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Sustainable Development Assessment (SDA)

Ascension College – Stage 1

DOCUMENT REVISION

Stage	Revision	Revision Description	Author	Checked by	Revision Date
SD	00	For Review	CB	AG	26.08.2025
SD	00	For Issue	CB	AG	01.09.2025

Company information

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Project Information

Job Number	12744
Job Name	Ascension College – Stage 1
Address	3 Nortons Lane, Wantirna South
Building Class	9b
Client	MSM & Associates
Relevant NCC	NCC 2022, Volume 1
Printed	1/09/2025 4:04 PM

1.0 Table of Contents

2.0 Executive Summary

This Sustainable Development Assessment (SDA), also referred to as an Environmentally Sustainable Design (ESD) Report, has been prepared for Ascension College, 3 Nortons Lane, Wantirna South. The report supports the town planning permit application and outlines the environmental initiatives integrated into the proposed development.

This assessment has been undertaken of the architectural drawings prepared by MSM & Associates which are referenced in Appendix A – Referenced Architectural Documents.

2.1 SDA Assessment Summary

The proposed sustainable design initiatives proposed for the development, these initiatives to be implemented into requirements and documentation.

The analysis for the Sustainability Design Assessment (SDA) has been undertaken in accordance with the Knox City Council's Planning Scheme. The following tools were utilised to assess the proposed development:

- Built Environment Sustainability Scorecard (BESS);

  Scores between 50–70% reflect best practice, while those above 70% are considered excellent. The project must satisfies minimum standards in key areas including Energy, Water, and Indoor Environmental Quality (IEQ).

- STORM assessment tool for stormwater management;
- Table J7D3a of the NCC 2022 BCA Volume 1 Section J;
- NCC 2022 BCA Façade Calculator - Appendix C;
- Green Star Daylight and Views Hand Calculation - Appendix D.

Figure 1 shows the BESS score for this development, which meets the required minimum of 50% overall.

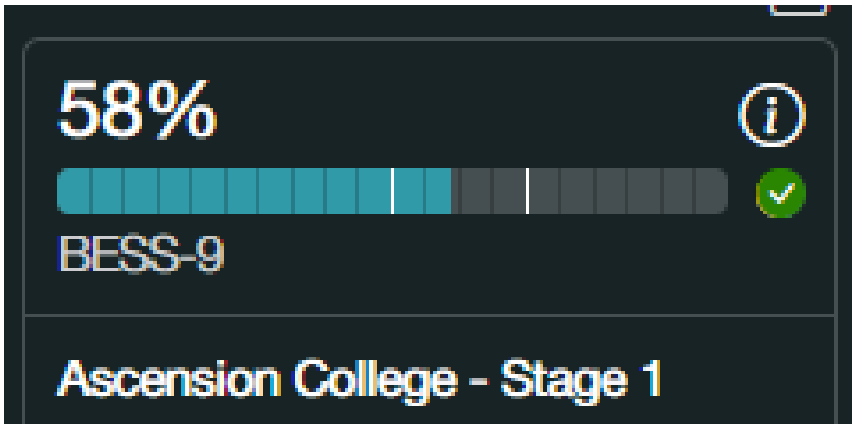


Figure 1: BESS score

2.2 SDA Stakeholders Commitment and Implication

The table below outlines the key sustainability commitments made in this Sustainable Development Assessment (SDA), the practical implications for design and construction, and the relevant stakeholders responsible for ensuring implementation. These commitments align with the objectives of the Knox City Council's Planning Scheme ESD policy and aim to embed sustainability principles throughout the project lifecycle.

