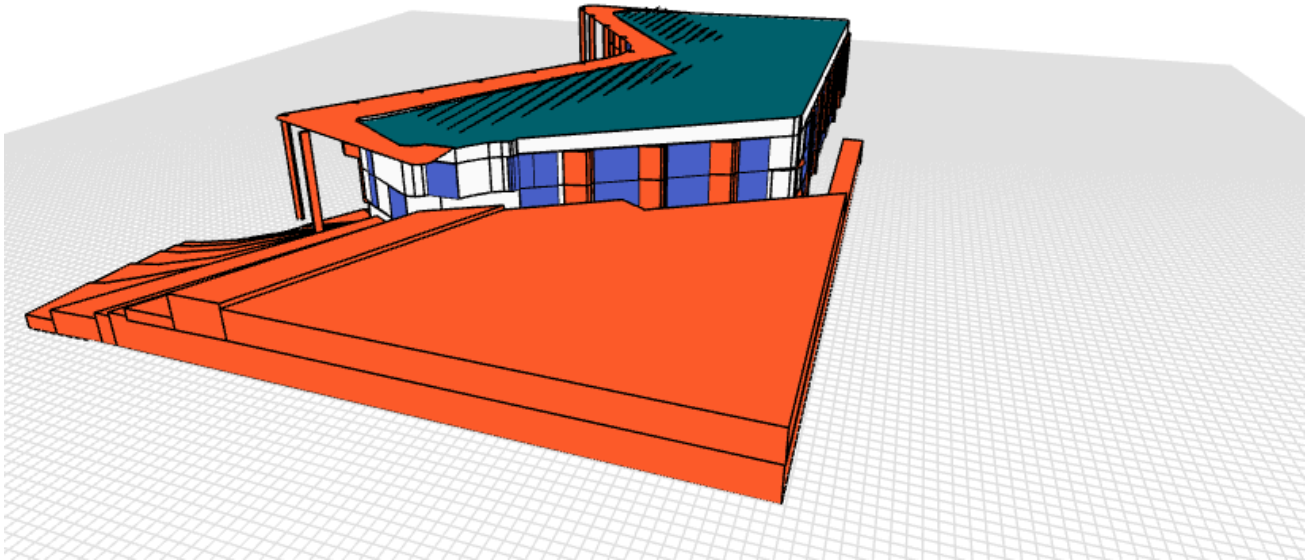


Figure 4: West view.

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## 6 CONCLUSIONS AND RECOMMENDATIONS

Results from the dynamic thermal and energy modelling are shown below for both energy consumption and thermal comfort. Note that it is conservatively assumed that the lighting and HVAC equipment performs at minimum DtS performance efficiencies.

	Heating	Cooling	Lighting	Equipment	On-site Renewable Energy Generation	Total	GHG (kgCO <sub>2</sub> )/m <sup>2</sup>
Annual Energy Use (MWh)							
Reference building with DtS services	108.7	51.6	80.2	87.4	-	327.8	44.25
Proposed building with DtS services	104.4	51.3	80.2	87.4	-99.4	223.8	30.21
					<b>Result</b>	<b>PASS</b>	

Proposed Building Thermal Comfort - Predicted Mean Vote - % Hours in Range		
Applicable Floor Area		>-1.00 to ≤1.00
<b>Weighted Total</b>	<b>School</b>	<b>&gt; 98%</b>

The proposed building when modelled with the DtS services consumed less energy annually and therefore had lower annual greenhouse gas emissions than the reference building without the requirement of offset through renewable energy generation or reclaimed energy.

In addition, the proposed building achieved a thermal comfort level of between a predicted mean vote of -1 and +1 across 95% of the floor area for not less than 98% of the annual hours of operation of the building while also complying with Specification 33 requirements.

The modelling was complete in accordance with ANSI/ASHRAE Standard 140 and Specification 34.

