

SUSTAINABLE MANAGEMENT PLAN

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PROPOSED COMMERCIAL DEVELOPMENT

32-38 & 40-50 Rokeby Street,
Collingwood

GIW23130
Revision D

Prepared for:
Beams Projects

20 December 2023

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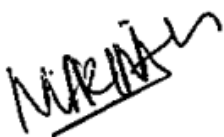
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Revision History

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1. Introduction

Project Information

GIW Environmental Solutions Pty Ltd ("GIW") has been engaged by Beams Projects to provide Environmentally Sustainable Design (ESD) consulting services for the proposed commercial development at 32-38 & 40-50 Rokeby Street, Collingwood.

The proposed development is to comprise of two buildings with 3 levels of shared basement and will consist of the following:

32-38 Rokeby Street

- 242m² retail
- 3,794m² commercial

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40-50 Rokeby Street

- 207m² retail
- 14,178m² commercial
- Ground floor amenities including a library, lounge areas, meeting room, drawings rooms, business lounge, EOT lounge, yoga room.
- Rooftop amenities including half basketball court, garden, and bocce space.

The site located at 32-38 & 40-50 Rokeby Street, Collingwood has an approximate surface area of 2,943m² and is currently the location of a double storey brick building. Distance from the site to Melbourne CBD is approximately 2.8km.

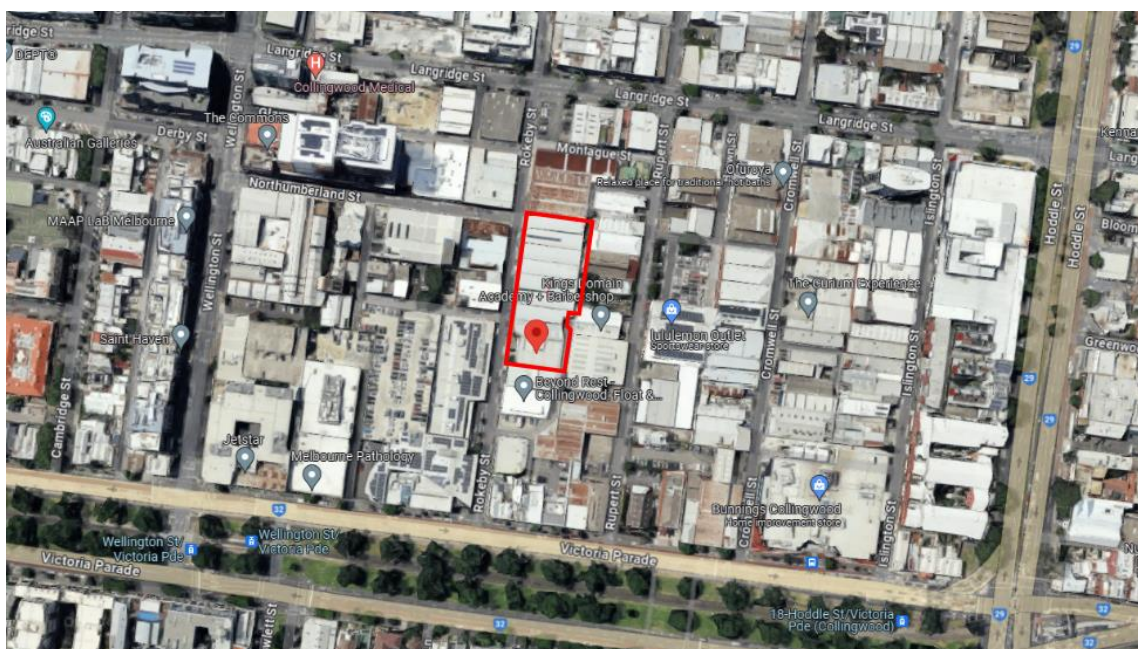


Figure 1 - Pre-existing sites at 32-38 & 40-50 Rokeby Street, Collingwood.

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Statutory Requirements

This Sustainable Management Plan (SMP) has been prepared to inform City of Yarra of the proposed development's sustainability credentials and performance targets. The project team is committed to achieving a building solution which responds to City of Yarra Planning Scheme - Clause 22.17 Environmentally Sustainable Development.

Development Type	Application Requirement	Example Tools
Development of a non-residential building with a gross floor area of more than 1000m ² .	Sustainability Management Plan (SMP)	BESS Green Star MUSIC STORM

Further to the above, this SMP also responds to Victoria Planning Provisions VC216 – 15.01-2S.

Built Environment Sustainability Scorecard (BESS)

The proposed commercial development will be assessed against the Built Environment Sustainability Scorecard (BESS) guidelines. The BESS tool addresses nine key environmental categories as follows:

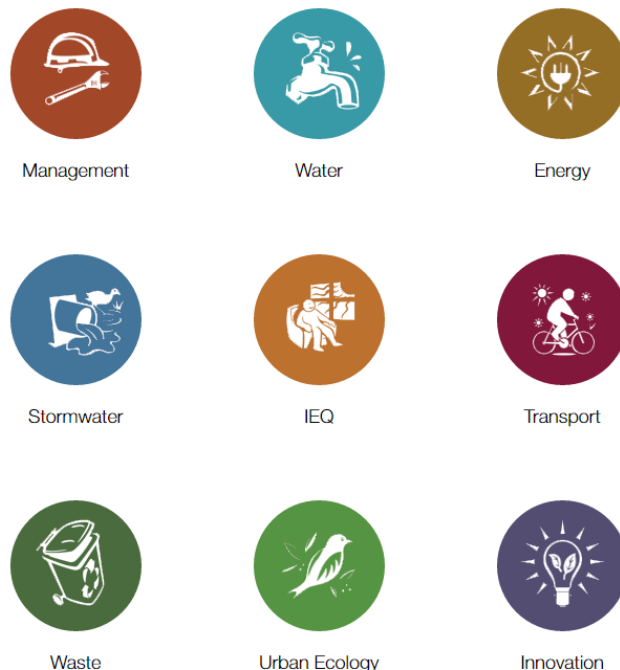


Figure 2 - BESS Environmental Categories (www.bess.net.au)

All ESD measures described under the nine key environmental categories are to be suitably incorporated into relevant project documentation at the appropriate project phase.

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Responsibilities & Implementation

Beams Projects will be responsible for the suitable implementation of the requirements of this report throughout the design and development phases. Should the development be sold the responsibility will pass to the new owner. At such time as a builder is novated or a building contract is put in place the builder will be responsible for implementation during the construction phase. At occupancy, the Owners Corporation and individual lot owners and or tenants will be responsible for the correct use of installed equipment and building systems in line with the provided Building User's Guide.

Sources of Information

The following 'Sources of Information' have been used to guide the design solutions:

- MA Architects – Project No. 22015; Drawing No. TP001 Rev A; TP005 Rev A; TP020 Rev A; TP050-TP051 Rev A; TP090 Rev A; TP100 Rev A; TP110-TP127 Rev A; TP200-TP202 Rev A; TP300-TP302 Rev A; TP900-TP903 Rev A.
- Municipal Association of Victoria - SDAPP Explained; Building Design for a Sustainable Future
- Built Environment Sustainability Scorecard (BESS)
- CSIRO 1999, Urban Stormwater – Best Practise Environmental Management Guidelines

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2. ESD Summary

The proposed commercial development at 32-38 & 40-50 Rokeby Street, Collingwood will implement the following ESD initiatives:

1. The project achieves a total BESS score of 70% with no mandatory category (IEQ, Energy, Water, Stormwater) below 50%.
2. The non-residential areas are targeting a 2% DF to 33% of the nominated area.
3. The development is provided with a comprehensive shading strategy.
4. The non-residential areas of 32 Rokeby aim to reduce heating and cooling energy consumption below the reference case (BCA Section J 2019).
5. The non-residential areas of 40 Rokeby demonstrates that the proposed building has the ability to achieve a minimum 5.5-star NABERS Energy for Offices base building (BCA Section J 2019 – JV1).
6. The development is to utilise a centralised electric heat pump domestic hot water system.
7. A 15.3kW Solar PV system is to be located on the roof of 32 Rokeby and a 32.4kW Solar PV system is to be located on the roof of 40 Rokeby building.
8. Individual electricity and cold water meters will be provided to the tenancies and communal areas.
9. Water efficient fittings and fixtures are applied throughout.
10. A 12,000-litre rainwater tank and 37,000-litre rainwater tank will harvest rainwater from the upper roof. This tank will be connected to ground floor and L1 toilets, plus landscape irrigation.
11. A Melbourne STORM rating of 100% is achieved.
12. Landscape irrigation demand will be connected to the rainwater tank equipped with mains top-up.
13. In total 190 bicycle spaces are to be provided for retail and office employees.
14. In total 44 bicycle spaces are to be provided for visitors.
15. The development is provided with an end of trip facilities including 19 showers, 232 lockers and changing facilities.
16. 1,327m² of communal space will be provided across ground floor, L4 balconies at 32 Rokeby and the roof terrace at 40 Rokeby.
17. The proposed development will incorporate a green roof.

18. 10-year carbon neutral power agreement between developer, owner's corporation, and electrical retailer to provide GreenPower to both communal areas and options to the future tenants.
19. An ESD As-Built Verification Report will be prepared prior to practical completion.
20. A life cycle assessment is to be undertaken during the Design Development phase.
21. A material passport will be developed to outline all quantities of materials used within the building and recommendations on potential recycling and / or reuse of these materials and the end of life.
22. IEQ sensors will be provided to all floors.
23. The development will include a bicycle repair station for occupants. The station will be provided with tools, stand and pump.

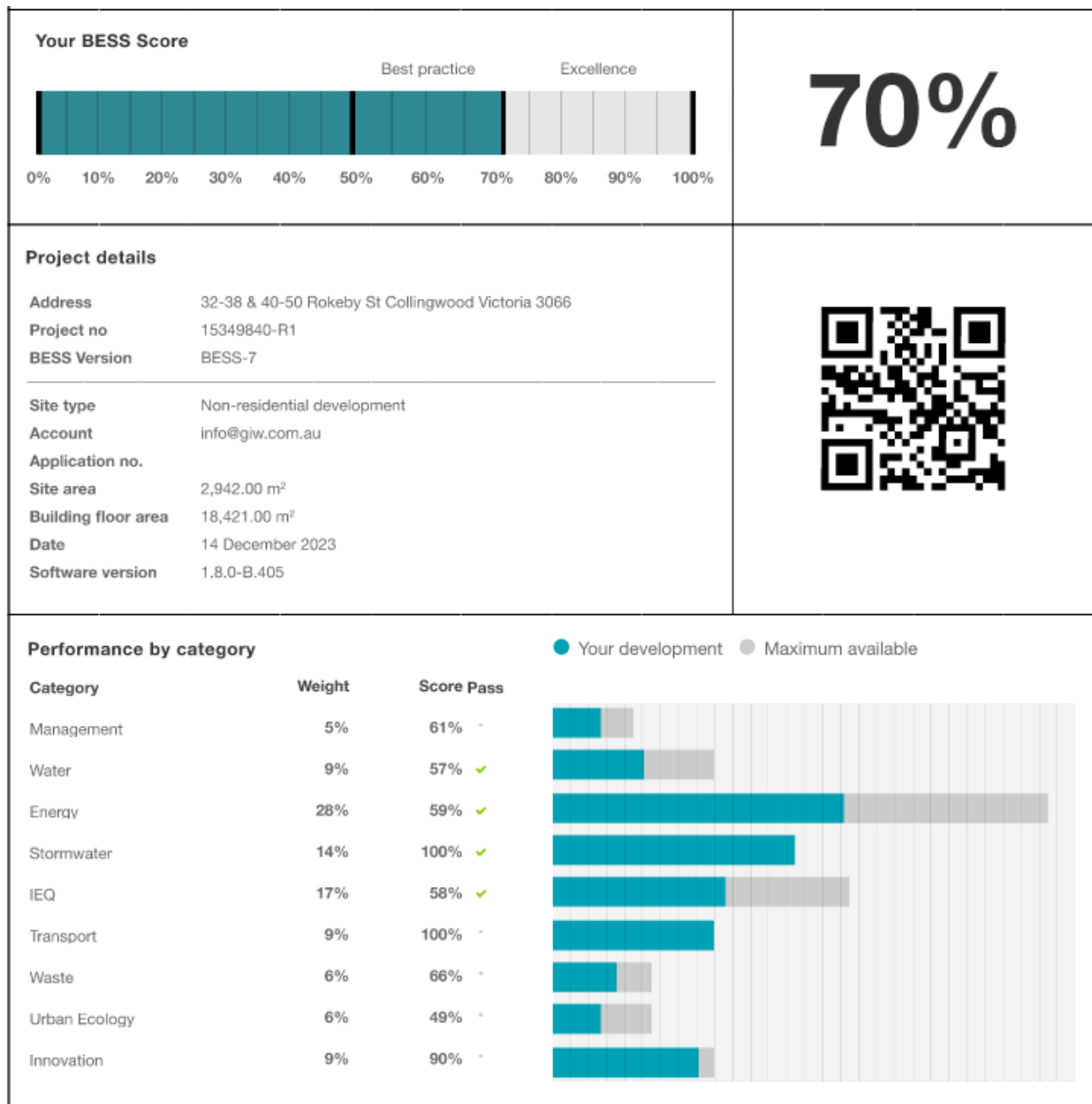
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3. BESS Performance

The project achieves a total BESS score of 70% with no mandatory category (IEQ, Energy, Water, Stormwater) below 50%. This figure represents a percentage improvement over a benchmark project. A score of 50% and higher equates to 'best practice' and is an effective pass of the BESS tool. A score of 70% and higher equates to BESS 'excellence' and exists as a higher benchmark in the tool.



