SUSTAINABLE MANAGEMENT PLAN





GIW20189 Revision E

Prepared for: Neoscape

21 July 2022

Prepared by:

GIW Environmental Solutions Pty Ltd 285 Lennox Street, Richmond Victoria 3121, Australia T +61 3 9044 5111 giw.com.au

> PORT PHILLIP PLANNING DEPARTMENT Date Received: 21 July 2022



Limitations

This Report has been prepared by GIW Environmental Solutions Pty Ltd for the sole use of Neoscape ("the Client"). This Report should only be presented in full and should not be used to support any objective other than those detailed within the Agreement. In particular, the Report does not contain sufficient information to enable it to be used for any use other than the project specific requirements for which the Report has been carried out.

Any reliance on this Report by a third party shall be entirely at such party's own risk. GIW Environmental Solutions Pty Ltd provides no warranty or guarantee to any third party, express or implied, as to the information and/or professional advice indicated in the Report, and accepts no liability for or in respect of any use or reliance upon the Report by a third party. Any publication of this Report must be in accordance with the Planning and Environment Act 1987 procedures under the Freedom of Information Act 1982. GIW will require formal notification by the Responsible Authority to use this Report for public access purposes. This Report is to be removed by the Responsible Authority from the public domain immediately following the public consultation period.

Copyright

The concepts and information contained in this Report are the property of GIW Environmental Solutions Pty Ltd. Use or copying of this Report in whole or in part without the written permission of GIW Environmental Solutions Pty Ltd constitutes an infringement of copyright. Information shall not be assigned to a third party without the prior consent of the author.

Revision History

Revision Number	Date Issued	Author	Approved	Comments
А	18/8/2021	IB	GW	Draft
В	20/08/2021	MS	GW	Final
С	15/07/2021	MS	IB	Draft - VCAT
D	20/07/2022	MS	IB	Draft - VCAT
E	21/07/2022	MS	IB	VCAT

Prepared by: Project Consultant:

Mareena Saleem ESD engineer B.Eng (Mechanical) M. (Energy Efficient and Sustainable Building Approved by: Project Team Leader

Ines Buskermolen Associate B.Sc. (Science, Business and Innovation) M.Sc. (Sustainable Development)



Contents

Limitations	1
Copyright	1
Revision History	1
Contents	2
1. Introduction	3
Project Information	3
Statutory Requirements	4
Built Environment Sustainability Scorecard (BESS)	4
Responsibilities & Implementation	5
Sources of Information	5
2. ESD Summary	б
3. BESS Performance	7
4. Carbon Neutral Building	
5. ESD Assessment	9
Management	9
Water	
Energy	
Stormwater	
Indoor Environment Quality	
Transport	
Materials	
Waste Management	21
Urban Ecology	
Innovation	
Appendices	
Appendix A: WSUD Response	
Appendix B: Preliminary JV3 Energy Modelling	
Appendix C: Renewable Energy	
Appendix D: Daylight Modelling	
Appendix E: BESS Assessment	41



Introduction 1.

Project Information

GIW Environmental Solutions Pty Ltd ("GIW") has been engaged by Neoscape to provide Environmentally Sustainable Design (ESD) consulting services for the proposed commercial development at 313-317 Kings Way, South Melbourne.

The proposed development will include ground floor coffee point with bookable meeting room, 3740m² commercial space over levels 1-17 offices, rooftop amenities including outdoor meeting pod and basement carpark.

The site located at 313-317 Kings Way, South Melbourne has an approximate surface area of 335m² and is currently the location of a 3 storey residential development. Distance from the site to Melbourne CBD is approximately 2.2km.



Figure 1 - Pre-existing sites at 313-317 Kings Way, South Melbourne.



Statutory Requirements

This Sustainable Management Plan (SMP) has been prepared to inform City of Port Phillip 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 Port Phillip Planning Scheme - Clause 22.13 Environmentally Sustainable Development.

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

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.



Responsibilities & Implementation

Neoscape 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:

- Elenberg Fraser Project No. 21035 Drawing No. A0000-A0005 Rev C; A0096-A0101 Rev C; A0100M Rev C; A0105-A0106 Rev A; A0111-A0113 Rev A; A0118-A0119 Rev C; A900-A0902 Rev D; A0910-A0912 Rev B; A0950-A0952 Rev C; A0960-A0962 Rev B.
- 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



2. ESD Summary

The proposed commercial development at 313-317 Kings Way, South Melbourne 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 commercial areas are targeting a 2% DF to 100% of the nominated area.
- 3. The commercial areas aim to reduce heating and cooling energy consumption below the reference case (BCA Section J 2019).
- 4. A 10kW Solar PV system is to be located on the roof of the proposed development.
- 5. Individual water and electricity meters will be provided to the tenancies and communal areas.
- 6. Water efficient fittings and fixtures are applied throughout.
- 7. A 10,000-litre rainwater tank will harvest rainwater from the roof, rooftop terrace and L12 terrace. This tank will be connected to all basement level 2 to level 1 WC's and bin wash taps.
- 8. A Melbourne STORM rating of 153% is achieved.
- 9. The majority of landscaping is to be native vegetation and water efficient drip irrigation will be provided.
- 10. In total 32 bicycle spaces are to be provided for employees & 12 bicycle spaces are to be provided for visitors.
- 11. The development is provided with an end of trip facility including 4 showers, 32 lockers and changing facilities.
- 12. 286m2 of communal space will be provided at ground level, level 12 terrace and the rooftop terrace.
- 13. EV infrastructure for all car spots complete with load management system.
- 14. The ventilation system will be designed to achieve, monitor and maintain CO2 concentrations below 700ppm.
- 15. 10-year carbon neutral power agreement between developer, owners corporation and electrical retailer to provide GreenPower to communal areas.
- 16. Each level will be provided with an IEQ sensor, measuring PM levels, CO2, humidity and temperature (or equivalent parameters).
- 17. A life cycle assessment is to be undertaken during the Design Development phase.
- 18. Air Permeability testing by a member of the member of ATTMA or AIVAA is to be undertaken for a typical floor.