Commitment	Implication	Relevant to
	Management	
Façade Assessment	A preliminary facade assessment to be undertaken in accordance with NCC2022 Section J4D6	ESD Consultant
Building Users Guide	Building Users Guide to be produced to help facilitate more sustainable behavior by building occupants	Services
	Integrated Water Management	
Sanitary Fixtures	WELS star rating to be greater than: Showerheads: >=5* kitchen taps: >=6 bathroom taps: >=6 WC: >=4* Urinals >=5* dishwasher: >=5 *RWT connected to Toilets and urinals	Architect Services Engineer
Water efficient landscaping	The developments water resources require to be designed to maximise water resources throughout the development garden areas.	Architect
Rainwater	30kL RWT is proposed, connected to existing nearby downpipes. Serving toilets and irrigation.	Hydraulics
Stormwater	STORM assessment to be conducted and to have a score => 100% STORM	Civil Engineer
	Operational Energy	
Peak Demand in the proposed area of works	All exposed floors and ceilings to achieve 10% improvement in insulation levels over NCC. Walls, and glazing demonstrate meeting the required NCC requirements. Existing water heating system is unchanged, if upgrade or change came up, proposed system to be within one star of the best available. Any new HVAC system CoP & EER to be not less than 85% of the CoP & EER of the most efficient equivalent capacity unit available.	Architect & Services
Lighting	Illumination power density in the area of works to meet the NCC requirements	Services
Electrification	The site is to be all-electric	Services
	Indoor Environmental Quality	
Daylight Access	Minimum 33% of regularly used areas in the proposed area of works are	Architect

Commitment	Implication	Relevant to
	effectively have daylight access	
Ventillation	80% of the regular use areas are to be effectively naturally ventilated	Architect
Glazing	Double Glazing to be used throughout the project All external glazing must meet or exceed the following performance: U≤4.5 & SHGC≤0.40 50% of the glazing facing the east, north and west regular use areas is to be effectively shaded	Architect
Thermal Comfort	Ceiling fans are to be provided to all classrooms and staff areas	Architect/Services
Air Quality	All paints, sealants and adhesives meet the maximum total indoor pollutant emission limits All carpet meets the maximum total indoor pollutant emission limits	Architect
Transport		
Transport	2 employee and 1 visitor bike parking provided for the development with EOT facilities that includes 1 shower and 2 lockers.	Architect
Waste & Resource Recovery		
Operational Waste - Convenience of Recycling	Recycling bins to be provided in all kitchens and wherever general waste is disposed.	Architect/Waste Consultant
Urban Ecology		
Communal Spaces	Availability of around 75 sqm of communal space	Architect
Vegetation	25% of the site is covered with vegetation	Architect

Table 1 – SDA Stakeholders Commitment and Implication

3.0 Site Description

3.1 Location of local government area

The proposed development is in the Victorian local government area of the Knox City Council