Performance by category

● Your development ● Maximum available

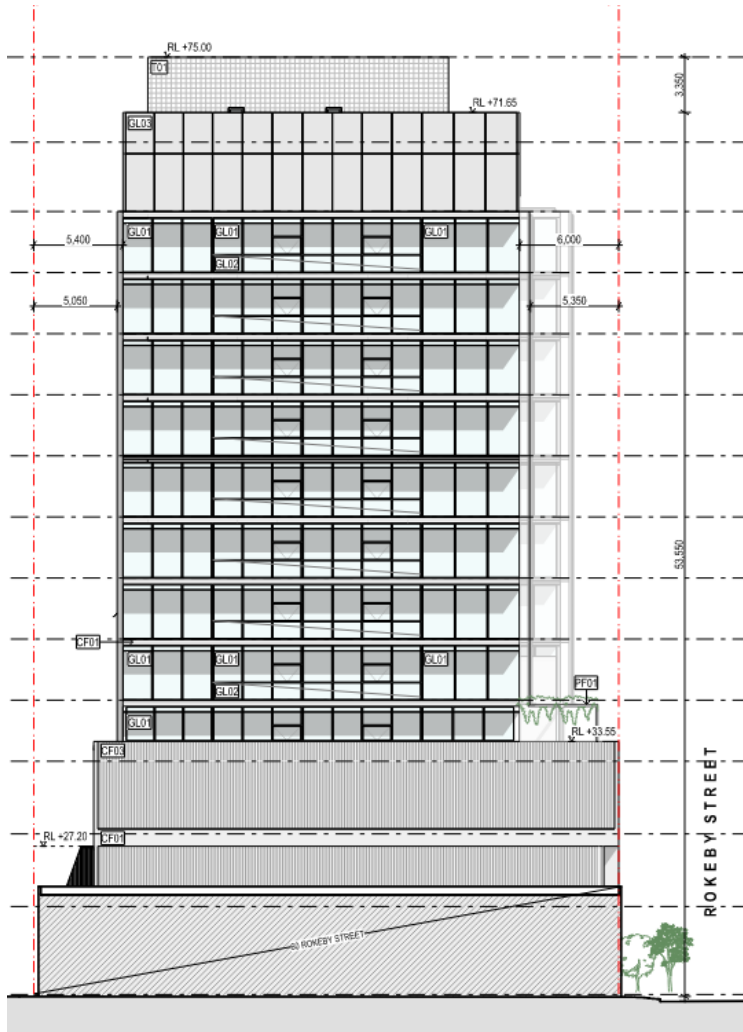
Category	Weight	Score	Pass
Management	5%	61%	-
Water	9%	57%	✓
Energy	28%	59%	✓
Stormwater	14%	100%	✓
IEQ	17%	58%	✓
Transport	9%	100%	-
Waste	6%	66%	-
Urban Ecology	6%	49%	-
Innovation	9%	90%	-



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4. Carbon Neutral Building

The proposed development commits to Carbon Neutrality for a minimum of 10 years. This ambition aligns with the objectives outlined in the City of Yarra draft Climate Emergency Plan. The Carbon Neutral Operations strategy is achieved through the following GIW Carbon Neutral Program™:



Reduce

- “Fossil fuel free” – all electric services
- Optimised façade for thermal comfort

Renew

- 47.7kW Solar PV System at roof
- 10-year GreenPower commitment

Regenerate

- Additional carbon will be offset under the National Carbon Offset Standard

Refine

- On-going refinement, education, and reporting on the agreed targets.

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5. ESD Assessment

Management

Council ESD objectives:

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

Council Best Practice Standard

Criteria	Construction and Building Management Actions	
Pre-Application Meeting	To ensure appropriate sustainable design principles and strategies are considered from the preliminary design stage of each development.	GIW has been actively involved in the preliminary design stage, but has not been involved in a pre-application meeting with Council.
Metering	To provide building users with information that allows monitoring of energy and water consumption	Electricity and cold water metering is to be provided to each individual commercial tenancy. Lighting and general power to common areas is to be separately metered to quantify energy used for common areas spaces.
Building User's Guide	To encourage and recognise initiatives that will help building users to use the building more efficiently.	A Building User's Guide will be provided to all occupants explaining the correct use of installed equipment and building systems. This shall cover at a minimum: <ul style="list-style-type: none">• Energy and Environmental Strategy• Monitoring and Targeting• Building Services• Transport Facilities• Materials and Waste Policy• Expansion/Re-fit Considerations• References and Further Information
Head Contractor	To encourage sustainable building practices.	The head contractor is to be ISO14001 accredited.

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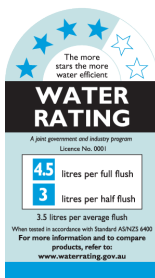

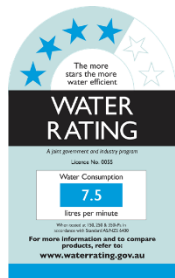

Water

Council ESD objectives:

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

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Council Best Practice Standard

Criteria	Development Provision
<p>Potable Water Reduction</p>	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>WELS 4 Star - Toilets</p>  </div> <div style="text-align: center;"> <p>WELS 5 Star - Taps</p>  </div> <div style="text-align: center;"> <p>WELS 4 Star - Showerhead</p>  </div> <div style="text-align: center;"> <p>WELS 5 Star - Dishwasher</p>  </div> </div>
<p>Rainwater Collection & Reuse</p>	<p><u>32 Rokeby</u></p> <p>A 12,000-litre rainwater tank will harvest rainwater from the upper roof. This tank will be connected to ground floor and L1 toilets, plus landscape irrigation. It is estimated that this will save more than 131kL of potable water every year and meet 36.2% of the demand in these areas.</p> <p><u>40 Rokeby</u></p> <p>A 37,000-litre rainwater tank will harvest rainwater from the upper and lower roof areas. This tank will be connected to all ground floor and L1 toilets, plus landscape irrigation. It is estimated that this will save more than 423kL of potable water every year and meet 30.5% of the demand in these areas.</p> <p>Stormwater drainage mechanism and suitable filtration is to be determined by the hydraulics services engineer at the design development phase.</p> <p>Refer Appendix A – WSUD Response</p>
<p>Landscape Irrigation</p>	<p>To ensure the efficient use of water and to</p> <p>Landscape irrigation demand will be connected to the rainwater tank equipped with mains top-up.</p>

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Council Best Practice Standard

Criteria	Development Provision	
	reduce total operating potable water use through encouraging water efficient landscape design.	ADVERTISED PLAN
Building System Water Use Reduction	Ensure the efficient use of water, to reduce total operating potable water use and to encourage the appropriate use of alternative water sources for cooling and fire testing systems.	<p>>80% of fire test water (e.g. hydrant pump test water or SCV annubar test) is to be reused on site.</p> <p>The proposed development is to incorporate air-cooled HVAC systems for the non-residential areas within the development.</p>

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Energy

Council ESD objectives:

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

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Council Best Practice Standard

Criteria	Development Provision	
Thermal Performance Rating – Non-Residential	To reduce energy needed to achieve thermal comfort in summer and winter - improving comfort, reducing greenhouse gas emissions, energy consumption, and maintenance costs.	<p><u>32 Rokeby</u></p> <p>The non-residential areas aim to reduce heating and cooling energy consumption below the reference case (BCA Section J 2019).</p> <p>Refer Appendix B – Preliminary JV3 Energy Modelling</p> <p><u>40 Rokeby</u></p> <p>The building energy model demonstrates that the proposed building has the ability to achieve a minimum 5.5-star NABERS Energy for Offices base building (BCA Section J 2019 – JV1).</p> <p>Refer Appendix C – Preliminary NABERS Energy Modelling.</p>
HVAC System	To ensure the efficient use of energy and to reduce consumption of electricity.	VRV / VRF systems with a COP of 3.4 are to be installed to the non-residential areas.
Hot Water System	To ensure the efficient use of energy and to reduce consumption and greenhouse emissions from water heating.	The development is to utilise a centralised electric heat pump hot water system for office areas and EOT facilities. Electric instantaneous / storage point of use systems may be added as part of tenancy fit outs.
Car Park Ventilation	To ensure the efficient use of energy, reduce total operating greenhouse gas emissions and to	Carpark ventilation fans are driven by a VSD motor connected to CO sensors within the carpark. The inclusion of CO sensor control will allow the ventilation fans to ramp down when the car park is unoccupied.

Council Best Practice Standard

Criteria	Development Provision
reduce energy peak demand.	<p>The mechanical services engineer is responsible for the design and specification of the system. The contractor is to procure and install the specified system.</p> <p>Maintenance requirements of the CO sensor system are to be included in the O&M manual.</p>
Internal Lighting – Non-Residential	<p>To ensure the efficient use of energy, to reduce energy consumption, greenhouse emissions associated with artificial lighting, and to reduce energy peak demand.</p> <p>The maximum illumination power density (W/m²) in the non-residential areas meets the requirements of Table J6.2a of the NCC 2019 Section J.</p> <p>Lighting power density shall be as follows:</p> <ul style="list-style-type: none"> • Retail: No greater than average 14W/m² • Office: No greater than average 4.5W/m²

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Renewable
Energy
Systems -
Solar

To encourage on-site renewable energy generation and reduce greenhouse emissions.

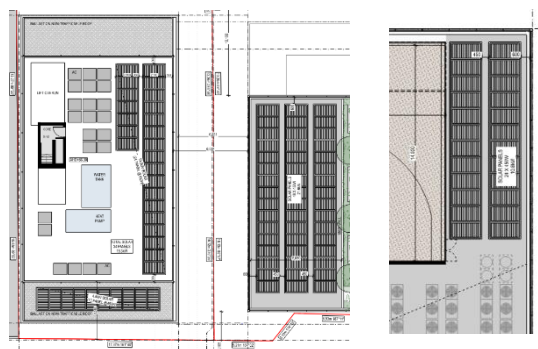
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32 Rokeby

A 15.3kW Solar PV system is to be located on the roof of 32 Rokeby building. The system is expected to generate approximately 20,504kWh and will be provide 18% of common area lighting and power.

40 Rokeby

A 32.4kW Solar PV system is to be located on the roof of 40 Rokeby building. The system is expected to generate approximately 43,421kWh and will be provide 10% of common area lighting and power.



Location Solar PV System

Refer Appendix D – Renewable Energy

Stormwater

Council ESD objectives:

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

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Council Best Practice Standard

Criteria	Development Provision
<p>Stormwater Treatment</p> <p>To minimise negative environmental impacts of stormwater runoff and maximise onsite re-use of stormwater.</p>	<p>The Melbourne Water - Stormwater Treatment Objective Relative Measure (STORM) tool has been applied to determine performance relative to Best Practice Environmental Management Guidelines (Victoria Stormwater Committee, 1999). As per City of Yarra Planning Scheme - Clause 22.16 Stormwater Management (Water Sensitive Urban Design), the development is required to achieve a STORM rating of 100% or greater.</p> <p>A Melbourne STORM rating of 100% is achieved via the following:</p> <ul style="list-style-type: none"> • 32 Rokeby: Rainwater is to be collected from the upper roof and directed into the 12,000-litre rainwater tank. All ground floor and L1 toilets, plus landscape irrigation are to be connected to the rainwater tank. • 40 Rokeby: Rainwater is to be collected from the upper and lower roof areas and directed into the 37,000-litre rainwater tank. All ground floor and L1 toilets, plus landscape irrigation are to be connected to the rainwater tank. <p>Refer Appendix A – WSUD Response.</p>

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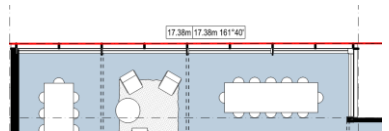
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Indoor Environment Quality

Council ESD objectives:

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

Council Best Practice Standard

Criteria	Development Provision	
Daylight Access – Non-Residential	To provide a high level of amenity and energy efficiency through design for natural light.	The non-residential areas are targeting a 2% DF to 33% of the nominated area. Refer Appendix E – Preliminary Daylight Modelling.
Ventilation – Non-Residential	To provide fresh air and passive cooling opportunities.	<p>A mixed-mode ventilation strategy will be provided to the development. All levels will be naturally ventilated when weather conditions permit;</p> <p>AND either:</p> <p>The ventilation system for the office areas will be designed to achieve, monitor and maintain CO2 concentrations below 800ppm. OR</p> <p>The outdoor air rates of the office areas are to be increased by 50% over the minimum air rates required by AS 1668.2:2012.</p> <p>This is to be included in the mechanical design and specifications.</p>
Thermal Comfort – Non-Residential	To provide comfortable indoor spaces and reduce energy needed for heating and cooling.	<p>The development is provided with a comprehensive shading strategy:</p> <p>32 Rokeby:</p> <div style="display: flex; justify-content: space-around;">   </div>

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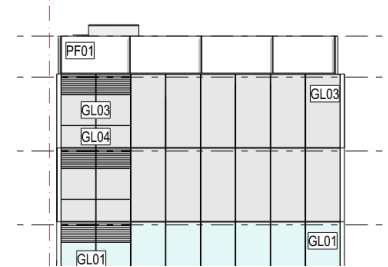
Council Best Practice Standard

Criteria

Development Provision

Ground floor west and east oriented windows will be shaded by the overhanging slab of the floor above.

North, east and west oriented windows at level 1-3 will be shaded by a 200mm deep vertical fins.

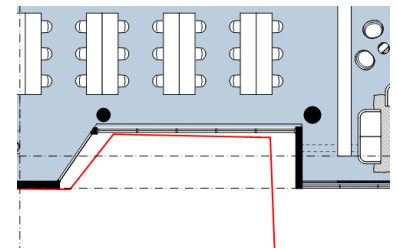
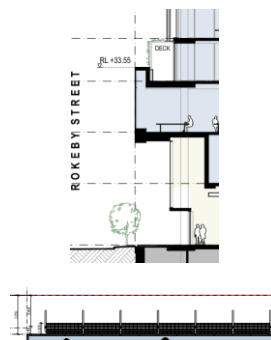


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North oriented windows at level 4-12 will be shaded by the adjacent building.

All windows on level 11 and 12 will be provided with high performance tinted windows to limit summer solar heat gains.

40 Rokeby:



Level 1 & 3 west oriented windows will be shaded by the overhanging slab or shading element above.

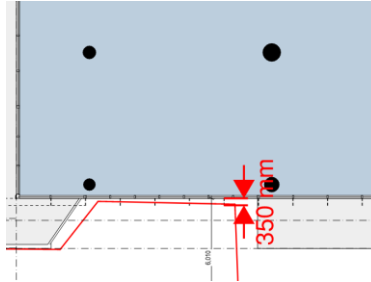
Recessed level 1 & 2 east oriented windows will be shaded by the built form or overhangs

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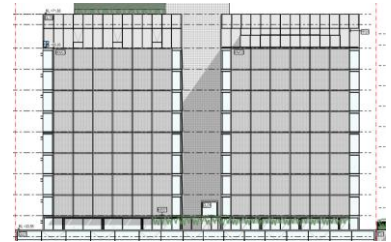
Council Best Practice Standard

Criteria

Development Provision

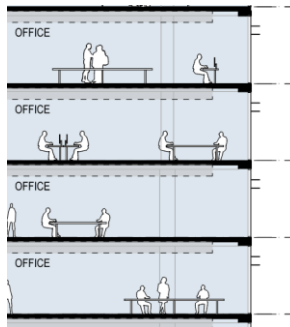


Level 3-11 east façade is provided with 350mm deep fins with 1,750mm spacing between fins.