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.

1001 8200 00010	
Best practice Excellence	
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%	
Project details	
Address 313-317 Kings Way South Melbourne VIC 3205	
Project no 261D8B08-R4	
BESS Version BESS-6	
Site type Non-residential development	
Account info@giw.com.au	
Application no.	
Site area 335.00 m ²	
Building floor area 3,740.00 m ²	
Date 20 July 2022	
Software version 1.7.0-B.386	
Performance by category	
Category Weight Score Pass	
Management 5% 62% *	
Stormwater 14% 100%	
IEQ 17% 66% -	
Transport 9% 75% "	
Waste 6% 66% "	
Urban Ecology 6% 50% -	
Innovation 9% 110% *	



4. Carbon Neutral Building

The proposed development commits to operational Carbon Neutrality for a minimum of 10 years. This ambition aligns with the sustainability objectives of City of Port Phillip. 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

- 10kW 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.



5. **ESD** Assessment

Management

Council ESD objectives:

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

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 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: Energy and Environmental Strategy Monitoring and Targeting Building Services Transport Facilities Materials and Waste Policy Expansion/Re-fit Considerations References and Further Information WSUD Maintenance Manual 	



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

Criteria		Development Provision			
Potable Water Reduction	To reduce total potable water use due through the use of	<section-header></section-header>	<section-header></section-header>	<section-header></section-header>	<section-header></section-header>
Rainwater Collection & Reuse	appliances, and the use of rainwater.	A 10,000-litre rainwater tank will harvest rainwater from the roof, rooftop terrace and L12 terrace. This tank will be connected to all basement level 2 to level 1 WC's and bin wash taps. It is estimated that this will save more than 102kL of potable water every year and meet 42.5% of the demand in these areas. Stormwater drainage mechanism and suitable filtration is to be determined by the hydraulics services engineer at the design development phase. Refer Appendix A – WSUD Response			
Landscape Irrigation	To ensure the efficient use of water and to reduce total operating potable water use through encouraging water efficient landscape design.	The majority of landscaping is to be native vegetation and water efficient drip irrigation will be provided.		tion and water	



Criteria		Development Provision
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.	 >80% of fire test water is to be reused on site. Sprinkler drain downs are to be connected to the rainwater tank and reused for toilet flushing. The proposed development is to incorporate air-cooled HVAC systems for the non-residential areas within the development.



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

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.	The commercial areas aim to reduce heating and cooling energy consumption below the reference case (BCA Section J 2019). Refer Appendix B – Preliminary JV3 Energy Modelling.	
Peak Energy Demand	To reduce demand on electrical infrastructure during peak cooling periods.	A high-performance thermal envelope in conjunction with high efficiency HVAC systems and lighting systems reduce energy demand at peak times.	
HVAC System	To ensure the efficient use of energy and to reduce consumption of electricity.	High efficiency VRV / VRF systems with a COP of 3.4 are to be installed to the commercial areas.	
Hot Water System	To ensure the efficient use of energy and to reduce consumption and greenhouse	The development is to utilise individual electric instantaneous units on each level.	



Criteria		Development Provision
	emissions from water heating.	
Car Park Ventilation	To ensure the efficient use of energy, reduce total operating greenhouse gas emissions and to reduce energy peak demand.	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. The system is to be designed in accordance with AS1668.2. The mechanical services engineer is responsible for the design and specification of the system. The contractor is to procure and install the specified system. Maintenance requirements of the CO sensor system are to be included in the O&M manual.
Internal Lighting – Non- Residential	To ensure the efficient use of energy, reduce greenhouse emissions associated with artificial lighting, and to reduce energy peak demand.	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. Lighting power density shall be as follows: • Office: No greater than average 4.5W/m ²
Renewable Energy Systems - Solar	To encourage on- site renewable energy generation and reduce greenhouse emissions.	A 10kW Solar PV system is to be located on the roof of the proposed development. The system is expected to generate approximately 12,992kWh.



Criteria		Development Provision
Heat Island	To reduce the	Roof material is to have a three-year SRI of minimum 64.
Effect	heat island effect	Unshaded hard-scaping elements with a three-year SRI of minimum 34 or an initial SRI of minimum 39.