As such, **compliance with J1V3 has been confirmed.**

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## 7 APPENDICES

### 7.1 APPENDIX A – PART J4D2: BUILDING ENVELOPE

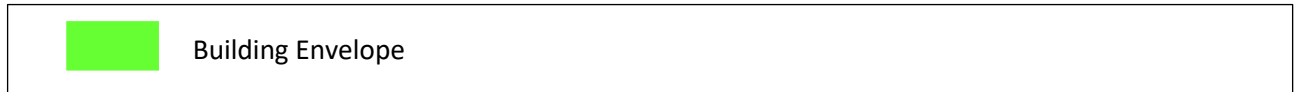


Figure 5: Building Envelope – Lower Ground Floor

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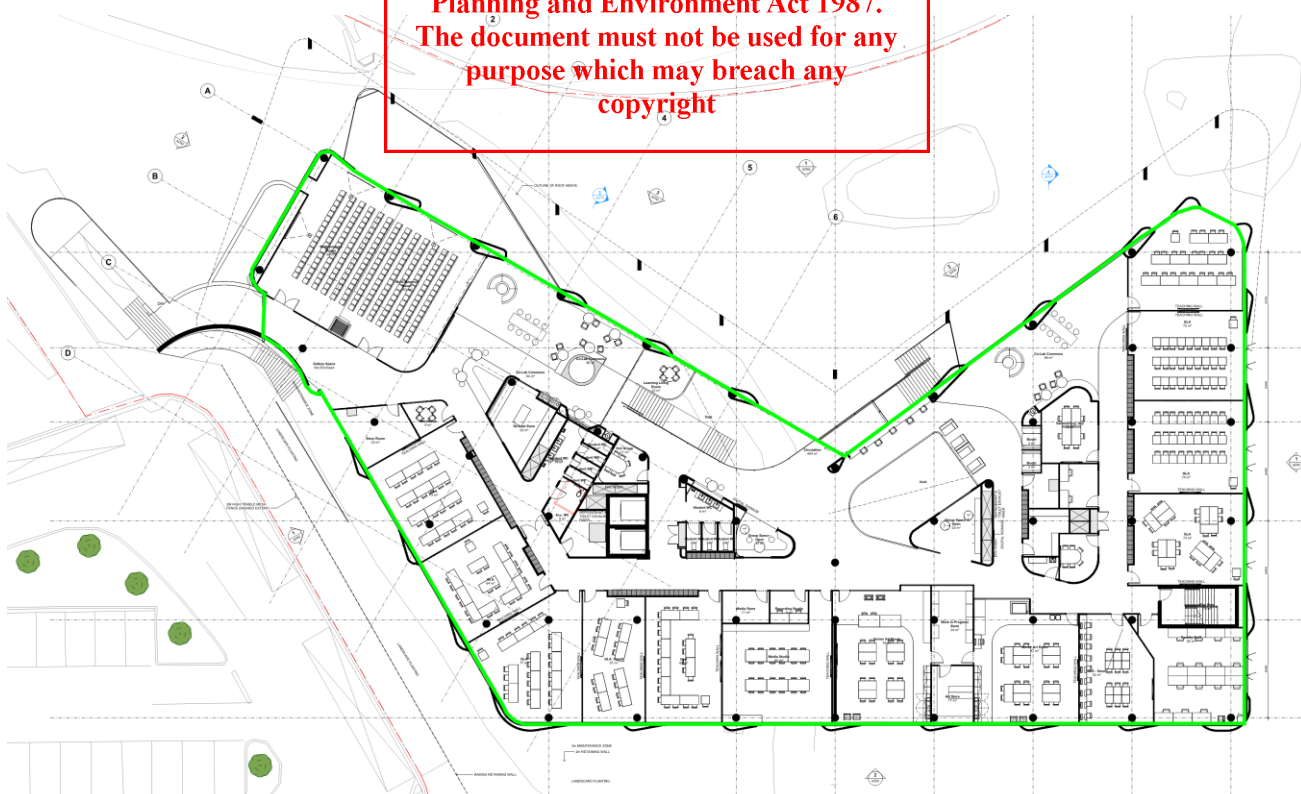


