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Sustainable Built Environments Pty Ltd

Environmentally Sustainable Design (ESD) Report

for the

PROPOSED NON RESIDENTIAL DEVELOPMENT

at

12-14 Johnson Street, Oakleigh

For

Tal Goldman

BECENTRAL

CONTENTS

1. Executive Summary 3
2. Design 6
3. Management 7
4. Water 8
5. Energy 9
6. Stormwater 10
7. Indoor Environment Quality 11
8. Transport 12
9. Waste 13
10. Urban Ecology 14
11. Materials 15
12. Innovation 16
13. Conclusion 17

Appendix A – Preliminary Energy Efficiency Assessment 18
Appendix B – Stormwater Treatment 22
Appendix C – Paints, Adhesive, Sealants and Carpets 23
Appendix D – Engineered Wood Products 24
Appendix E – Daylight Assessment 25
Appendix F – BESS Scorecard 30

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V1	19/03/20	12-14 Johnson St, Oakleigh Plans dated 02.03.20	SMc
V2	26/03/20	12-14 Johnson St, Oakleigh Plans dated 25.03.20	SMc
V3	06/07/20	12-14 Johnson St, Oakleigh Plans dated 16.06.20 Rev 2	SMc
V4	17/07/20	Confirm bicycle parking provisions	SMc

1. EXECUTIVE SUMMARY

Sustainable Built Environments (SBE) has been commissioned to provide an Environmentally Sustainable Design (ESD) report for the proposed non-residential development at 12-14 Johnson Street, Oakleigh.

The aim of the ESD 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 City of Monash ESD policy aims and objectives. In particular, this report addresses the requirements outlined in the Monash Planning Scheme Clause 22.13.

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 encouraged to be addressed by Council.

The proposed development currently targets 56 points out of 100 in BESS (see extract below), which equates to Best Practice.

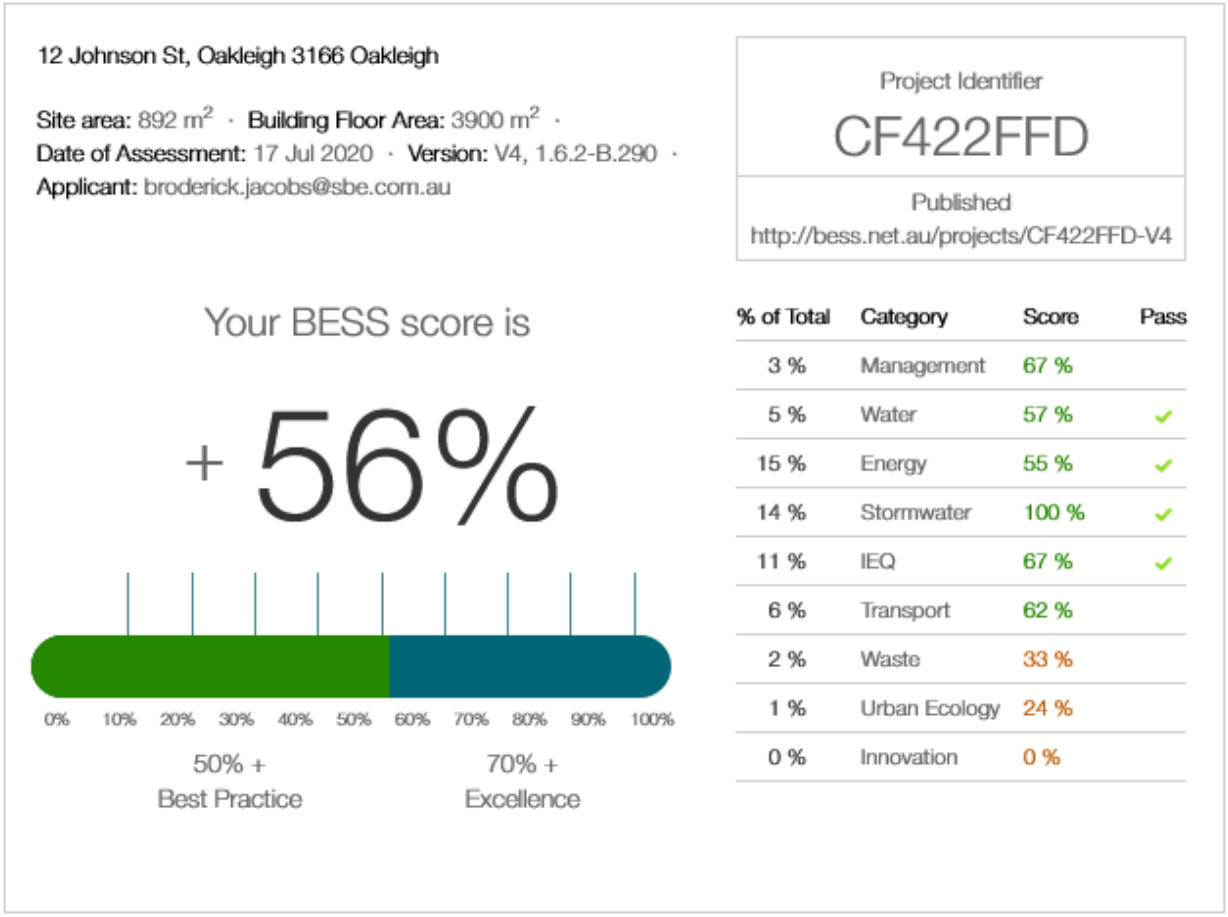

Figure 1 BESS score card. See Appendix F for full report.

2. INTRODUCTION

Sustainable Built Environments (SBE) has been commissioned to provide an Environmentally Sustainable Design (ESD) report for the proposed office accommodation at 12-14 Johnson Street, Oakleigh.

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. The report addresses the City of Monash commitment to promoting good ESD outcomes in the built environment and demonstrates how this is being achieved within the project.

2.1 The Project

The project involves the development a mixed use non-residential building. The proposed building consists of offices from level 2-5, the ground floor has 2 retail tenancies, a lobby, services, end of trip facilities and carparks, there is a further two levels of carparks below ground.

2.2 Building Class Determination and Requirements

Table 1 below describes Class 5 and Class 5 building definitions as per the NCC[1]. In this regards, the proposed development has been classified as mixed use with appropriate classifications applied to each section of the building.

Building Class	Definition
Class 5	*Class 5 buildings are office buildings that are used for professional or commercial purposes, excluding Class 6, 7, 8 or 9 buildings. Examples of Class 5 buildings are offices for lawyers, accountants, general medical practitioners, government agencies and architects.*
Class 6	*Class 6 buildings are typically shops, restaurants and cafés. They are a place for the sale of retail goods or the supply of services direct to the public. Some examples are: a dining room, bar, shop, kiosk part of a hotel/ motel, hairdresser, barber shop, public laundry, market, showroom, funeral parlour or a shopping centre.*
Class 7a	*Carparks*

Table 1: Relevant building definitions as per NCC

2.3 Documents

This report has been informed by the Architectural drawings produced by Bruce Henderson Architects dated 16.06.20 Rev 2.

2.4 City of Monash Planning Requirements

2.4.1. Clause 22.13 ENVIRONMENTALLY SUSTAINABLE DEVELOPMENT (ESD) POLICY

Clause 22.13 of the Monash Planning Scheme calls for a Sustainable Management Plan (SMP) for the project, that outlines the Environmentally Sustainable Design (ESD) initiatives of the development (see table 1 below) and references the use of the BESS[2] tool.

[1] *National Construction Code 2019*

[2] *Built Environment Sustainability Scorecard*

Type of Development	Application Requirements	Example Tools
dwellings with a gross floor area of more than 1000m².		STORM
Non-residential		
▪ Development of a non-residential building with a gross floor area between and including 500m² and 1000m².	Sustainable Design Assessment (SDA)	BESS MUSIC STORM
▪ Development of a non-residential building with a gross floor area of more than 1000m².	Sustainability Management Plan (SMP)	Green Star BESS MUSIC STORM

Table 2: ESD Application Requirements from Clause 22.13 of the Monash Planning Scheme

2.5 This Report

The following Guides and tools have been used to assess and verify the potential of the design in relation to those Clauses:

- IES VE modelling using the JV3 protocols to test the energy efficiency of the building as per NCC 2019 requirements.
- IES VE modelling using the Flucs DL module to test the daylighting of the building.
- Green star – for guidance and materials, VOCs.
- STORM Modelling to design the WSUD response
- BESS to frame the overall assessment.

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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.

The above numbered items are also generally in decreasing order of cost effectiveness over the life of the building.

Proposed Design and Site

The proposed development is located within an established neighbourhood and is well connected to public transport and local amenities.

The proposed design has extensive perimeter glazing wherever possible to bring daylight into the heart of the building.

The location mostly consists of office space which is much less likely to be occupied during the night and is therefore less reliant on artificial lighting.