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

Criteria		Development Provision
Stormwater Treatment	To minimise negative environmental impacts of stormwater runoff and maximise onsite re-use of stormwater.	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 Port Phillip Planning Scheme - Clause 22.12 Stormwater Management (Water Sensitive Urban Design), the development is required to achieve a STORM rating of 100% or greater.
		 A Melbourne STORM rating of 153% is achieved via the following: Rainwater is to be collected from the roof, rooftop terrace and L12 terrace and directed into the 10,000-litre rainwater tank. All basement 2 to level 1 WC's and bin wash taps are to be connected to the rainwater tank.
		Note: suitable filtration is to be introduced as rainwater is collected off trafficable areas.
		Refer Appendix A – WSUD Response.



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.

Criteria		Development Provision		
Daylight Access – Non- Residential	To provide a high level of amenity and energy efficiency through design for natural light.	The commercial areas are targeting a 2% DF to 100% of the nominated area.		
Ventilation – Non- Residential	To provide fresh air and passive cooling opportunities.	Outdoor air rate for the commercial office areas is to be increased 50% compared to AS 1668:2012. The ventilation system will be designed to achieve, monitor, and maintain CO2 concentrations below 700ppm. This is to be included in the mechanical design and specifications.		
Thermal Comfort – Non- Residential	To provide comfortable indoor spaces and reduce energy needed for heating and cooling.	The development is provided with strategy:	a comprehensive shading	



Criteria		Development Provision		
		113 400 6.5.6 400 100 </th <th></th>		
		L5 and L12 is set back by 300mm and are shaded by the overhanging slab of the floor above	More than 50% of the rooftop terrace is shaded by the overhanging solar panel canopy/pergola above	
		Nil ceiling fans to be provided.		
Air Quality – Non- Residential	All paints and adhesives meet the maximum total indoor pollutant emission limits.	All internally applied paints adhes low or ultra-low VOC content in lir Built V1.3 Credit 13.1.	vives and sealants are to have a ne with Green Star Design & As-	
	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 v formaldehyde levels in line with G V1.3 Credit 13.2.	vood products are to have low Green Star Design & As-Built	



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.

Criteria		Development Provision	
Bicycle Parking – Non- Residential & Non- Residential	To encourage and recognise initiatives that facilitate cycling.		Aver, from sweet surfice col to current commots as p arrowantice reover or or current commots as p arrowantice reover or current commots arrowantice reover or current commots arrowant
Visitors		In total 32 bicycle spaces are to be provided for employees. This represents a greater than 50% increase over the planning scheme requirements.	In total 12 bicycle spaces are to be provided for visitors. This represents a greater than 50% increase over the planning scheme requirements.
End of Trip Facilities – Non- Residential	To minimise car dependency and to ensure that the built environment is designed to promote the use of public transport, walking and cycling.	The development is provided with an end of trip facility includ 4 showers, 32 lockers and changing facilities.	
Electric Vehicle Infrastructure	To minimise car dependency and to ensure that the built environment is designed to promote the use of public transport,	All carparking spaces will be provided with EV charging station and a load management system will be provided to the development.	



Development Provision Criteria walking and cycling. To minimise car dependency and to ensure that the built environment Car Share is designed to NIL Scheme promote the use of public transport, walking and cycling. To minimise car dependency and to ensure that the built environment Motorbikes / is designed to NIL Mopeds promote the use of public transport, walking and cycling.



Materials

ESD objectives:

- Recycling/Reuse
- Embodied energy
- Human health
- Environmental toxicity & responsibility

Criteria		Development Provision
Embodies Energy	Limited use of high embodied energy metals and materials, especially in a design with intended high churn (e.g. retail)	The design will seek to limit the use of high embodied energy metal finishes. 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).
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.
Recyclability / Reusability	Commitment to source recycled materials and materials that can be readily recycled in Australia.	The development will incorporate ≥6% recycled materials (i.e. bricks, plasterboard, carpet, timber, etc.) and ≥50% readily Australian recyclable materials (i.e. fibreboard, cladding, steel, aluminium and concrete).
Design for Longevity	Commitment to ensure that selected materials are low in maintenance and high in durability, relative to the chosen application and life expectancy of the development	The team will select materials which are durable and require low maintenance over the lifespan of the building.



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.

Criteria		Development Provision
Building Re-use	To ensure waste avoidance, reuse and recycling during the design.	None of the existing structure is re-used.
Food & Garden Waste	To ensure waste avoidance, reuse and recycling during the operational life of the building.	Organics / green waste storage is provided in the basement bin room.
Convenience of Recycling	To ensure waste avoidance, reuse and recycling during the operational life of the building.	Separate general, recycling, organics, glass, soft plastics, and e-waste / hard waste storage will be provided at the basement 1 waste room.



Urban Ecology

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.