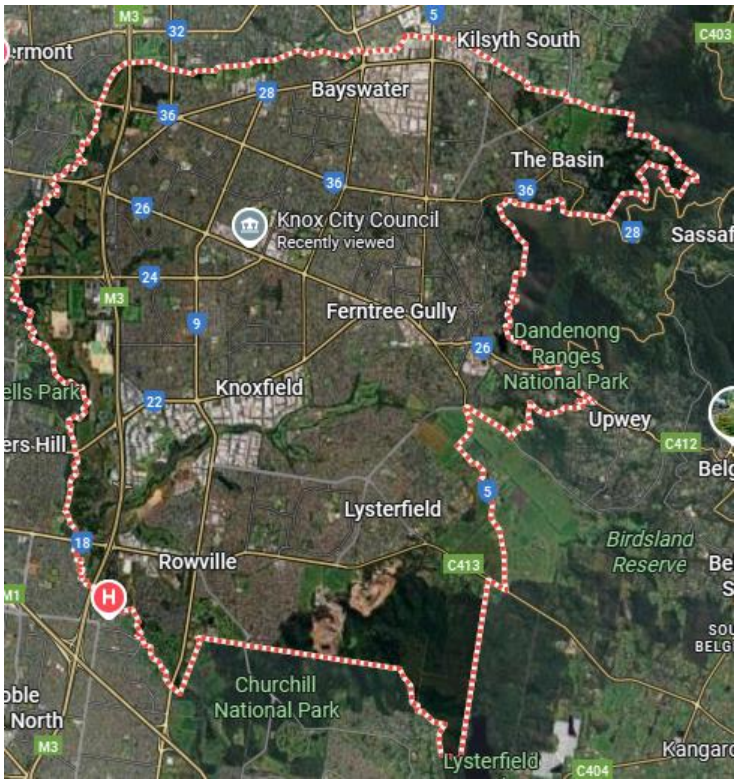


Figure 2 – Council map

The Knox City Council is active in their strategic planning to meet the ongoing challenges that climate change presents to their communities.

3.2 Project Details

This project proposes new portable building, which includes areas such as classrooms, toilets and staff areas

Proposed Development Details	
Address:	3 Nortons Lane
Suburb:	Wantirna South VIC 3152
Development Type:	Non-residential development
Number of Storeys:	1
Number of Dwellings:	0
Climate Zone:	6
Site Area:	14,600 m^2

Proposed Development Details	
Floor Area:	1002 m^2

Table 2 - Proposed Development Details

3.3 Site Location

The site address in Wantirna South is in Climate Zone 6. The total site is approximately 14,600 m^2.

The site is currently located in a mixed use and residential zone.

Figure 3 – Locality image showing site. Google Maps©

The client's objective in undertaking the development of the site is to provide a sustainable facility with enhanced internal and external environment for students and staff whilst reducing recurrent energy consumption and the environment impact on the site.

4.0 Response to Environmentally Sustainable Development Policy – City of Knox Planning Scheme

This Sustainable Development Assessment has been prepared in response to the Environmentally Sustainable Development (ESD) policy outlined in the City of Knox Planning Scheme. The policy applies to residential and non-residential developments that meet specific floor area thresholds and seeks to ensure best practice sustainability outcomes from design through to construction and operation.

In accordance with the policy, this report addresses key sustainability categories including energy efficiency, water conservation, indoor environmental quality, sustainable transport, waste management, and urban ecology. These categories align with the Built Environment Sustainability Scorecard (BESS) assessment tool.

The proposed development meets the requirement for a **Sustainable Design Assessment (SDA)** and has been evaluated inline with BESS and using STORM tools, The report demonstrates how the project minimises environmental impacts through passive design, efficient water and energy use, support for active and low-emission transport, and strategies to enhance biodiversity and mitigate the urban heat island effect.

This SDA ensures the development aligns with the objectives and strategies of the planning scheme and reflects a commitment to achieving environmentally responsible outcomes in line with local policy expectations.

5.0 Built Environment Sustainability Scorecard (BESS) Assessment Tool

5.1 Management

5.1.1 ESD Professional Engagement

An ESD professional, BRT Consulting, has been engaged to provide sustainability advice to accompany the town planning submission (in the form of this report). This is to ensure that appropriate sustainability measures are incorporated into the project from the very preliminary stages of the development.

5.1.2 Preliminary Façade Assesment

A preliminary facade assessment has been undertaken in accordance with NCC2022 to inform the material selections.

5.1.3 Builder User Guide

A Building User Guide provides occupants, facility managers and visitors with clear information on how to operate and interact with the building in a way that supports sustainability outcomes. By explaining the building's systems, sustainability features and operational best practice in simple terms, the guide helps reduce energy, water and waste use while improving comfort and safety. It also ensures that future staff or tenants can easily understand and maintain sustainable practices, supporting the long-term performance targets set out in this Sustainability Management Plan.