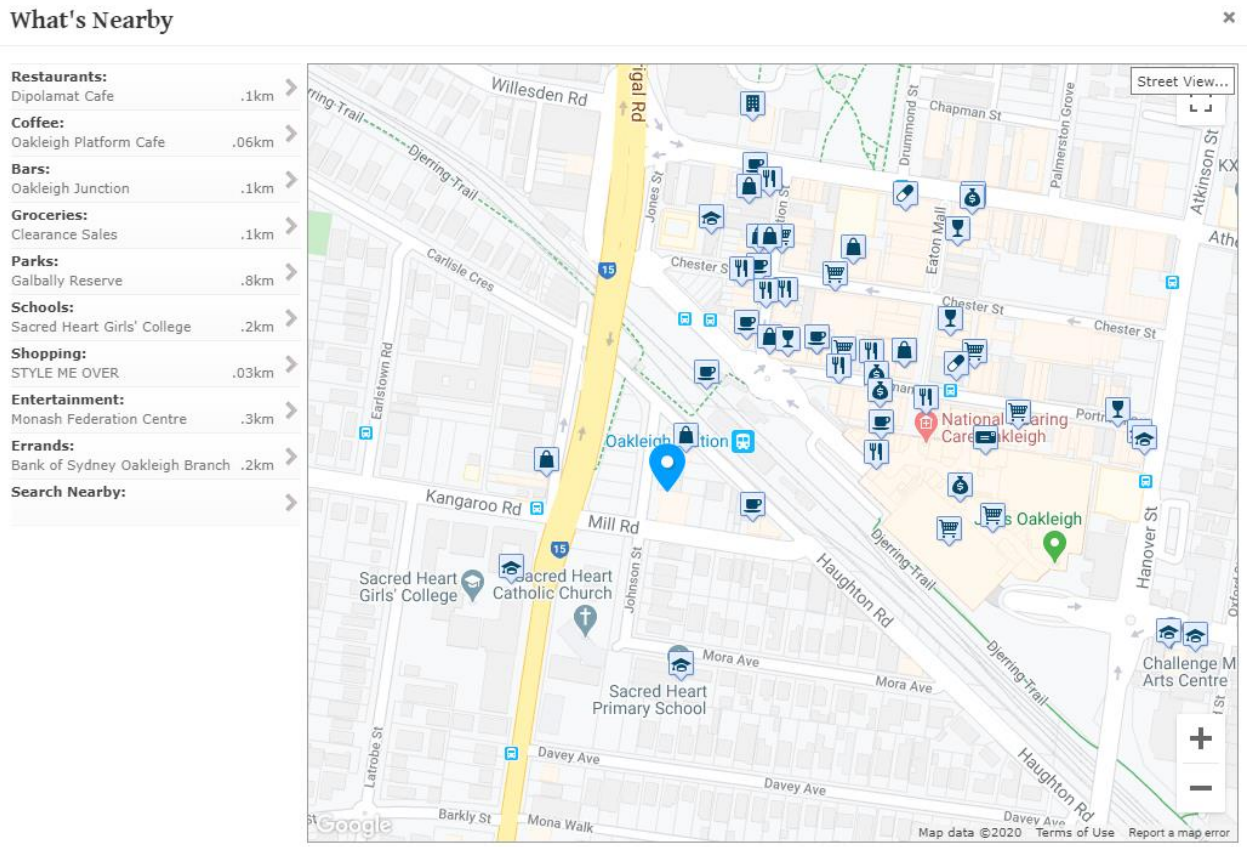


Figure 2 – Location plan for the proposed development

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 initiatives may include: engaging a professional with a thorough understanding of green building principles; conducting early energy and thermal assessment to help optimise the design, managing construction activities to minimise pollution and maximise soil and air quality protection; enhanced commissioning and tuning of building systems; as well as information management initiatives such as user training and data monitoring.

Management		
Credit	**Aim**	**Design Response/ Project Compliance**
Thermal Performance Modelling	To encourage and recognise developments that have used modelling to inform passive design at the early design stage	Preliminary modelling has been undertaken in accordance with BCA Section J (Energy Efficiency) JV3 protocols, including a Section J DTS glazing calculation to establish the base case (DTS) and an As-Designed (AD) models for the building . For more information on Section J DTS glazing calculations and results for base case (DTS) and an As-Designed (AD) models refer to Appendix A.
Metering	To provide building users with information that allows monitoring of energy and water consumption	The commercial tenancies will be separately metered. All major common area services (e.g. common lighting, car park, exhaust fan, etc.) shall be separately sub-metered.
Building Users Guide	To encourage and recognise initiatives that will help building users to use the building efficiently	A simple Building User's Guide will be provided to building tenants, detailing information and inspiration for sustainable behaviour

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. Australia remains the driest inhabited continent in the world with the third largest per capita water consumption rates, and demand for water is close to outstripping supply in many major cities'.

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. Demand for potable water can be reduced through recycling from rainwater, greywater and blackwater. Currently, less than ten percent of Australia's sewage is being recycled.

BESS has calculated that the design responses proposed for this development will achieve a 40% reduction in potable water consumption compared to a reference building.

Water		
Credit	**Aim**	**Design Response/ Project Compliance**
Rainwater Tank	To encourage building design that minimises potable water consumption in operations.	Rainwater from the roof area will be captured (25,000L tank), treated and reused for toilet flushing.
Sanitary Fixture Efficiency		All sanitary fixtures shall have the WELS rating stated below: • Showers – 3 Stars (>6.0 but <=7.5) • Kitchen Taps – 5 Stars • Bathroom Taps – 6 Stars • Dishwashers – 5 stars • Toilets – 4 Stars • Urinals – 6 stars • Washing Machines – 5 Stars (where installed) • Rainwater flushing to WCs
Water Efficient Landscaping		Water efficient landscaping will be installed.

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. Australia's greenhouse gas emissions per person are amongst the highest in the world.

There is potential for substantial environmental savings through energy efficiency measures in Australian buildings. Greater efficiency of energy use, energy demand reduction methods and generation of energy from alternative sources are all means of addressing this urgent Issue.

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. Reductions in energy demand and associated greenhouse gas emissions may be achieved through more efficient use of energy in buildings and generation of energy from alternative sources.

BESS has calculated that the design responses proposed for this development will achieve a 19% reduction in greenhouse gas emissions.

Energy		
Credit	**Aim**	**Design Response/ Project Compliance**
Thermal Performance Rating	To reduce energy use and hence greenhouse gas emissions and consumption/ maintenance costs.	Initial modelling suggests the proposed building will require 19% less energy for heating and cooling, due to fabric and building services improvements detailed in appendix A. The proposed HVAC EER/COP for the building = 3.7
Greenhouse Gas Emissions		Initial modelling suggests the proposed building will produce 19% less greenhouse gas emissions, due to fabric and building services improvements. The proposed HVAC EER/COP for the building = 3.7
Gas Consumption		Initial modelling suggests the proposed building will consume 33% less natural gas, due to improved DHW unit selection.
Domestic Hot Water		The proposed domestic hot water system shall have a 95% efficient boiler with a continuous flow centralised system powered by natural gas.
Car Park Ventilation		A Carbon Monoxide monitoring system shall be installed to control the operation and speed of the car park ventilation fans.
Internal Lighting		The maximum illumination power density (W/m2) in at least 90% of the building shall be at least 20% lower than required by Table J6.2a of the NCC 2016 BCA Volume 1 Section J (Class 2 to 9). LED lighting will be used throughout.

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		
Credit	**Aim**	**Design Response/ Project Compliance**
Stormwater Treatment	To minimise negative environmental impacts of stormwater runoff and maximise onsite re-use of stormwater	Rainwater is to be collected from the roof for reuse for toilet flushing; 100m2 of terrace runoff is to be diverted through a 4m2 Raingarden on the terrace at level 1 and the remainder of stormwater arriving on site shall not be treated prior to discharge. Refer to Appendix B for the WSUD STORM assessment.

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 residents.

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		
Credit	**Aim**	**Design Response/ Project Compliance**
Daylight Access – Non Residential	What % of the nominated floor area has at least 2% daylight factor?	69% of the retail tenancy area and 66.4% of the office area achieve a Daylight Factor (DF) of 2% or more. It is assumed the retail windows are clear with a 70% transmittance and that the office windows have 55% transmittance. See Appendix E. for modelling results.

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. Global warming is directly affected by motor vehicle use due to the high amounts of energy required to build cars and supporting infrastructure and services, as well as the greenhouse gas emissions within exhaust fumes. Car exhaust fumes also contribute to asthma and other respiratory illnesses.

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.

Transport		
Credit	**Aim**	**Design Response/ Project Compliance**
Bike parking and EOT facilities	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)? And 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)? And Where adequate bicycle parking has been provided. Is there also: * 1 shower for the first 5 employee bicycle spaces plus 1 to each 10 employee bicycles spaces thereafter, * changing facilities adjacent to showers, and * one secure locker per employee bicycle space in the vicinity of the changing / shower facilities?	A total of 15 internal and 6 external bikes spaces are provided. The exact allocations may be subject to later review and optimisation but at present the following is recommended: • 12 bike parks for offices and 3 for shops available for employees and • 4 bike parks for visitors to offices and 2 for visitors to shops. EOT facilities have been provided including 3 showers, a separate change room with lockers (min 15)
Motorbike parking	A minimum of 5% of vehicle parking spaces designed and labelled for motorbikes (must be at least 5 motorbike spaces)	Points claimed on the basis of 5 motorbike parks being provided. This exceeds the 5% minimum requirement and meets the minimum number of bike parks required.

The development is located within the City of Monash and scores 95% on walkscore.com.