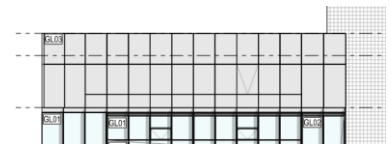


Level 4-11 west façade is provided with a screen 500mm off the window line.

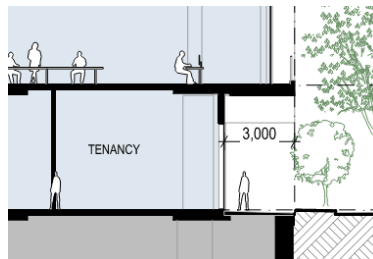
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Level 3-11 north oriented windows are provided with 450mm deep web forge overhangs with 600mm spacing.



Level 12 north, east and west oriented facades will be provided with high performance tinted windows to limit summer solar heat gains.



North, east and west oriented retail windows are shaded by the overhanging slab of the level above.

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Council Best Practice Standard

Criteria	Development Provision	
	None of the regular use areas of the commercial areas are provided with ceiling fans.	
Air Quality – Non-Residential	All paints and adhesives meet the maximum total indoor pollutant emission limits.	All internally applied paints adhesives and sealants are to have a low or ultra-low VOC content in line with Green Star Buildings Credit 13.
	All carpet meets the maximum total indoor pollutant emission limits.	All internally applied carpets are to have a low VOC content in line with Green Star Design & As-Built V1.3 Credit 13.1.
	All engineered wood meets the maximum total indoor pollutant emission limits.	All internally applied engineered wood products are to have low formaldehyde levels in line with Green Star Design & As-Built V1.3 Credit 13.2.

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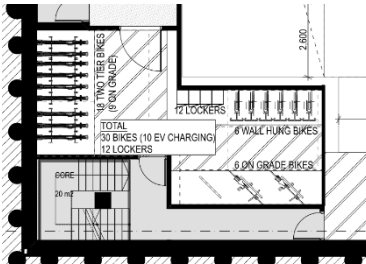
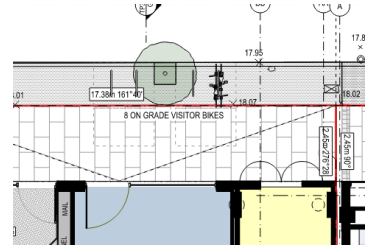
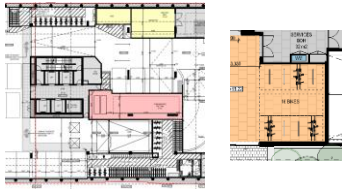

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Transport

Council ESD objectives:

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

Council Best Practice Standard

Criteria	Development Provision	
	32 Rokeby:	
		
Bicycle Parking – Non-Residential & Non-Residential Visitors	To encourage and recognise initiatives that facilitate cycling.	
	In total 30 bicycle spaces are to be provided for employees. This represents a 50% increase over the planning scheme requirements.	In total 8 bicycle spaces are to be provided for non-residential visitors. This represents a 50% increase over the planning scheme requirements.
	40 Rokeby:	
		
	In total 160 bicycle spaces are to be provided for retail and office employees at basement 1. This represents a >50% increase over the planning scheme requirements.	In total 36 bicycle spaces are to be provided for non-residential visitors at ground level. This represents a >50% increase over the planning scheme requirements.

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Council Best Practice Standard

Criteria	Development Provision
End of Trip Facilities – Non-Residential	<p>To minimise car dependency and to ensure that the built environment is designed to promote the use of public transport, walking and cycling.</p> <p>The development is provided with an end of trip facilities per below:</p> <p><u>32 Rokeby:</u> 6 showers (including 1xDDA), 36 lockers and changing facilities.</p> <p><u>40 Rokeby:</u> 13 showers (including 1xDDA), 196 lockers and changing facilities.</p>

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Electric Vehicle Infrastructure

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

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32 Rokeby:

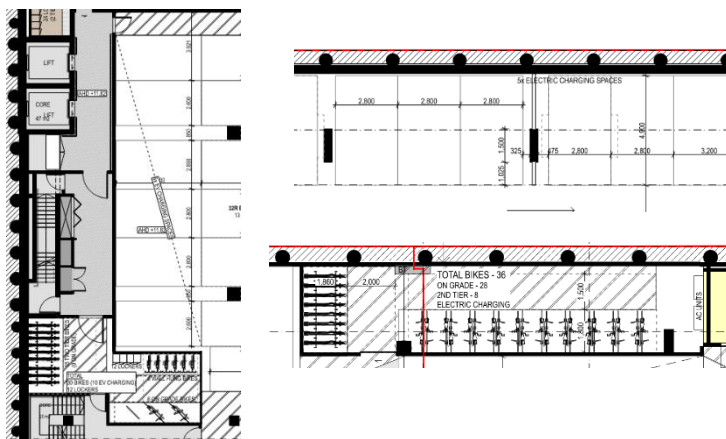
16 electric charging points for electrical cars are integrated in the proposed development at basement 1-3.

10 electric bicycle charging points will be provided to the development at basement 2.

40 Rokeby:

5 electric charging points for electrical cars are integrated in the proposed development at basement 2.

36 electric bicycle charging points will be provided to the development at basement 2.



Location of electric charging points.

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Council Best Practice Standard

Criteria	Development Provision	
Car Share Scheme	To minimise car dependency and to ensure that the built environment is designed to promote the use of public transport, walking and cycling.	The proposed development will incorporate a dedicated car parking space for car sharing.
Motorbikes / Mopeds	To minimise car dependency and to ensure that the built environment is designed to promote the use of public transport, walking and cycling.	<p><u>32 Rokeby:</u> Nil.</p> <p><u>40 Rokeby:</u> The proposed development will incorporate 19 motorbike / moped spaces at basement 1-2. This represents ≥5% of the total carparking.</p>

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Materials

ESD objectives:

- Use of low embodied energy materials.
- Encourage use of recycled and reusable materials in building construction and undertake adaptive reuse of buildings, where practical.

Council Best Practice Standard

Criteria		Development Provision
Embodied Energy	Limited use of high embodied energy metals and materials, especially in a design with intended high churn (e.g. retail)	<p>The design will seek to limit the use of materials and embodied energy through the incorporation of a limited material pallet and floor, ceiling and wall finishes.</p> <p>Application of sustainably accredited materials (where deemed appropriate).</p> <p>At least 40% of coarse aggregate in the concrete is crushed slag aggregate or other alternative materials (measured by mass across all concrete mixes in the project).</p>
Structural and Reinforcing Steel	Commitment to source structural and reinforcing steel from a responsible steel maker	<p>The building's steel (by mass) is to be sourced from a Responsible Steel Maker with:</p> <ul style="list-style-type: none"> • a currently valid and certified ISO 14001 Environmental Management System (EMS) in place; and • is a member of the World Steel Association's (WSA) Climate Action Programme (CAP)
Sustainable Timber	Commitment to source timber from sustainably managed source, with proof of audit trail.	Where timber is to be used, such timbers are to accord with the GBCA's 'Essential' criteria for forest certification. This may include FSC and / or PEFC Certification which are both internationally recognised schemes ensuring that timber is sourced from sustainable sources. Alternatively, recycled timber will be used.
PVC	Commitment to source best practice PVC products	<p>Permanent formwork, pipes, flooring, blinds and cables in the project will seek to comply with the following:</p> <ul style="list-style-type: none"> • Meet the GBCA's Best Practice Guidelines for PVC. or; • The supplier holds a valid ISO140001 certification.
Sustainable Products	Commitment to source products that meet the transparency and sustainability requirements	The project will incorporate products that meet the transparency and sustainability requirements where deemed appropriate. This includes the following: reused products, recycled content products, environmental product declarations, third party certified and stewardship programs.

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Waste Management

Council ESD objectives:

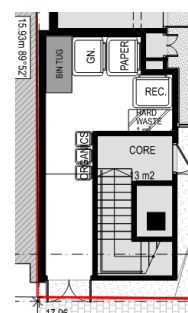
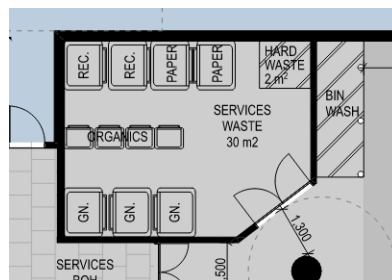
- To ensure waste avoidance, reuse and recycling during the design, construction and operation stages of development.
- To ensure long term reusability of building materials.
- To meet Councils' requirement that all multi-unit developments must provide a Waste Management Plan in accordance with the *Guide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

Council Best Practice Standard

Criteria	Development Provision	
Building Re-use	To ensure waste avoidance, reuse and recycling during the design.	None of the existing structure is re-used.
Construction and Demolition Waste	To reduce construction waste going to landfill	At least 90% of the waste generated during construction and demolition has been diverted from landfill.
Food & Garden Waste	To ensure waste avoidance, reuse and recycling during the operational life of the building.	Food and organic waste storage is provided in the ground floor bin room.

Convenience of Recycling

To ensure waste avoidance, reuse and recycling during the operational life of the building.



Separate general, recycling, paper and organic waste storage will be provided at the ground floor bin rooms.

Each tenancy is to be provided with separate general, recycling and food and organics waste bins. This requirement is to be included in the owners corporation rules or lease agreement.

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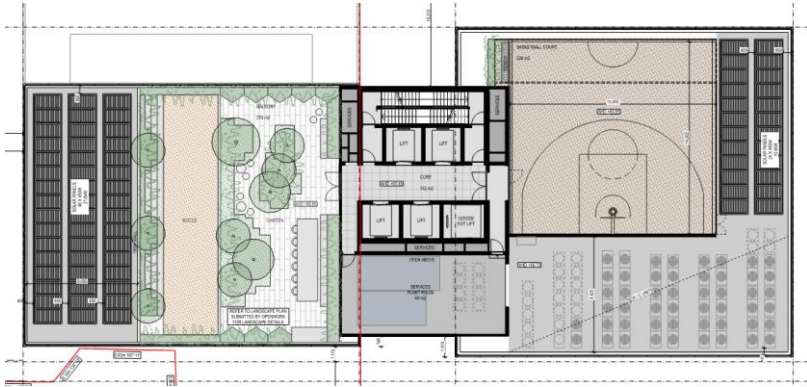
Urban Ecology

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Council ESD objectives:

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

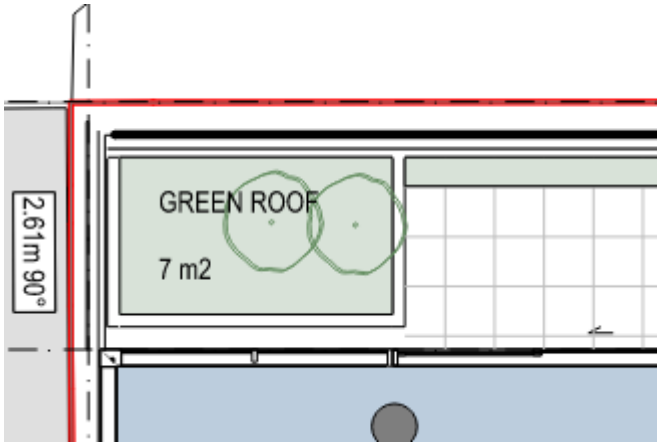
Council Best Practice Standard

Criteria	Development Provision
Communal Space	<p><u>32 Rokeby:</u></p> <p>103m² of communal space will be provided at level 4 terraces. Communal space will include the following amenities: landscaping and seating opportunities.</p> <p><u>40 Rokeby:</u></p> <p>1,428m² of communal space will be provided across the breakout spaces at ground floor and the roof terrace. Communal space will include the following amenities: business lounge, yoga space, gym, EOT lounge, Bocce, basketball court and terrace areas.</p>  <p>Communal space will be provided at rooftop.</p>
Vegetation	<p>To encourage and recognise initiatives that facilitate interaction between building occupants.</p> <p>To encourage and recognise the use of vegetation and landscaping within and around developments.</p> <p><u>32 Rokeby:</u></p> <p>Planter boxes are to be located at ground floor and level 4 balconies.</p> <p><u>40 Rokeby:</u></p> <p>Planter boxes are to be located at ground floor, L3 and L12 balconies, plus rooftop.</p>

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Criteria	Development Provision	
	The total area of vegetation is 11% of the site area.	
	The proposed development will incorporate a green roof.	
Green Walls / Roof	To encourage the appropriate use of green roofs, walls and facades to mitigate the impact of the urban heat island effect.	 <p>Green roof location.</p>
Food Production – Non-Residential	To encourage the production of fresh food on-site.	Nil.
Heat Island Effect	To reduce the contribution of the project site to the 'heat island effect	<p>Roofs are to have a three year SRI of minimum 60.</p> <p>Unshaded hard-scaping elements are to have a SRI of minimum 40.</p>

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Innovation

Council ESD objectives:

- To encourage innovative technology, design and processes in all development, which positively influence the sustainability of buildings.

Council Best Practice Standard

Criteria		Development Provision
Carbon Neutral Power Agreement	10-year carbon neutral power agreement.	10-year carbon neutral power agreement between developer, owner's corporation, and electrical retailer to provide GreenPower to both communal areas and options to the future tenants.
ESD Checkpoint during Construction Phase	To ensure that all ESD items are suitably installed and incorporated during construction.	An ESD professional will be engaged throughout the design and construction process. The ESD professional will perform a minimum of 2 site inspections during the construction phase to ensure suitable implementation of the ESD initiatives. Any deficiencies compared to the endorsed SMP will be escalated to the project manager and resolved. The checkpoint assessments will be undertaken at two stages as follows: <ul style="list-style-type: none"> Site Inspection 1: Prior to installation of internal linings. Site inspection 2: At the time of project completion.
Life Cycle Assessment	To reduce the embodied carbon of the development.	A life cycle assessment is to be undertaken during the Design Development phase. The embodied carbon of the development will be benchmarked against a standard practice building to determine the percentage reduction achieved. The life cycle results will be used to inform material selection, construction practices and end of life treatment.
Material Passport	To encourage the recycling and reuse of the used materials.	Based on the life cycle assessment a material passport will be developed to outline all quantities of materials used within the building and recommendations on potential recycling and / or reuse of these materials and the end of life.
IEQ Sensor	To deliver healthy spaces.	IEQ sensors are to be installed to all levels. The sensors are to measure at a minimum VOC levels, humidity, PPM and temperature.
Bicycle Repair Station	To encourage and recognise initiatives that facilitate cycling.	The development will include a bicycle repair station for occupants. The station will be provided with tools, stand and pump.

