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Sustainable Built Environments Pty Ltd

Sustainable Management Plan (SMP)

for the

Extension

at

Mulgrave Private Hospital

535-559 Police Rd, Mulgrave VIC 3170,
Australia

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Quality Assurance

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Prepared by: SM

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1. EXECUTIVE SUMMARY

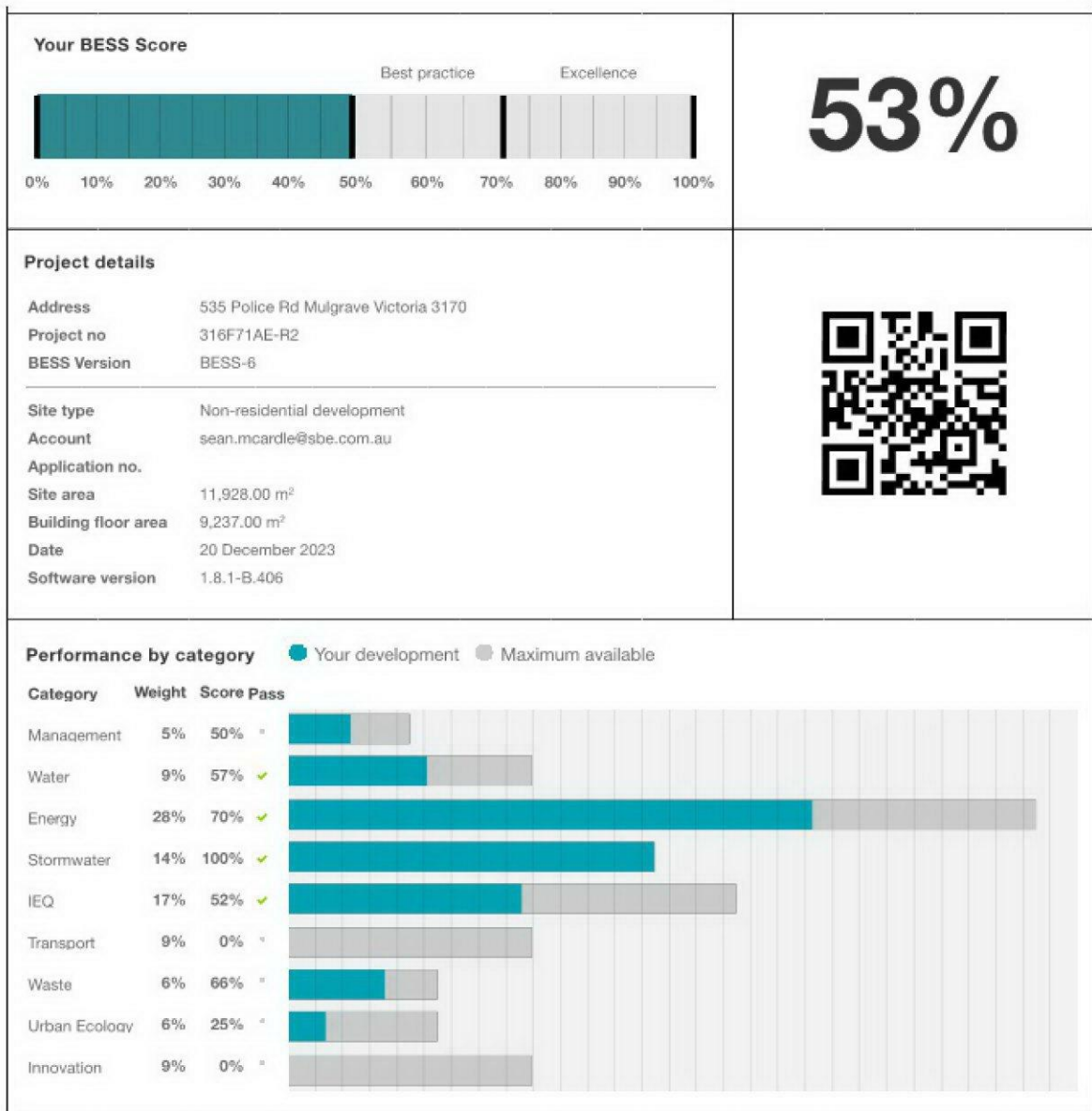
Sustainable Built Environments (SBE) has been commissioned to provide an Environmentally Sustainable Design (ESD) report for the proposed Extension at Mulgrave Private Hospital, 535 Police Rd, Mulgrave VIC 3170, Australia.

The project involves the addition of a new three storey building incorporating bedrooms, lounge and dining spaces, multi-purpose rooms, offices and consult rooms and other ancillary spaces as well as an elevated outdoor terrace.

The aim of this report is to identify and convey the key sustainability opportunities embraced in the design, and provide the Responsible Planning Authority with a clear indication of how the development achieves the Monash City Council ESD policy aims and objectives.

SBE has used the Built Environment Sustainability Scorecard (BESS) to benchmark the design's potential ESD performance under each key ESD criteria including: management, water and energy efficiency, stormwater, indoor environment quality (IEQ), sustainable transport, waste, urban ecology, and innovation. Relevant standards included in the [Sustainable Design Factsheets](#) published by IMAP have been used to assess ESD criteria not covered by BESS (e.g. Building Materials) but typically encouraged to be addressed by Victorian councils.

The proposed development currently targets 53 points from 100 in BESS (see extract below), which equates to Best Practice. We understand this will satisfy Council's desired performance of development within its boundaries.



2. INTRODUCTION

Sustainable Built Environments (SBE) has been commissioned to provide an Environmentally Sustainable Design (ESD) report for the proposed Extension at Mulgrave Private Hospital, 535 Police Rd, Mulgrave VIC 3170, Australia.

This Environmentally Sustainable Design (ESD) report developed for Town Planning provides an overview of the key sustainable design initiatives and predicted environmental performance of the proposed development.

2.1 The Project

The project involves the addition of a new three storey building and the integrated refurbishment of an adjacent building as well as a new elevated carpark.

The new and refurbished spaces consist of wards, administration, some office space and ancillary back of house spaces.

It is noted that for the purpose of this assessment only the new building and new carpark have been included (see image below highlighting in yellow the assessed site). Any connecting work proposed within the existing buildings is limited to interior refurbishment and it is understood it will not trigger town planning requirements and consequently has been excluded from this assessment.

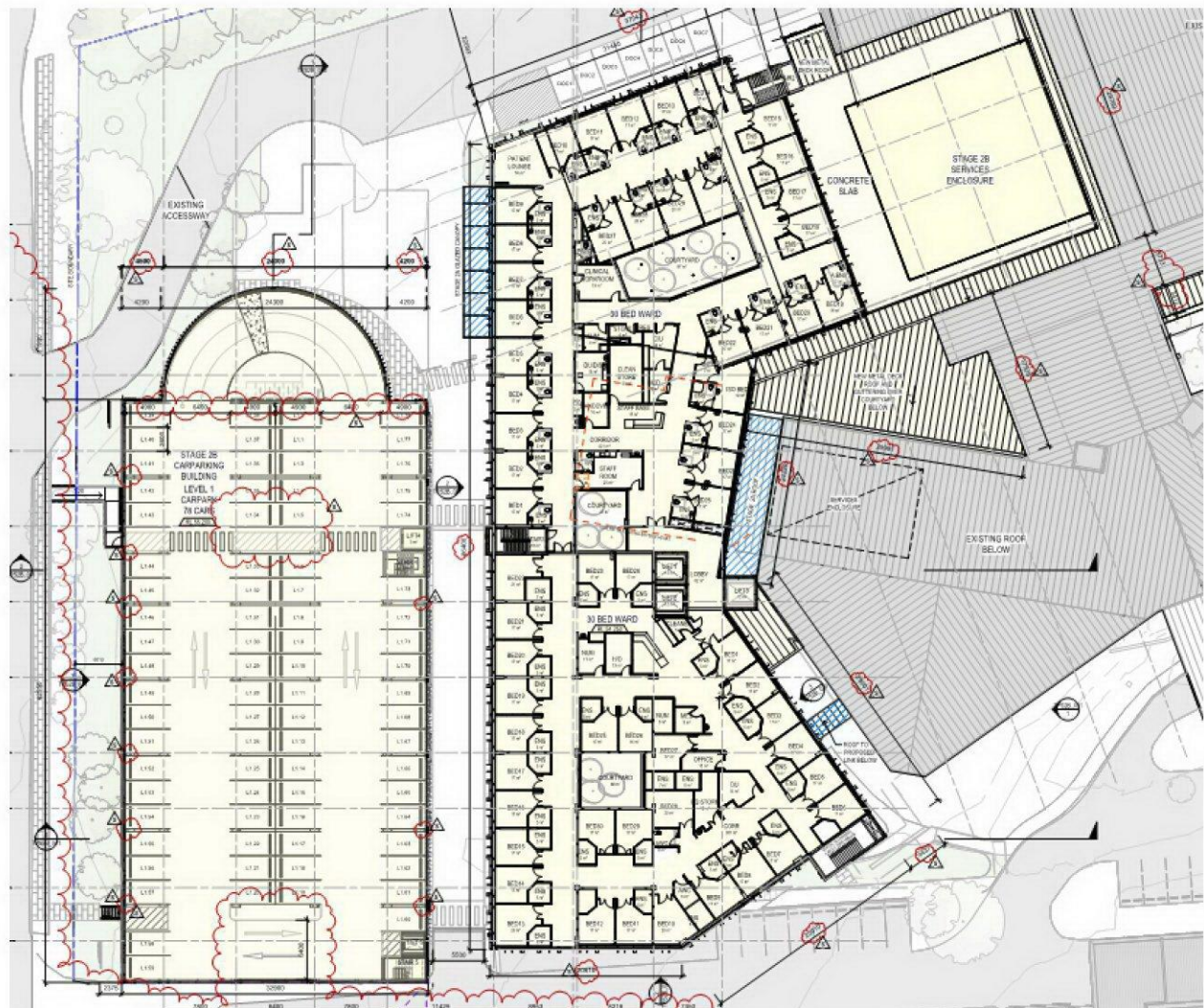


Figure 1: New building works (3 storeys) shaded in yellow and showing new multi deck carpark to the west.

2.2 Documents

This report has been informed by the Architectural drawings produced by HSPC Architects dated 30/11/2023 Rev S, Project Number 9-22-0005.

2.3 Approach to ESD

The overarching objective is that the development should achieve best practice in environmentally sustainable development from the design stage through to construction and operation.