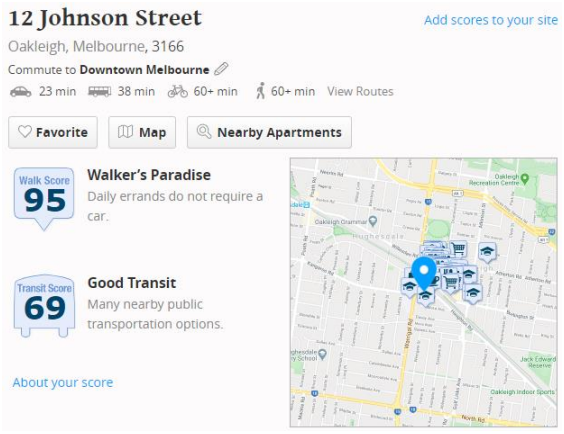


Figure 3 Walkscore from https://www.walkscore.com/score/

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		
Credit	**Aim**	**Design Response/ Project Compliance**
Operational Waste – Convenience of Recycling	To minimise recyclable material going to landfill	Recycling facilities will be at least as convenient for occupants as facilities for general waste. The building will have a combined waste storage area located in the basement. See waste management plan by other.

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.

Australia is home to more than one million different species, many of which are found nowhere else in the world. Australia is also a continent defined as 'megadiverse", which means that it has a very large variation of life forms in the environment.

Over the past few hundred years, development has caused displacement and degradation of much of Australia's natural flora and fauna and reduced biodiversity in many locations.

Achieving an increase in levels of biodiversity across an ecosystem may require protection and restoration of local indigenous flora and fauna.

The State of the Environment Report released in 2006 by the Department of Environment and Heritage indicates that regions with the most intense urban and agricultural development tend to have the highest levels of decline in number of species, habitats and ecological communities. More than 40% of nationally-listed threatened ecological communities, and more than 50% of threatened species, are in urban fringe areas.

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		
Credit	**Aim**	**Design Response/ Project Compliance**
Communal Spaces	Is there at least the following amount of common space measured in square meters : * 1m² for each of the first 50 occupants * Additional 0.5m² for each occupant between 51 and 250 * Additional 0.25m² for each occupant above 251	There is 397m2 of communal spaces provided in the form of balconies.
Vegetation	How much of the site is covered with vegetation, expressed as a percentage of the total site area	Approximately 7% of site covered with vegetation in the form of planters on the balconies.

Both of these initiatives together contribute to one BESS point

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.

The environmental impact from building materials is reduced by limiting the quantities of virgin building materials used in projects and choosing the least harmful when using virgin building materials.

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		
Initiative	**Aim**	**Design Response/ Project Compliance**
Timber Products	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: • Certified by a forest certification scheme and be accompanied by a relevant Chain of Custody (CoC) certificate; or • Be from a reused source.
Permanent Formwork, Pipes, Flooring, Blinds and Cables		At least 90% (by cost) of all permanent formwork, pipes, flooring, blinds and cables in a project shall either: • Not contain PVC and have an Environmental Product Declaration (EPD); or • Meet Best Practice Guidelines for PVC.
Product Transparency and Sustainability	To encourage sustainability and transparency in product specification.	Products and manufacturers complying with the following standards and certifications shall be chosen in preference to non-compliance choices, where they are equally suitable for use and selection does not impact the project budget: • Products with a product-specific, third-party verified EPD; • Products with a industry-wide, third-party verified EPD; • Carpet Institute of Australia Environmental Certification Scheme (ECS); • Ecospecifier Green Tag GreenRate; • Australasian Furnishing Research and Development Institute Green Tick; • Good Environmental Choice Australia; • The institute for Market Transformation to Sustainability Sustainable Materials Rating Technology; • Manufacturer Environmental Management System (ISO14001); • Manufacturer certified to SA8000 social accountability standard or GeSI management standards; and • Products certified to Fairtrade Mark.
Recycled Construction Materials	To encourage sustainability and re-use of materials in the product specification.	Where equally suitable for use and selection does not impact the project budget, construction materials with a recycled content shall be chosen in preference to materials without a recycled content.
Construction and Demolition Waste	To limit waste going to landfill.	At least 60% of the waste generated during construction and demolition shall be diverted from landfill. This commitment shall be included in the contractual documentation.

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' criterion 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 non-residential, mixed use development at 12-14 Johnson Street, Oakleigh.

The development proposal demonstrates a holistic approach to sustainable urban development that addresses the ESD objectives of the City of Monash (Clause 22.13 of the City of Monash Planning Scheme).

A copy of the BESS scorecard used to complete this assessment in accordance to the City of Monash Planning Scheme is attached in Appendix F.

APPENDIX A – PRELIMINARY ENERGY EFFICIENCY ASSESSMENT

Step 1: Establishing the base case using NCC 2019.

Deemed to Satisfy (DTS) component and material properties

Component	Properties
Roof	R3.2, solar absorptance 0.4
External walls (and walls surrounding core)	R 2.8, solar absorptance 0.6
Interior envelope walls	R 1.8
Exposed slab (above carpark)	R 2.0
Glazing	U 3.7, SHGC 0.31
HVAC	COP/EER 3.2
DHW boiler	75% efficiency

Façade calculator results

	North	East	South	West
Glazing Area (m²)	115	121	498.3	341.7
Glazing to Façade Ratio	17%	30%	68%	80%
Glazing References	North Glazing +	East Glazing +	South Retail Glazing + South Glazing +	West Retail Glazing + West Glazing +
Glazing System Types	Fixed +	Fixed +	Fixed +	Fixed +
Glass Types	Double Glazed Unit - double low-E coating +	Double Glazed Unit - double low-E coating +	Double Glazed Unit - double low-E coating +	Double Glazed Unit - double low-E coating +
Frame Types	Aluminium +	Aluminium +	Aluminium +	Aluminium +
Methodology	WERS (Default module size)			
e Glazing U-Value (W/m².K)	3.70	3.70	3.70	3.70
Average Glazing SHGC	0.31	0.31	0.31	0.31
Shading Systems	Horizontal	Horizontal	Horizontal	Horizontal
Wall Area (m²)	571	287	236.5	87
Wall Types	Wall +	Wall +	Wall +	Wall +
Methodology	0			
Wall Construction	Johnson St +	Johnson St +	Johnson St +	Johnson St +
Wall Thickness	200 +	200 +	200 +	200 +
rage Wall R-value (m²K/W)	2.80	2.80	2.80	2.80
Solar Absorptance	0.6	0.6	0.6	0.6

A deemed to satisfy base case has been developed using NCC 2019 requirements. The base case façade materials were determined using the NCC 2019 façade calculator **method 2**. Note NCC class 5 and 6 buildings have identical façade performance requirements in climate zone 6, hence both sections of the building are assessed together in this calculation.

Step 2: Assess proposed design against the base case.

As Designed (AD) component and material properties

Component	Properties
Roof	R3.2, solar absorptance 0.4
External walls	R 2.8, solar absorptance 0.6
Internal envelope walls	R 1.8
Exposed slab (above carpark)	R 2.0
Glazing	U 3.0, SHGC 0.5
HVAC	COP/EER 3.7
DHW boiler	95% efficiency

DTS			
Date	*Boilers space cond'g energy*	*Boilers DHW energy*	*Chillers energy*
Jan 01-31	0.314592	0.312032	0.5225
Feb 01-28	0.3096	0.297234	1.698189
Mar 01-31	0.828384	0.341824	0.609279
Apr 01-30	2.886048	0.326928	0.023421
May 01-31	7.280448	0.312032	0
Jun 01-30	11.517504	0.326928	0
Jul 01-31	13.194336	0.326928	0
Aug 01-31	11.002752	0.326928	0
Sep 01-30	8.113152	0.326928	0.000777
Oct 01-31	4.389984	0.312032	0.137196
Nov 01-30	2.29872	0.326928	0.394938
Dec 01-31	0.902784	0.341824	0.353646
Summed total	63.038304	3.878644	3.744807
Total energy	**70.661755 MWh**		
As Designed			
Date	*Boilers space cond'g energy*	*Boilers DHW energy*	*Chillers energy*
Jan 01-31	0.167422	0.208704	0.816696
Feb 01-28	0.193903	0.198816	1.890918
Mar 01-31	0.56842	0.228576	0.814302
Apr 01-30	2.170278	0.218688	0.038532
May 01-31	5.707286	0.208704	0.000114
Jun 01-30	9.265343	0.218688	0
Jul 01-31	10.613158	0.218688	0
Aug 01-31	8.609332	0.218688	0
Sep 01-30	6.175408	0.218688	0.00456
Oct 01-31	3.210894	0.208704	0.190836
Nov 01-30	1.605447	0.218688	0.575928

Dec 01-31	0.572591	0.228576	0.562248
Summed total	48.859482	2.594304	4.894134
Total energy	**56.34792 MWh**		
Energy reduction	14.313835		
% energy reduction	**19%**		

Figure 4 Modelling outputs for Base Case (DTS) and AS Designed (Proposed) MWh.