5.2 Integrated Water Management

5.2.1 Water Efficient Fixtures

The site is proposed to be provided with water efficient fixtures throughout. Using the Water Efficient Labelling Standard (WELS) rating system, the following ratings are proposed;

- Basins – 6 Star WELS rating
- WC's – 4 Star WELS (dual flush)
- Urinals – 5 Star WELS
- Kitchen Taps – 6 Star WELS rating
- Dishwashers – 6 Star WELS rating
- Showerheads – 5 Star

5.2.2 Rainwater Tank

A rainwater tank will be installed to capture roof water and supply non-potable uses such as toilet flushing. This initiative reduces reliance on mains water, lowers operating costs, and contributes to water conservation outcomes. By offsetting potable demand with harvested rainwater, the system also supports **environmental** targets, while demonstrating resilience and responsible resource management in line with the objectives of this Sustainability Management Plan.

5.2.3 Landscape Design

The landscape design will enhance the developments energy performance, water resources and the urban ecology using the following principals.

The developments water resources will be maximised through the use of drought tolerant plants to reduce the reliance on irrigation; while irrigation requirements will be met by the capture, storage and reuse of stormwater reducing potable water use.

5.2.4 Stormwater Management

The new development shall incorporate best practice stormwater management.

The Melbourne Water STORM tool shall be used where applicable and required by local planning permits and verified by the Civil drainage engineer for the project and a STORM rating of 100% must be achieved, demonstrating best practice for the project.

The stormwater design achieves the urban stormwater best requirements as set out by the CSIRO in 1999.

The combination of rainwater tanks for the roof drainage (30000lt) and buffer strips for the roadways/carpark have been used to achieve the 100% rating

5.3 Operational Energy

5.3.1 Services

All appliances and services throughout the project will be electric.

All heating and cooling throughout the project shall be via reverse cycle air conditioning as a minimum.

5.3.2 Gas to Site

The development will not have a gas connection provided. All appliances and services will be electric.

5.3.3 Internal Lighting

The development is targeting, but not mandating, to exceed the minimum BCA Section J requirements for lighting energy efficiency by at least 10%.

Artificial lighting is proposed to use LED fittings for all areas. The selection of fittings will be developed during the design phase of the project.

5.3.4 Domestic Hot Water

The development is proposed to be served by electric heat pump water systems.

5.3.5 Peak Energy Demand

The development proposes to manage and minimise the peak energy demand by providing a well-insulated construction that will minimise the impact of the extreme ambient conditions experienced during summer and the middle of winter.

5.3.6 Building Ventilation

Natural ventilation is proposed throughout the development however, where natural ventilation cannot be achieved mechanical ventilation shall be provided in accordance with the BCA requirements.

5.4 Indoor Environmental Quality

5.4.1 Natural Light

The building has been designed to achieve a minimum daylight factor of 2% to at least 33% of the usable floor area. This ensures good access to natural light for occupants, reducing reliance on artificial lighting and lowering energy consumption. Improved daylight quality also supports occupant health and wellbeing by enhancing visual comfort and connection to the outdoors. Meeting this target contributes to sustainable design benchmarks in BESS Indoor Environment Quality Credit, aligning the project with best practice environmental performance objectives.

5.4.2 Window Systems

The facility is proposed to be provided with double-glazed windows throughout all habitable spaces which will enhance the indoor environment for staff and students. This is a targeted objective and not mandated to the development.

The double-glazed window system will also enhance the thermal and acoustic performance for all building occupants. Double glazed windows will minimise the inducement of cold drafts during low ambient temperatures which will allow staff and students to minimise the use of window furnishings and enhance their outlook through uncovered windows.

The double-glazed system will also provide acoustic treatment and reduction of transmission of external noises including traffic noise. Acoustic performance will enhance the indoor environment.

Single glazing may be considered to zones which are not conditioned or habitable.

5.4.3 Shading

The proposed building is to incorporate shading strategies through design features such as building overhangs and extended eaves. These elements should be strategically positioned to provide effective shading during warmer months while allowing sunlight penetration in cooler months. The implementation of these strategies will be influenced by the roof design and layout. 50% of the east, north and west glazing to regular use areas is effectively shaded.