Best practice is defined as a combination of commercially proven techniques, methodologies and systems, appropriate to the scale of development and site-specific opportunities and constraints, which are demonstrated and locally available and have already led to optimum ESD outcomes. Best practice in the built environment encompasses the full life of the build.

SBE has used the Built Environment Sustainability Scorecard (BESS) to benchmark the design's potential ESD performance under each key ESD criteria including: management, water and energy efficiency, stormwater, indoor environment quality (IEQ), sustainable transport, waste, urban ecology, and innovation. Relevant standards included in the Sustainable Design Factsheets published by IMAP have been used to assess ESD criteria not covered by BESS (e.g. Building Materials) but often encouraged to be addressed by Councils.

3. DESIGN

The ultimate environmental design aim for our built environment is to create buildings that are comfortable, use no energy, no water, that neither produce waste in operation or create waste in their construction, and are made from materials that derive totally from sustainable sources. Although this may not be achievable by all buildings, it nonetheless provides an inspirational goal and an opportunity to consider best practice design solutions.

Environmental Strategy

A sound strategy for reducing the environmental impact of a project is to tackle the design in three ways and in this order of priority:

1. Reduce the demands on active systems in the building by enhancing the passive performance of the building. This includes optimising orientation, shading, insulation, daylighting, ventilation and longevity.
2. Select and specify the most efficient active systems available to satisfy the resultant demands of the building.
3. Offset the resultant energy demands of the building with local or off site mechanisms, for example Photo Voltaic panels or solar hot water.

Proposed Site

The proposed development is located within an established health care campus neighbourhood adjacent to significant green spaces. Though well connected to road networks the public transport options are relatively limited, most visitors will arrive by car. A bus route (862, 850, 804, 802) has a bust stop within 400m.

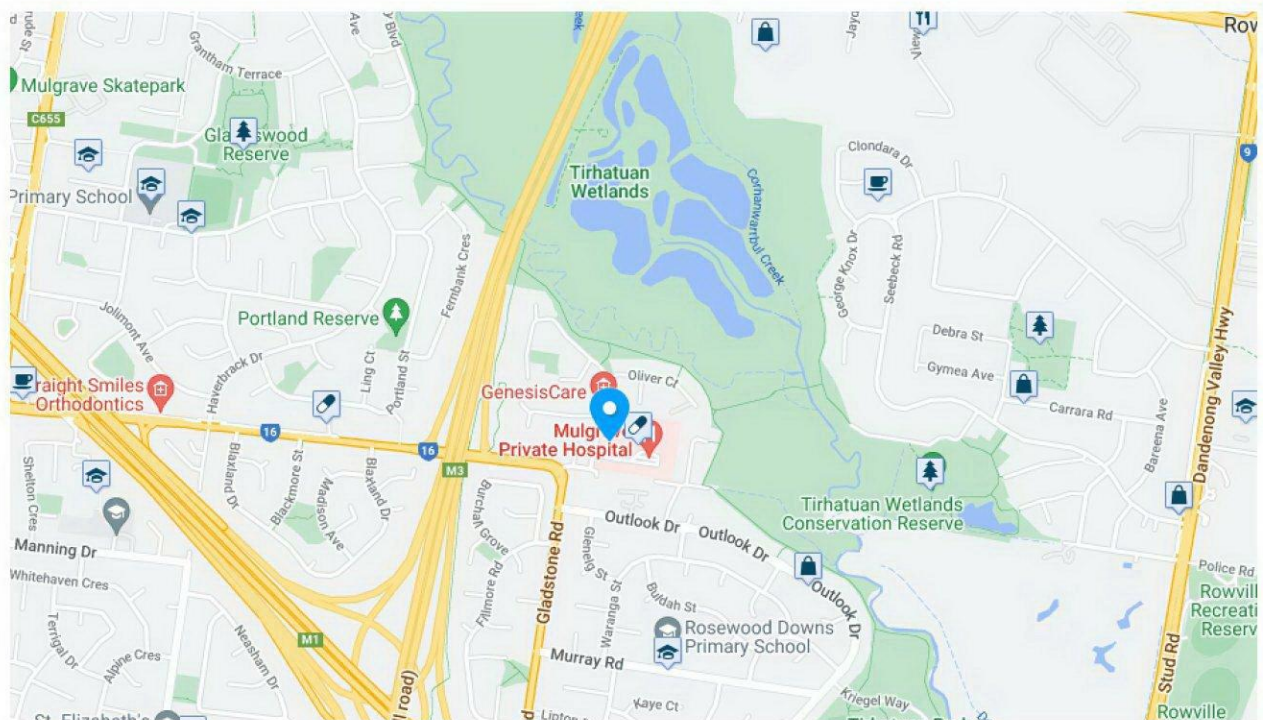


Figure 2 – Location plan for the proposed development at 535-559 Police Rd, Mulgrave VIC 3170, Australia. The site has a Walk Score of 19 out of 100. This location is a Car-Dependent neighbourhood so almost all errands require a car¹.

¹ <https://www.walkscore.com/score/535-police-rd-mulgrave-vic-australia>

4. MANAGEMENT

It is important to encourage an environmental focus in the management of design, construction and operational phases of the development. The Management category aims to highlight the importance of a holistic and thoroughly integrated approach to constructing and operating a building with good environmental performance.

Management				
Section Number	Reference Credit	Credit Aim	Design Response/ Project Compliance	Supporting Evidence
4.1	<i>BESS 2.3 Thermal Performance Modelling – Non-Residential</i>	To encourage and recognise developments that have used modelling to inform passive design at the early design stage	A preliminary energy efficiency/section J façade assessment has been conducted.	Refer to Appendix A . We note that the preliminary assessment is a DTS Section J. The project may choose to adopt a JV3 alternative compliance assessment at a later date that will demonstrate equivalence.
4.2	<i>BESS 3.2 Metering</i>	To provide building users with information that allows monitoring of energy and water consumption	The Imaging section will be separately metered and monitored.	Refer to electrical drawings.
4.3	<i>BESS 3.3 Metering</i>	To provide building users with information that allows monitoring of energy and water consumption	All major building services (i.e. lighting, HVAC equipment, lifts, outdoor lighting, etc.) shall be individually sub-metered.	Refer to notes in the architectural drawings.
4.4	<i>BESS 4.1 Building Users Guide</i>	To encourage and recognise initiatives that will help building users to use the building efficiently	A Building Users' Guide using a non-technical language shall be developed and issued to all building operators and/or site manager(s). The Building Users' Guide may be a simple booklet and/or a combination of interpretative signage throughout the building with the purpose to facilitate more sustainable behaviour by building occupants.	Refer to notes in the architectural drawings.



5. WATER

In Australia, water has long been considered a precious and high-demand resource. Fresh water supplies are increasingly affected by a range of factors including catchment locations, contaminated sources, drought and rising demand. In addition to reducing the demand for water, efficient use of water in buildings can reduce building owners' operational costs. This category aims to minimise the impacts on the environment from extensive water use in the built environment.

Water				
Section Number	Reference Credit	Credit Aim	Design Response/ Project Compliance	Supporting Evidence
5.1	<i>BESS 1.1 Potable Water Use Reduction</i>	To encourage building design that minimise potable water consumption in operations.	<p>All sanitary fixtures and water appliances shall have the WELS rating stated below:</p> <ul style="list-style-type: none"> • Showers – 4 Stars (>4.5 but ≤6.0) • Taps – 5 Stars • Toilets – 4 Stars • Urinals – 5 Stars • Dishwashers – 5 Stars 	Refer to notes in the architectural drawings.
5.3	<i>BESS 3.1 Water Efficient Landscaping</i>		Low water use plants shall be specified for the landscaped areas that will not need long term irrigation.	Refer to landscape drawings for preliminary plant selection.
5.4	<i>BESS 4.1 Building Systems Water Use Reduction</i>	To minimise water use for building systems such as evaporative cooling and fire testing systems.	No water-based heat rejection systems shall be used within the development and the use of potable water demand for testing of fire safety systems shall be reduced by at least 80%.	Refer to notes in the architectural drawings.



6. ENERGY

Production of Australia's energy is largely from the incineration of non-renewable fossil fuels and is the country's greatest contributor to greenhouse gas emissions. The credits within the Energy Category target an overall reduction of energy consumption. Such reduction has an impact upon greenhouse gas emissions and energy production capacity as well as other emissions associated with energy generation.

Energy				
Section Number	Reference Credit	Credit Aim	Design Response/ Project Compliance	Supporting Evidence
6.1	<i>BESS 1.1 Thermal Performance Rating</i>		A preliminary energy efficiency assessment has been conducted to establish the minimum performance requirements of the proposed building fabric.	Refer to the preliminary energy efficiency assessment in Appendix A . We note that the preliminary assessment is a DTS Section J. The project may choose to adopt a JV3 alternative compliance assessment at a later date that will demonstrate equivalence.
6.2	<i>BESS 2.1 Greenhouse Gas Emissions</i> <i>BESS 2.2 Peak Demand</i> <i>BESS 2.3 Electricity Consumption</i> <i>BESS 2.4 Gas Consumption</i>	To reduce reliance on mechanical systems to achieve thermal comfort in summer and winter, as well as to reduce greenhouse gas emissions, energy demand, and maintenance and operational costs.	All air-conditioning systems provided for the development shall have a COP and EER 85% or better than the most efficient equivalent capacity unit available. The rated capacity of the air conditioning equipment shall not exceed the design heating capacity by more than 20% and the design cooling capacity by more than 10%.	Refer to notes in the architectural drawings.
6.3	<i>BESS 3.2 Hot Water</i>		The domestic hot water systems provided for the development shall be 85% or better than the most efficient equivalent capacity unit available.	Refer to notes in the architectural drawings.
6.4	<i>BESS 3.7 Internal Lighting</i>		The maximum illumination power density (W/m ²) in at least 90% of the areas of each of the relevant building class shall meet the requirements in Table J6.2a of the NCC 2019 Vol 1.	Refer to notes in the architectural drawings.
6.5	<i>IMAP Energy Efficiency Factsheet</i>		All new external lighting shall be LED and controlled by either (or a combination of) motion detectors, timers and Photo electric (PE) sensors.	Refer to notes in the architectural drawings.
6.6	<i>BESS Energy 4.2 Renewable Energy Systems – Solar</i>		An on site PV array.	A PV array of at least 25kW shall be located on the roof facing north and angled at ~38°

7. STORMWATER

Continued urbanisation and expansion has resulted in a dramatic increase in areas of hard and impervious surfaces, such as buildings, roads and car parks. This has various negative impacts on waterways and their water quality, as well as on people, fauna and flora.