Figure 7: Building Envelope – First Floor

## 7.2 APPENDIX B – PART J4D3: THERMAL CONSTRUCTION REQUIREMENTS

Part J1.2 Thermal Construction Requirements		Compliance	Comments
(a)	Insulation must comply with AS/NZS 4859.1 and be installed appropriately as per this NCC clause.		Architectural specification to comply.
(i)	The insulation must abut or overlap adjoining insulation; or butt against supporting members.		Architectural specification to comply.
(ii)	The insulation must form a continuous barrier with ceiling, walls, bulkheads, floors, or the like.		Architectural drawings to comply.
i(iii)	The insulation must not affect the safe or effective operation of a service fitting.		
(b)	Reflective insulation must be installed with –		
(i)	The necessary airspace to achieve the required R-value; and		Architectural specification to comply.
(ii)	The reflective insulation closely fitted against any penetration, door or window opening; and		Architectural specification to comply.
(iii)	The reflective insulation adequately supported by framing members; and		Architectural specification to comply.
(iv)	Each adjoining sheet of roll membrane being –		
(A)	Overlapped not less than 50mm; or		Architectural specification to comply.
(B)	Taped together		Architectural specification to comply.
(c)	Bulk insulation must be installed so that		
(i)	It maintains its position and thickness, other than where it crosses roof battens, water pipes, electrical cabling, or the like; and		Architectural specification to comply.
(ii)	In a ceiling, where there is no bulk insulation or reflective insulation in the wall beneath, it overlaps the wall not less than 50mm.		Architectural specification to comply.

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### 7.3 APPENDIX C – PART J4D4: ROOF AND CEILING INSULATION



Roof insulation required – Minimum added insulation R4.0

Roof Colour - maximum solar absorptance of 0.45.



Figure 8: Roof Insulation Requirements – Lower Ground Floor

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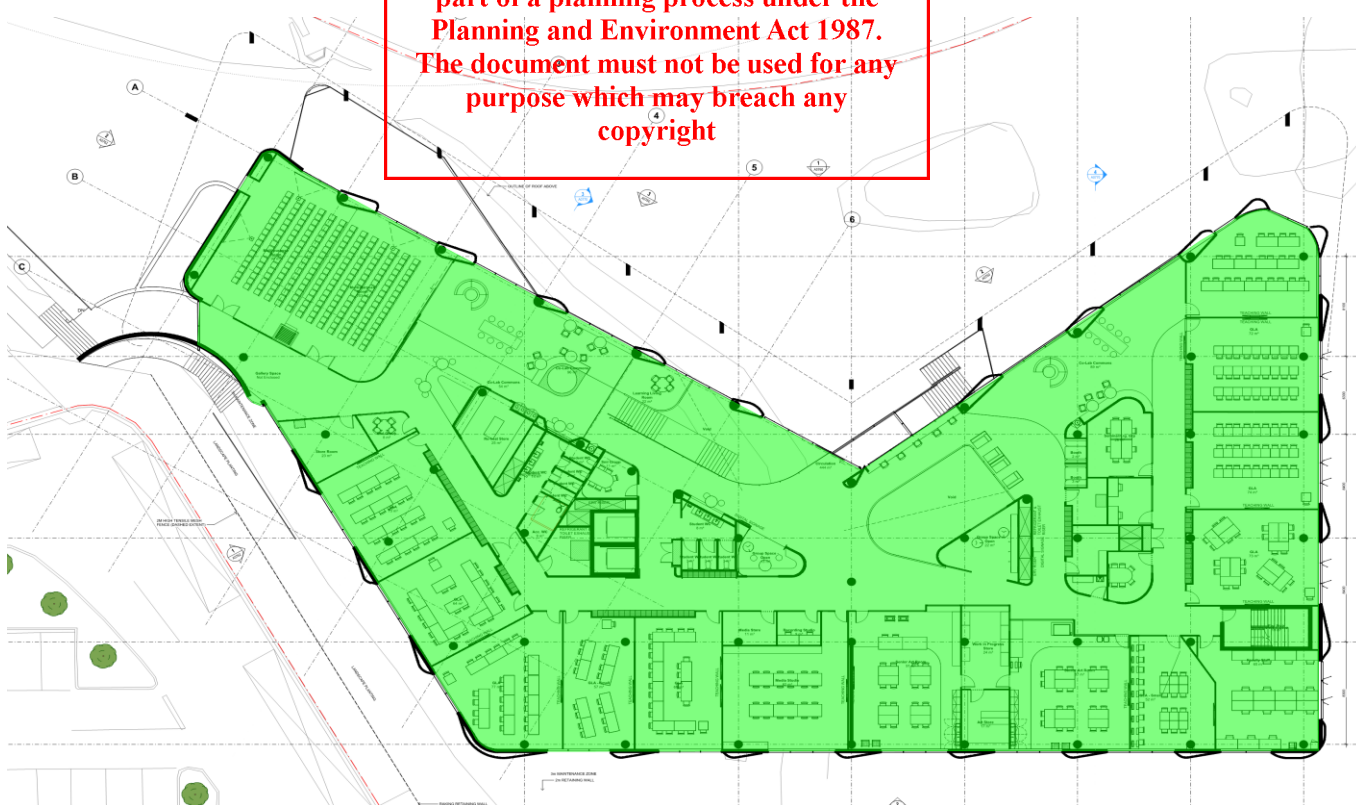