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Appendices

Appendix A: WSUD Response

Site layout Plan

The following architectural mark-up illustrates the rainwater collection and impervious areas of the proposed development site.

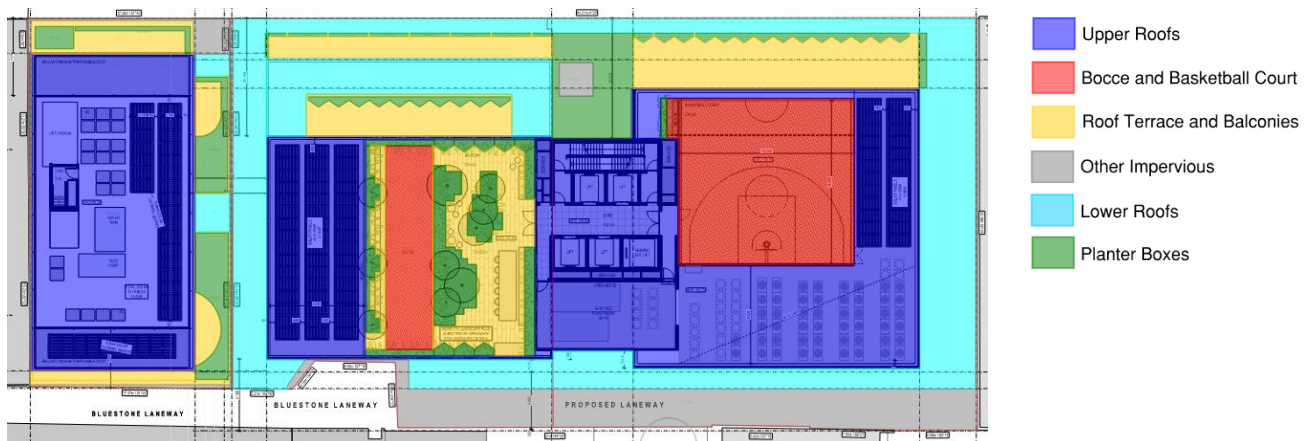


Figure 1 - Mark-up of water catchment and impervious areas

STORM Rating Report

A STORM rating of $\geq 100\%$ can be achieved by implementing the following initiatives:

- Rainwater collection off the upper and lower roof areas of the 40 Rokeby building and directed into a 37,000-litre rainwater tank connected to all ground floor and L1 toilets.
- Rainwater collection off the upper roof areas of the 32 Rokeby building and directed into a 12,000-litre rainwater tank connected to all ground floor and L1 toilets.

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Melbourne Water has developed the Stormwater Treatment Objective- Relative Measure (STORM) Calculator as a method of simplifying the analysis of stormwater treatment methods. The STORM Calculator displays the amount of treatment that is required to meet best practice targets, using WSUD treatment measures.

The best practice standards have been set out in the Urban Stormwater Best Practice Environmental Management Guidelines (Victoria Stormwater Committee, 1999) for reduction in total suspended solids (TSS), total phosphorus (TP) and total nitrogen (TN) loads.

The STORM Result is provided below:



STORM Rating Report

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TransactionID: 0
Municipality: YARRA
Rainfall Station: YARRA
Address: 32-38 & 40-50 Rokeby Street
Collingwood
VIC 3066
Assessor: GIW
Development Type: Commercial/Retail
Allotment Site (m2): 2,746.00
STORM Rating %: 100

Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
32 Rokeby - Upper Roof	386.00	Rainwater Tank	12,000.00	45	170.00	82.00
40 Rokeby - Upper Roof	699.00	Rainwater Tank	21,000.00	100	170.00	82.00
40 Rokeby - Lower Roofs	535.00	Rainwater Tank	16,000.00	60	169.80	82.00
Roof Terrace and Balconies	388.00	None	0.00	0	0.00	0.00
Bocce and Basketball Court	289.00	None	0.00	0	0.00	0.00
Other Impervious	223.00	None	0.00	0	0.00	0.00
Planter Boxes	226.00	None	0.00	0	0.00	0.00

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WSUD Strategy

The development will include the provision of a 37,000-litre rainwater tank for 40 Rokeby and a 12,000-litre rainwater tank for 32 Rokeby, plus associated pumps in the basement garage. The rainwater tank is to be connected to all ground floor and L1 toilets of the respective building.

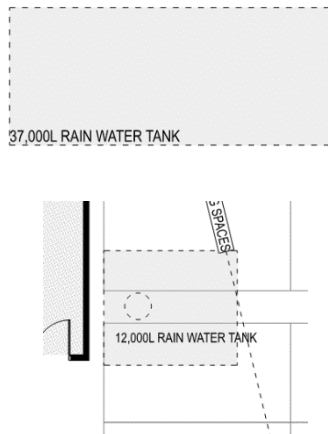


Figure 2 – Location Rainwater Tanks

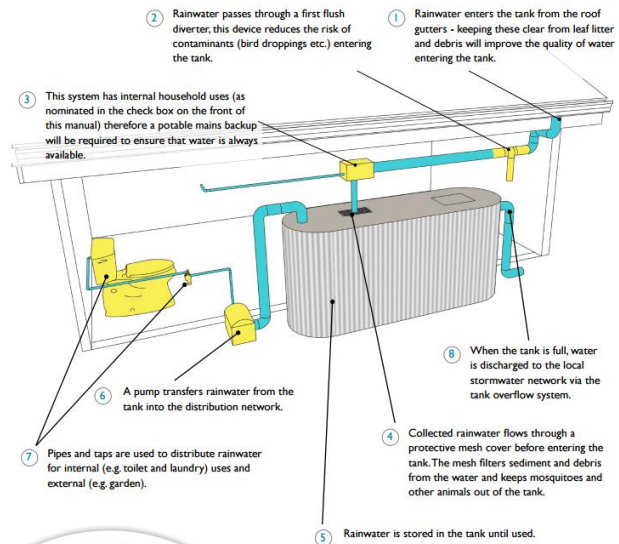


Figure 3 – Cross-section Tank
(City of Port Phillip)

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Rainwater Reuse

32 Rokeby:

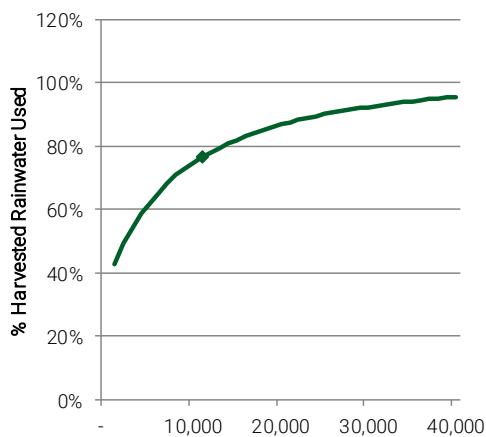
Inputs

Catchment Area	386 sqm
Number of Occupants	44
Bin Washout	No
Irrigation Area	61 sqm
Tank Capacity	12,000 Litre

Outputs

% Served by Rainwater	36.2%
% Harvested Rainwater Used	94.4%
Total Potable Water Saved	131,587 Litre

Tank Sizing

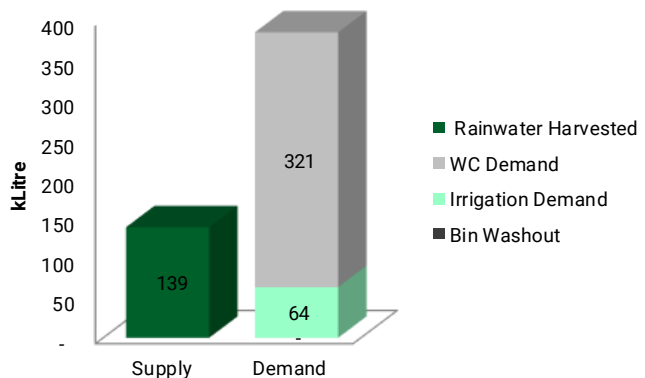


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Rainwater Balance (Monthly Averages)

Month	Rainwater Harvested (L)	Irrigation Demand (L)	WC Demand (L)	Bin Washout (L)
Jan	9,072	9,438	27,280	0
Feb	11,499	8,549	24,640	0
Mar	10,516	4,386	27,280	0
Apr	12,487	4,198	26,400	0
May	10,818	4,332	27,280	0
Jun	11,912	1,974	26,400	0
Jul	8,607	2,011	27,280	0
Aug	11,133	2,011	27,280	0
Sep	11,675	5,770	26,400	0
Oct	12,545	5,879	27,280	0
Nov	16,758	5,734	26,400	0
Dec	12,348	9,511	27,280	0
Total	139,370	63,795	321,200	0
Equivalent STORM tool		9		0

Supply-Demand



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40 Rokeby:

Inputs

Catchment Area	1234 sqm
Number of Occupants	164
Bin Washout	No
Irrigation Area	259 sqm
Tank Capacity	37,000 Litre

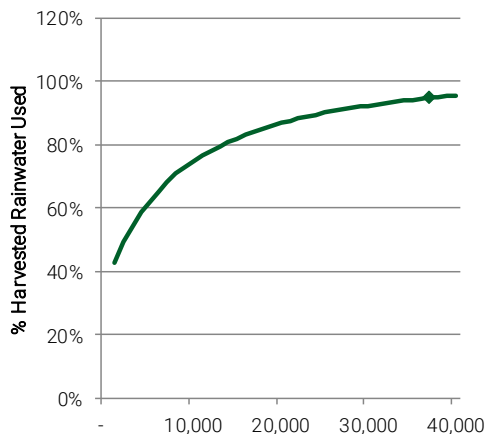
Outputs

% Served by Rainwater	30.5%
% Harvested Rainwater Used	94.8%
Total Potable Water Saved	423,987 Litre

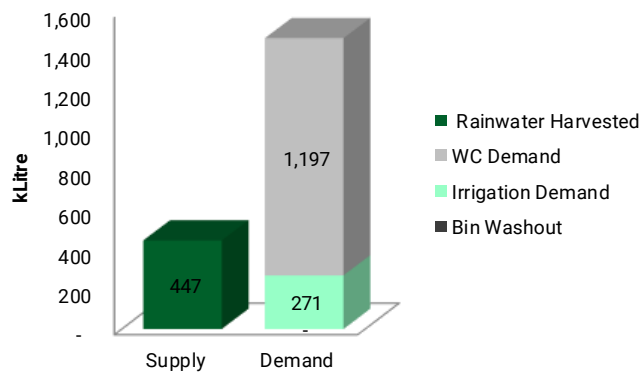
Rainwater Balance (Monthly Averages)

Month	Rainwater Harvested (L)	Irrigation Demand (L)	WC Demand (L)	Bin Washout (L)
Jan	29,089	40,072	101,680	0
Feb	36,719	36,300	91,840	0
Mar	33,628	18,621	101,680	0
Apr	40,385	17,826	98,400	0
May	34,565	18,394	101,680	0
Jun	38,192	8,382	98,400	0
Jul	27,515	8,540	101,680	0
Aug	35,591	8,540	101,680	0
Sep	37,342	24,501	98,400	0
Oct	40,186	24,963	101,680	0
Nov	54,283	24,347	98,400	0
Dec	39,821	40,382	101,680	0
Total	447,315	270,867	1,197,200	0
Equivalent STORM tool		37		0

Tank Sizing



Supply-Demand



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Site Management Statement

Prevention of litter, sediments and pollution entering the stormwater system in the construction phase is to be addressed through introduction of the following initiatives:

- Buffer strips to pervert stormwater runoff.
- Gravel sausage filters at stormwater inlets to prevent silt, mud or any other site contaminant from entering the stormwater system.
- Silt fences under grates at surface entry inlets to prevent sediment from entering the stormwater system.
- Temporary rumble grids to vibrate mud and dirt off vehicles prior to leaving the site.
- The site is to be kept clean from any loose rubbish or rubble.
- Introduction of offsite construction for building elements where deemed appropriate.

The builder is to include these initiatives in the construction management plan and address these during site induction of relevant contractors.

Maintenance Program

The following maintenance requirements are to be programmed to ensure the rainwater tank operates effectively:

Item	Description	Maintenance Interval
Gutters and downpipes	Eave and box gutters are to be inspected and cleaned to prevent large debris from being washed into rainwater tank.	3 monthly
First flush system (as applicable)	Inspect and clean excess sediment from diverter chamber to prevent blockages.	3 monthly
Tank contents	Siphon the tank to inspect contents. If sludge is present, a plumber will be required to drain tank contents and clean the tank.	2 to 3 years
Tank structure	Inspect tank externally for leaks	Yearly
Pump system	Inspect pump wiring, plumbing and check for smooth operation.	6 monthly
Plumbing	Plumbing and fixtures connected to the rainwater tank is to be inspected for leaks.	Yearly

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Appendix B: Preliminary JV3 Energy Modelling

The proposed development is located in Climate Zone 6 and is classified as a Class 5 Office Building under the National Construction Code (NCC) 2019. In this preliminary assessment two typical levels (L2 and L7) have been assessed to determine the energy performance of the development.

The NCC states that Alternative Solution: Verification Method JV3 may be applied as a viable Assessment Method to demonstrate achievement of the Performance Requirement JP1. The services documentation is to be certified by the projects RBP.

JV3 modelling simulates predicted annual GHG emissions for two building Models as follows:

- Model 1: Simulates the building with full DTS compliance and is known as the 'Reference Building';
- Model 2: Simulates the architecture as depicted in the contract documentation with services modelled as DTS compliant.

To determine a compliant result for the proposed building, the predicted annual GHG emissions of Model 2 is to be less than that of Model 1.

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JV3 Compliance Requirements

The building energy models demonstrate that the annual GHG emissions of the proposed building with reference services (Model 2) is less than that of the reference building (Model 1). This is deemed to be a compliant solution under NCC Section J – Verification Method JV3. Refer Section: 'Results' for modelling outputs.