Criteria		Development Provision	
Communal Space	To encourage and recognise initiatives that facilitate interaction between building occupants.	<text></text>	
Vegetation	To encourage and recognise the use of vegetation and landscaping within and around developments.	Landscape buffer provided at ground level and planter boxes are to be located at L12 terrace and the communal rooftop terrace. The total area of vegetation is approximately 24% of the site area.	
Green Walls / Roof	To encourage the appropriate use of green roofs, walls and facades to mitigate the impact of the	NIL	



Criteria		Development Provision
	urban heat island effect.	
Food Production – Non- Residential	To encourage the production of fresh food on-site.	NIL



Innovation

Council ESD objectives:

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

Criteria		Development Provision
Contractor Education	To increase the knowledge of contractors and subcontractors about the benefits and outcomes of sustainable practices.	Deliver training on the core concepts of global warming, climate change and the health impacts of minimum building practices. Deliver site-specific training that highlights the sustainable solutions of your project (attended by ≥80% of site personnel).
Ultra-Low VOC Paints	To safeguard occupant health through the reduction in internal air pollutant levels.	50% of paints (by volume) have a maximum TVOC content of 5g/L.
Electric Charging Point and Bike Repair Station	To encourage and recognise initiatives that facilitate cycling	One electric bicycle charging point and a bicycle repair station including tools and pumps is to be provided.
Indoor Environmental Quality	To safeguard occupant health through monitoring internal air pollutant levels.	Each level will be provided with an IEQ sensor, measuring PM levels, CO2, humidity, and temperature (or equivalent parameters).
ESD Checkpoint during Construction Phase	To ensure that all ESD items are suitably installed and incorporated during	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.	The checkpoint assessments will be undertaken at two stages as follows:



Criteria		Development Provision
		 Site Inspection 1: Prior to installation of internal linings. Site inspection 2: At the time of project completion.
Carbon Neutral Power Agreement	10-year carbon neutral power agreement.	10-year carbon neutral power agreement between developer, owner's corporation and electrical retailer / embedded network provider to provide GreenPower to both communal areas and tenancies.
Life Cycle Assessment	To reduce the embodied carbon of the building	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.
>150% STORM Score	To minimise negative environmental impacts of stormwater runoff and maximise onsite re-use of stormwater	The project achieves 153% STORM Score.
Air Tightness	To minimize air leakage and ensure that the building fabric is compliant with Section J.	Air Permeability testing by a member of the member of the Air Tightness Testing and Measurement Association (ATTMA) or the Air Infiltration and Ventilation Association of Australia (AIVAA) is to be undertaken for a typical floor.



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 is to be collected from the roof, rooftop terrace and L12 terrace and directed into the 10,000-litre rainwater tank. All basement 2 to level 1 WC's and bin wash taps are to be connected to the rainwater tank.



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:

Melbourne STORM Rating Report Water

TransactionID:	1411750					
Municipality:	PORT PHILLIP					
Rainfall Station:	PORT PHILLIP					
Address:	313-317 Kings Wa	ay .				
	South Melbourne					
	VIC	3205				
Assessor:	GIW					
Development Type:	Commercial/Retai	I				
Allotment Site (m2):	335.00					
STORM Rating %:	153					
Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
Upper Roof, Rooftop Terrace and L12 Terrace	302.00	Rainwater Tank	10,000.00	35	170.00	82.00
Lower Roofs	4.00	None	0.00	0	0.00	0.00
Impervious Ground	29.00	None	0.00	0	0.00	0.00



WSUD Strategy

The development will include the provision of a min. 10,000 litre rainwater tank and associated pump in the basement. The rainwater tank is to be connected to all basement 2 to level 1 WCs and bin wash taps.

Note: suitable filtration is to be introduced as rainwater is collected off trafficable areas.



Figure 3 – Cross-section Tank (Rainwater Tank Handbook)



Rainwater Reuse

Inputs

Catchment Area	302 sqm
Number of Occupants	35
Bin Washout	Yes
Irrigation Area	0 sqm
Tank Capacity	10,000 Litre

			WC	Bin	
Month	Rainwater	Irrigation	Demand	Washout	
	Harvested (L)	Demand (L)	(L)	(L)	
Jan	7,092	0	21,700	60	
Feb	9,028	0	19,600	59	
Mar	8,262	0	21,700	60	
Apr	9,713	0	21,000	60	
May	8,488	0	21,700	60	
Jun	9,385	0	21,000	60	
Jul	6,734	0	21,700	60	
Aug	8,710	0	21,700	60	
Sep	9,136	0	21,000	60	
Oct	9,831	0	21,700	60	
Nov	12,801	0	21,000	60	
Dec	9,595	0	21,700	60	
Total	108,776	0	255,500	720	
Equivalent					
STORM		0		0	
tool					

Rainwater Balance (Monthly Averages)

Outputs

% Served by Rainwater	42.5%		
% Harvested Rainwater Used	94.2%		
Total Potable Water Saved	102.457 Litre		

Supply-Demand



Tank Sizing





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:

ltem	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



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 a typical level (level 8) has 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 energy consumption 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 energy consumption of Model 2 is to be less than that of Model 1.

JV3 Compliance Requirements

The building energy models demonstrate that the annual energy consumption 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
Curtain Wall	 Total System U-value ≤ 2.2 Total System SHGC = 0.27 ±10% Total System VLT = 0.39 ±10% 	Aluminium Frame, Thermally Broken, Double glazed, Argon filled, Low-E, Spectrally Selective
Walls	Thermal Performance (Added Insulation Value)	Recommended Product
Ext. Spandrel Wall	R2.7 Bulk Insulation	Bradford Gold Hi-performance Wall batts 90mm thick R2.7
		Insulation is to be incorporated into a separate framing section behind the spandrel.