Figure 10: Roof Insulation Requirements – First Floor

## 7.4 APPENDIX D – PART J4D6: WALLS AND GLAZING – REFERENCE BUILDING

Under specification 34 of the NCC 2022, modelling parameters for the reference building must comply with DtS provisions for walls and glazing. Part J4D6 of the NCC outlines the requirements for wall-glazing construction. Elements of wall-glazing construction that are excluded from the façade construction assessed are display glazing<sup>1</sup>, opaque non-glazed openings such as doors, vents, penetrations and shutters.

Simulation inputs for the reference building have been calculated using the ABCB façade calculator, taking into account building geometry, orientation, and the thermal envelope as defined in the 2022 NCC.

The façade calculator provides two methods to achieve compliance:

- Method 1, where each aspect of wall-glazing construction is required to individually meet the applicable Total System U-Value and SHGC for the respective aspect of the building, or
- Method 2, where a single Total System U-Value and AC Value for the whole development must be met.

### Wall and glazing inputs for the reference building achieve compliance under method 2.

Additionally, wall components of a wall-glazing construction must achieve a minimum Total R-Value in accordance with J4D6 (4) and Table J4D6a, as follows:

- Where the wall is less than 80% of the area of the wall-glazing construction, R1.0; or
- Where the wall is 80% or more of the area of the wall-glazing construction in climate zone 6, for a class 3, R2.8 and class 6 building, R1.4

The wall values listed below were used for modelling the reference building.

#### Walls reference building:

Proposed	Title	Class	R-Value m <sup>2</sup> K <sup>o</sup> /W	Solar Abs.	Area m <sup>2</sup>
External	Concept	9B	1.40	0.7	1,443.92
External	Wall 0.4 (Ex)	9B	0.40	0.7	198.20
Reference	Title	Class	R-Value m <sup>2</sup> K <sup>o</sup> /W	Solar Abs.	Area m <sup>2</sup>
External	Concept	9B	1.34	0.6	1,443.92
External	Wall 0.4 (Ex)	9B	1.34	0.6	198.20

#### Windows reference building:

Proposed	Title	Class	U-value	SHGC	Area m <sup>2</sup>
External	Concept	9B	2.80	0.30	1,306.89
Reference	Title	Class	U-value	SHGC	Area m <sup>2</sup>
External	Concept	9B	3.56	0.33	1,306.89

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## 7.5 APPENDIX E – PART J4D6: WALLS – PROPOSED BUILDING

For the proposed building, internal and external walls forming the thermal envelope have been modelled as per section 3.1.2 **Building Fabric and Insulation** of this report.