Best practice stormwater management means incorporating water sensitive urban design strategies such as rainwater tanks, raingardens, porous paving and landscaping to reduce the volume of run-off and the pollutant load on local waterways.

Stormwater				
Section Number	Reference Credit	Credit Aim	Design Response/ Project Compliance	Supporting Evidence
7.1	<i>BESS 1.1 Stormwater Treatment</i>	To minimise negative environmental impacts of stormwater runoff and maximise onsite re-use of stormwater	<p>A MUSIC assessment has been conducted to demonstrate that the proposed stormwater treatment achieves the nominated pollution reduction targets.</p> <p>The currently proposed treatment train consists of:</p> <ul style="list-style-type: none"> All rainwater and SW collected from roofs, terraces and other designated hard paved areas to be treated with a SPEL Eccoceptor and Hydrosystem 	Refer to Appendix B for the MUSIC report.

MUSIC Modelling Results below.



Figure 3: MUSIC Model Configuration

Catchment Details

Catchment	Size (m ²)	Imperviousness (%)
Site Remainder	5530	100
Multideck Carpark	2283	100
Roof Areas	4135	100

MUSIC Results



Figure 4: MUSIC Model Results

Pollutant	Sources (kg/yr)	Residual Load (kg/yr)	Reduction (%)	Reduction Target (%)
Flow (ML/yr)	7.26	7.26	0	0
Total Suspended Solids	1710	344	80	80
Total Phosphorus	3.14	0.633	79.8	45
Total Nitrogen	17.1	7.54	56	45
Gross Pollutants	290	10.8	96.3	70



8. INDOOR ENVIRONMENT QUALITY

Indoor Environment Quality (IEQ) is a key ESD objective in the provision of a healthy and safe internal building environment for occupants. The IEQ category aims to balance other categories, in the sense that reductions in energy consumption could easily be achieved at the expense of occupants' comfort. Yet, occupant comfort is vital and as such the IEQ category encourages healthy and good indoor environmental quality.

Indoor Environment Quality				
Section Number	Reference Credit	Credit Aim	Design Response/ Project Compliance	Supporting Evidence
8.1	<i>BESS 1.4 Daylight Access – Non-Residential</i>	To provide a high level of amenity and energy efficiency through design for natural light.	49% of the nominated floor area achieves appropriate daylight access. The VLT of all windows shall not be less than 40%.	Refer to Appendix C for more information on the daylight assessment and results
8.2	<i>BESS IEQ 2.3 Ventilation - Non-Residential</i>	Improved health and amenity from better access to fresh air.	In lieu of increased fresh air rates and CO2 monitoring this project will provide improved air quantity via the use of UVC filters (similar to Steril-aire) which actively kills bacteria, viruses and air borne particles over 95%. This along with individual room units which avoid the transfer of air from one room to the next will provide the necessary improvement to air quality. The project claims these points for this equivalent alternative.	See mechanical specification. More information on the effectiveness of this system can be found here: Impact of UVC-sustained recirculating air filtration on airborne bacteria and dust in a pig facility - PMC (nih.gov) ²
8.3	<i>IMAP Indoor Environment Quality Factsheet</i>	To recognise projects that safeguard occupant health through the reduction in internal air pollutant levels.	All paints, adhesives, sealants and carpets applied on-site shall meet the maximum Total Volatile Organic Compound (TVOC) limits outlined in Appendix D .	Refer to notes in the architectural drawings.
8.4	<i>IMAP Indoor Environment Quality Factsheet</i>	To recognise projects that safeguard occupant health through the reduction in internal air pollutant levels.	All engineered wood products including particleboard, plywood, Medium Density Fibreboard (MDF), Laminated Veneer Lumber (LVL), High-Pressure Laminate (HPL), Compact Laminate and decorative overlaid wood panels shall meet the Formaldehyde emission limits outlined in Appendix E .	Refer to notes in the architectural drawings.

² <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6837447/>

9. TRANSPORT



The automobile accounts for 54% of Australia's total domestic transport emissions and approximately 80% of adults use a private car to commute to and from work. There is a need to maximise alternative transport options if the environmental impact of car commuting is to be reduced. Options available may include trains, buses and, light rail trams. Walking and cycling are the most environmentally friendly alternatives, with no associated fuel use or pollutants. All credits within the Transport category have the same underlying principle; to reward the reduction in automotive movement by simultaneously discouraging it and encouraging use of alternative transportation.

No particular transport initiatives associated with this extension.

10. WASTE

Up to 40% of the waste going to Australia's landfills is related to the construction and demolition of buildings. Simple design decisions can influence the amount of construction waste being produced and operational waste streams being separated.

Even more waste is produced during the occupancy phase of buildings. Poor waste practices and treatment of the environment in the past have not only lead to a degradation of our water, air and land resources but also represent a big financial burden to current and future generations.

Waste				
Section Number	Reference Credit	Credit Aim	Design Response/ Project Compliance	Supporting Evidence
10.1	<i>BESS 2.2 Operational Waste – Convenience of Recycling</i>	To minimise recyclable material going to landfill	Wherever a general waste bin is provided, a clearly labelled recycling bin shall also be provided. This is a site wide management practice.	Refer to notes in the architectural drawings and Waste Management Plan by other.
10.2	<i>BESS Waste 1.1 - Construction Waste - Building Re-Use</i>	To recognise developments that re-use/retain materials on-site	The development is on a site that has been previously developed, and much of the existing building is re-used.	See Architectural drawings.



11. URBAN ECOLOGY

The credits within the Land Use and Ecology category promote initiatives to improve or reduce impacts on ecological systems and biodiversity. The term 'Biodiversity' is used to describe the variation of life forms in a particular ecosystem and is often used as a measure of the health status of the environment.

Many credits in other categories have an indirect impact on the land use and ecology of the Australian environment, for example, the 'Stormwater' category addresses the rainwater run-off from buildings and hard surfaces in an attempt to prevent pollution from reaching nearby natural watercourses. This category, however, addresses the direct impact of a project on the ecological value of the site.

Urban Ecology				
Section Number	Reference Credit	Credit Aim	Design Response/ Project Compliance	Supporting Evidence
11.1	BESS 1.1 Communal Spaces	To encourage and recognise initiatives that facilitate interaction between building occupants	There are many communal spaces provided on the site as a whole but no credits will be claimed for this extension.	NA
11.2	BESS 2.1 Vegetation	To encourage and recognise the use of vegetation and landscaping within and around developments.	Approximately 13% of the site (1,565m ²) area shall be covered in vegetation.	Refer to the Landscape Architectural drawings.

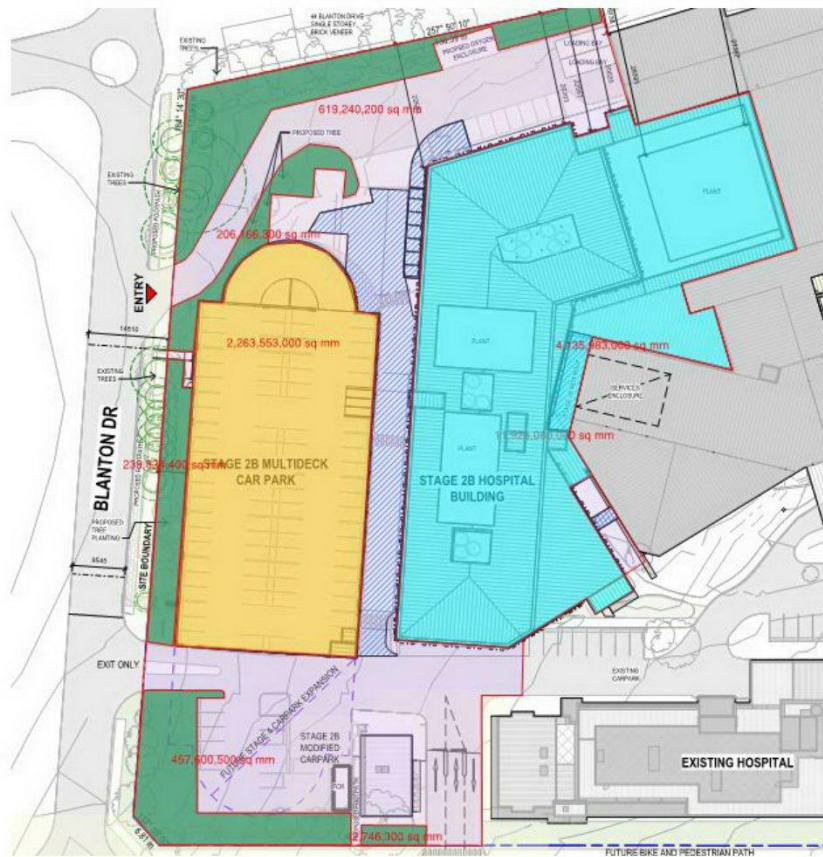


Figure 3 Area of vegetation = 1,565m². Total site area = 11,928m²

12. MATERIALS



The production and use of building materials can have serious impacts on the environment. Energy is used to extract, produce and transport building materials; natural resources are exploited to be used in building materials; the industrial production of the materials causes pollution, and if poorly selected and used the material ends up as waste, to become landfill or incinerated.

Within the Materials category the credits target the consumption of resources through selection and re-use of materials, and efficient management practices. The basic concepts of the category are to reduce the amount of natural resources used, re-use whatever materials can be re-used, and recycle whenever possible.

Materials				
Section Number	Reference Credit	Credit Aim	Design Response/ Project Compliance	Supporting Evidence
12.1	<i>IMAP Building Materials</i>	To reward projects that include materials that are responsibly sourced or have a sustainable supply chain.	At least 95% (by cost) of all timber used in the building and construction works shall either be: <ul style="list-style-type: none"> • Certified by a forest certification scheme and be accompanied by a relevant Chain of Custody (CoC) certificate; or • Be from a reused source. 	Refer to notes in the architectural drawings.
12.2	<i>IMAP Building Materials</i>	To encourage sustainability and transparency in product specification.	At least 90% (by cost) of all permanent formwork, pipes, flooring, blinds and cables in a project shall either: <ul style="list-style-type: none"> • Not contain PVC and have an Environmental Product Declaration (EPD); or • Meet Best Practice Guidelines for PVC. 	Refer to notes in the architectural drawings.
12.3	<i>Green Star 21 Product Transparency and Sustainability</i>	To reward projects that reduce construction waste going to landfill by reusing or recycling building materials.	Products and manufacturers complying with recognised sustainability schemes (e.g. Ecospecifier Green Tag GreenRate, Fairtrade Mark, Good Environmental Choice Australia, verified EPDs, etc.) shall be chosen in preference to non-compliance choices, where they are equally suitable for use and selection does not impact the project budget.	Refer to notes in the architectural drawings.
12.4	<i>IMAP Construction and Building Management</i>		At least 70% of the waste generated during construction and demolition shall be diverted from landfill. This commitment shall be included in the contractual documentation.	Refer to notes in the architectural drawings.