Walls	Thermal Performance (Added Insulation Value)	Recommended Product
Int. Concrete Wall - adjacent to unconditioned core	R1.8 Bulk Insulation	Bradford Acousticgard Partition Rolls 14kg/m3 75mm thick R1.8.
Roofs	Thermal Performance	Recommended Product
Concrete Roof	TBC	TBC
Floors	Thermal Performance	Recommended Product
Concrete slab – where unconditioned or exposed below	TBC	TBC
Other	I hermal Performance	Recommended Product
Air Tightness	5.0m ³ /h.m ² air permeability	Air barrier with appropriate taping and sealing.
Concrete Roof Floors Concrete slab – where unconditioned or exposed below Other Air Tightness	TBC Thermal Performance TBC Thermal Performance 5.0m ³ /h.m ² air permeability	TBC Recommended Product TBC Recommended Product Air barrier with appropriate taping and sealing.

Modelling Software

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	Spandrel (>80% WWR)	R1.0
Internal Walls	Concrete	R1.4
Infiltration		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



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

Glazing	Total System U-value	Total System SHGC
All windows	2.74	0.15

Building Services Inputs

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. Core, condenser room and toilets are assumed to be unconditioned.
Heating – Spaces conditioned	Assumed all office areas are conditioned. Core, condenser room 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. These profiles are modified in some instances to better represent the usage of certain spaces.
Heating and Cooling Setpoints	Cooling - 24°C Heating - 21°C
Airflow rates	Modelled in accordance with AS1668.



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. These profiles are modified in some instances to better represent the usage of certain spaces.
Occupancy Heat Gains	Per NCC Section J – Specification JVc Table 2n.
Appliance Heat Gains	Per NCC Section J – Specification JVc Table 2I.
Appliance Schedule	Per NCC Section J – Specification JVc Table 2c and 2d. These profiles are modified in some instances to better represent the usage of certain spaces.

Results



Figure 3 – Model of proposed building for energy simulations



The results below show that the proposed building (Model 2) use less energy than the reference building (Model 1). This result indicates that the proposed building achieves Section J Performance Requirement JP1.

	Model 1 – Reference Building (kg-CO2eq/Annum)	Model 2 - Proposed Building with Reference Services (kg-CO2eq/Annum)
Lighting	4,871	4,871
Heating (Electricity)	1,948	1,023
Cooling (Electricity)	1,269	2,187
TOTAL	8,087	8,081
GHG/yr/m ²	33.42	33.39



Appendix C: Renewable Energy

Inputs Solar PV

Peak Wattage of System	10.0 kWp
Azimuth	300 degrees
Inclination	10 degrees

Outputs Solar PV

Electricity Produced per Year	12,992 kWh
No. Panels Required	28
Total Roof Area Required	73 sqm
Annual Carbon Savings	14,551 kg CO2

Economic Output

Cost of System	15,000 \$
Annual Savings	2,598 \$
Simple Payback	6 Years



Appendix D: Daylight Modelling

Scope of Modelling

We have undertaken daylight modelling for a sample office level. Level 8 has been selected with consideration of internal layout, inherent and adjacent building shading features. This level represents an average of the development.

The development has been modelled under an equitable development rights scenario with the proposed 19 storey residential development to the east and the existing developments to the north-west.

Methodology

The daylight levels in non-residential developments 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:

"The nominated areas are benchmarked against the following daylight factors (DF)

• ≥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.





Figure 3 – DesignBuilder model of proposed and adjacent equitable development right buildings



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, clear window with a total system VLT of 0.39.
- The reflectance of all materials is in accordance with the below:
 - Floors: 0.4 (concrete)
 - Internal Walls: 0.7
 - Ceilings: 0.8
- 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.

Daylight Results – Numerical

The daylight results for the nominated area of 313-317 Kings Way, South Melbourne can be summarised as follows:

Area	Floor Area (m2)	Floor Area above DF2 (m2)	% of floor area above DF2	Status
Level 8	224.2	224.2	100	Compliant



Daylight Results - Visual



Figure 4 - Daylight Map – L4

Conclusion

The development has been assessed and it has been determined that 100% 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.



Appendix E: BESS Assessment

BESS Report

Built Environment Sustainability Scorecard



This BESS report outlines the sustainable design commitments of the proposed development at 313-317 Kings Way South Melbourne VIC 3205. 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 Port Phillip 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						
Best practice Excellence						
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%	70%					
Project details						
Address 313-317 Kings Way South Melbourne VIC 3205						
Project no 261D8B08-R4	[특] 친정님 특]					
BESS Version BESS-6						
Site type Non-residential development	2325552					
Account info@giw.com.au	<u> </u>					
Application no.	i ni se					
Site area 335.00 m ²						
Building floor area 3,740.00 m ²						
Date 20 July 2022						
Software version 1.7.0-B.386						
Performance by category Your development Maximum available						
Category Weight Score Pass						
Management 5% 62% *						
Water 9% 57% 🗸						
Energy 28% 55% -						
Stormustor 14% 100%						



Buildings

Name	Height	Footprint	% of total footprint
313-317 Kings Way	19	4,968 m ²	100%

Dwellings & Non Res Spaces

Non-Res Spaces					
Name	Quantity	Area	Building	% of total area	
Office Building					
Office L2-18	1	3,487 m ²	313-317 Kings Way	93%	
Office L1	1	253 m ²	313-317 Kings Way	6%	
Total	2	3,740 m ²	100%		