DTS	Values in MWh				Proposed			
Office energy					Office energy			
Date	Boilers space cond'g energy	Boilers DHW energy	Chillers energy		Date	Boilers space cond'g energy	Boilers DHW energy	Chillers energy
Jan 01-31	0.291047168	0.288678765	0.483394827		Jan 01-31	0.15489173	0.193084084	0.755572481
Feb 01-28	0.286428782	0.274988283	1.571092397		Feb 01-28	0.179390827	0.183936126	1.749397089
Mar 01-31	0.766385723	0.316241059	0.563679075		Mar 01-31	0.525878062	0.211468815	0.753357654
Apr 01-30	2.670049134	0.302459912	0.021668115		Apr 01-30	2.007849106	0.202320857	0.035648171
May 01-31	6.735561529	0.288678765	0		May 01-31	5.280138807	0.193084084	0.000105468
Jun 01-30	10.65550593	0.302459912	0		Jun 01-30	8.57190215	0.202320857	0
Jul 01-31	12.20683974	0.302459912	0		Jul 01-31	9.818843391	0.202320857	0
Aug 01-31	10.17927923	0.302459912	0		Aug 01-31	7.964988612	0.202320857	0
Sep 01-30	7.505943933	0.302459912	0.000718847		Sep 01-30	5.713225416	0.202320857	0.004218718
Oct 01-31	4.061426899	0.288678765	0.126927917		Oct 01-31	2.970582868	0.193084084	0.176553369
Nov 01-30	2.126678193	0.302459912	0.365379878		Nov 01-30	1.485291434	0.202320857	0.532824145
Dec 01-31	0.835217445	0.316241059	0.327178272		Dec 01-31	0.529736894	0.211468815	0.520167989
Summed total	**58.32036371**	**3.588266165**	**3.460039327**		Summed total	**45.2027193**	**2.400051151**	**4.527845085**
Summed total MWH Heating and cooling	**61.78040303**	***12917.7582***	***MJ DHW***		Summed total MWH Heating and cooling	**49.73056438**	***8640.184145***	***MJ DHW***
Retail energy					Retail energy			
Date	Boilers space cond'g energy	Boilers DHW energy	Chillers energy		Date	Boilers space cond'g energy	Boilers DHW energy	Chillers energy
Jan 01-31	0.023544832	0.023353235	0.039105173		Jan 01-31	0.01253027	0.015619916	0.061123519
Feb 01-28	0.023171218	0.022245717	0.127096603		Feb 01-28	0.014512173	0.014879874	0.141520911
Mar 01-31	0.061998277	0.025582941	0.045599925		Mar 01-31	0.042541938	0.017107185	0.060944346
Apr 01-30	0.215998866	0.024468088	0.001752885		Apr 01-30	0.162428894	0.016367143	0.002883829
May 01-31	0.544886471	0.023353235	0		May 01-31	0.427147193	0.015619916	8.53204E-06
Jun 01-30	0.861998067	0.024468088	0		Jun 01-30	0.69344085	0.016367143	0
Jul 01-31	0.987496261	0.024468088	0		Jul 01-31	0.794314609	0.016367143	0
Aug 01-31	0.823472773	0.024468088	0		Aug 01-31	0.644343388	0.016367143	0
Sep 01-30	0.607208067	0.024468088	5.81526E-05		Sep 01-30	0.462182584	0.016367143	0.000341282
Oct 01-31	0.328557101	0.023353235	0.010268083		Oct 01-31	0.240311132	0.015619916	0.014282631
Nov 01-30	0.172041807	0.024468088	0.029558122		Nov 01-30	0.120155566	0.016367143	0.043103855
Dec 01-31	0.067566555	0.025582941	0.026467728		Dec 01-31	0.042854106	0.017107185	0.042080011
Summed total	**4.717940294**	**0.290279835**	**0.279906673**		Summed total	**3.656762702**	**0.194156849**	**0.366288915**
Summed total MWH Heating and cooling	**4.997846967**	***1045.007404***	***MJ DHW***		Summed total MWH Heating and cooling	**4.023051618**	***698.9646555***	***MJ DHW***

Figure 5 Outputs adapted for BESS inputs

Clause	Design Response/ Project Compliance
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.
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.
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.

Preliminary Section J Part J1-J3 assessment

APPENDIX B – STORMWATER TREATMENT

Rainwater is to be collected from the roof for reuse for toilet flushing; 100m2 of terrace runoff is to be diverted through a 4m2 Raingarden on the terrace at level 1 and the remainder of stormwater arriving on site shall not be treated prior to discharge.

Melbourne Water **STORM Rating Report**

TransactionID:	983670
Municipality:	MONASH
Rainfall Station:	MONASH
Address:	12-14 Johnson St
	Oakleigh
	VIC 3166
Assessor:	SBE
Development Type:	Commercial/Retail
Allotment Site (m2):	892.00
STORM Rating %:	109

Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
catchment 1	100.00	Rainwater Tank	5,000.00	100	170.00	82.00
catchment 2	100.00	Rainwater Tank	5,000.00	90	170.00	82.00
catchment 3	100.00	Rainwater Tank	5,000.00	90	170.00	82.00
catchment 4	100.00	Rainwater Tank	5,000.00	90	170.00	82.00
catchment 5	95.00	Rainwater Tank	5,000.00	90	170.00	82.00
untreated	297.00	None	0.00	0	0.00	0.00
treated to RG	100.00	Raingarden 100mm	4.00	0	133.00	0.00

Building occupancy is calculated with the assumption of 10m^2 per person for office areas and 3m^2 per person for retail areas as per NCC guidelines. Note the STORM tool will not allow more than 100 building occupants to be allocated per treatment device. Consequently, the rainwater tank was divided into five 5 000L tanks to satisfy, in application a single 25 000L tank will be installed.

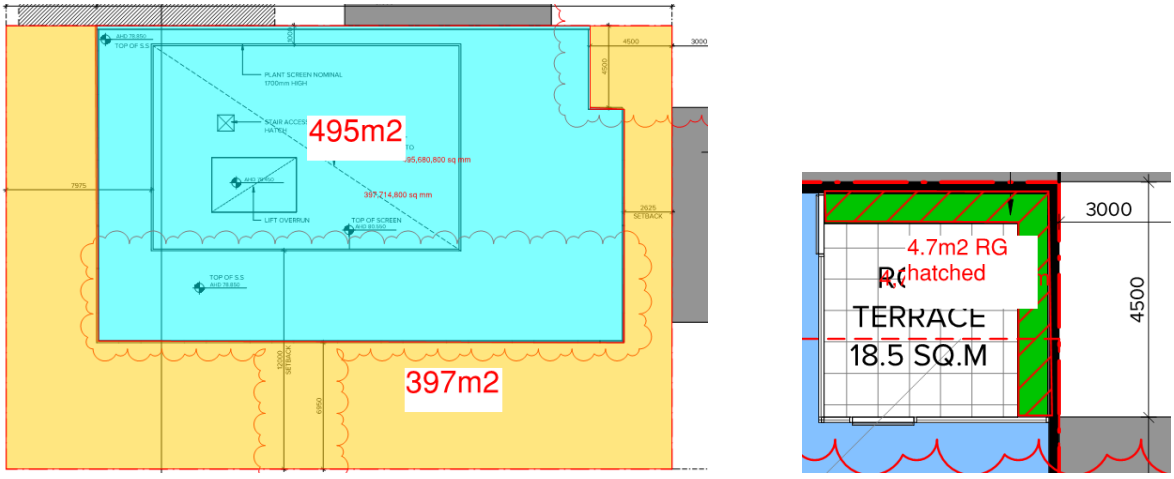


Figure 6 Catchment areas are shown in blue. The majority of terrace runoff shall be untreated. However, 100m2 shall be diverted to a Raingarden on the level 1 terrace for treatment prior to discharge.

APPENDIX C – 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

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/m2 per hour
ASTM D5116 – 4-PC (4 – Phenylcyclohexene)	0.05mg/m2 per hour
ISO 16000 / EN 13419 – TVOC at three days	0.5mg/m2 per hour
ISO 10580 / ISO/TC 219 (Document N238) – TVOC at 24 hours	0.5mg/m2 per hour

Carpet Test Standards and TVOC Emissions Limits

APPENDIX D – 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/ m²hr
ASTM D5116 (applicable to high pressure laminates and compact laminates)	≤0.1mg/m²hr
ISO 16000 part 9, 10 and 11 (also known as EN 13419), applicable to high pressure laminates and compact laminates	≤0.1 mg/m²hr (at 3 days)
ASTM D6007	≤0.12mg/m³**
ASTM E1333	≤0.12mg/m³***
EN 717-1 (also known as DIN EN 717-1)	≤0.12 mg/m³
EN 717-2 (also known as DIN EN 717-2)	≤3.5 mg/m²hr
**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.	

Formaldehyde emission limit values for engineered wood products

APPENDIX E – DAYLIGHT ASSESSMENT

Below are the assumptions that have been included in the daylight assessment for the building and the results obtained.

General Building Simulation Parameters	
Address	12-14 Johnson Street, Oakleigh
Terrain Type	CBD
Climate Zone	6
Building Class	Mixed use (5,6,7a)
Sky	10,000 Lux CIE overcast sky
Working Plane	Floor level
Software	IES VE 2019
Application	FlucsDL
Assessed Areas	• Offices (Class 5) • Retail tenancies (Class 6)
Total Assessed Floor Area[3]	3,158m^2

Building Element Parameters	
Element	**Reflectance**
Floor	0.30
Wall	0.70
Ceiling	0.75
Roof	0.30
Ground	0.30
Glazing (VLT)	0.70 (retail), 0.55 (offices)
Glass Balustrades	0.80

Shading Elements	
Element	**Description**
Local shading	All geometries have been modelled as per the architectural drawings.

Daylight simulation parameters

Threshold Calculation

Building Results

Total floor area (m^2)	Total floor area above threshold (m^2)	Percentage floor area above threshold (%)	Area-weighted average daylight factor (%)	Area-weighted average illumination (lux)
2873.327	1906.699	66.4	7.2	718.872

Rooms included in the analysis

Room ID	Room name	Working plane	Floor area (m^2)	Floor area > threshold (m^2)	Percentage floor area > threshold (%)	Average illumination (%)
1_000002	1	0	741.201	438.973	**59.2**	6.17
1_000000	2	0	741.201	445.662	**60.1**	6.20
2_000000	3	0	510.659	350.321	**68.6**	7.44
3_000000	4	0	510.659	365.885	**71.6**	7.68
4_000000	5	0	369.608	305.857	**82.8**	10.12

Office areas results extract. 66.4% of the nominated floor area achieved a DF>2%.