The following thermal performance requirements form the basis of the JV3 Compliance Report. It is the responsibility of the applicant / permit holder to ensure the performance requirements are constructed to the satisfaction of the RBS.

Glazing	Thermal Performance	Recommended Product
All Windows – North Façade	<ul style="list-style-type: none"> Total System U-value ≤ 2.1 Total System SHGC = $0.26 \pm 10\%$ Total System VLT = 0.57 	Aluminium framed, thermally broken, double glazed, low-E, spectrally selective
All Windows – East, South and West Façade	<ul style="list-style-type: none"> Total System U-value ≤ 2.7 Total System SHGC = $0.26 \pm 10\%$ Total System VLT = 0.57 	Aluminium framed, double glazed, Low-E, spectrally selective
Skylight	<ul style="list-style-type: none"> Total System U-value ≤ 2.5 Total System SHGC = $0.26 \pm 10\%$ Total System VLT = 0.57 	Aluminium framed, double glazed, Low-E, spectrally selective

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Walls	Thermal Performance (Added Insulation Value)	Recommended Product
Ext. Wall – Concrete/Metal Clad	R2.7 Bulk Insulation	Bradford Gold Hi-performance Wall batts 90mm thick R2.7 with 20mm airspace
Int. Wall – Concrete/Plasterboard	R2.7 Bulk Insulation	Bradford Gold Hi-performance Wall batts 90mm thick R2.7 with 20mm airspace
Roofs	Thermal Performance	Recommended Product
Concrete Roof	R1.75 Soffit Insulation	Kingspan Kooltherm K10 G2 Soffit Board 40mm thick R1.75
Floors	Thermal Performance	Recommended Product
Concrete slab – where unconditioned or exposed below	TBC	TBC

Modelling Software

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Simulation Package Software	DesignBuilder
Weather Data	Representative Meteorological Year (RMY) file for Melbourne

Reference Building Input Data

The following tables list the building thermal performance values applied within the reference model:

Walls	Description	Total R-Value
External Walls	Concrete (<80% WWR)	R1.4
	Concrete/Metal Clad (>80% WWR)	R1.0
Internal Walls	Concrete/Plasterboard	R1.4
Roof	Concrete	R3.2
Floor	Concrete	R2.0
Infiltration	<p>This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright</p>	
	<p>0.7 Air Change per Hour (ac/h) when outdoor air is not mechanically supplied AND; 0.35 Air Change per Hour (ac/h) at all other times</p>	

The following table lists the glazing performance values required by the reference model.

Glazing	Total System U-value	Total System SHGC
L2 - Method 2 – Multiple Aspects	3.70	0.15
L7 - Method 2 – Multiple Aspects	2.57	0.21
Skylight	3.90	0.45

Building Services Inputs

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The services have been modelled in accordance with the table below:

Services	Reference Building Services
Artificial lighting	NCC 2019 Section J Part J6.2 - Table 6.2a – Maximum Illumination Power Densities.
Cooling – Spaces conditioned	Assumed all office areas are conditioned. Lobbies, stairwells, and toilets are assumed to be unconditioned.
Heating – Spaces conditioned	Assumed all office areas are conditioned. Lobbies, stairwells, and toilets are assumed to be unconditioned.
Cooling – System type	VRV units specified modelled as air-to-air heat pump units with COP of 3.1 (per minimum MEPS requirements for split systems).
Heating – System type	VRV units specified modelled as air-to-air heat pump units with COP of 3.1 (per minimum MEPS requirements for split systems).
Services Operating Profile	Per NCC 2019 Section J – Specification JVc Table 2c and 2d.
Heating and Cooling Setpoints	Cooling – 24°C Heating – 21°C
Airflow rates	Modelled in accordance with AS1668.

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Activity Profiles

All zones include an activity profile which model occupancy, appliance and equipment, and associated operation profiles. The heat gains from these sources must be accounted for within the modelling. The same profiles are applied in all models per the requirements of Verification Method JV3. These can be summarised as follows:

Activity Profile Item	All Models
Occupant Density	Occupant density is per NCC Section D – Part D1.13 and AS1668.2-2012.
Occupancy Schedule	Per NCC Section J – Specification JVc Table 2c and 2d.
Occupancy Heat Gains	Per NCC Section J – Specification JVc Table 2n.
Appliance Heat Gains	Per NCC Section J – Specification JVc Table 2l.
Appliance Schedule	Per NCC Section J – Specification JVc Table 2c and 2d.

Results

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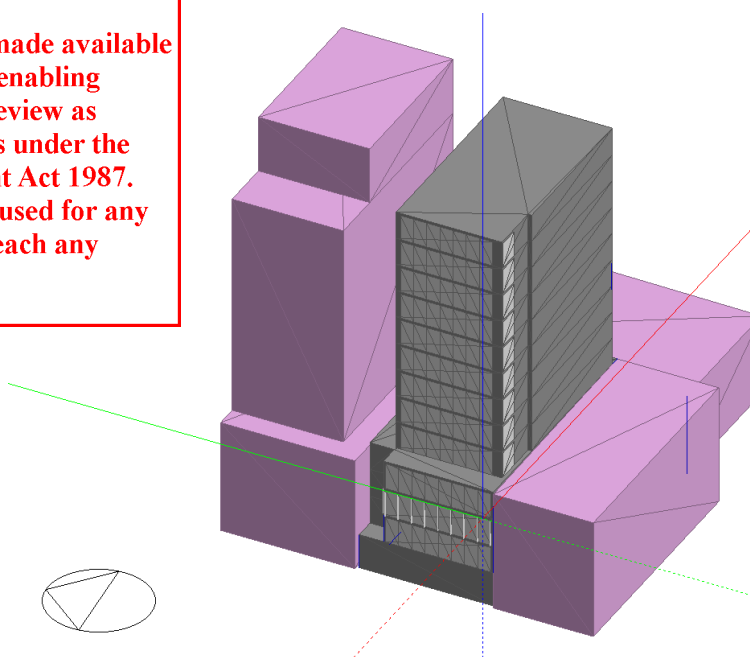


Figure 3 – Model of proposed building for energy simulations

The results below have been produced within the DesignBuilder software. These show that the proposed building (Model 2) emits less GHG than the reference building (Model 1).

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	Model 1 – Reference Building (kg- CO ₂ eq/Annum)	Model 2 - Proposed Building with Reference Services (kg-CO ₂ eq/Annum)
Lighting	81,476	81,476
Heating (Electricity)	33,428	25,871
Cooling (Electricity)	17,119	21,346
TOTAL	132,024	128,693
GHG/yr/m ²	32.3	31.5

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Appendix C: Preliminary NABERS Energy Modelling

Background to JV1 NABERS Energy for Offices Compliance Requirements

The NCC states that Alternative Solution: Verification Method JV1 NABERS Energy for Offices may be applied as a viable Assessment Method to demonstrate achievement of the Performance Requirement JP1. The services documentation is to be certified by the projects RBP.

The modelling applies the methodology outlined in the NABERS Handbook for estimating NABERS ratings (Version 2.0 – September 2021) in accordance with The Rules - Energy and Water for Offices (Version 4.1).

Scope of Modelling

The proposed development is located in Climate Zone 6 and is classified as a Class 5 Office Building with a Class 6 component under the National Construction Code (NCC) 2019. In this preliminary assessment a typical level (level 6) has been assessed to determine the energy performance of the development.

The assessment was performed using building energy modelling software to simulate predicted annual energy consumption and annual Greenhouse Gas emissions.

JV1 NABERS Energy for Offices Compliance Requirements

The building energy model demonstrates that the proposed building has the ability to achieve a NABERS 5.5-star. The following thermal performance requirements form the basis of the Energy Performance Modelling and Compliance Reporting requirements. It is the responsibility of the applicant / permit holder to ensure the performance requirements are constructed to the satisfaction of the RBS.

Roofs	Thermal Performance	Recommended Product
Concrete slab – where Roof / external balcony / plant room above (WP-01 – WP05)	R4.0 above slab insulation Total System R4.5 inclusive of thermal bridging.	DCT GA300 100mm
(WP-06)	R4.1 soffit insulation Total System R4.5 inclusive of thermal bridging.	Kooltherm K10 90mm

Walls	Thermal Performance (Added Insulation Value)	Recommended Product
Ext. Wall Heavyweight	R2.5 Bulk Insulation Total System R1.4 inclusive of thermal bridging.	Bradford Gold Hi-performance Wall batts 90mm thick R2.5

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Walls	Thermal Performance (Added Insulation Value)	Recommended Product
Ext. Wall / Spandrel (E01)	R2.5 Bulk Insulation Total System R1.0 inclusive of thermal bridging.	Bradford Gold Hi-performance Wall batts 90mm thick R2.5
Int. Wall – adjacent to core / unconditioned areas	R2.0 Bulk Insulation Total System R1.4 inclusive of thermal bridging.	Bradford Gold Wall batts 90mm thick R2.0
Floors	Thermal Performance	Recommended Product
Concrete slab – where unconditioned or exposed below	R1.75 soffit insulation Total System R2.0 inclusive of thermal bridging.	Kooltherm K10 40mm
Glazing	Thermal Performance	Recommended Product
All Windows	Total System U-value ≤ 2.5 Total System SHGC = $0.27 \pm 10\%$ Total System VLT = 0.57	Aluminium Frame, Double Glazed, Low-E, Spectrally Selective
Other	Thermal Performance	Recommended Product
Air Tightness	0.7ACH	Air barrier with appropriate taping and sealing.

Modelling Software

Simulation Package Software	DesignBuilder
Weather Data	Representative Meteorological Year (RMY) file for Melbourne

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Building Services Inputs

The services have been modelled in DesignBuilder in accordance with the table below:

Services	Proposed Building Services
Artificial lighting	The following Illumination Power Densities have been applied: <ul style="list-style-type: none"> - Office - 4.5W/m² (modelled for heat load on air conditioning system only. Energy use of office lighting excluded from final total as lighting is to be provided by tenant.) - Corridors - 5W/m² - WCs - 3W/m² - Stairwells, Plant Rooms - 2W/m² - Carparks - 1.5W/m²
Cooling – Spaces conditioned	Per Mechanical Services drawings.
Heating – Spaces conditioned	Per Mechanical Services drawings.
Cooling – System type	VRF systems has been modelled for each tenancy units. At this preliminary simulation Design builder default performance curves used for the outdoor units full load COP of 3.2. Each outdoor unit has 15W Crankcase heater
Heating – System type	VRF systems has been modelled for each tenancy units. At this preliminary simulation Design builder default performance curves used for the outdoor units full load COP of 3.2. Each outdoor unit has 15W Crankcase heater
Air Distribution System type	Outside air is supplied by heat recovery units. Full capacity efficiency is 75%. Heat Recovery and Outside Air supply system has a return fan. Both Supply and return fans have 400Pa total pressure drop. Fan efficiency is 60% and Motor efficiency is 90%. All fans have VSDs All the indoor units/FCUs are assumed to have a pressure drop of 150 Pa. Fan control strategy is ON/OFF Indoor unit Parasitic electric energy: ON 30W; OFF 20W Cooling Supply air temperatures 12°C heating Supply air temperatures 34°C Economy cycle operation for both internal FCU and perimeter FCUs. The economiser control type is Differential enthalpy and locked out with heating.

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Services	Proposed Building Services
Services Operating Profile	<p>For office areas, the NABERS Office – Base Building default operation profiles have been applied. Refer Handbook for Estimating NABERS Ratings v2.0 – Section 6.1.4 Schedules. After hours not applied.</p> <p>For other spaces, the profiles applied are per the Green Star Energy Consumption and Greenhouse Gas Emissions Calculation Guide – September 2019 sections:</p> <ul style="list-style-type: none"> - 14.3.9 Circulation for corridors and entry lobbies; - 14.3.11 BOH for plant rooms and toilets; and - 14.3.28 Carparks and Loading Docks.
Heating and Cooling Setpoints	<p>Cooling - 24°C</p> <p>Heating - 21°C</p>
Airflow rates	<p>Modelled in accordance with AS1668 for toilets and carparks.</p> <p>Outside air to Office areas is 15L/s/person.</p>

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Activity Profiles

All zones include an activity profile which model occupancy, appliance and equipment, and associated operation profiles. The heat gains from these sources must be accounted for within the modelling. These can be summarised as follows:

Activity Profile Item	All Models
Occupant Density	<p>Occupant density is per NCC Section D – Part D1.13 and AS1668.2-2012. Specific Densities are applied as follows:</p> <ul style="list-style-type: none"> - Office Areas: 10m²/person - Corridors / Toilets / Plant rooms / Carparks: No occupancy
Occupancy Schedule	<p>For office areas, the NABERS Office – Base Building default occupancy and operation profiles have been applied. Refer Handbook for Estimating NABERS Ratings v2.0 – Section 6.1.4 Schedules. Note that the Saturday / After-hours zone profiles have NOT been applied to any level at this time.</p> <p>For other spaces, the profiles applied are per the Green Star Energy Consumption and Greenhouse Gas Emissions Calculation Guide – September 2019 sections:</p> <ul style="list-style-type: none"> - 14.3.9 Circulation for corridors and entry lobbies; - 14.3.11 BOH for plant rooms and toilets; and - 14.3.28 Carparks and Loading Docks.
Occupancy Heat Gains	<p>Per NCC Section J – Specification JVC Table 2n:</p> <ul style="list-style-type: none"> - 75W sensible gain and 55W latent gain per person
Appliance Heat Gains	<p>Refer Handbook for Estimating NABERS Ratings v2.0 – Section 6.1.4 Schedules:</p> <ul style="list-style-type: none"> - Office Areas Design: 16W/m²; 70% of design loads uniformly applied at this stage since the indoor unit zoning map is not available yet. Refer to NABERS Section 6.1.2 - All other areas: No appliance heat gains.
Appliance Schedule	<p>For office areas, the NABERS Office – Base Building default operation profiles have been applied. Refer Handbook for Estimating NABERS Ratings v2.0 – Section 6.1.4 Schedules. Note that the Saturday / After-hours zone profiles have NOT been applied to any Level yet.</p> <p>For other spaces, the profiles applied are per the Green Star Energy Consumption and Greenhouse Gas Emissions Calculation Guide – September 2019 sections:</p> <ul style="list-style-type: none"> - 14.3.9 Circulation for corridors and entry lobbies; - 14.3.11 BOH for plant rooms and toilets; and - 14.3.28 Carparks and Loading Docks.