13. INNOVATION

The 'Innovation' criteria aims to recognise the implementation of innovative practices, processes and strategies that promote sustainability in the built environment.

The 'Innovation' criteria also rewards projects that can demonstrate that sustainability principles have been incorporated not at a project level, but also in a broader sense. This may include, for instance, collaboration between building owners and tenants, disclosure of the financial impacts of sustainability or delivering sustainable education content to site workers.

No credits claimed for this category.

14. CONCLUSION

This report outlines the range of ESD initiatives that have been included in the design of the proposed development.

The development proposal demonstrates a holistic approach to sustainable urban development that addresses the ESD objectives of the City of Monash.

A copy of the BESS scorecard used to complete this assessment is attached in [Appendix F](#).

APPENDIX A – PRELIMINARY ENERGY EFFICIENCY ASSESSMENT

Table 1 and 2 outline the assumptions that have been included in the preliminary Section J1-J3 assessment and the results obtained.

We note that this preliminary assessment is a DTS Section J assessment. The project may choose to adopt a JV3 alternative compliance assessment at a later date that will demonstrate equivalence.

General Building Simulation Parameters	
Address	535-559 Police Rd, Mulgrave VIC 3170, Australia
Climate Zone	6
Building Class	9A (Health Care Building)
Weather Data	62_Moorabbin_VIC_CZ0611_12_TMYC
Software	IES VE 2022
Assessed Areas	Extension
Total Assessed Floor Area	9,237m2

Part J1 Building Fabric

Part	Provisions / DTS Performance Values	Compliance	Proposed Performance Values	Comments / Assemblies
J1.1 Application of Part	The Deemed-to-Satisfy Provisions of this Part apply to building elements forming the envelope of a Class 2 to 9 building.	-	-	Noted
J1.2 Thermal construction – general	<p>Insulation must comply with AS/NZS 4859.1 and be installed so that:</p> <ul style="list-style-type: none"> Abuts or overlaps adjoining insulation other than at supporting members such as studs, noggings, joists, furring channels and the like; and Forms a continuous barrier with ceilings, walls, bulkheads, floors or the like; and Does not affect the safe or effective operation of a service or fitting. <p>Reflective insulation must be installed with:</p> <ul style="list-style-type: none"> The necessary airspace to achieve the required R-Value between a reflective side of the reflective insulation and a building lining or cladding; and The reflective insulation closely fitted against any penetration, door or window opening, The reflective insulation adequately supported by framing members; and Each adjoining sheet of roll membrane being overlapped not less than 50mm or taped together. <p>Bulk insulation must be installed so that:</p> <ul style="list-style-type: none"> It maintains its position and thickness, other than where it 	-	-	These are installation requirements and must be specified in the architectural documentation.

	is compressed between cladding and supporting members, water pipes, electrical cabling or the like; and					
	<ul style="list-style-type: none"> In a ceiling where there is no bulk insulation or reflective insulation in the wall beneath, it overlaps the wall by not less than 50mm. 					
J1.3a	Roof and ceiling construction	A roof or ceiling that is part of the envelope must achieve a Total R-Value of 3.20 (downwards)	YES	R_T (down)	4.00	Assumed to be Bradford Anticon R4.2 batts draped over purlins with 175mm ashgrid (or similar) spacers to ensure non compression of the batts and thermal break, or similar.
J1.3b		The solar absorptance of the upper surface of a roof must be not more than 0.45.	YES		0.45 (or less)	Architect to select a light colour finish (e.g. Colorbond Surfsmist, Whitehaven, Galactic, Cosmic, Shale Grey, Classic Cream, Paperbark, or Evening Haze).
J1.4	Roof lights	Roof lights must have a total area of not more than 5% of the floor area of the room or space served and transparent and translucent elements with U_w of 3.9 (or less) and a $SHGC_w$ in accordance to Table J1.4 of the NCC.	N/A		-	There are no roof lights within the assessed project area.
		The Total System U-Value of wall-glazing construction must not be greater than 1.1.	YES		1.02	Refer to Façade Calculator below.
J1.5	Wall and Glazing Method 2	The wall components of a wall-glazing construction must achieve a minimum Total R-Value of 1.0 The solar admittance of externally facing wall-glazing construction must achieve an AC Energy Value of less than 428	YES		330	Refer to Façade Calculator below. DTS glazing U2.5, SHGC 0.25 Prop External walls R1.96 (Cement sheet) and 2.03 (Pre-cast).
J1.6	Floors	A floor without an in-slab heating or cooling system that is part of the envelope must achieve a Total R-Value of 2.0 (downwards). Suspended slabs (eg exposed soffit underneath a conditioned space) to be insulated to R2.0	YES		R_T 2.27	Xtratherm Thin-R 50mm PIR board direct stick to underside of soffit (or similar)

Note that all specific products and assemblies nominated within this report can be replaced by alternatives provided that the same performance values are achieved.

Part J3 Building Sealing

Part	Provisions	Compliance	Comments
J3.2 Chimneys and flues	The chimney or flue of an open solid-fuel burning appliance must be provided with a damper flap that can be closed to seal the chimney or flue.	N/A	There are no chimneys and flues within the project site.
J3.3 Roof lights	A roof light must be sealed, or capable of being sealed, when serving a conditioned space or a habitable room.	N/A	There are no roof lights within the project site.
J3.4 Windows and doors	A seal to restrict air infiltration must be fitted to each edge of a door, openable window or the like when forming part of the envelope of a conditioned space or the external fabric of a habitable room of public area.	YES	These are installation requirements and will be specified in the architectural documentation.
J3.5 Exhaust fans	Miscellaneous exhaust fans must be fitted with a sealing device such as a self-closing damper or the like when serving a conditioned space or a habitable room.	YES	These are installation requirements and will be specified in the architectural documentation.
J3.6 Construction of roofs, walls and floors	Roofs, ceiling, walls, floors and any opening such as a window frame, door frame, roof light frame or the like must be 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 when forming part of the envelope or the external fabric of a habitable room or public area.	YES	These are installation requirements and will be specified in the architectural documentation.
J3.7 Evaporative coolers	An evaporative cooler must be fitted with a self-closing damper or the like when serving a heated space or a habitable room or a public area of a building	N/A	There are no evaporative coolers within the project site.
Condensation	Condensation provisions are not a part of this analysis.	N/A	N/A

Appendix A – Façade Calculator

A copy of the Façade Calculator output is shown below.

Project Summary

Date 18/12/2023 Name smc Company sbe Position AD Building Name / Address Mulgrave PH extension 0 Building State VIC Climate Zone Climate Zone 6 - Mild temperate Building Classification Class 9a - ward Stores Above Ground 4 Tool Version 1.1 (April 2020)	The summary below provides an overview of where compliance has been achieved for Specification J1.5a - Calculation of U-Value and solar admittance - Method 1 (Single Aspect) and Method 2 (Multiple Aspects). <div style="float: right; text-align: right;"> Compliant Solution = Non-Compliant Solution = </div>
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	North	East	South	West	Method 2 All
Wall-glazing U-Value (W/m².K)	0.95	1.04	1.09	0.99	1.02
Solar Admittance	0.05	0.05	0.06	0.06	
AC Energy Value					330

Method 1

Method 2

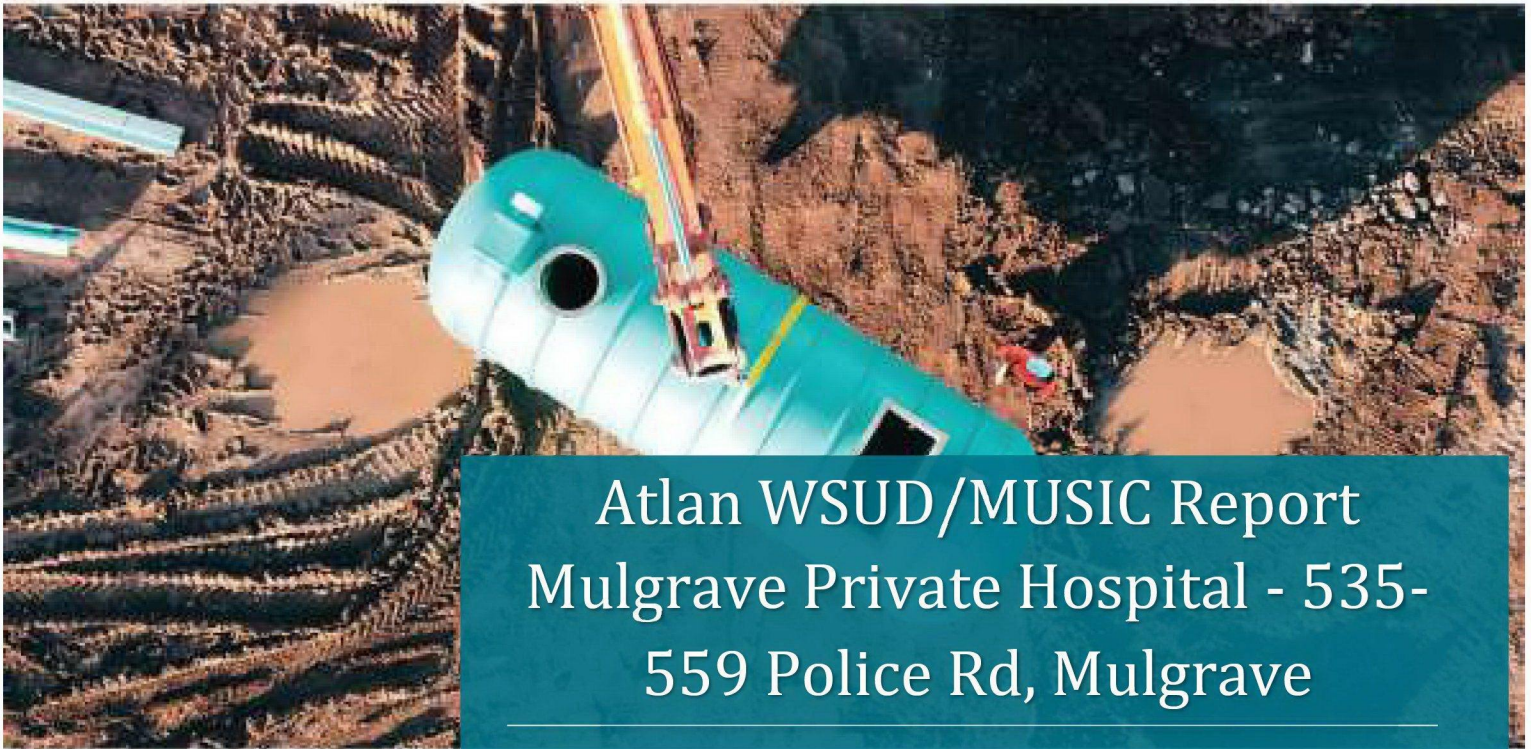
	North	East	South	West
Glazing Area (m²)	202	256	346	344
Glazing to Façade Ratio	22%	22%	26%	25%
Glazing References	DTS 1	DTS 1	DTS 1	DTS 1
Glazing System Types	0	0	0	0
Glass Types	0	0	0	0
Frame Types	0	0	0	0
Average Glazing U-Value (W/m².K)	2.50	2.50	2.50	2.50
Average Glazing SHGC	0.25	0.25	0.25	0.25
Shading Systems	Horizontal	Horizontal	Horizontal	Horizontal
Wall Area (m²)	735.3	893.2	1007.1	1051
Wall Types	Wall	Wall	Wall	Wall
Methodology	Wall			
Wall Construction	DTS R2 DTS R1 int	DTS R2 DTS R1 int	DTS R2 DTS R1 int	DTS R2 DTS R1 int
Wall Thickness	150 100	150 100	150 100	150
Average Wall R-value (m².K/W)	1.30	1.60	1.66	2.03
Solar Absorptance	0.5	0.5	0.5	0.5