5.4.4 Ventilation

The building is to be naturally and/or mechanically ventilated to the Building Code of Australia and Australian Standards requirements. 80% of the regular use areas are provided with effective natural ventilation.

5.4.5 Air Conditioning & Heating

The use of local control of heating/cooling and lighting systems also provides the space with increased environmental quality to allow users to locally control the internal temperature in the space. The ability to locally and/or centrally isolate individual air conditioning units also enables energy consumption to be reduced by not conditioning areas that aren't occupied. Similarly operating and controlling individual room temperatures to potentially higher or lower temperature (variable setpoints) during summer and winter will also enable the environment to be better controlled as well as potentially reduce energy consumption for the facility.

5.4.6 Low-Emission Materials

All paints, sealants, adhesives and floor coverings specified for the project are to comply with the maximum total indoor pollutant emission limits as defined in recognised standards (e.g. Green Star and relevant ISO/ASTM test methods). Using low-VOC finishes reduces the release of harmful chemicals, improving indoor air quality and supporting occupant health and wellbeing. It also helps maintain compliance with sustainable building benchmarks

and minimises long-term environmental impacts.

5.4.7 Thermal Comfort

Each of the above six initiatives ensure that the development achieves a high level of thermal comfort for the staff and students.

The use and treatment of natural light can enhance the feeling and wellbeing of staff and students. The treatment and use of natural light have been carefully located to minimise solar heat gain to the building envelope and/or cause nuisance of glare or shadowing internally.

Along with the use of shading, acoustic and ventilation considerations throughout the building, the project shall provide high level of thermal comfort.

5.5 Transport

5.5.1 Public Transport

The site is currently a direct bus service located at the end of the street that connects to Monash University, Knox City, and Glen Waverley train station

5.5.2 On-Site Bicycle Parking

The development proposes to have approximately 3 bike parking spots for visitors, staff and students.

There is a shower staff can use for end of trip facilities and 2 lockers are to be provided.

5.5.3 Waste & Resource Recovery

The installation of general and recycling bins will be provided throughout the facility to enable the separation of rubbish at the source.

The provision of the exact size, number and type of recycling bins will be determined at a later stage of the project.

5.6 Urban Ecology

5.6.1 Communal Spaces

Communal spaces are places where people gather for social exchange, enhancing the health of the school community. The new development is proposed to have well in excess of the required 75 m^2 of communal space for the staff and students in the form of a number of playgrounds as well as a soccer field..

5.6.2 Vegetation

The landscaping is proposed to compliment the current environment, protecting the natural habitat and increasing the biodiversity with the provision of a variety of native and indigenous trees, shrubs and understorey planting which will provide a natural habitat for birds and animals. The new development is proposed to have 760 m^2 of garden areas.

6.0 Future Action

The following steps are recommended for the continuation of this project

1. Review credits with client and design team.
2. Agree credits to be targeted.
3. Implement credit requirements into documentation.
4. Design review by owner's representative, contractor or building manager.
5. Preliminary council advice/submission.
6. Final council advice/submission.