Supporting information

Floorplans & elevation notes

Credit	Requirement	Response	Status
Management 3.2	Individual utility meters annotated		_
Management 3.3	Common area submeters annotated		-
Water 3.1	Water efficient garden annotated		-
Energy 3.1	Carpark with natural ventilation or CO monitoring system		-
Energy 4.2	Floor plans showing location of photovoltaic panels as describe	ed.	-
Stormwater 1.1	Location of any stormwater management systems used in STO MUSIC modelling (e.g. Rainwater tanks, raingarden, buffer strip	DRM or os)	-
Transport 1.4	All nominated non-residential bicycle parking spaces		-
Transport 1.5	All nominated non-residential visitor bicycle parking spaces		-
Transport 1.6	Showers, change rooms and lockers as nominated		-
Transport 2.1	Location of electric vehicle charging infrastructure		-
Waste 2.1	Location of food and garden waste facilities		-
Waste 2.2	Location of recycling facilities		-
Urban Ecology 1.1	Size and location of communal spaces		-
Urban Ecology 2.1	Vegetated areas		-

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 Provide a written explanation of either the fully natural carpark ventilation or carbon monxide monitoring, describing how these systems will work, what systems are required for them to be fully integrated and who will be responsible for their implementation throughout the design, procurement and operational phases of the building life.		n or nat t	-

Credit	Requirement	Response	Status
Energy 3.7 Provide a written description of the average lighting power density to be			-
installed in the development and specify the lighting type(s) to be used.			
Energy 4.2	Specifications of the solar photovoltaic system(s).		-
Stormwater 1.1	r 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%

	62%
1.1 Pre-Application Meeting	0%
2.3 Thermal Performance Modelling - Non-Residential	100%
3.2 Metering - Non-Residential	100%
3.3 Metering - Common Areas	100%
4.1 Building Users Guide	100%

Water Overall contribution 9.0%

	Minin	num 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%		

BESS, 313-317 Kings Way South Melbourne 3205

Energy Overall contribution 27.5%

	Minimum required 50% 55% 🖌 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
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	N/A Ø Disabled
	No other (non-solar PV) renewable energy is in use.

Stormwater Overall contribution 13.5%

	Mi	linimum required 100%	100%	✓ Pass
1.1 Stormwater Treatment			100%	

IEQ Overall contribution 16.5%

	Minimum required 50%	66%	✓ Pass
1.4 Daylight Access - Non-Residential		100%	 Achieved
2.3 Ventilation - Non-Residential		72%	✓ Achieved
3.4 Thermal comfort - Shading - Non-residential		0%	
3.5 Thermal Comfort - Ceiling Fans - Non-Residential		0%	
4.1 Air Quality - Non-Residential		100%	

Transport Overall contribution 9.0%

	75%
1.4 Bicycle Parking - Non-Residential	100%
1.5 Bicycle Parking - Non-Residential Visitor	100%
1.6 End of Trip Facilities - Non-Residential	100%
2.1 Electric Vehicle Infrastructure	100%
2.2 Car Share Scheme	0%
2.3 Motorbikes / Mopeds	0%

Waste Overall contribution 5.5%

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

Urban Ecology Overall contribution 5.5%

		50%
1	1 Communal Spaces	100%
2	1 Vegetation	75%
2	2 Green Roofs	0%
2	3 Green Walls and Facades	0%
3	2 Food Production - Non-Residential	0%

Innovation Overall contribution 9.0%

	110%
1.1 Innovation	110%

Credit breakdown

Management Overall contribution 3%

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

Water Overall contribution 5% Minimum required 50%

Water Approach	
What approach do you want to use for Water?:	Use the built in calculation tools
Project Water Profile Question	
Do you have a reticulated third pipe or an on-site water recycling system?:	No
Are you installing a swimming pool?:	No
Are you installing a rainwater tank?:	Yes
Water fixtures, fittings and connections	
Building: All	313-317 Kings Way
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	>= 5 Star WELS rating
Washing Machine Water Efficiency: All	Scope out
Which non-potable water source is the dwelling/space connected to?:	
Office L2-18	-1
Office L1	Tank 1
Non-potable water source connected to Toilets:	
Office L2-18	No
Office L1	Yes
Non-potable water source connected to Laundry (washing machine): All	No
Non-potable water source connected to Hot Water System: A	All No
Rainwater Tank	
What is the total roof area connected to the rainwater tank?: Tank 1	302 m²
Tank Size: Tank 1	10,000 Litres
Irrigation area connected to tank: Tank 1	-
Is connected irrigation area a water efficient garden?: Tank 1	-
Other external water demand connected to tank?: Tank 1	-

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	6436 kL
Output	Proposed (excluding rainwater and recycled water use)
Project	4389 kL
Output	Proposed (including rainwater and recycled water use)
Project	4389 kL
Output	% Reduction in Potable Water Consumption
Project	31 %
Output	% of connected demand met by rainwater
Project	0 %
Output	How often does the tank overflow?
Project	Very Often
Output	Opportunity for additional rainwater connection
Project	2106 kL
3.1 Water Efficient Landscaping	100%
Score Contribution	This credit contributes 14.3% towards the category score.
Criteria	Will water efficient landscaping be installed?
Question	Criteria Achieved ?
Project	Yes
4.1 Building Systems Water Use Red	uction 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 15% Minimum required 50%