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Results

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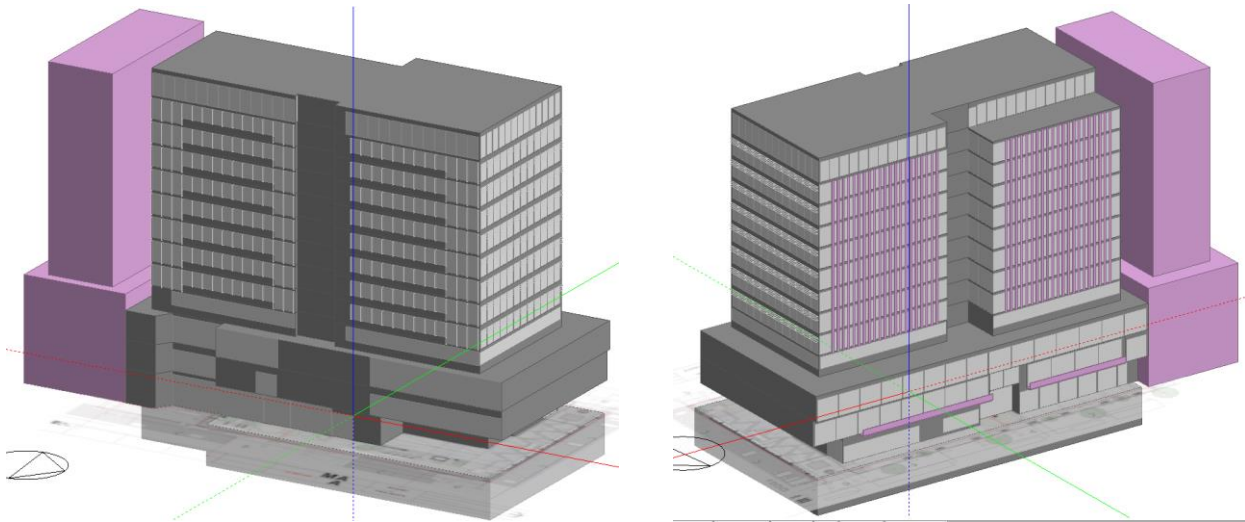


Figure 4 – Model of proposed building for energy simulations

The results below indicate that that the proposed building has the ability to achieve a minimum 5.5-star NABERS Energy for Offices base building.

Base Model

	Electricity (kWh)	Diesel (L)
Heating (Elec)	32,073.51	-
Cooling Base Bld	96,914.35	-
Air Conditioning Fans Base Bld	82,885.73	-
Lights Base Bld	44,970.74	-
Equipment Base Bld	737.92	-
External Lighting & Signage	2,190.00	-
Diesel Generator heater	4,368.00	-
Car Park Lighting	18,055.13	-
Vertical Transport Energy	81,649.68	-
Mech Exhaust Fan Including Car park	21,359.82	-
Non HVAC Pumps	16,240.00	-

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DHW Including Pumps & Controls	27,943.27	-
Security, BMS 1.5kW 24/7	13,140.00	-
Diesel		750
Renewable Energy	-33,561	
TOTAL Incl. PV	408,966	750
TOTAL with 25% margin	519,598	938
kgCO2-eq p.a. (all fuels)	481,199	
kgCO2-eq/m2 p.a. (all fuels)	34	

Further to the above, a preliminary NABERS Estimate has been calculated to demonstrate that a 5.5-star rating can be achieved without GreenPower:



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Appendix D: Renewable Energy

32 Rokeby:

Inputs Solar PV

Peak Wattage of System	15.3 kWp
Azimuth	0 degrees
Inclination	10 degrees

Outputs Solar PV

Electricity Produced per Year	20,504 kWh
No. Panels Required	34
Total Roof Area Required	82 sqm
Annual Carbon Savings	22,965 kg CO ₂

Economic Output

Cost of System	22,950 \$
Annual Savings	4,101 \$
Simple Payback	6 Years

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Annual Common Area Demand

Annual Demand Class 2 Non-Residential Are:	66,342 kWh/year
Annual Demand Carpark / Services	50,219 kWh/year
Total Annual Demand	116,561 kWh/year

Demand / Supply

Contribution Solar PV to Communal Area Power	18%
--	-----

40 Rokeby:

Inputs Solar PV

Peak Wattage of System	32.4 kWp
Azimuth	0 degrees
Inclination	10 degrees

Outputs Solar PV

Electricity Produced per Year	43,421 kWh
No. Panels Required	72
Total Roof Area Required	172 sqm
Annual Carbon Savings	48,631 kg CO ₂

Economic Output

Cost of System	48,600 \$
Annual Savings	8,684 \$
Simple Payback	6 Years

Annual Common Area Demand

Annual Demand Class 2 Non-Residential Are:	232,414 kWh/year
Annual Demand Carpark / Services	200,124 kWh/year
Total Annual Demand	432,539 kWh/year

Demand / Supply

Contribution Solar PV to Communal Area Power	10%
--	-----

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Appendix E: Daylight Modelling

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Scope of Modelling

We have undertaken daylight modelling for 2 sample levels from 32 Rokeby and 1 sample level from 40 Rokeby. Level 2 and 7 from 32 Rokeby building and L6 from 40 Rokeby have been selected with consideration of internal layout, inherent and adjacent building shading features. This level represents an average of the development.

The 32 Rokeby sample levels have been modelled under an equitable development rights scenario with a similar building to that of the proposed on the east boundary and 40 Rokeby to the north.

The 40 Rokeby sample level has been modelled under an equitable development rights scenario with a similar building to that of the proposed on the north and east boundaries, plus 32 Rokeby to the south.

Methodology

The daylight levels in the non-residential areas are benchmarked against the best practice requirements as set out under the Built Environment Sustainability Scorecard (BESS) tool: Indoor Environment Quality (IEQ) – Daylight Access Non-Residential. These levels are as follows:

"A minimum of 33% of the nominated floor area is to achieve a daylight factor greater than 2%.

The daylight modelling has been completed using the Radiance software suite, an accurate computing program used to predict light levels in a space prior to construction. Scene geometric data and material properties are interfaced into the Radiance software using DesignBuilder.

Daylight Factor has been calculated using a CIE uniform cloudy sky.

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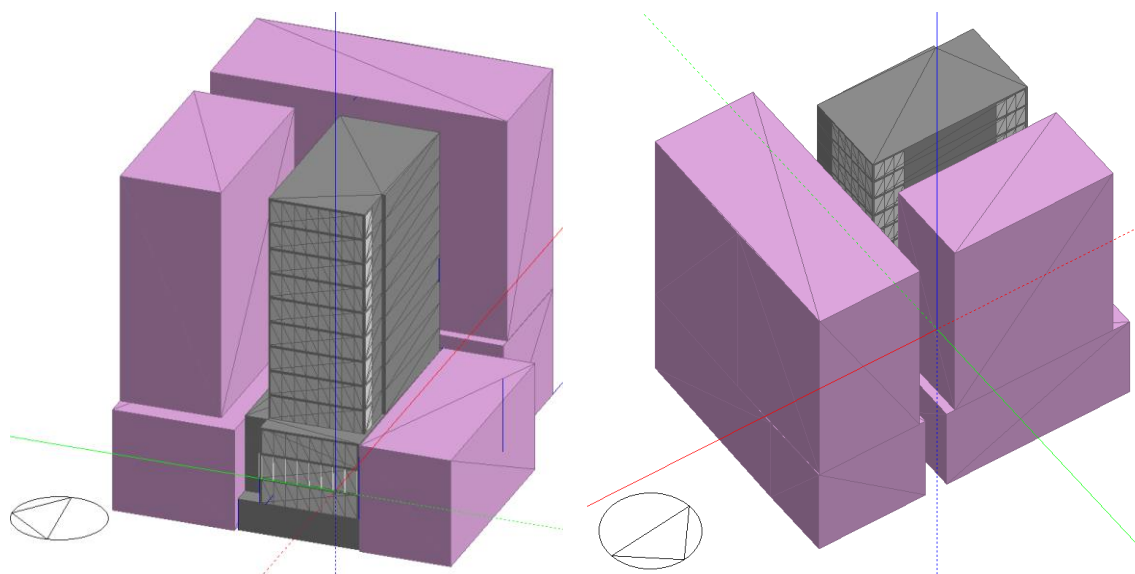


Figure 3 – DesignBuilder model of 32 Rokeby and adjacent buildings

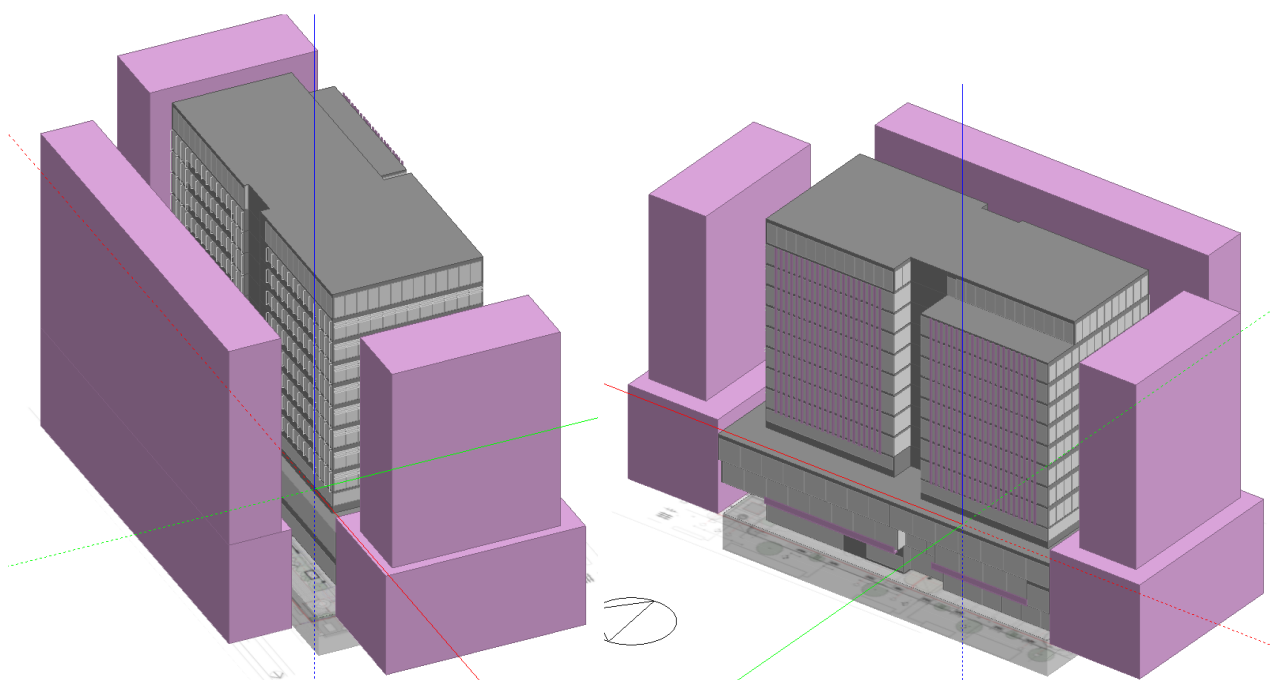


Figure 5 – DesignBuilder model of 40 Rokeby and adjacent buildings

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Modelling Assumptions

The following assumptions have been made with respect to the modelling:

- Modelled window dimensions and shading structures are as depicted on the Architectural drawings.
- The glazing performance used for external windows is as follows:
 - Windows: double glazed, low-e, spectrally selective window with a total system VLT of 0.57.
 - Screened Windows (West): double glazed, low-e, spectrally selective window with a total system VLT of 0.35 based on 61% transmittance of the mesh.
- The reflectance of all materials is in accordance with the below:
 - Floors: 0.4
 - Internal Walls: 0.7
 - Ceilings: 0.8
- North 2 x 400mm web forge overhang, 600mm vertical spacing, 50% transmittance each.
- Transient and unoccupied spaces such as corridors and amenities have been excluded from the modelled area.
- The reflectance of external buildings and structures is assumed to be 0.4.

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Daylight Results – Numerical

The daylight results for the nominated area of 32-38 Rokeby Street, Collingwood can be summarised as follows:

Area	Floor Area (m2)	Floor Area above DF2 (m2)	% of floor area above DF2
32 Rokeby - Office L2	408.4	106.0	26.0
32 Rokeby - Office L7	282.1	134.0	47.5

The area weighted daylight results for the nominated area of 32-38 Rokeby Street, Collingwood can be summarised as follows:

Area	Floors similar to sample floor	Floor Area (m2)	Floor Area above DF2 (m2)	Area weighted % of floor area above DF2
32 Rokeby - Office L2	GF-L3	1225.1	318.0	26.0
32 Rokeby - Office L7	L4-L12	2538.6	1205.9	47.5
Total		3763.7	1523.9	40.5% (Compliant)

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The daylight results for the nominated area of 40-50 Rokeby Street, Collingwood can be summarised as follows:

Area	Floor Area (m2)	Floor Area above DF2 (m2)	% of floor area above DF2
40 Rokeby - Office 1 South P	83.3	44.6	53.5
40 Rokeby - Office 1 East P	83.5	33.0	39.5
40 Rokeby - Office 1 West P	85.6	85.6	100.0
40 Rokeby - Office 1 Internal	339.6	68.4	20.2
40 Rokeby - Office 2 North P	75.6	74.2	98.2
40 Rokeby - Office 2 East	79.5	37.5	47.1
40 Rokeby - Office 2 West P	93.5	93.5	100.0
40 Rokeby - Office 2 Internal	266.3	53.4	20.1
TOTAL	1,106.8	490.1	44.3% (Compliant)