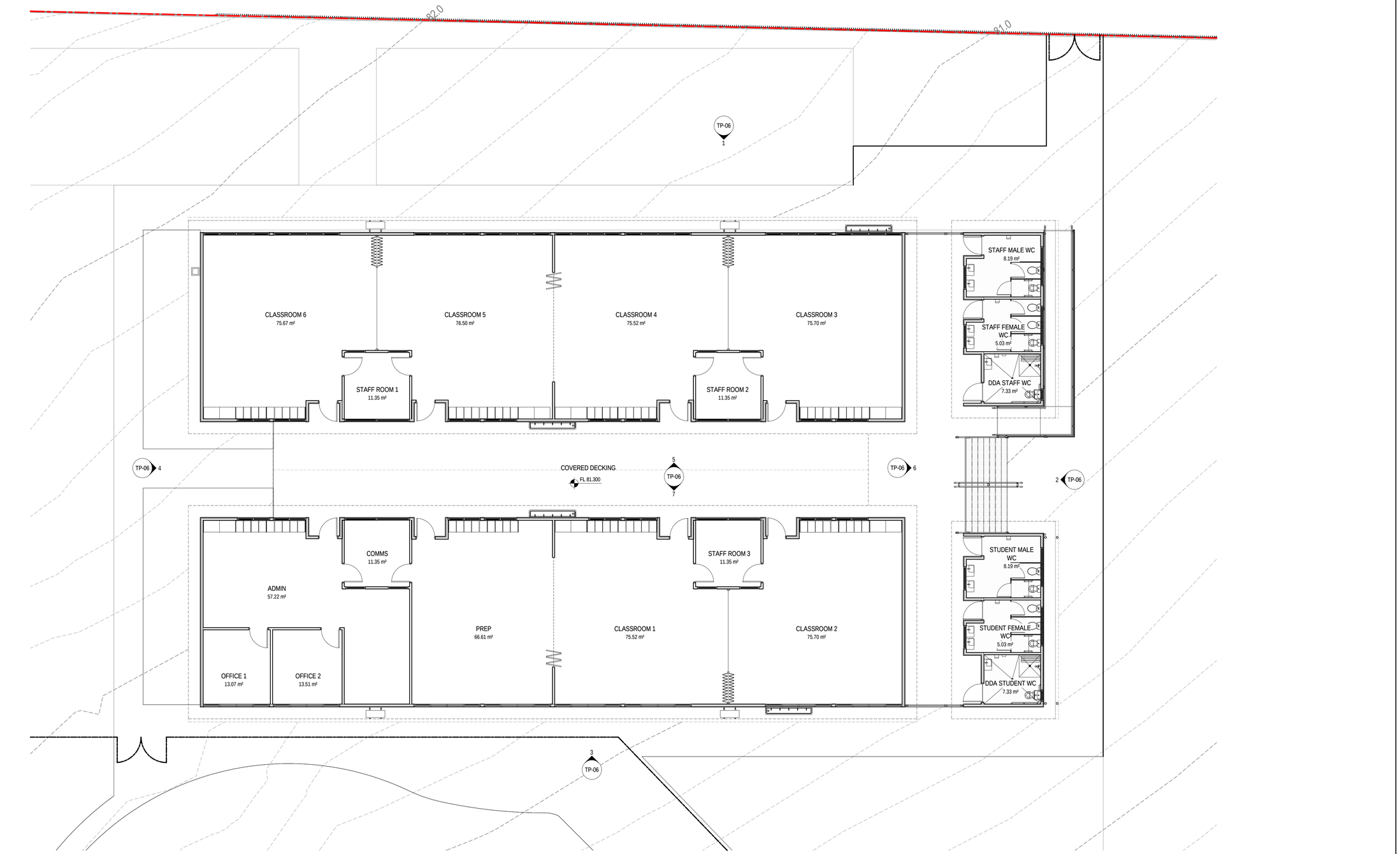
7.0 Disclaimer

This report focuses solely on the sustainability performance of the building as per the design intent and drawings provided. It does not specify materials or detailed site implementation. The contractor must implement the design according to the Building Code of Australia (BCA), building permit requirements and relevant standards.

This report does not address any acoustic, bush fire, combustibility, and condensation requirements. This report does not cover building standard practice.