APPENDIX B – STORMWATER TREATMENT

See WSUD/MUSIC Report attached.

Atlan

STORMWATER



Atlan WSUD/MUSIC Report Mulgrave Private Hospital - 535- 559 Police Rd, Mulgrave

PROJECT NUMBER:
23-60615

CLIENT:
Sustainable Built Environments

DATE:
December, 18, 2023

Victoria Office
Atlan Stormwater(Formerly SPEL)
897 Wellington Road
Rowville VIC 3178

Telephone: 1300 773 500
sales@atlan.com.au

www.atlan.com.au

WSUD/MUSIC Report | Mulgrave Private Hospital

Sustainable Built Environments

Project Site

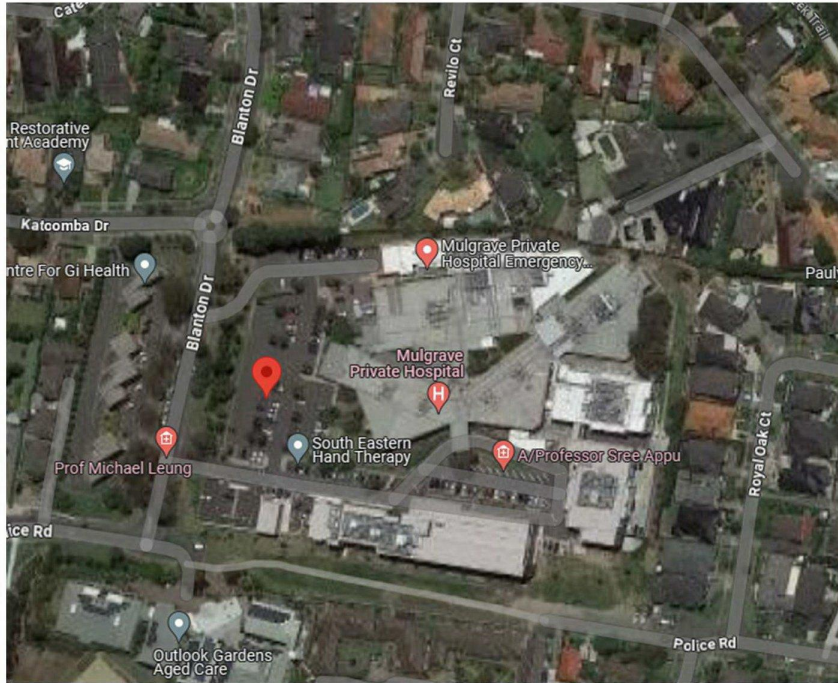


Figure 1: Existing Site Conditions

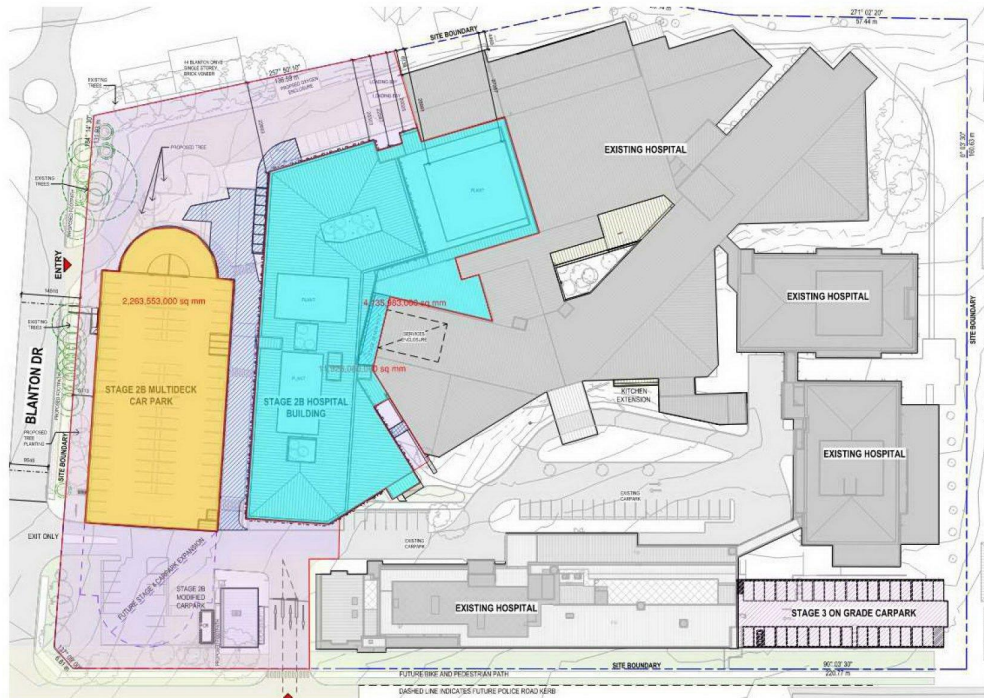


Figure 2: Proposed Development

MUSIC Inputs

10 Year rainfall template: Koo Wee Rup, 1981-1991 6-minute

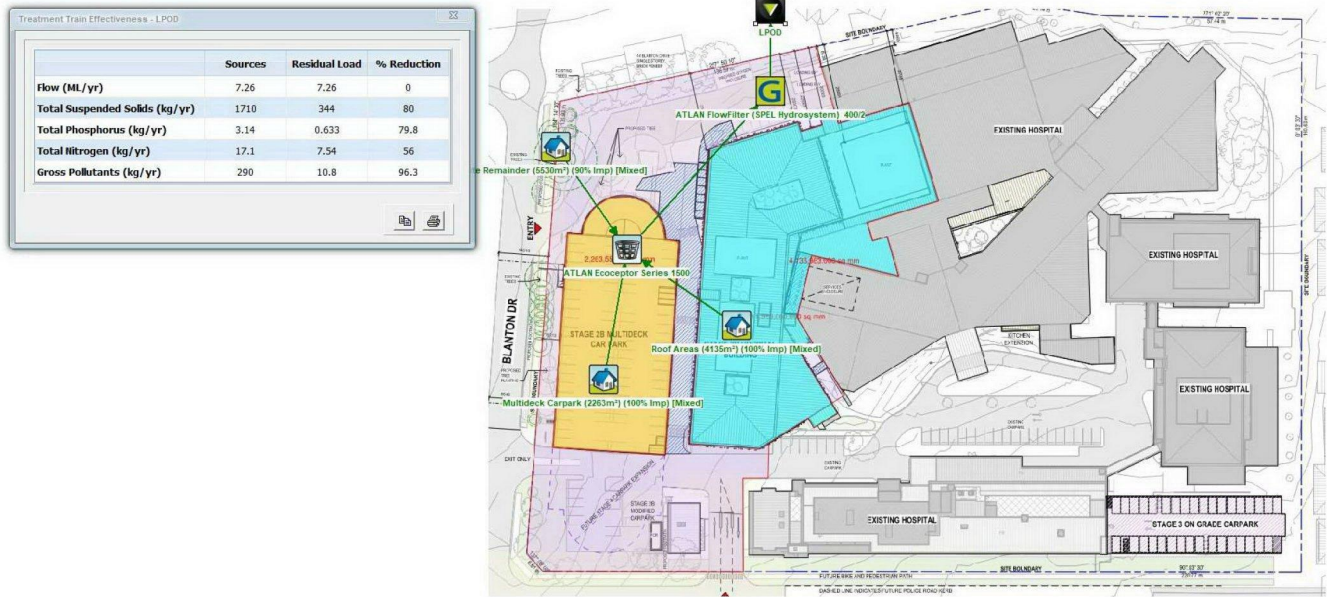


Figure 3: MUSIC Model Configuration

Catchment Details

Catchment	Size (m ²)	Imperviousness (%)
Site Remainder	5530	100
Multideck Carpark	2263	100
Roof Areas	4135	100

Treatment Details

SPEL Ecoceptor

System Type: GPT (Gross Pollutant Trap)