[3] Total Assessed Floor Area (a.k.a nominated area) excludes circulation and back of house spaces.

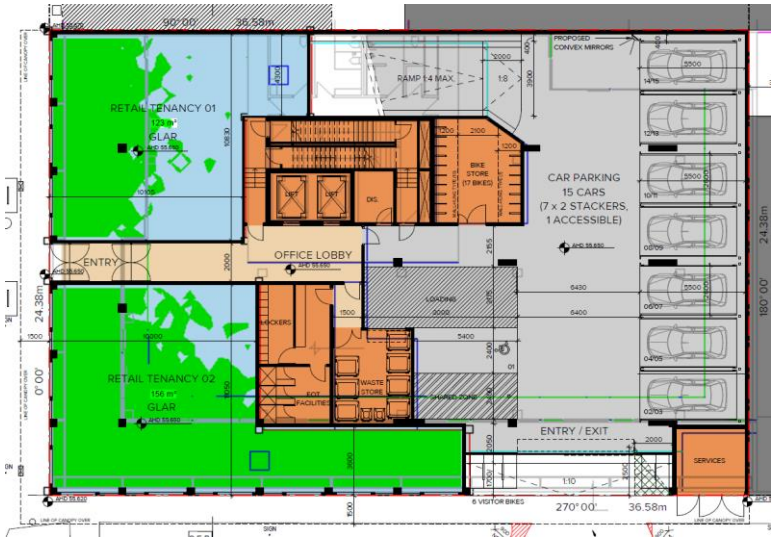
Total floor area (m^2)	Total floor area above threshold (m^2)	Percentage floor area above threshold (%)	Area-weighted average daylight factor (%)	Area-weighted average illumination (lux)
285.362	198.071	69.4	5.3	529.762

Rooms included in the analysis

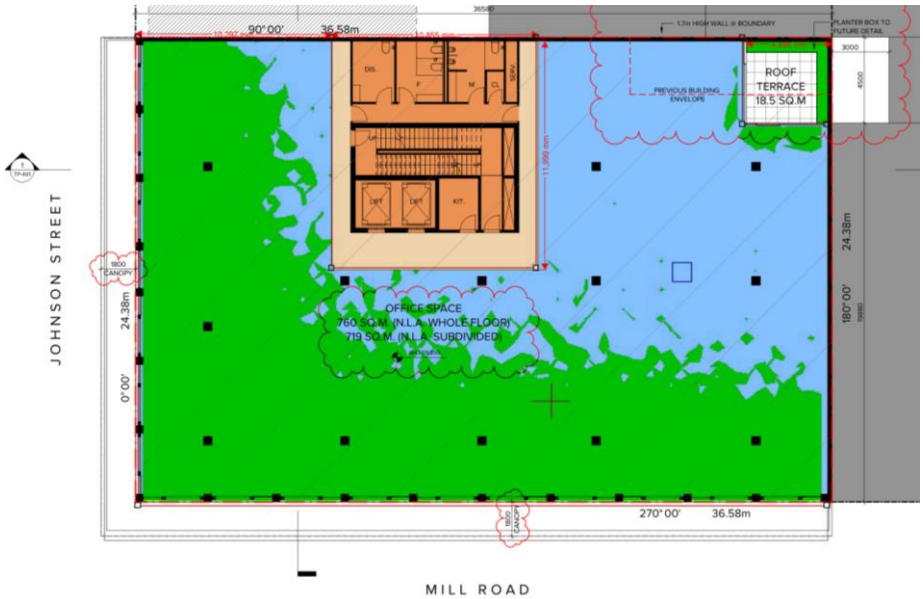
Room ID	Room name	Working plane	Floor area (m^2)	Floor area > threshold (m^2)	Percentage floor area > threshold (%)	Average illumination (%)
GR000000	G retail tenancy 2	0	157.011	137.851	**87.8**	7.04
GR000001	G retail tenancy 1	0	128.350	60.220	**46.9**	3.15

Retail areas results extract. 69.4% of the nominated floor area achieve a DF>2%.

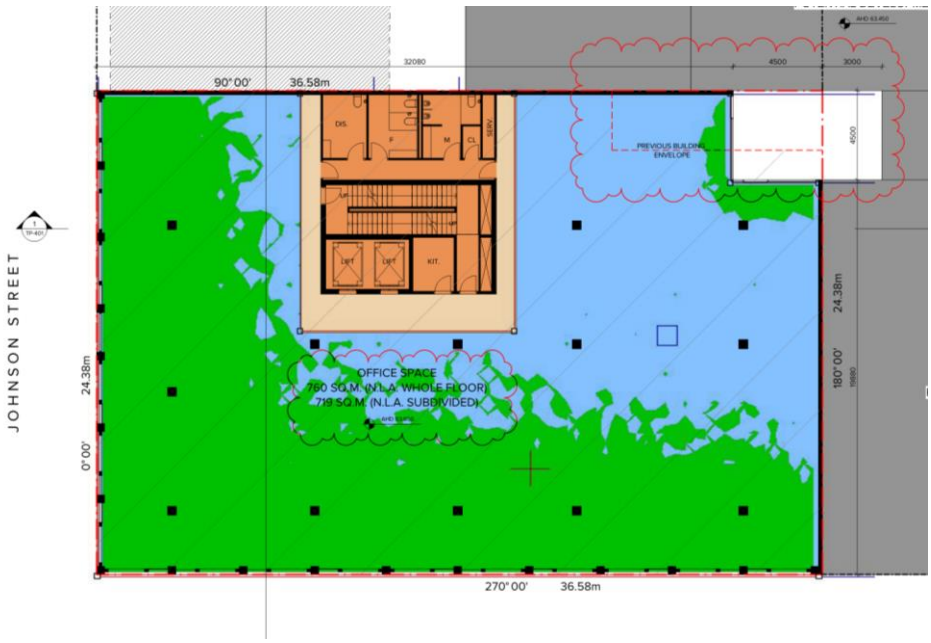
The following show the extent of nominated floor area that achieves the required daylight factor which is represented in green.



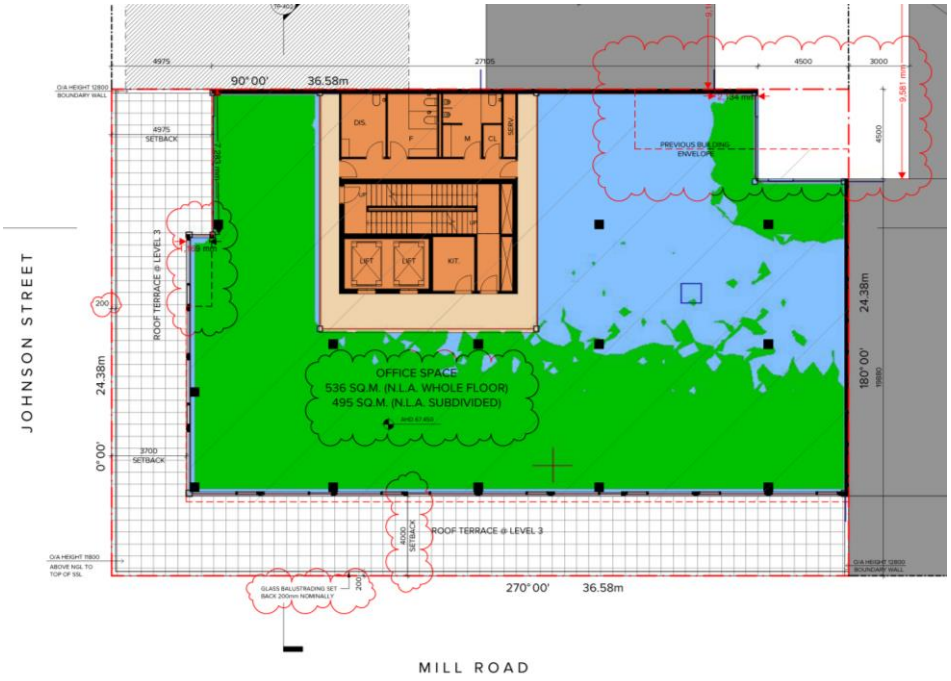
Ground floor (retail tenancy) Daylight Factor results. Areas in green have a DF>2%.