Calculation of total wall system R-values under the 2022 NCC (Volume 1) considers the effect of thermal bridging, which can decrease the effectiveness of installed insulation. The total construction R-value of each wall system forming part of the building envelope has been calculated using the ABCB 2022 Façade Calculator.

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 Walls insulation Mark-ups.



Figure 11: Walls Insulation Requirements – Lower Ground Floor

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Figure 12: Walls Insulation Requirements – Ground Floor

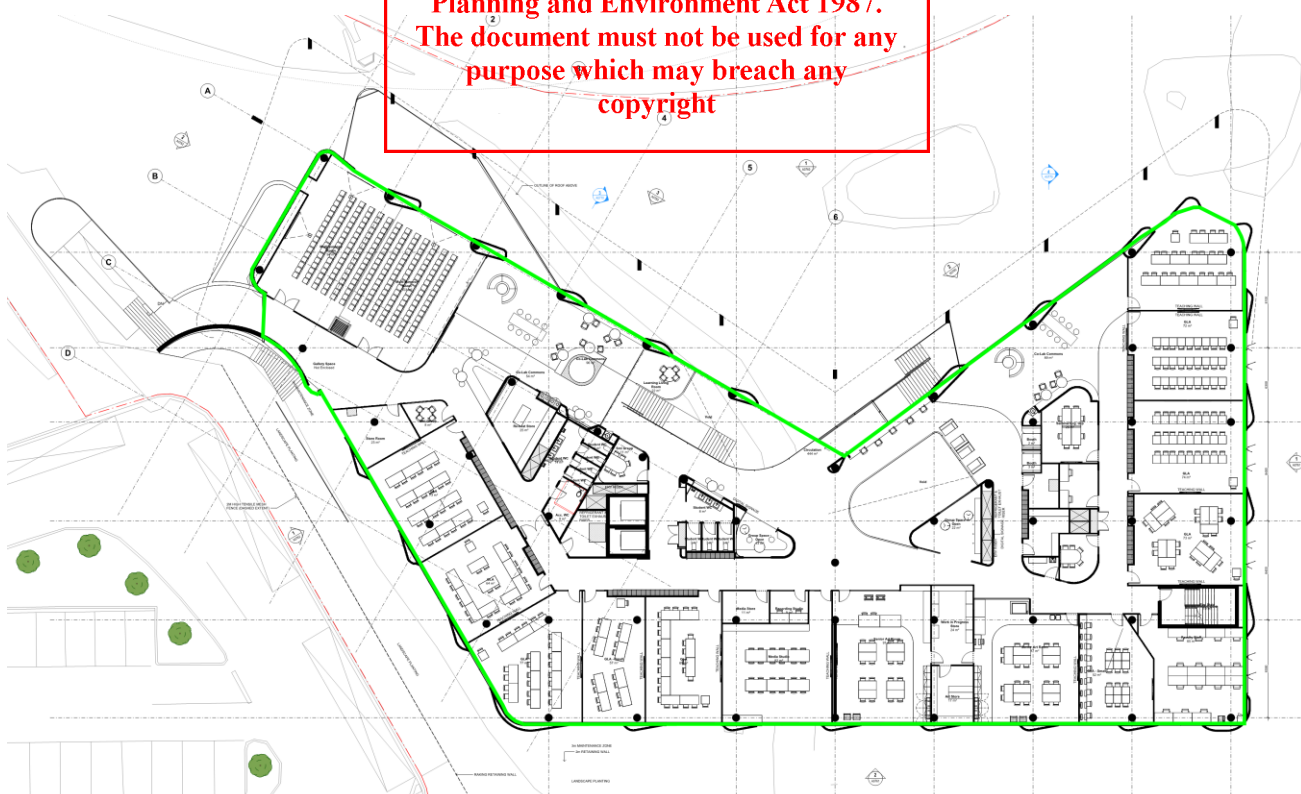


Figure 13: Walls Insulation Requirements – First Floor

## 7.6 APPENDIX F – PART J4D7: FLOOR INSULATION



Floor insulation required – R2.0 minimum added insulation is required.