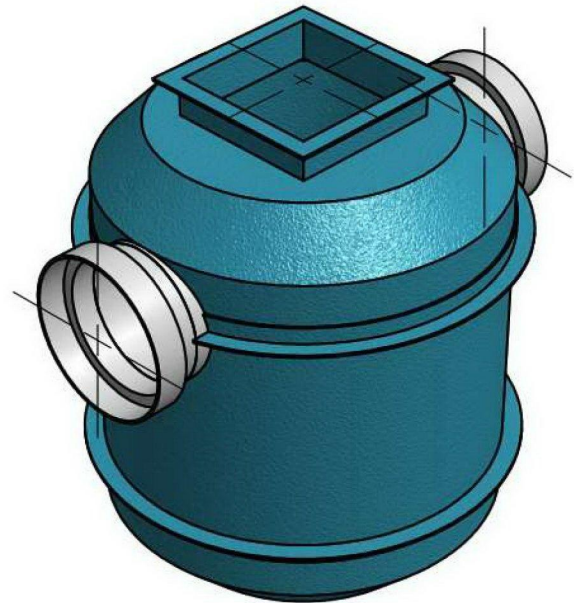
Treatment Type: Primary

Model: Ecoceptor 1500 Series

Treatment Flow Rate: 24 L/s

Pollutant Removal Rates

Pollutant	TSS	TP	TN	GP
Input (mg/L)	1000	5	50	15
Output (mg/L)	290	1.55	26.5	0.7



SPEL Hydrosystem

System Type: Dynamic Separator and Filter

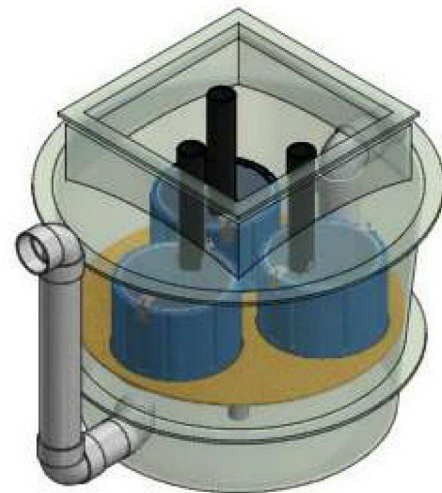
Treatment Type: Secondary and Tertiary

Model: HS.400/2

Treatment Flow Rate: 5L/s

Pollutant Removal Rates

Pollutant	TSS	TP	TN	GP
Input (mg/L)	1000	5	50	15.0
Output (mg/L)	100	0.5	28	0.0



MUSIC Results

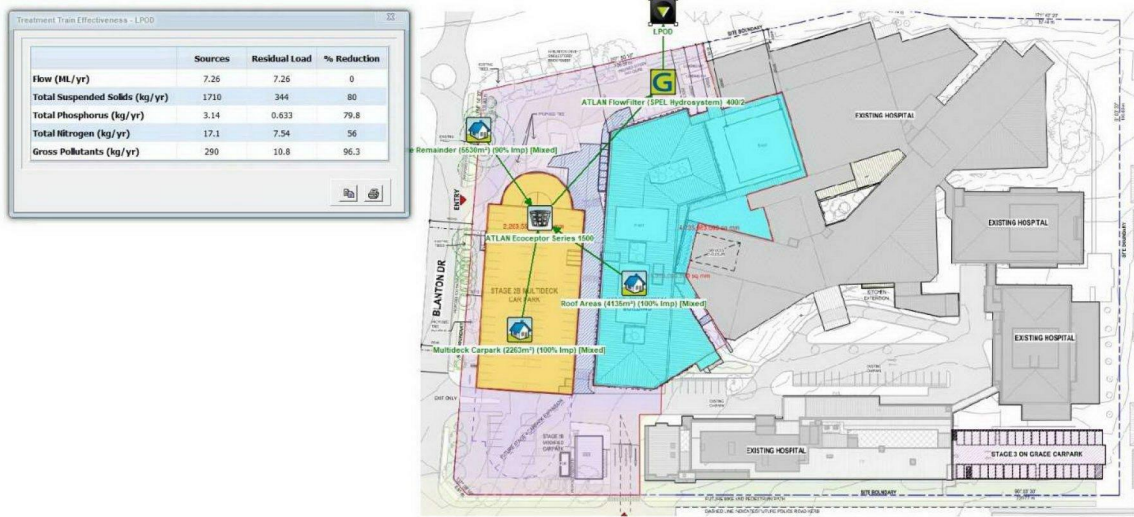


Figure 4: MUSIC Model Results

Pollutant	Sources (kg/yr)	Residual Load (kg/yr)	Reduction (%)	Reduction Target (%)
Flow (ML/yr)	7.26	7.26	0	0
Total Suspended Solids	1710	344	80	80
Total Phosphorus	3.14	0.633	79.8	45
Total Nitrogen	17.1	7.54	56	45
Gross Pollutants	290	10.8	96.3	70

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This study, report and analysis have been based on the information available to SPEL Stormwater at the time of preparation. SPEL Stormwater accepts responsibility for the report and its conclusions to the extent that the information was sufficient at the time of preparation. SPEL Stormwater does not take responsibility for errors and emissions due to incorrect information or information not available to SPEL Stormwater at the time of preparation of the study, report or analysis.

Author: Lee Parker
 Position: Engineering Coordinator

Approved: Kurt Jensen
 Position: VIC/TAS General Manager

APPENDIX C – DAYLIGHT ASSESSMENT

Table 1 outlines the assumptions that have been included in the Daylight Assessment, while Tables 2 and 3 and Figures 1 and 2 show the results obtained.

General Building Simulation Parameters	
Address	535-559 Police Rd, Mulgrave VIC 3170, Australia
Climate Zone	6
Building Class	9A (Health Care Building)
Weather Data	62_Moorabbin_VIC_CZ0611_12_TMYC
Sky	Uniform Design Sky @ 10,000 Lux
Software	IES VE 2022
Application	FlucsDL
Working Plane	Floor Level
Daylight Factor Threshold	2%
Total Assessed Floor Area	2,821m ² (excludes circulation, back of house, operation and administrative areas)

Surface Reflectance	
Floors	0.3
Walls	0.7
Ceilings	0.8
Roof	0.3
Ground	0.3

Glazing Visible Light Transmittance	
External Glazing	0.4

Geometry	
Overshadowing	Neighbouring buildings that provide overshadowing have been included within the model.
Local shading	All balconies, canopies and reveals have been modelled as per the architectural drawings.

Table 1: Daylight modelling inputs

Room ID	Room name	Floor area (m ²)	Floor area > threshold (m ²)	Percentage floor area > threshold (%)
G_000000	G imaging	892.792	303.892	34
1_000006	1S beds 18-22	76.318	35.563	46.6
1_000008	1S beds 13-17	76.724	45.93	59.9
1_000009	1S bed 10-12	44.125	31.07	70.4
1_000000	1S bed s 7-9	44.897	23.813	53
1_00000B	1S beds 1-6	90.398	49.557	54.8
1_00000C	1S beds 25-27	40.544	11.979	29.5
1_00000A	1S beds 28-30	45.693	12.548	27.5
1_00000E	1S beds 23-24	24.318	8.613	35.4
1_00000F	1N beds 23-26	72.405	31.165	43
1_000002	1N Beds 21-22	28.356	12.798	45.1
1_000005	1N beds 15-20	89.512	59.008	65.9
1_000011	1N beds 27-30	61.248	22.408	36.6
1N000001	1N beds 1-8	103.166	44.472	43.1
1N000002	1N bed 9-14 and staff	139.546	88.986	63.8

1S000001	2S beds 18-22	76.318	45.168	59.2
1S000002	2S beds 13-17	76.724	55.064	71.8
1S000003	2S bed 10-12	44.125	33.681	76.3
1S000004	2S bed s 7-9	44.897	27.037	60.2
1S000005	2S beds 1-6	90.398	52.296	57.9
1S000006	2S beds 25-27	40.544	25.109	61.9
1S000007	2S beds 28-30	45.693	27.463	60.1
1S000008	2S beds 23-24	24.318	18.745	77.1
1N000000	2N beds 23-26	72.405	31.399	43.4
1N000003	2N Beds 21-22	28.356	15.558	54.9
1N000004	2N beds 15-20	89.512	60.508	67.6
1N000005	2N beds 27-30	61.248	41.579	67.9
1N000006	2N beds 1-8	103.166	65.674	63.7
1N000007	2N bed 9-14 and staff	139.546	98.845	70.8
G_000002	G Education	54.339	13.846	25.5
		2821.631	1393.774	49%