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Daylight Results – Visual

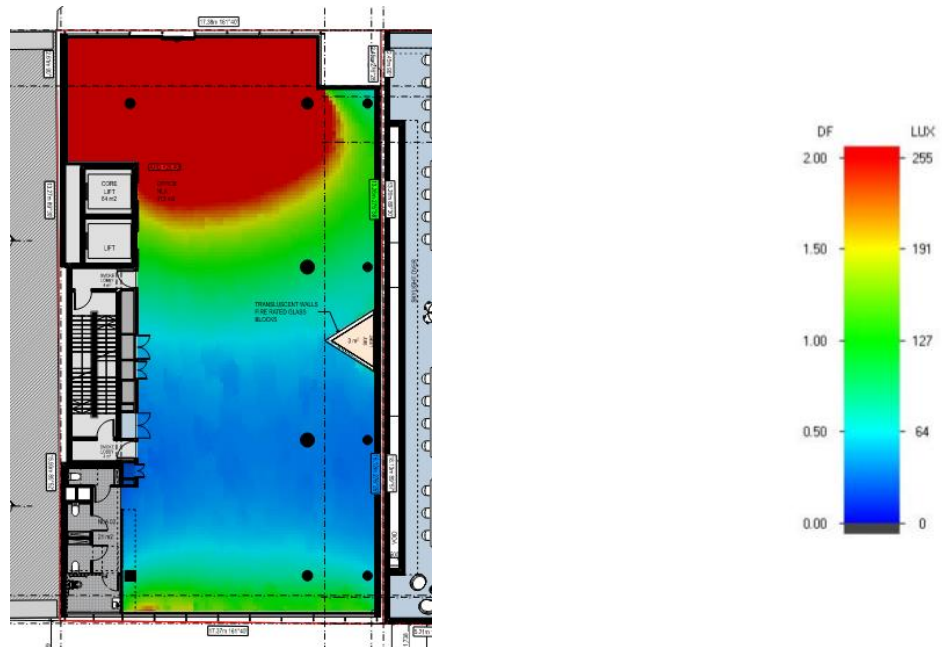


Figure 4 - Daylight Map – 32 Rokeby - Level 2

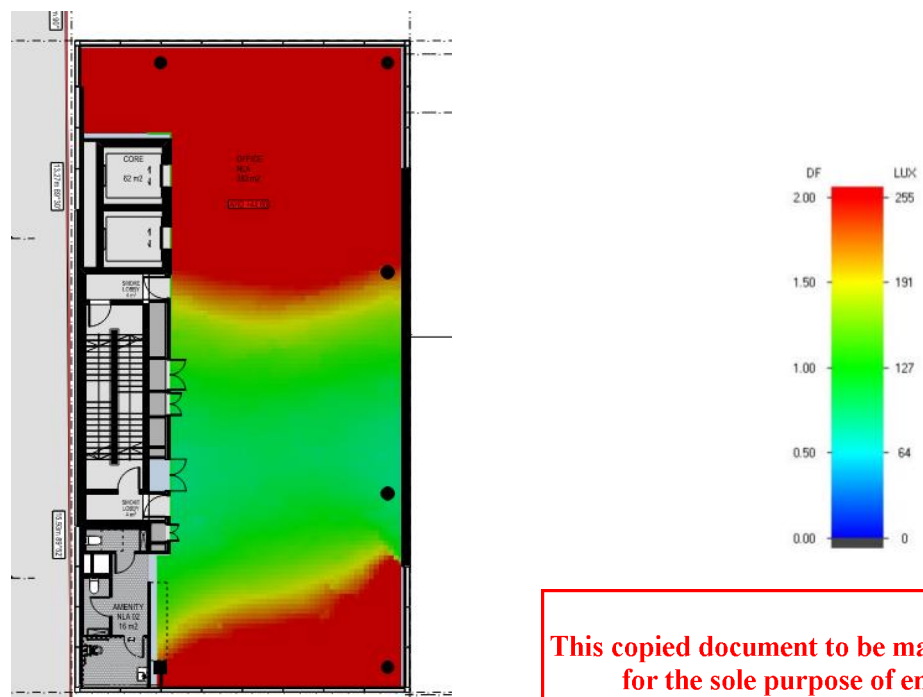


Figure 3 - Daylight Map – 32 Rokeby - Level 7

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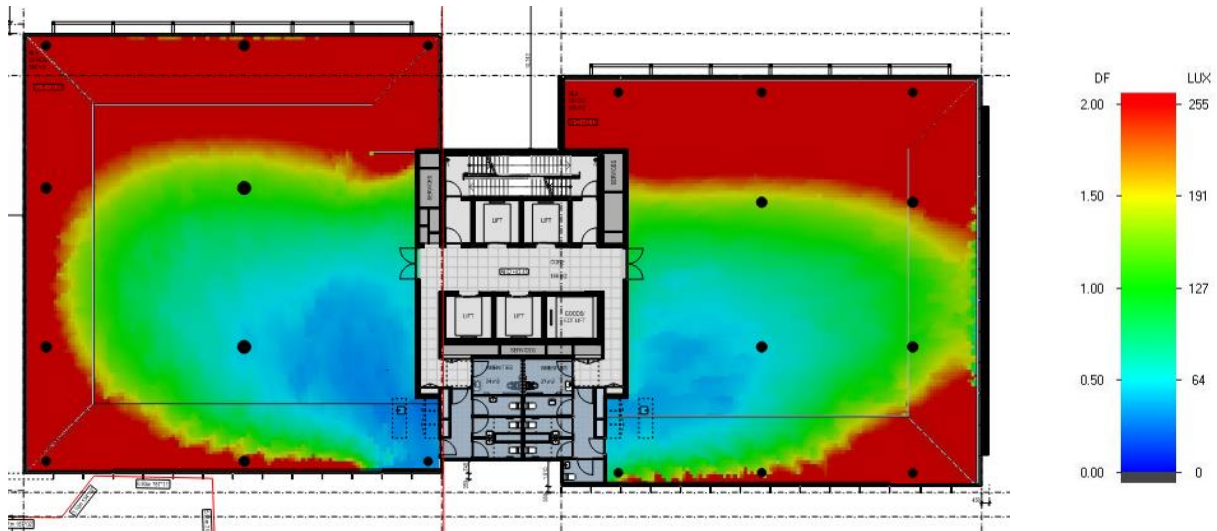


Figure 5 - Daylight Map – 40 Rokeby - L6

Conclusion

The development has been assessed and it has been determined that $\geq 33\%$ of the nominated floor area will achieve the daylight factors as prescribed under BESS and therefore the development will meet the BESS IEQ guidelines for daylight.

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Appendix F: BESS Assessment

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BESS Report

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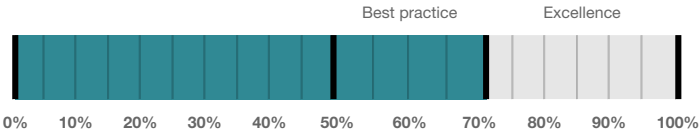
Built Environment Sustainability Scorecard



This BESS report outlines the sustainable design commitments of the proposed development at 32-38 & 40-50 Rokeby St Collingwood Victoria 3066. 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 Yarra 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



70%

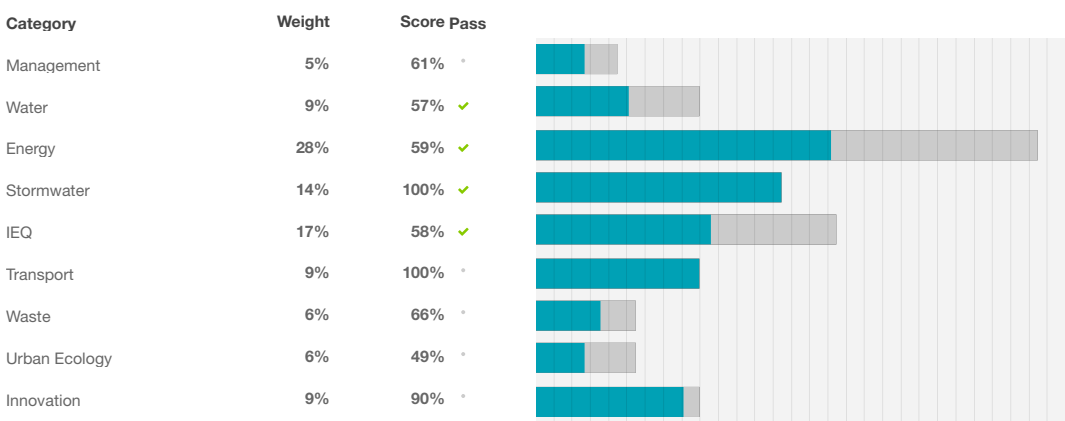
Project details

Address	32-38 & 40-50 Rokeby St Collingwood Victoria 3066
Project no	15349840-RP
BESS Version	BESS-7
Site type	Non-residential development
Account	info@giw.com.au
Application no.	
Site area	2,942.00 m²
Building floor area	18,421.00 m²
Date	14 December 2023
Software version	1.8.0-B.405

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Performance by category



Buildings

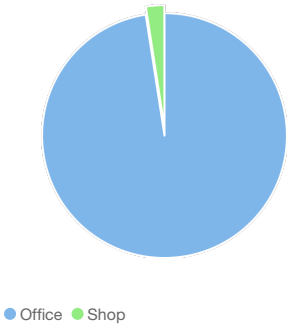
Name	Height	Footprint	% of total footprint
32 Rokeby	13	5,944 m²	21%
40 Rokeby	13	22,168 m²	78%

Dwellings & Non Res Spaces

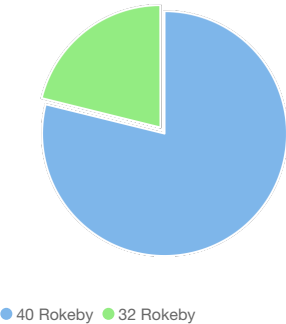
Non-Res Spaces

Name	Quantity	Area	Building	% of total area
Office				
Office L2-L12	1	12,565 m²	40 Rokeby	68%
Office L2-L12	1	3,377 m²	32 Rokeby	18%
Office L1	1	1,613 m²	40 Rokeby	8%
Office L1	1	417 m²	32 Rokeby	2%
Total	4	17,972 m²	97%	
Shop				
Shop 2	1	242 m²	32 Rokeby	1%
Shop 1	1	207 m²	40 Rokeby	1%
Total	2	449 m²	2%	

Building Type composition



Building composition



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Supporting information

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Floorplans & elevation notes

Credit	Requirement	Response	Status
Management 3.2	Annotation: Individual utility meters to be provided to all individual commercial tenancies		-
Management 3.3	Annotation: Sub-meters to be provided to all major common area services (list each)		-
Water 3.1	Annotation: Water efficient garden details		-
Energy 3.1	Carpark with natural ventilation or CO monitoring system		-
Energy 4.2	Location and size of solar photovoltaic system		-
Stormwater 1.1	Location of any stormwater management systems (rainwater tanks, raingardens, buffer strips)		-
Transport 1.4	Location of non-residential bicycle parking spaces		-
Transport 1.5	Location of non-residential visitor bicycle parking spaces		-
Transport 1.6	Location of showers, change rooms and lockers as nominated		-
Transport 2.1	Location of electric vehicle charging infrastructure		-
Transport 2.2	Location of car share parking space(s)		-
Transport 2.3	Location of nominated motorbicycle parking spaces		-
Waste 2.1	Location of food and garden waste facilities		-
Waste 2.2	Location of recycling facilities		-
Urban Ecology 1.1	Location and size of communal spaces		-
Urban Ecology 2.1	Location and size of vegetated areas		-
Urban Ecology 2.2	Location and size of green roof		-

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Supporting evidence

Credit	Requirement	Response	Status
Management 2.3a	Section J glazing assessment		-
Management 2.3b	Preliminary modelling report		-
Energy 1.1	Energy Report showing calculations of reference case and proposed buildings		-
Energy 3.1	Details of either the fully natural carpark ventilation or CO monitoring system proposed		-
Energy 3.7	Average lighting power density and lighting type(s) to be used		-
Energy 4.2	Specifications of the solar photovoltaic system(s)		-
Stormwater 1.1	STORM report or MUSIC model		-
IEQ 1.4	A short report detailing assumptions used and results achieved.		-

Credit summary

Management Overall contribution 4.5%

		61%
1.1 Pre-Application Meeting		0%
2.3 Thermal Performance Modelling - Non-Residential		97%
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%	59%	✔ Pass
1.1 Thermal Performance Rating - Non-Residential	12%		
2.1 Greenhouse Gas Emissions	100%		
2.2 Peak Demand	0%		
2.3 Electricity Consumption	100%		
2.4 Gas Consumption	N/A	✦ Scoped Out	
No gas connection in use			
2.6 Electrification	100%		
3.1 Carpark Ventilation	100%		
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%		

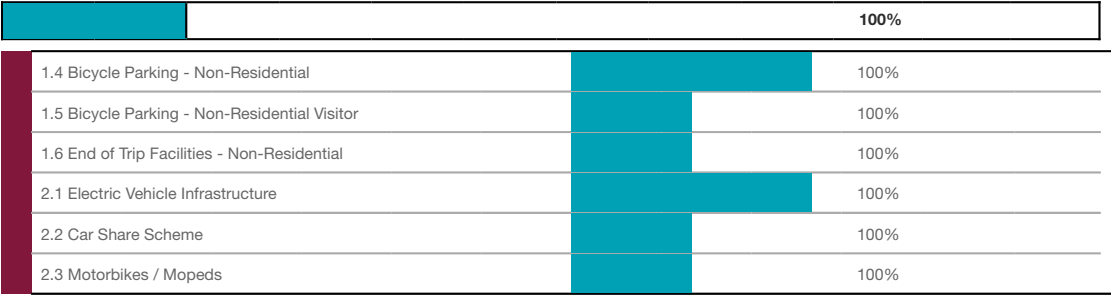
IEQ Overall contribution 16.5%

	Minimum required 50%	58%	✔ Pass
1.4 Daylight Access - Non-Residential	33%	✔ Achieved	
2.3 Ventilation - Non-Residential	82%	✔ Achieved	
3.4 Thermal comfort - Shading - Non-Residential	67%		
3.5 Thermal Comfort - Ceiling Fans - Non-Residential	0%		
4.1 Air Quality - Non-Residential	0%		