Use the BESS Deem to Satisfy (DtS) me	ethod for Energy?:	No
Non-Residential Building Energy Profile		
Heating, Cooling & Comfort Ventilation fabric and reference services:	- Electricity - reference	2,773 kWh
Heating, Cooling & Comfort Ventilation fabric and reference services:	- Electricity - proposed	2,768 kWh
Heating, Cooling & Comfort Ventilation fabric and proposed services:	- Electricity - proposed	2,768 kWh
Heating - Wood - reference fabric and I	reference services:	0.0 MJ
Heating - Wood - proposed fabric and	reference services:	-
Heating - Wood - proposed fabric and	proposed services:	-
Hot Water - Electricity - Baseline:		1,000 kWh
Hot Water - Electricity - Proposed:		1,000 kWh
Lighting - Baseline:		4,199 kWh
Lighting - Proposed:		4,199 kWh
Peak Thermal Cooling Load - Baseline:		-
Peak Thermal Cooling Load - Proposed	d:	-
Solar Photovoltaic system		
System Size (lesser of inverter and pan	el capacity): PV 1	10.0 kW peak
Orientation (which way is the system fa	icing)?: PV 1	North
Inclination (angle from horizontal): PV 1		10.0 Angle (degrees)
1.1 Thermal Performance Rating - No	on-Residential	12%
1.1 Thermal Performance Rating - No Score Contribution	on-Residential This credit contribute	12% s 40.0% towards the category score.
1.1 Thermal Performance Rating - No Score Contribution Criteria	Dn-Residential This credit contribute What is the % reduct	12% s 40.0% towards the category score. ion in heating and cooling energy consumption against the
1.1 Thermal Performance Rating - No Score Contribution Criteria	DN-Residential This credit contribute What is the % reduct reference case (NCC	12% s 40.0% towards the category score. ion in heating and cooling energy consumption against the 2019 Section J)?
1.1 Thermal Performance Rating - No Score Contribution Criteria Output	on-Residential This credit contribute What is the % reduct reference case (NCC Total Improvement	12% s 40.0% towards the category score. ion in heating and cooling energy consumption against the 2019 Section J)?
1.1 Thermal Performance Rating - No Score Contribution Criteria Output Office Building	Dr-Residential This credit contribute What is the % reduct reference case (NCC Total Improvement 0 %	12% s 40.0% towards the category score. ion in heating and cooling energy consumption against the 2019 Section J)?
1.1 Thermal Performance Rating - No Score Contribution Criteria Output Office Building 2.1 Greenhouse Gas Emissions	DN-Residential This credit contribute What is the % reduct reference case (NCC Total Improvement 0 %	12% s 40.0% towards the category score. ion in heating and cooling energy consumption against the 2019 Section J)? 100%
1.1 Thermal Performance Rating - No Score Contribution Criteria Output Office Building 2.1 Greenhouse Gas Emissions Score Contribution	on-Residential This credit contribute What is the % reduct reference case (NCC Total Improvement 0 % This credit contribute	12% s 40.0% towards the category score. ion in heating and cooling energy consumption against the 2019 Section J)? 100% s 10.0% towards the category score.
1.1 Thermal Performance Rating - No Score Contribution Criteria Output Office Building 2.1 Greenhouse Gas Emissions Score Contribution Criteria	on-Residential This credit contribute What is the % reduct reference case (NCC Total Improvement 0 % This credit contribute What is the % reduct	12% s 40.0% towards the category score. ion in heating and cooling energy consumption against the 2019 Section J)? 100% s 10.0% towards the category score. ion in annual greenhouse gas emissions against the benchmark?
1.1 Thermal Performance Rating - No Score Contribution Criteria Output Office Building 2.1 Greenhouse Gas Emissions Score Contribution Criteria Output	on-Residential This credit contribute What is the % reduct reference case (NCC Total Improvement 0 % This credit contribute What is the % reduct Reference Building w	12% s 40.0% towards the category score. ion in heating and cooling energy consumption against the 2019 Section J)? 100% s 10.0% towards the category score. ion in annual greenhouse gas emissions against the benchmark? ith Reference Services (BCA only)
1.1 Thermal Performance Rating - No Score Contribution Criteria Output Office Building 2.1 Greenhouse Gas Emissions Score Contribution Criteria Output Office Building	on-Residential This credit contribute What is the % reduct reference case (NCC Total Improvement 0 % This credit contribute What is the % reduct Reference Building w 3,848 kg CO2	12% s 40.0% towards the category score. ion in heating and cooling energy consumption against the 2019 Section J)? 100% s 10.0% towards the category score. ion in annual greenhouse gas emissions against the benchmark? ith Reference Services (BCA only)
1.1 Thermal Performance Rating - No Score Contribution Criteria Output Office Building 2.1 Greenhouse Gas Emissions Score Contribution Criteria Output Office Building Output Office Building Output Output Output Output Output Office Building Output	on-Residential This credit contribute What is the % reduct reference case (NCC Total Improvement 0 % This credit contribute What is the % reduct Reference Building w 3,848 kg CO2 Proposed Building wi	12% s 40.0% towards the category score. ion in heating and cooling energy consumption against the 2019 Section J)? 100% s 10.0% towards the category score. ion in annual greenhouse gas emissions against the benchmark? ith Reference Services (BCA only) th Proposed Services (Actual Building)