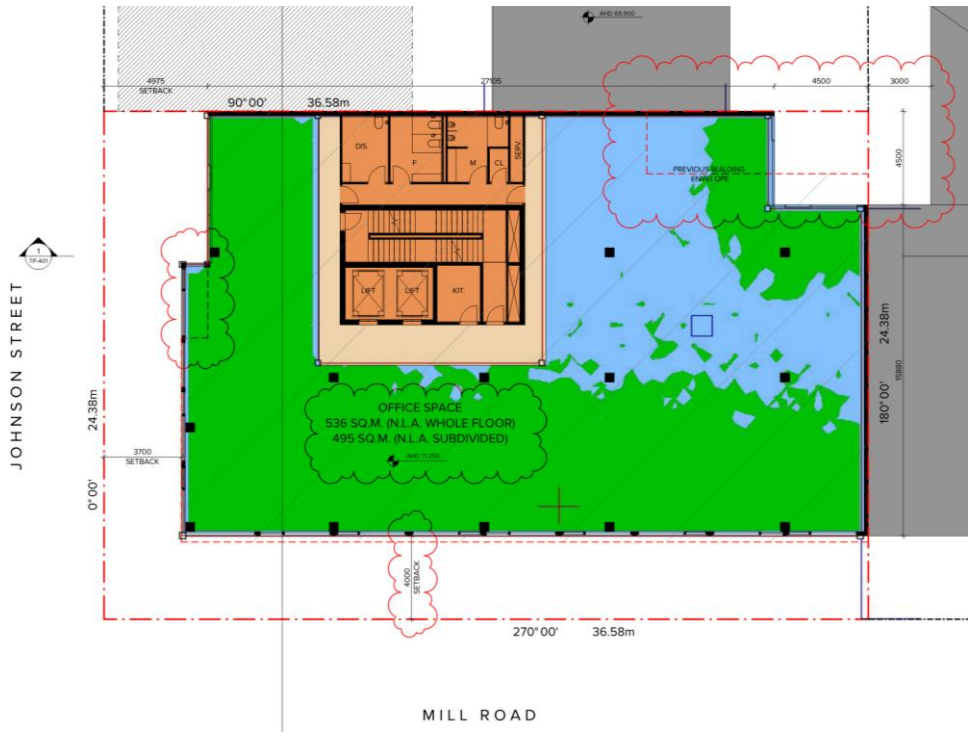
Level 1 (office space) Daylight Factor results. Areas in green have a DF>2%.



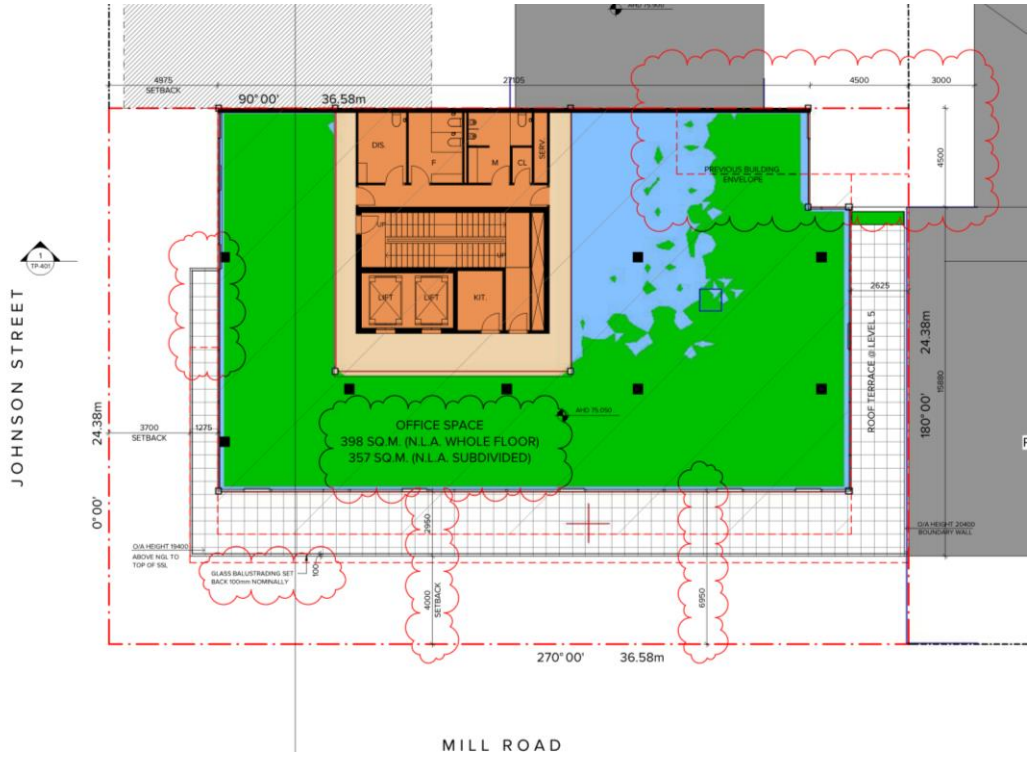
Level 2 (office space) Daylight Factor results. Areas in green have a DF>2%.



Level 3 (office space) Daylight Factor results. Areas in green have a DF>2%.



Level 4 (office space) Daylight Factor results. Areas in green have a DF>2%.



Level 5 (office space) Daylight Factor results. Areas in green have a DF>2%.

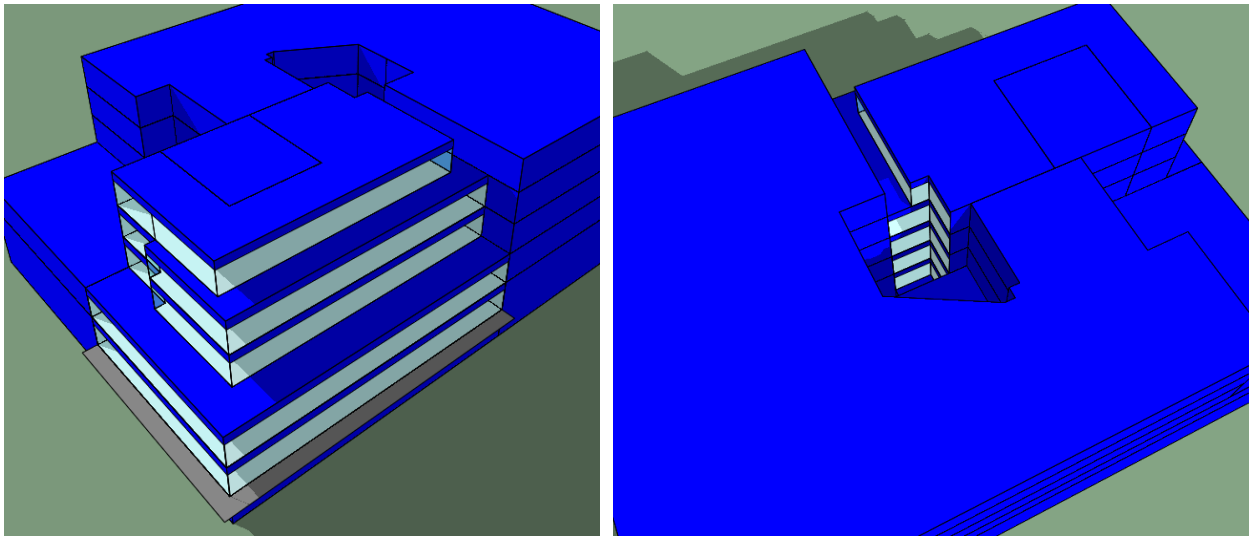


Figure 7 Daylighting and energy model image including the proposed adjacent buildings.

APPENDIX F – BESS SCORECARD

BESS Report

This BESS report outlines the sustainable design commitments of the proposed development at 12 Johnson St Oakleigh VIC 3166. 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.

12 Johnson St, Oakleigh 3166 Oakleigh

Site area: 892 m^2 · Building Floor Area: 3900 m^2 ·
Date of Assessment: 17 Jul 2020 ·
Version: V4, 1.6.2-B.290 ·
Applicant: broderick.jacobs@sbe.com.au

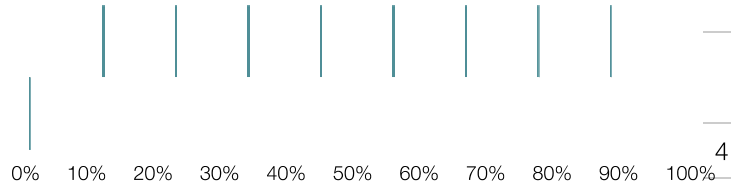
Project Identifier

CF422FFD

Published
http://bess.net.au/projects/CF422FFD-V3

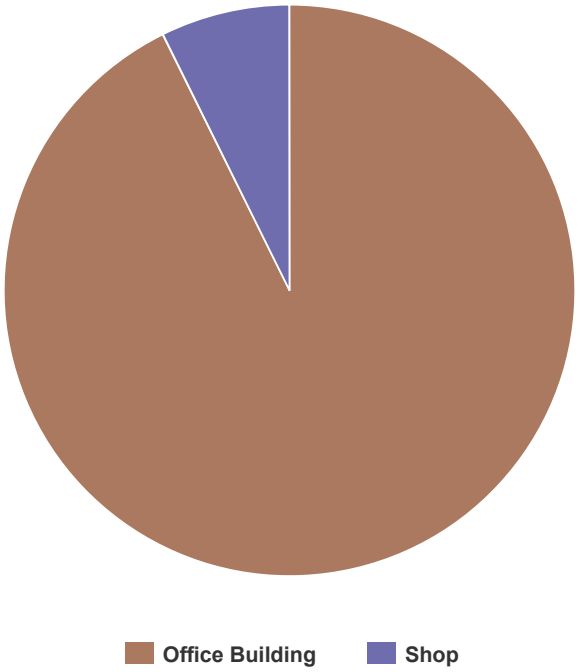
Your BESS score is

+ 55%



% of Total	Category	Score	Pass
3 %	Management	67 %	
5 %	Water	57 %	✔
15 %	Energy	55 %	✔
14 %	Stormwater	100 %	✔
11 %	IEQ	67 %	✔
4 %	Transport	50 %	
2 %	Waste	33 %	
1 %	Urban Ecology	24 %	
0 %	Innovation	0 %	