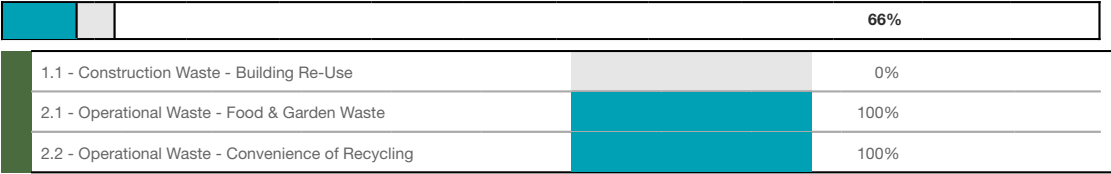
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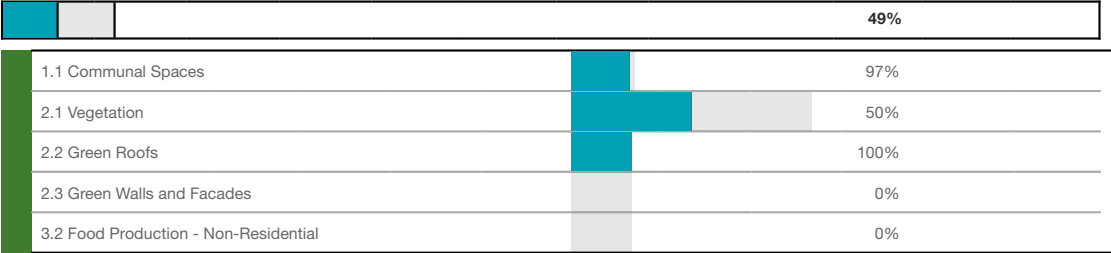
Transport Overall contribution 9.0%



Waste Overall contribution 5.5%



Urban Ecology Overall contribution 5.5%



Innovation Overall contribution 9.0%



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Credit breakdown**Management** Overall contribution 3%

1.1 Pre-Application Meeting		8%
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		97%
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 ?	
Office	Yes	
Shop	No	
Criteria	Has preliminary modelling been undertaken in accordance with either NCC2019 Section J (Energy Efficiency), NABERS or Green Star?	
Question	Criteria Achieved ?	
Office	Yes	
Shop	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 ?	
Office	Yes	
Shop	Yes	
3.3 Metering - Common Areas		100%
Score Contribution	This credit contributes 12.5% towards the category score.	
Criteria	Have all major common area services been separately submetered?	
Question	Criteria Achieved ?	
Office	Yes	
Shop	Yes	
4.1 Building Users Guide		100%
Score Contribution	This credit contributes 12.5% towards the category score.	
Criteria	Will a building users guide be produced and issued to occupants?	
Question	Criteria Achieved ?	
Project	Yes	

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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?:	Yes
Water fixtures, fittings and connections	
Showerhead: All	4 Star WELS (>= 6.0 but <= 7.5)
Bath: All	Scope out
Kitchen Taps: All	>= 5 Star WELS rating
Bathroom Taps: All	>= 5 Star WELS rating
Dishwashers: All	>= 5 Star WELS rating
WC: All	>= 4 Star WELS rating
Urinals: All	Scope out
Washing Machine Water Efficiency: All	Scope out
Which non-potable water source is the dwelling/space connected to?:	
Shop 1 Office L1	Tank 1 - 40 Rokeby
Office L2-L12 Office L2-L12	-1
Shop 2 Office L1	Tank 2 - 32 Rokeby
Non-potable water source connected to Toilets:	
Shop 1 Office L1 Shop 2 Office L1	Yes
Office L2-L12 Office L2-L12	No
Non-potable water source connected to Laundry (washing machine): All	No
Non-potable water source connected to Hot Water System: All	No
Rainwater Tanks	
What is the total roof area connected to the rainwater tank?:	
Tank 1 - 40 Rokeby	1,234 m ²
Tank 2 - 32 Rokeby	386 m ²
Tank Size:	
Tank 1 - 40 Rokeby	37,000 Litres
Tank 2 - 32 Rokeby	12,000 Litres

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Irrigation area connected to tank:		ADVERTISED PLAN
Tank 1 - 40 Rokeby	259 m²	
Tank 2 - 32 Rokeby	61.0 m²	
Is connected irrigation area a water efficient garden?:		
Tank 1 - 40 Rokeby	Yes	
Tank 2 - 32 Rokeby	Yes	
Other external water demand connected to tank?:		
Tank 1 - 40 Rokeby	-	
Tank 2 - 32 Rokeby	-	

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	32855 kL	
Output	Proposed (excluding rainwater and recycled water use)	
Project	24634 kL	
Output	Proposed (including rainwater and recycled water use)	
Project	23651 kL	
Output	% Reduction in Potable Water Consumption	
Project	28 %	
Output	% of connected demand met by rainwater	
Project	78 %	
Output	How often does the tank overflow?	
Project	Never / Rarely	
Output	Opportunity for additional rainwater connection	
Project	12064 kL	

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3.1 Water Efficient Landscaping	100%
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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 16% Minimum required 50%

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Use the BESS Deem to Satisfy (DtS) method for Energy?:	No
Non-Residential Building Energy Profiles	
Heating, Cooling & Comfort Ventilation - Electricity Reference fabric & services:	
32 Rokeby	55,805 kWh
40 Rokeby	122,125 kWh
Heating, Cooling & Comfort Ventilation - Electricity - proposed fabric and reference services:	
32 Rokeby	55,805 kWh
40 Rokeby	122,125 kWh
Heating, Cooling & Comfort Ventilation - Electricity Proposed fabric & services:	
32 Rokeby	55,805 kWh
40 Rokeby	122,125 kWh
Hot Water - Electricity - Reference:	
32 Rokeby	1,000 kWh
40 Rokeby	22,330 kWh
Hot Water - Electricity - Proposed:	
32 Rokeby	899 kWh
40 Rokeby	22,330 kWh
Lighting - Reference:	
32 Rokeby	76,465 kWh
40 Rokeby	47,083 kWh
Lighting - Proposed:	
32 Rokeby	76,465 kWh
40 Rokeby	47,083 kWh
Solar Photovoltaic systems	
System Size (lesser of inverter and panel capacity):	
40 Rokeby - PV 1	20.0 kW peak
40 Rokeby - PV 2	7.0 kW peak
32 Rokeby - PV 1	5.0 kW peak
32 Rokeby - PV 2	5.0 kW peak
Orientation (which way is the system facing)?:	
40 Rokeby - PV 1	North
40 Rokeby - PV 2	North
32 Rokeby - PV 1	East
32 Rokeby - PV 2	West
Inclination (angle from horizontal):	
40 Rokeby - PV 1	10.0 Angle (degrees)
40 Rokeby - PV 2	10.0 Angle (degrees)
32 Rokeby - PV 1	10.0 Angle (degrees)
32 Rokeby - PV 2	10.0 Angle (degrees)

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Which Building Class does this apply to?:	
40 Rokeby - PV 1	Office
40 Rokeby - PV 2	Shop
32 Rokeby - PV 1	Office
32 Rokeby - PV 2	Office
1.1 Thermal Performance Rating - Non-Residential	12%
Score Contribution	This credit contributes 36.4% towards the category score.
Criteria	What is the % reduction in heating and cooling energy consumption against the reference case (NCC 2019 Section J)?
Output	Total Improvement
Office	0 %
Shop	0 %
2.1 Greenhouse Gas Emissions	100%
Score Contribution	This credit contributes 9.1% towards the category score.
Criteria	What is the % reduction in annual greenhouse gas emissions against the benchmark?
Output	Reference Building with Reference Services (BCA only)
Office	199,691 kg CO2
Shop	5,594 kg CO2
Output	Proposed Building with Proposed Services (Actual Building)
Office	199,594 kg CO2
Shop	5,588 kg CO2
Output	% Reduction in GHG Emissions
Office	< 1 %
Shop	< 1 %
2.2 Peak Demand	0%
Score Contribution	This credit contributes 4.5% 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 9.1% towards the category score.
Criteria	What is the % reduction in annual electricity consumption against the benchmark?
Output	Reference
Office	195,776 kWh
Shop	5,485 kWh
Output	Proposed
Office	195,681 kWh
Shop	5,479 kWh
Output	Improvement
Office	< 1 %
Shop	< 1 %

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2.4 Gas Consumption		N/A	✦ Scoped Out
This credit was scoped out	No gas connection in use		
2.6 Electrification		100%	
Score Contribution	This credit contributes 9.1% towards the category score.		
Criteria	Is the development all-electric?		
Question	Criteria Achieved?		
Project	Yes		
3.1 Carpark Ventilation		100%	
Score Contribution	This credit contributes 9.1% towards the category score.		
Criteria	If you have an enclosed carpark, is it: (a) fully naturally ventilated (no mechanical ventilation system) or (b) 40 car spaces or less with Carbon Monoxide monitoring to control the operation and speed of the ventilation fans?		
Question	Criteria Achieved ?		
Project	Yes		
3.2 Hot Water		100%	
Score Contribution	This credit contributes 4.5% towards the category score.		
Criteria	What is the % reduction in annual energy consumption (gas and electricity) of the hot water system against the benchmark?		
Output	Reference	This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright	
Office	82,615 MJ		
Shop	1,373 MJ		
Output	Proposed		
Office	82,274 MJ		
Shop	1,351 MJ		
Output	Improvement		
Office	< 1 %		
Shop	1 %		
3.7 Internal Lighting - Non-Residential		100%	
Score Contribution	This credit contributes 9.1% towards the category score.		
Criteria	Does the maximum illumination power density (W/m2) in at least 90% of the area of the relevant building class meet the requirements in Table J6.2a of the NCC 2019 Vol 1?		
Question	Criteria Achieved ?		
Office	Yes		
Shop	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.		

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4.2 Renewable Energy Systems - Solar		100%
Score Contribution	This credit contributes 4.5% towards the category score.	
Criteria	What % of the estimated energy consumption of the building class it supplies does the solar power system provide?	
Output	Solar Power - Energy Generation per year	
Office	35,331 kWh	
Shop	8,483 kWh	
Output	% of Building's Energy	
Office	11 %	
Shop	78 %	
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?:		Melbourne Water STORM tool
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	STORM score achieved	
Project	100	
Output	Min STORM Score	
Project	100	

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IEQ Overall contribution 10% Minimum required 50%

1.4 Daylight Access - Non-Residential		33%	✓ 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?		
Office	33 %		
Shop	33 %		
2.3 Ventilation - Non-Residential		82%	✓ 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?		
Office	100 %		
Shop	100 %		
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?		
Office	0 %		
Shop	-		
Criteria	What CO2 concentrations are the ventilation systems designed to achieve, to monitor and to maintain?		
Question	Value		
Office	800 ppm		
Shop	-		
3.4 Thermal comfort - Shading - Non-Residential		67%	
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?		
Office	50 %		
Shop	100 %		
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?		
Office	-		
Shop	-		
4.1 Air Quality - Non-Residential		100%	
Score Contribution	This credit contributes 5.9% towards the category score.		

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

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

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

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Transport Overall contribution 9%**1.4 Bicycle Parking - Non-Residential**

100%

Score Contribution	This credit contributes 25.0% 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 ?
Office	Yes
Shop	Yes
Question	Bicycle Spaces Provided ?
Office	187
Shop	3

1.5 Bicycle Parking - Non-Residential Visitor

100%

Score Contribution	This credit contributes 12.5% 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 ?
Office	Yes
Shop	Yes
Question	Bicycle Spaces Provided ?
Office	42
Shop	2

1.6 End of Trip Facilities - Non-Residential

100%

Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	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?
Question	Number of showers provided ?
Office	18
Shop	1
Question	Number of lockers provided ?
Office	229
Shop	3
Output	Min Showers Required
Office	1
Shop	1
Output	Min Lockers Required
Office	187
Shop	3

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2.1 Electric Vehicle Infrastructure		100%
Score Contribution	This credit contributes 25.0% towards the category score.	
Criteria	Are facilities provided for the charging of electric vehicles?	
Question	Criteria Achieved ?	
Project	Yes	
2.2 Car Share Scheme		100%
Score Contribution	This credit contributes 12.5% towards the category score.	
Criteria	Has a formal car sharing scheme been integrated into the development?	
Question	Criteria Achieved ?	
Project	Yes	
2.3 Motorbikes / Mopeds		100%
Score Contribution	This credit contributes 12.5% 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	Yes	

Waste Overall contribution 4%

1.1 - Construction Waste - Building Re-Use		0%
Score Contribution	This credit contributes 33.3% towards the category score.	
Criteria	If the development is on a site that has been previously developed, has at least 30% of the existing building been re-used?	
Question	Criteria Achieved ?	
Project	No	
2.1 - Operational Waste - Food & Garden Waste		100%
Score Contribution	This credit contributes 33.3% towards the category score.	
Criteria	Are facilities provided for on-site management of food and garden waste?	
Question	Criteria Achieved ?	
Project	Yes	
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	

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Urban Ecology Overall contribution 3%

1.1 Communal Spaces97%	
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 : * 1m² for each of the first 50 occupants * Additional 0.5m² for each occupant between 51 and 250 * Additional 0.25m² for each occupant above 251?
Question	Common space provided
Office	1,531 m²
Shop	0.0 m²
Output	Minimum Common Space Required
Office	496 m²
Shop	44 m²
2.1 Vegetation50%	
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?
Question	Percentage Achieved ?
Project	11 %
2.2 Green Roofs100%	
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Does the development incorporate a green roof?
Question	Criteria Achieved ?
Project	Yes
2.3 Green Walls and Facades0%	
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-Residential0%	
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
Office	-
Shop	-
Output	Min Food Production Area
Office	360 m²
Shop	12 m²

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Innovation Overall contribution 8%

Innovations		
Description:		
Carbon Neutral Operations		10-year carbon neutral power agreement between developer, owner's corporation, and electrical retailer to provide GreenPower to both communal areas and options to the future tenants.
ESD Verification		An ESD professional will be engaged throughout the design and construction process. The ESD professional will perform a minimum of 2 site inspections during the construction phase to ensure suitable implementation of the ESD initiatives. Any deficiencies compared to the endorsed SMP will be escalated to the project manager and resolved.
Construction Waste		At least 90% of the waste generated during construction and demolition has been diverted from landfill.
Life cycle assessment		A life cycle assessment is to be undertaken during the Design Development phase. The embodied carbon of the development will be benchmarked against a standard practice building to determine the percentage reduction achieved. The life cycle results will be used to inform material selection, construction practices and end of life treatment.
IEQ Sensors		IEQ sensors will be provided to all floors to measure at a minimum VOC, PPM, humidity and temperature.
Material Passport		Based on the life cycle assessment a material passport will be developed to outlined all quantities of materials used within the building and recommendations on potential recycling and / or reuse of these materials and the end of life.
Bicycle Repair Station		The development will include a bicycle repair station for occupants. The station will be provided with tools, stand and pump
Points Targeted:		
Carbon Neutral Operations	2	This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright
ESD Verification	1	
Construction Waste	1	
Life cycle assessment	2	
IEQ Sensors	1	
Material Passport	1	
Bicycle Repair Station	1	
1.1 Innovation		
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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