Table 2: Daylight assessment results

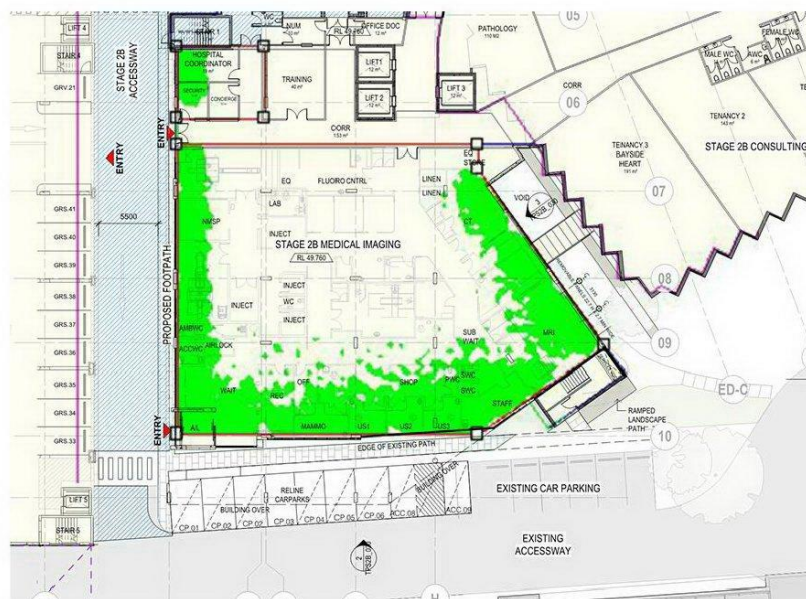


Figure 4: Level G Daylight plots showing area of compliance



Figure 5: Level 1 Daylight plots showing area of compliance



Figure 6: Level 2 Rotated Daylight plots showing area of compliance

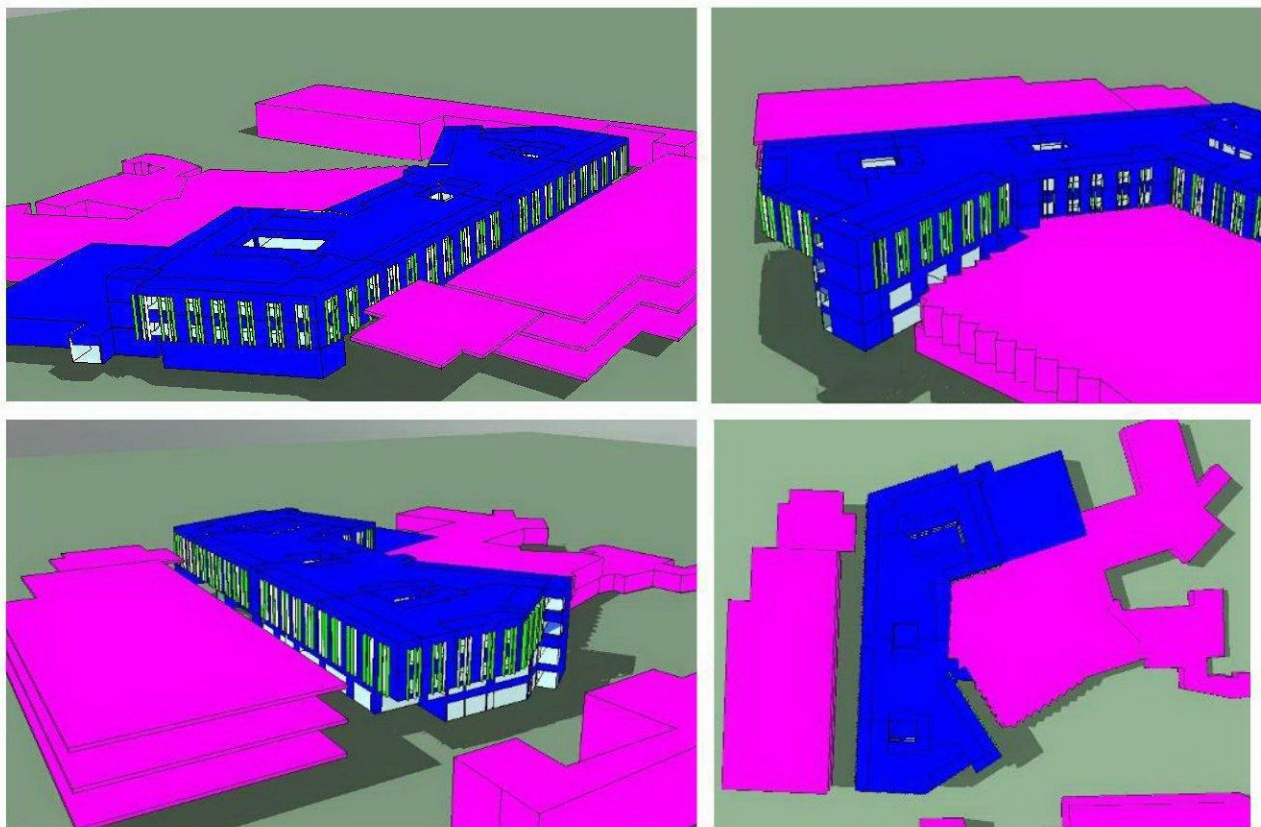


Figure 7 Model Images

APPENDIX D – PAINTS, ADHESIVE, SEALANTS AND CARPETS

The following TVOC limits are applicable to all internal applications of all types of paints, adhesives or sealants applied on-site, including both exposed and concealed applications. If exterior grade products are used in an internal application then these must also meet the requirements.

The following items are excluded from this credit:

- Glazing film, tapes, and plumbing pipe cements;
- Products used in car park;
- Paints, adhesives and sealants used off-site, for example applied to furniture items in a manufacturing site and later installed in the fitout; and
- Adhesives and mastics used for temporary formwork and other temporary installations.

Product Type	Maximum TVOC Content (g/litre of ready to use product)
General purpose adhesive and sealants	50
Interior wall and ceiling paints, 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 sealants, fire retardant sealants and adhesives	250
Structural glazing adhesive, wood flooring and laminate adhesives and sealants	100

Table 3: Maximum TVOC Limits for Paints, Adhesives and Sealants

Further, carpets used in the project must either be:

- Certified under a recognised Product Certification Scheme (listed on the GBCA website) or other recognised standards; or
- Compliant with the Total VOC (TVOC) limits specified in the table below.

Product Type	Maximum TVOC Content (g/litre of ready to use product)
ASTM D5116 – Total VOC limit	0.5mg/m ² per hour
ASTM D5116 – 4-PC (4 – Phenylcyclohexene)	0.05mg/m ² per hour
ISO 16000 / EN 13419 – TVOC at three days	0.5mg/m ² per hour
ISO 10580 / ISO/TC 219 (Document N238) – TVOC at 24 hours	0.5mg/m ² per hour

Table 4: Carpet Test Standards and TVOC Emissions Limits

APPENDIX E – ENGINEERED WOOD PRODUCTS

The term "engineered wood products" includes composite wood products and includes raw/ unfinished as well as finished products. Items not covered by these limits include products used in exterior applications, formwork, internal car park applications, re-used products, and raw timber. All emission levels must be established by a NATA or ISO/IEC 17025 registered laboratory as per the testing methodologies in the table above.

Test Protocol	Emission Limit / Unit of Measurement
AS/NZS 2269:2004, testing procedure AS/NZS 2098.11:2005 method 10 for Plywood	≤1.0 mg/L
AS/NZS 1859.1:2004 - Particle Board, with use of testing procedure AS/NZS 4266.16:2004 method 16	≤1.5 mg/L
AS/NZS 1859.2:2004 - MDF, with use of testing procedure AS/NZS 4266.16:2004 method 16	≤1.0 mg/L
AS/NZS 4357.4 – Laminated Veneer Lumber (LVL)	≤1.0 mg/L
Japanese Agricultural Standard MAFF Notification No.701 Appendix Clause 3 (11) - LVL	≤1.0 mg/L
JIS A 5908:2003- Particle Board and Plywood, with use of testing procedure JIS A 1460	≤1.0 mg/L
JIS A 5905:2003 - MDF, with use of testing procedure JIS A 1460	≤1.0 mg/L
JIS A1901 (not applicable to Plywood, applicable to high pressure laminates and compact laminates)	≤0.1 mg/ m ² hr
ASTM D5116 (applicable to high pressure laminates and compact laminates)	≤0.1mg/m ² hr
ISO 16000 part 9, 10 and 11 (also known as EN 13419), applicable to high pressure laminates and compact laminates	≤0.1 mg/m ² hr (at 3 days)
ASTM D6007	≤0.12mg/m ³ **
ASTM E1333	≤0.12mg/m ³ ***
EN 717-1 (also known as DIN EN 717-1)	≤0.12 mg/m ³
EN 717-2 (also known as DIN EN 717-2)	≤3.5 mg/m ² hr
**The test report must confirm that the conditions of this table comply for the particular wood product type, the final results must be presented in EN 717-1 equivalent (as presented in the table) using the correlation ratio of 0.98.	
*** The final results must be presented in EN 717-1 equivalent (as presented in the table), using the correlation ratio of 0.98.	

Table 5: Formaldehyde emission limit values for engineered wood products

APPENDIX F – BESS SCORECARD

BESS Report

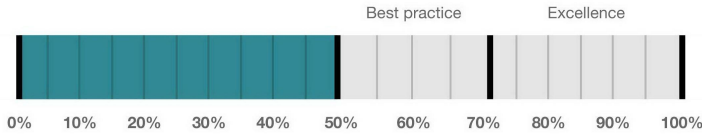
Built Environment Sustainability Scorecard



This BESS report outlines the sustainable design commitments of the proposed development at 535 Police Rd Mulgrave Victoria 3170. 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



53%

Project details

Address 535 Police Rd Mulgrave Victoria 3170
Project no 316F71AE-R2
BESS Version BESS-6

Site type Non-residential development
Account sean.mcardle@sbe.com.au
Application no.
Site area 11,928.00 m²
Building floor area 9,237.00 m²
Date 20 December 2023
Software version 1.8.1-B.406



Performance by category ● Your development ● Maximum available

Category	Weight	Score	Pass
Management	5%	50%	*
Water	9%	57%	✓
Energy	28%	70%	✓
Stormwater	14%	100%	✓
IEQ	17%	52%	✓
Transport	9%	0%	*
Waste	6%	66%	*
Urban Ecology	6%	25%	*
Innovation	9%	0%	*

Buildings

Name	Height	Footprint	% of total footprint
Extension	4	3,400 m ²	100%


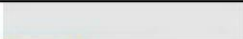




Dwellings & Non Res Spaces

Non-Res Spaces

Name	Quantity	Area	Building	% of total area
Public building				
extension works	1	9,237 m ²	Extension	100%
Total	1	9,237 m²	100%	

Credit summary


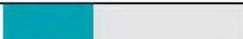










Management Overall contribution 4.5%

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



Water Overall contribution 9.0%

		Minimum required 50%	57%	✔ Pass
1.1 Potable water use reduction			40%	
3.1 Water Efficient Landscaping			100%	
4.1 Building Systems Water Use Reduction			100%	

Energy Overall contribution 27.5%

		Minimum required 50%	70%	✔ Pass
1.1 Thermal Performance Rating - Non-Residential			37%	
2.1 Greenhouse Gas Emissions			100%	
2.2 Peak Demand			100%	
2.3 Electricity Consumption			100%	
2.4 Gas Consumption			100%	
3.1 Carpark Ventilation			N/A	✦ Scoped Out carpark is open
3.2 Hot Water			100%	
3.7 Internal Lighting - Non-Residential			100%	
4.1 Combined Heat and Power (cogeneration / trigeneration)			N/A	✦ Scoped Out No cogeneration or trigeneration system in use.
4.2 Renewable Energy Systems - Solar			100%	
4.4 Renewable Energy Systems - Other			0%	⊘ Disabled No other (non-solar PV) renewable energy is in use.