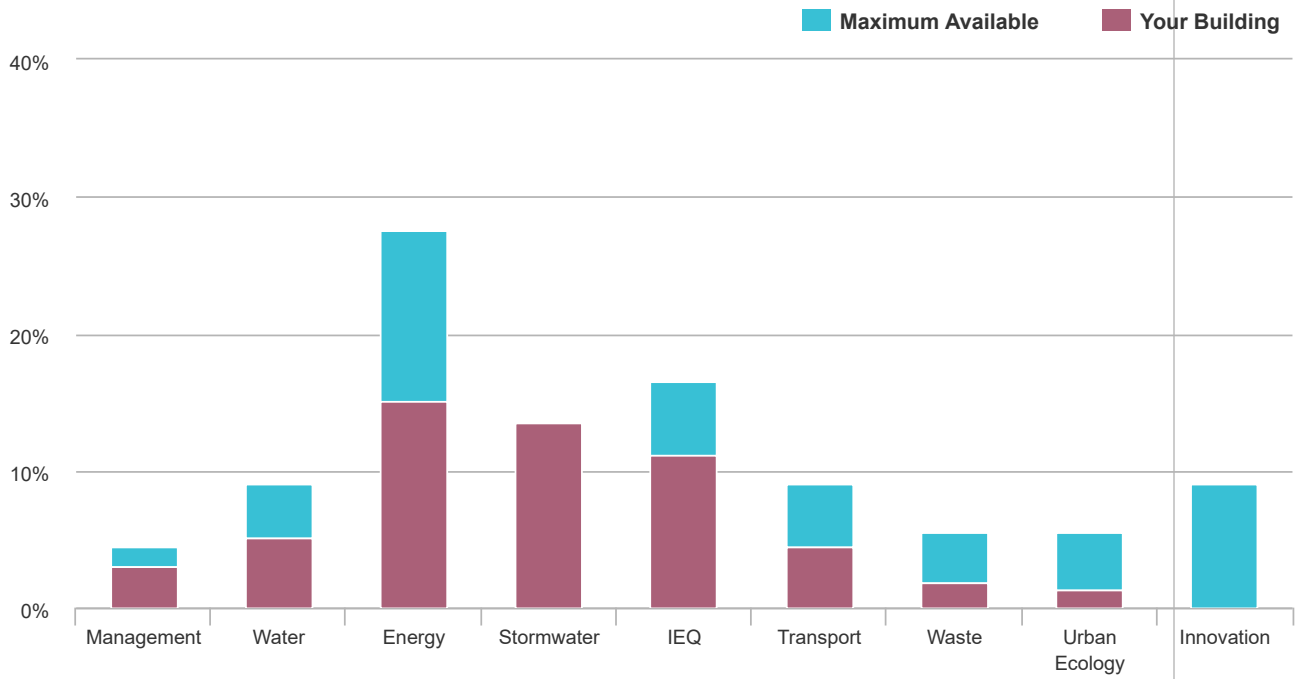
Building Composition



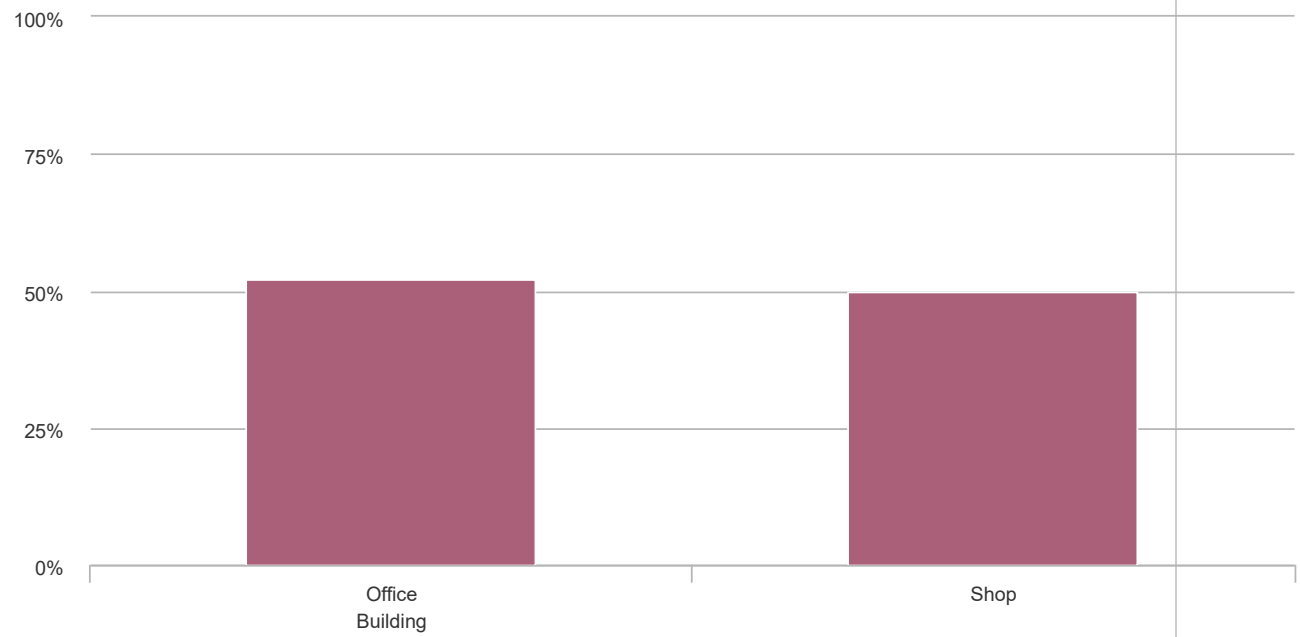
Non-Residential Spaces

Office Building	3,615 m^2
Shop	285 m^2

How did this Development Perform in each Environmental Category?



How does each Dwelling or Non-Residential Space type perform?



Sustainable design commitments by category

The sustainable design commitments for this project are listed below. These are to be incorporated into the design documentation and subsequently implemented.

Management

67% - contributing 3% to overall score

Credit	Disabled	Scoped out	Score
Management 2.3 Thermal Performance Modelling - Non-Residential			100 %
Management 2.4 Thermal Performance Modelling - Non-Residential			100 %
Management 3.2 Metering			100 %
Management 3.3 Metering			100 %
Management 4.1 Building Users Guide			100 %

Management 2.3 Thermal Performance Modelling - Non-Residential

Score Contribution	This credit contributes 22.2% towards this section's score.
Aim	To encourage and recognise developments that have used modelling to inform passive design at the early design stage

Questions

Has preliminary modelling been undertaken in accordance with either BCA Section J (Energy Efficiency), NABERS or Green Star? *

Office Building	Shop
Yes	Yes

Management 2.4 Thermal Performance Modelling - Non-Residential 100%

Score Contribution	This credit contributes 11.1% towards this section's score.
Aim	To encourage and recognise developments that have used modelling to inform passive design at the early design stage

Questions

Has a preliminary Section J glazing assessment been undertaken? *

Office Building	Shop
Yes	Yes

Management 3.2 Metering 100%

Score Contribution	This credit contributes 11.1% towards this section's score.
Aim	To provide building users with information that allows monitoring of energy and water consumption

Questions

Have utility meters been provided for all individual commercial tenants? *

Office Building	Shop
Yes	Yes

Management 3.3 Metering 100%

Score Contribution	This credit contributes 11.1% towards this section's score.
Aim	To provide building users with information that allows monitoring of energy and water consumption

Questions

Have all major common area services been separately submetered? *

Office Building	Shop
Yes	Yes

Management 4.1 Building Users Guide 100%

Score Contribution	This credit contributes 11.1% towards this section's score.
Aim	To encourage and recognise initiatives that will help building users to use the building efficiently

Questions

Will a building users guide be produced and issued to occupants? *

Project wide
Yes

Water 57% - contributing 5% to overall score

Credit	Disabled	Scoped out	Score
Water 1.1 Potable water use reduction			60 %
Water 3.1 Water Efficient Landscaping			100 %

Water Approachs

What approach do you want to use Water?	Use the built in calculation tools
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?	Yes

Water fixtures, fittings and connections

	Office areas	Retail tenancy
Showerhead	3 Star WELS (>= 6.0 but <= 7.5)	Scope out
Bath	Scope out	Scope out
Kitchen Taps	>= 5 Star WELS rating	>= 5 Star WELS rating
Bathroom Taps	>= 6 Star WELS rating	>= 6 Star WELS rating
Dishwashers	>= 4 Star WELS rating	>= 4 Star WELS rating
WC	>= 4 Star WELS rating	>= 4 Star WELS rating
Urinals	>= 6 Star WELS rating	Scope out
Washing Machine Water Efficiency	Scope out	>= 5 Star WELS rating
Which non-potable water source is the dwelling/space connected to?	Tank 1	Tank 1
Non-potable water source connected to Toilets	Yes	Yes
Non-potable water source connected to Laundry (washing machine)	No	No
Non-potable water source connected to Hot Water System	No	No

Rainwater Tanks

	Tank 1
Name	Tank 1
What is the total roof area connected to the rainwater tank? Square Metres	537.0
Tank Size Litres	25000.0
Irrigation area connected to tank Square Metres	0.0
Is connected irrigation area a water efficient garden?	No
Other external water demand connected to tank? Litres/Day	0.0

Water 1.1 Potable water use reduction 60%

Score Contribution	This credit contributes 71.4% towards this section's score.
Aim	Water 1.1 Potable water use reduction (interior uses) What is the reduction in total water use due to efficient fixtures, appliances, and rainwater use? To achieve points in this credit there must be >25% potable water reduction. You are using the built in calculation tools. This credit is calculated from information you have entered above.

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.