8.0 Appendix A – Referenced Architectural Documents

Architect's Job Number	Site	Drawings Number	Drawings Date	Drawings Revision	Drawings Description
1566_TP-04	Ascension College	TP-04	19.12.2024	A	Proposed Site Plan
1566_TP-06	Ascension College	TP-06	06.03.2024	A	Elevations



1 / TP-04 PROPOSED RELOCATABLE BUILDING
SCALE 1 : 100

TOWN PLANNING DOCUMENT
NOT FOR CONSTRUCTION

0 5 10 15m

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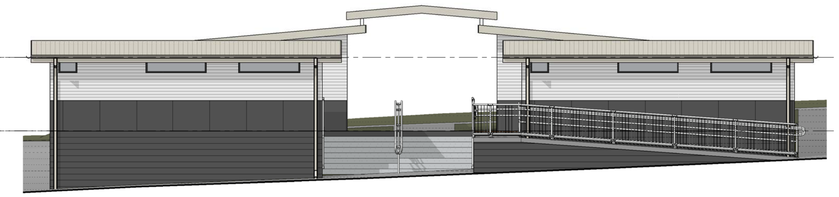
ASCENSION COLLEGE

3 NORTONS LANE, WANTIRNA SOUTH

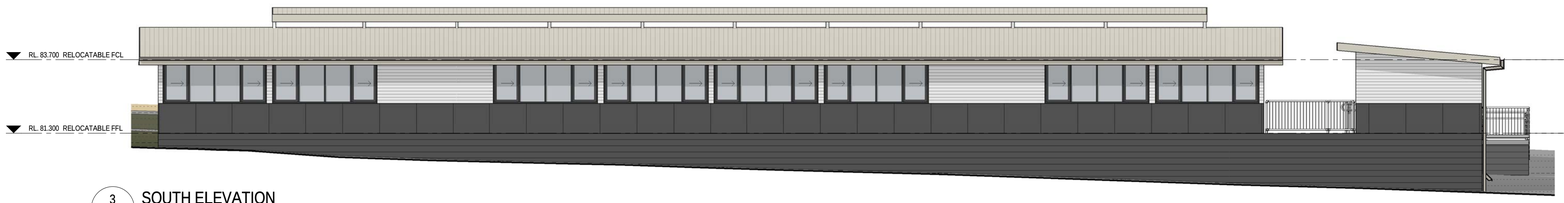
QIBLA

PROPOSED PORTABLE BUILDING PLAN - STAGE 1
SCALE @ A1 - 1:100
26/08/2025
1566 - TP-04 [Rev A]

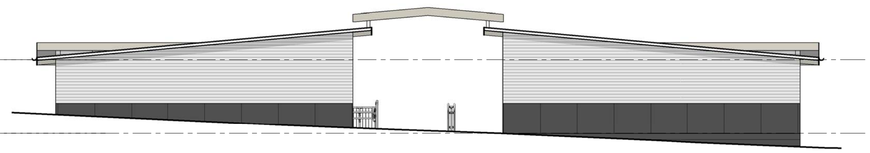
1 TP-06 NORTH ELEVATION
SCALE 1 : 100



2 TP-06 EAST ELEVATION
SCALE 1 : 100

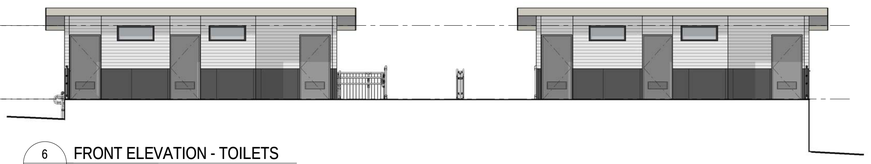


3 TP-06 SOUTH ELEVATION
SCALE 1 : 100



4 TP-06 WEST ELEVATION
SCALE 1 : 100

5 TP-06 FRONT ELEVATION - NORTH SIDE
SCALE 1 : 100



6 TP-06 FRONT ELEVATION - TOILETS
SCALE 1 : 100

7 TP-06 FRONT ELEVATION - SOUTH SIDE
SCALE 1 : 100

0 5 10 15m

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PROPOSED STREETSCAPE ELEVATIONS - STAGE 1
SCALE @ A1 - 1:100
26/08/2025
1566 - TP-06 [Rev A]