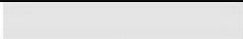
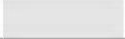
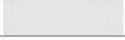
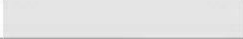
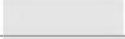
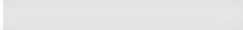
Stormwater Overall contribution 13.5%

		Minimum required 100%	100%	✔ Pass
1.1 Stormwater Treatment			100%	





IEQ Overall contribution 16.5%

		Minimum required 50%	52%	✔ Pass
1.4 Daylight Access - Non-Residential			49%	✔ Achieved
2.3 Ventilation - Non-Residential			83%	✔ Achieved
3.4 Thermal comfort - Shading - Non-residential			0%	
3.5 Thermal Comfort - Ceiling Fans - Non-Residential			0%	
4.1 Air Quality - Non-Residential			100%	







Transport Overall contribution 9.0%

			0%	
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%	


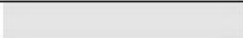
Waste Overall contribution 5.5%

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

Urban Ecology Overall contribution 5.5%

			25%	
1.1 Communal Spaces			0%	
2.1 Vegetation			50%	
2.2 Green Roofs			0%	
2.3 Green Walls and Facades			0%	
3.2 Food Production - Non-Residential			0%	

Innovation Overall contribution 9.0%

			0%	
1.1 Innovation			0%	

Credit breakdown

Management Overall contribution 2%



1.1 Pre-Application Meeting	0%
Score Contribution	This credit contributes 37.5% towards the category score.
Criteria	Has an ESD professional been engaged to provide sustainability advice from schematic design to construction? AND Has the ESD professional been involved in a pre-application meeting with Council?
Question	Criteria Achieved ?
Project	No
2.3 Thermal Performance Modelling - Non-Residential	50%
Score Contribution	This credit contributes 25.0% towards the category score.
Criteria	Has a preliminary facade assessment been undertaken in accordance with NCC2019 Section J1.5?
Question	Criteria Achieved ?
Public building	Yes
Criteria	Has preliminary modelling been undertaken in accordance with either NCC2019 Section J (Energy Efficiency), NABERS or Green Star?
Question	Criteria Achieved ?
Public building	No
3.2 Metering - Non-Residential	100%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Have utility meters been provided for all individual commercial tenants?
Question	Criteria Achieved ?
Public building	Yes
3.3 Metering - Common Areas	100%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Have all major common area services been separately submetered?
Question	Criteria Achieved ?
Public building	Yes
4.1 Building Users Guide	100%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Will a building users guide be produced and issued to occupants?
Question	Criteria Achieved ?
Project	Yes

Water Overall contribution 5% Minimum required 50%

Water Approach	
What approach do you want to use for Water?:	Use the built in calculation tools
Project Water Profile Question	
Do you have a reticulated third pipe or an on-site water recycling system?:	No
Are you installing a swimming pool?:	No
Are you installing a rainwater tank?:	No
Water fixtures, fittings and connections	
Showerhead:	4 Star WELS (>= 4.5 but <= 6.0)
Bath:	Scope out
Kitchen Taps:	>= 5 Star WELS rating
Bathroom Taps:	>= 5 Star WELS rating
Dishwashers:	>= 5 Star WELS rating
WC:	>= 4 Star WELS rating
Urinals:	>= 5 Star WELS rating
Washing Machine Water Efficiency:	Scope out
1.1 Potable water use reduction	40%
Score Contribution	This credit contributes 71.4% 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	30226 kL
Output	Proposed (excluding rainwater and recycled water use)
Project	20502 kL
Output	Proposed (including rainwater and recycled water use)
Project	20502 kL
Output	% Reduction in Potable Water Consumption
Project	32 %
3.1 Water Efficient Landscaping	100%
Score Contribution	This credit contributes 14.3% towards the category score.
Criteria	Will water efficient landscaping be installed?
Question	Criteria Achieved ?
Project	Yes
4.1 Building Systems Water Use Reduction	100%
Score Contribution	This credit contributes 14.3% towards the category score.
Criteria	Where applicable, have measures been taken to reduce potable water consumption by >80% in the buildings air-conditioning chillers and when testing fire safety systems?
Question	Criteria Achieved ?
Project	Yes

Energy Overall contribution 19% Minimum required 50%

Use the BESS Deem to Satisfy (DtS) method for Energy?:	Yes
Do all exposed floors and ceilings (forming part of the envelope) demonstrate a minimum 10% improvement in required NCC2019 insulation levels (total R-value upwards and downwards)?:	Yes
Does all wall and glazing demonstrate meeting the required NCC2019 facade calculator (or better than the total allowance)?:	Yes
Are heating and cooling systems within one Star of the most efficient equivalent capacity unit available, or Coefficient of Performance (CoP) & Energy Efficiency Ratios (EER) not less than 85% of the CoP & EER of the most efficient equivalent capacity unit available?:	Yes
Are water heating systems within one star of the best available, or 85% or better than the most efficient equivalent capacity unit?:	Yes
Are you installing a cogeneration or trigeneration system?:	No
Non-Residential Building Energy Profile	
Heating, Cooling & Comfort Ventilation - Electricity - reference fabric and reference services:	-
Heating, Cooling & Comfort Ventilation - Electricity - proposed fabric and reference services:	-
Heating, Cooling & Comfort Ventilation - Electricity - proposed fabric and proposed services:	-
Heating - Gas - reference fabric and reference services:	-
Heating - Gas - proposed fabric and reference services:	-
Heating - Gas - proposed fabric and proposed services:	-
Heating - Wood - reference fabric and reference services:	-
Heating - Wood - proposed fabric and reference services:	-
Heating - Wood - proposed fabric and proposed services:	-
Hot Water - Electricity - Baseline:	-
Hot Water - Electricity - Proposed:	-
Hot Water - Gas - Baseline:	-
Hot Water - Gas - Proposed:	-
Lighting - Baseline:	-
Lighting - Proposed:	-
Peak Thermal Cooling Load - Baseline:	-
Peak Thermal Cooling Load - Proposed:	-
Solar Photovoltaic system	
System Size (lesser of inverter and panel capacity):	50 kw array 50.0 kW peak
Orientation (which way is the system facing)?:	50 kw array North
Inclination (angle from horizontal):	50 kw array 38.0 Angle (degrees)

1.1 Thermal Performance Rating - Non-Residential	37%
Score Contribution	This credit contributes 40.0% towards the category score.
Criteria	What is the % reduction in heating and cooling energy consumption against the reference case (NCC 2019 Section J)?
2.1 Greenhouse Gas Emissions	100%
Score Contribution	This credit contributes 10.0% towards the category score.
Criteria	What is the % reduction in annual greenhouse gas emissions against the benchmark?
2.2 Peak Demand	100%
Score Contribution	This credit contributes 5.0% towards the category score.
Criteria	What is the % reduction in the instantaneous (peak-hour) demand against the benchmark?
2.3 Electricity Consumption	100%
Score Contribution	This credit contributes 10.0% towards the category score.
Criteria	What is the % reduction in annual electricity consumption against the benchmark?
2.4 Gas Consumption	100%
Score Contribution	This credit contributes 10.0% towards the category score.
Criteria	What is the % reduction in annual gas consumption against the benchmark?
3.1 Carpark Ventilation	N/A  Scoped Out
This credit was scoped out	carpark is open
3.2 Hot Water	100%
Score Contribution	This credit contributes 5.0% towards the category score.
Criteria	What is the % reduction in annual energy consumption (gas and electricity) of the hot water system against the benchmark?
3.7 Internal Lighting - Non-Residential	100%
Score Contribution	This credit contributes 10.0% 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 J6.2a of the NCC 2019 Vol 1?
Question	Criteria Achieved ?
Public building	Yes
4.1 Combined Heat and Power (cogeneration / trigeneration)	N/A  Scoped Out
This credit was scoped out	No cogeneration or trigeneration system in use.

4.2 Renewable Energy Systems - Solar		100%
Score Contribution	This credit contributes 5.0% 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	65,152 kWh	
Output	% of Building's Energy	
Public building	19 %	
4.4 Renewable Energy Systems - Other		0% <input type="checkbox"/> Disabled
This credit is disabled	No other (non-solar PV) renewable energy is in use.	

Stormwater

Overall contribution 14% Minimum required 100%


Which stormwater modelling are you using?:		MUSIC or other modelling software
1.1 Stormwater Treatment		100%
Score Contribution	This credit contributes 100.0% towards the category score.	
Criteria	Has best practice stormwater management been demonstrated?	
Question	Flow (ML/year)	
Project	0.0 % Reduction	
Question	Total Suspended Solids (kg/year)	
Project	80.0 % Reduction	
Question	Total Phosphorus (kg/year)	
Project	79.8 % Reduction	
Question	Total Nitrogen (kg/year)	
Project	56.0 % Reduction	

IEQ Overall contribution 9% Minimum required 50%

1.4 Daylight Access - Non-Residential	49%	✓ 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	49 %	
2.3 Ventilation - Non-Residential	83%	✓ 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	0 %	
Criteria	What increase in outdoor air is available to regular use areas compared to the minimum required by AS 1668.2:2012?	
Question	What increase in outdoor air is available to regular use areas compared to the minimum required by AS 1668:2012?	
Public building	50 %	
Criteria	What CO2 concentrations are the ventilation systems designed to achieve, to monitor and to maintain?	
Question	Value	
Public building	500 ppm	
3.4 Thermal comfort - Shading - Non-residential	0%	
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	0 %	
3.5 Thermal Comfort - Ceiling Fans - Non-Residential	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	0 %	
4.1 Air Quality - Non-Residential	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 ?	
Project	Yes	

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

Transport Overall contribution 0%

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
This credit is disabled	Credit 1.4 must be complete first.	
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	

Waste Overall contribution 4%

1.1 - Construction Waste - Building Re-Use	100%
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	Yes
2.1 - Operational Waste - Food & Garden Waste	0%
Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	Are facilities provided for on-site management of food and garden waste?
Question	Criteria Achieved ?
Project	No
2.2 - Operational Waste - Convenience of Recycling	100%
Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	Are the recycling facilities at least as convenient for occupants as facilities for general waste?
Question	Criteria Achieved ?
Project	Yes

Urban Ecology Overall contribution 1%

1.1 Communal Spaces	0%
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 ² for each of the first 50 occupants * Additional 0.5m ² for each occupant between 51 and 250 * Additional 0.25m ² for each occupant above 251?
Question	Common space provided
Public building	0.0 m ²
Output	Minimum Common Space Required
Public building	368 m ²
2.1 Vegetation	50%
Score Contribution	This credit contributes 50.0% towards the category score.
Criteria	How much of the site is covered with vegetation, expressed as a percentage of the total site area?
Annotation	Approximately 13% of the site (1,565m ²) area shall be covered in vegetation.
Question	Percentage Achieved ?
Project	13 %
2.2 Green Roofs	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
2.3 Green Walls and Facades	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
3.2 Food Production - Non-Residential	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	0.0 m ²
Output	Min Food Production Area
Public building	231 m ²

Innovation Overall contribution 0%

1.1 Innovation	0%
Score Contribution	This credit contributes 100.0% towards the category score.
Criteria	What percentage of the Innovation points have been claimed (10 points maximum)?

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