Calculations

Reference (kL) *

Project wide

6765

Proposed (excluding rainwater and recycled water use) (kL) *

Project wide

4464

Rainwater or recycled water supplied (Internal + External) (kL) *

Project wide

419

Proposed (including rainwater and recycled water use) (kL) *

Project wide

4045

% Reduction in Potable Water Consumption * Percentage %

Project wide

40 %

Water 3.1 Water Efficient Landscaping 100%

Score Contribution	This credit contributes 14.3% towards this section's score.
Aim	Are water efficiency principles used for landscaped areas? This includes low water use plant selection (e.g. xeriscaping). Note: food producing landscape areas and irrigation areas connected to rainwater or an alternative water source are excluded from this section.

Questions

Will water efficient landscaping be installed? *

Project wide

Yes

Energy

55% - contributing 15% to overall score

Credit	Disabled	Scoped out	Score
Energy 1.1 Thermal Performance Rating - Non-Residential			12 %
Energy 2.1 Greenhouse Gas Emissions			100 %
Energy 2.3 Electricity Consumption			100 %
Energy 2.4 Gas Consumption			100 %
Energy 3.1 Carpark Ventilation			100 %
Energy 3.2 Hot Water			100 %
Energy 3.7 Internal Lighting - Non-Residential			100 %
Energy 4.1 Combined Heat and Power (cogeneration / trigeneration)			N/A

Are you installing a cogeneration or trigeneration system?	No

Non-Residential Spaces Energy Profiles

	Office areas	Retail tenancy
Heating, Cooling & Comfort Ventilation - Electricity - baseline kWh	61780.0	4997.0
Heating, Cooling & Comfort Ventilation - Electricity - proposed kWh	49730.0	4023.0
Heating - Gas - baseline MJ	0.0	0.0
Heating - Gas - proposed MJ	0.0	0.0
Hot Water - Gas - baseline MJ	12917.0	1045.0
Hot Water - Gas - proposed MJ	8640.0	698.0
Peak Thermal Cooling Load - Baseline kW	0.0	0.0
Peak Thermal Cooling Load - Proposed kW	0.0	0.0

Energy 1.1 Thermal Performance Rating - Non-Residential

12%

Score Contribution	This credit contributes 36.4% towards this section's score.
Aim	Reduce reliance on mechanical systems to achieve thermal comfort in summer and winter - improving comfort, reducing greenhouse gas emissions, energy consumption, and maintenance costs.

Criteria	What is the % reduction in heating and cooling energy consumption against the reference case (NCC 2016 BCA Volume 1 Section J)?

Calculations

Total Improvement * Percentage %

Office Building	Shop
19 %	19 %

Energy 2.1 Greenhouse Gas Emissions 100%

Score Contribution	This credit contributes 9.1% towards this section's score.
Aim	Reduce the building's greenhouse gas emissions
Criteria	Are greenhouse gas emissions >10% below the benchmark?

Calculations

Reference Building with Reference Services (BCA only) * kg CO2

Office Building	Shop
66768.5	5400.5

Proposed Building with Proposed Services (Actual Building) * kg CO2

Office Building	Shop
53655.2	4340.5

% Reduction in GHG Emissions * Percentage %

Office Building	Shop
19 %	19 %

Energy 2.3 Electricity Consumption 100%

Score Contribution	This credit contributes 9.1% towards this section's score.
Aim	Reduce consumption of electricity
Criteria	Is the annual electricity consumption >10% below the benchmark?

Calculations

Reference * kWh

Office Building	Shop
61780.0	4997.0

Proposed * kWh

Office Building	Shop
49730.0	4023.0

Improvement * Percentage %

Office Building	Shop
19 %	19 %

Energy 2.4 Gas Consumption 100%

Score Contribution	This credit contributes 9.1% towards this section's score.
Aim	Reduce consumption of gas
Criteria	Is the annual gas consumption >10% below the benchmark?

Calculations

Reference * MJ

Office Building	Shop
12917.0	1045.0

Proposed * MJ

Office Building	Shop
8640.0	698.0

Improvement * Percentage %

Office Building	Shop
33 %	33 %

Energy 3.1 Carpark Ventilation 100%

Score Contribution	This credit contributes 9.1% towards this section's score.

Questions

If you have a basement carpark, is it either: (a) fully naturally ventilated (no mechanical ventilation

system), or (b) use Carbon Monoxide monitoring to control the operation and speed of the ventilation fans? *

Project wide
Yes

Energy 3.2 Hot Water 100%

Score Contribution	This credit contributes 4.5% towards this section's score.
Criteria	Does the hot water system use >10% less energy (gas and electricity) than the reference case?

Calculations

Reference * kWh

Office Building	Shop
3588.1	290.3

Proposed * kWh

Office Building	Shop
2400.0	193.9

Improvement * Percentage %

Office Building	Shop
33 %	33 %

Energy 3.7 Internal Lighting - Non-Residential 100%

Score Contribution	This credit contributes 9.1% towards this section's score.
Aim	Reduce energy consumption associated with internal lighting

Questions

Is the maximum illumination power density (W/m2) in at least 90% of the relevant building class at least 20% lower than required by Table J6.2a of the NCC 2016 BCA Volume 1 Section J (Class 2 to 9)? *

Office Building	Shop
Yes	Yes

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

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

This credit was disabled: No cogeneration or trigeneration system in use.

Aim	Reduce energy consumption
Criteria	Does the CHP system reduce the class of buildings GHG emissions by more than 25%?

Stormwater

100% - contributing 14% to overall score

Credit	Disabled	Scoped out	Score
Stormwater 1.1 Stormwater Treatment			100 %

Which stormwater modelling are you using?	Melbourne Water STORM tool

Stormwater 1.1 Stormwater Treatment 100%

Score Contribution	This credit contributes 100.0% towards this section's score.
Aim	To achieve best practice stormwater quality objectives through reduction of pollutant load (suspended solids, nitrogen and phosphorus)
Criteria	Has best practice stormwater management been demonstrated?
Notes	100+

Questions

STORM score achieved *

Project wide
100

Calculations

Min STORM Score *

Project wide
100

IEQ 67% - contributing 11% to overall score

Credit	Disabled	Scoped out	Score
IEQ 1.4 Daylight Access - Non-Residential			67 %

IEQ 1.4 Daylight Access - Non-Residential 67%

Score Contribution	This credit contributes 100.0% towards this section's score.
Aim	To provide a high level of amenity and energy efficiency through design for natural light.
Criteria	What % of the nominated floor area has at least 2% daylight factor?

Questions

% Achieved ? *

Office Building	Shop
66 %	69 %

Transport

50% - contributing 4% to overall score

Credit	Disabled	Scoped out	Score
Transport 1.4 Bicycle Parking - Non-Residential			100 %
Transport 1.5 Bicycle Parking - Non-Residential Visitor			100 %
Transport 2.3 Motorbikes / Mopeds			100 %

Transport 1.4 Bicycle Parking - Non-Residential

100%

Score Contribution	This credit contributes 25.0% towards this section's score.
Aim	To encourage and recognise initiatives that facilitate cycling
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)?

Questions

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)? *

Office Building	Shop
Yes	Yes

Bicycle Spaces Provided ? *

Office Building	Shop
12	3

Transport 1.5 Bicycle Parking - Non-Residential Visitor

100%

Score Contribution	This credit contributes 12.5% towards this section's score.
Aim	To encourage and recognise initiatives that facilitate cycling

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)?

Questions

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)? *

Office Building	Shop
Yes	Yes

Bicycle Spaces Provided ? *

Office Building	Shop
4	2

Transport 2.3 Motorbikes / Mopeds 100%

Score Contribution	This credit contributes 12.5% towards this section's score.
Aim	To encourage and recognise initiatives that help to minimise the use of private passenger cars

Questions

Are a minimum of 5% of vehicle parking spaces designed and labelled for motorbikes (must be at least 5 motorbike spaces)? *

Project wide
Yes

Waste 33% - contributing 2% to overall score

Credit	Disabled	Scoped out	Score
Waste 2.2 - Operational Waste - Convenience of Recycling			100 %

Waste 2.2 - Operational Waste - Convenience of Recycling 100%

Score Contribution	This credit contributes 33.3% towards this section's score.
Aim	To minimise recyclable material going to landfill

Questions

Are the recycling facilities at least as convenient for occupants as facilities for general waste? *

Project wide
Yes

Urban Ecology

24% - contributing 1% to overall score

Credit	Disabled	Scoped out	Score
Urban Ecology 1.1 Communal Spaces			93 %
Urban Ecology 2.1 Vegetation			25 %

Urban Ecology 1.1 Communal Spaces 93%

Score Contribution	This credit contributes 12.5% towards this section's score.
Aim	To encourage and recognise initiatives that facilitate interaction between building occupants
Criteria	Is there at least the following amount of common space measured in square meters : * 1m² for each of the first 50 occupants * Additional 0.5m² for each occupant between 51 and 250 * Additional 0.25m² for each occupant above 251?

Questions

Common space provided * Square Metres

Office Building	Shop
397.0	0.0

Calculations

Minimum Common Space Required * Square Metres

Office Building	Shop
209	28

Urban Ecology 2.1 Vegetation 25%

Score Contribution	This credit contributes 50.0% towards this section's score.
Aim	To encourage and recognise the use of vegetation and landscaping within and around developments
Criteria	How much of the site is covered with vegetation, expressed as a percentage of the total site area?

Questions

Percentage Achieved ? * Percentage %

Project wide
7 %