9.0 Appendix C – Façade Calculator

ABCB

Façade

Report

National Construction Code Calculator

Project Summary

Date
1/09/2025

Name
Ascension College -Stage 1

Company
BRT Consulting

Position
0

Building Name / Address
3 Nortons Lane
Wantirna South

Building State
VIC

Climate Zone
Climate Zone 6 - Mild temperate

Building Classification
Class 9b - schools

Storeys Above Ground
1

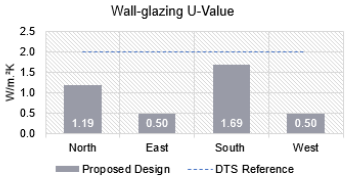
Tool Version
1.5 (May 2024)

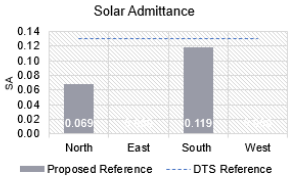
The summary below provides an overview of where compliance has been achieved for Specification S37 - Calculation of U-Value and solar admittance - Method 1 (Single Aspect) and Method 2 (Multiple Apects).

Compliant Solution =
Non-Compliant Solution =

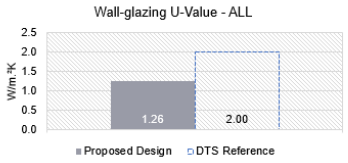
	Method 1 North	Method 1 East	Method 1 South	Method 1 West	Method 2 All
Wall-glazing U-Value (W/m².K)	1.19	0.50	1.69	0.50	1.26
Solar Admittance	0.07		0.12		
AC Energy Value					15

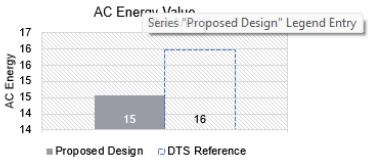
Method 1





Method 2





ABCB

Façade

Report

National Construction Code Calculator

Project Summary

Date
1/09/2025

Name
Ascension College -Stage 1

Company
BRT Consulting

Position
0

Building Name / Address
3 Nortons Lane
Wantirna South

Building State
VIC

Climate Zone
Climate Zone 6 - Mild temperate

Building Classification
Class 9b - schools

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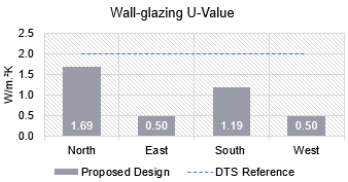
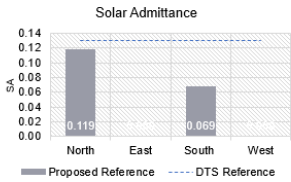
Non-Compliant Solution =

	Method 1 North	Method 1 East	Method 1 South	Method 1 West	Method 2 All
Wall-glazing U-Value (W/m².K)	1.69	0.50	1.19	0.50	1.26
Solar Admittance	0.12		0.07		
AC Energy Value					31

Method 1





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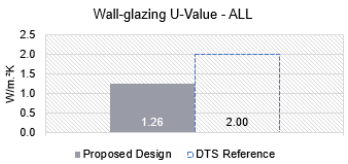

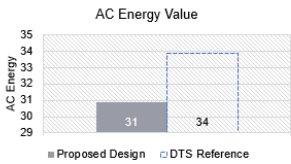

10.0 Appendix D – Daylight Green Star Hand Assessment

1 TP-04 PROPOSED RELOCATABLE BUILDING
SCALE 1 : 100

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Project	Ascension College - Stage 1
Service	ESD
Drawing	Daylight Calculations

Job No	Dwg No	Rev
12744		01
Date	Stage	Drawn By
28/08/2025	SD	CB

BESS IEQ Daylight compliance achieved

34.2%of the nominated floor area has to have at least 2% daylight factor

TOWN PLANNING DOCUMENT
NOT FOR CONSTRUCTION

0 5 10 15m

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