Figure 34: Floor Insulation Requirements – Lower Ground Floor

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Figure 15: Floor Insulation Requirements – Ground Floor



Figure 16: Floor Insulation Requirements – First Floor

**7.7 APPENDIX G – PART J5: COMPLIANCE CHECKLIST**

Part J5D3 Chimneys and flues		Compliance	Comments
	The chimney or flue of an open solid-fuel burning appliance must be provided with a damper or flap that can be closed to seal the chimney or flue.	N/A	
Part J5D4 Roof lights		Compliance	Comments
(a)	A roof light must be sealed, or capable of being sealed, when serving –		
(i)	a conditioned space; or	N/A	
(ii)	a habitable room in climate zones 4, 5, 6, 7 or 8.	N/A	
(b)	A roof light required by (a) to be sealed, or capable of being sealed, must be constructed with –		
(i)	an imperforate ceiling diffuser or the like installed at the ceiling or internal lining level; or	N/A	
(ii)	a weatherproof seal; or	N/A	
(iii)	a shutter system readily operated either manually, mechanically or electronically by the occupant.	N/A	
Part J5D5 Windows and doors		Compliance	Comments
(a)	A door, openable window or the like must be sealed		
(i)	When forming part of the envelope; or		Architectural drawings to comply.
(ii)	In climate zones 4, 5, 6, 7 or 8.		Architectural drawings to comply.
(a)	A seal to restrict air infiltration must be fitted to each edge of a door, openable window or the like forming part of –		
(i)	the envelope of a conditioned space; or		Architectural drawings to comply.
(ii)	the external fabric of a habitable room or public area in climate zones 4, 5, 6, 7 or 8.		Architectural drawings to comply.
(b)	The requirements of (a) do not apply to –		
(i)	a window complying with AS 2047; or		
(ii)	a fire door or smoke door;		
(iii)	a roller shutter door, roller shutter grille or other security door or device installed only for out-of-hours security.		
(c)	A seal required by (a) –		
(i)	for the bottom edge of an external window door must be a draft protective device; and		Architectural drawings to comply.
(ii)	for the other edges of an external door or the edges of an openable window or other such opening, may be a seal.		Architectural drawings to comply.
(d)	An entrance to a building, if leading to a conditioned space must have an airtight, self-closing door, revolving door or the like, other than –		
(i)	where the conditioned space has a floor area or volume greater than 50 m <sup>2</sup> ; or		
(ii)	where a café, restaurant, open front shop or the like has –		
(A)	a 3 m deep un-conditioned zone between the main entrance, including an open front, and the conditioned space;		
(B)	at all other entrances to the café, restaurant, open front shop or the like, self-closing doors.		
(e)	A loading dock entrance, if leading to a conditioned space, must be fitted with a rapid roller door or the like		
Part J5D6 Exhaust fans		Compliance	Comments
	An exhaust fan must be fitted with a sealing device such as a self-closing damper or the like when serving –		
(a)	a conditioned space; or		
(b)	a habitable room in climate zones 4, 5, 6, 7 or 8		
Part J5D7 Construction of roofs, walls and floors		Compliance	Comments
(a)	Ceilings, walls, floors and any opening such as a window frame, door frame, roof light frame or the like must be constructed to minimise air leakage in accordance with (b) when forming part of –		
(i)	the envelope; or		
(ii)	in climate zones 4, 5, 6, 7 or 8.		
(b)	Construction required by (a) must be –		
(i)	enclosed by internal lining systems that are close fitting at ceiling, wall and floor junctions; or		
(ii)	sealed by caulking, skirting, architraves, cornices or the like.		
(A)	Close fitting architrave, skirting or cornice; or		
(B)	Expanding foam, rubber compressible strip, caulking or the like.		
(c)	The requirement of (a) do not apply to openings, grilles or the like required for smoke hazard management		
Part J5D8 Evaporative coolers		Compliance	Comments
	An evaporative cooler must be fitted with a self-closing damper or the like when serving –		
(a)	a heated space; or		
(b)	in climate zones 4, 5, 6, 7 or 8.		

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