1.1 Thermal Performance Rating - No Score Contribution Criteria Output Office Building 2.1 Greenhouse Gas Emissions Score Contribution Criteria Output Office Building Qutput Office Building Output Office Building Output Office Building Output Office Building	on-Residential This credit contribute What is the % reduct reference case (NCC Total Improvement 0 % This credit contribute What is the % reduct Reference Building w 3,848 kg CO2 Proposed Building wi 3,843 kg CO2	12% s 40.0% towards the category score. ion in heating and cooling energy consumption against the 2019 Section J)? 100% s 10.0% towards the category score. ion in annual greenhouse gas emissions against the benchmark? ith Reference Services (BCA only) th Proposed Services (Actual Building)
1.1 Thermal Performance Rating - No Score Contribution Criteria Output Office Building 2.1 Greenhouse Gas Emissions Score Contribution Criteria Output Office Building Output	on-Residential This credit contribute What is the % reduct reference case (NCC Total Improvement 0 % This credit contribute What is the % reduct Reference Building wi 3,848 kg CO2 Proposed Building wi 3,843 kg CO2 % Reduction in GHG	12% s 40.0% towards the category score. ion in heating and cooling energy consumption against the 2019 Section J)? 100% s 10.0% towards the category score. ion in annual greenhouse gas emissions against the benchmark? ith Reference Services (BCA only) th Proposed Services (Actual Building) Emissions
1.1 Thermal Performance Rating - No Score Contribution Criteria Output Office Building 2.1 Greenhouse Gas Emissions Score Contribution Criteria Output Office Building	on-Residential This credit contribute What is the % reduct reference case (NCC Total Improvement 0 % This credit contribute What is the % reduct Reference Building wi 3,848 kg CO2 Proposed Building wi 3,843 kg CO2 % Reduction in GHG 0 %	12% s 40.0% towards the category score. ion in heating and cooling energy consumption against the 2019 Section J)? 100% s 10.0% towards the category score. ion in annual greenhouse gas emissions against the benchmark? ith Reference Services (BCA only) th Proposed Services (Actual Building) Emissions
1.1 Thermal Performance Rating - No Score Contribution Criteria Output Office Building 2.1 Greenhouse Gas Emissions Score Contribution Criteria Output Office Building Qutput Office Building Output	on-Residential This credit contribute What is the % reduct reference case (NCC Total Improvement 0 % This credit contribute What is the % reduct Reference Building wi 3,848 kg CO2 Proposed Building wi 3,843 kg CO2 % Reduction in GHG 0 %	12% s 40.0% towards the category score. ion in heating and cooling energy consumption against the 2019 Section J)? 100% s 10.0% towards the category score. ion in annual greenhouse gas emissions against the benchmark? ith Reference Services (BCA only) th Proposed Services (Actual Building) Emissions 0%
1.1 Thermal Performance Rating - No Score Contribution Criteria Output Office Building 2.1 Greenhouse Gas Emissions Score Contribution Criteria Output Office Building Score Contribution	on-Residential This credit contribute What is the % reduct reference case (NCC Total Improvement 0 % This credit contribute What is the % reduct Reference Building wi 3,848 kg CO2 Proposed Building wi 3,843 kg CO2 % Reduction in GHG 0 % This credit contribute	12% s 40.0% towards the category score. ion in heating and cooling energy consumption against the 2019 Section J)? 100% s 10.0% towards the category score. ion in annual greenhouse gas emissions against the benchmark? ith Reference Services (BCA only) th Proposed Services (Actual Building) Emissions 0% s 5.0% towards the category score.
1.1 Thermal Performance Rating - No Score Contribution Criteria Output Office Building 2.1 Greenhouse Gas Emissions Score Contribution Criteria Output Office Building Score Contribution Criteria	on-Residential This credit contribute What is the % reduct reference case (NCC Total Improvement 0 % This credit contribute What is the % reduct Reference Building wi 3,848 kg CO2 Proposed Building wi 3,843 kg CO2 % Reduction in GHG 0 % This credit contribute What is the % reduct	12% s 40.0% towards the category score. ion in heating and cooling energy consumption against the 2019 Section J)? 100% s 10.0% towards the category score. ion in annual greenhouse gas emissions against the benchmark? ith Reference Services (BCA only) th Proposed Services (Actual Building) Emissions 0% s 5.0% towards the category score. ion in the instantaneous (peak-hour) demand against the

2.3 Electricity Consumption	100%
Score Contribution	This credit contributes 10.0% towards the category score.
Criteria	What is the % reduction in annual electricity consumption against the benchmark?
Output	Reference
Office Building	3,773 kWh
Output	Proposed
Office Building	3,768 kWh
Output	Improvement
Office Building	0 %
2.4 Gas Consumption	N/A 💠 Scoped Out
This credit was scoped out	No gas connection in use
3.1 Carpark Ventilation	100%
Score Contribution	This credit contributes 10.0% 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 5.0% towards the category score.
Criteria	What is the % reduction in annual energy consumption (gas and electricity) of the hot
	water system against the benchmark?
Output	Reference
Office Building	1,000 kWh
Output	Proposed
Office Building	1,000 kWh
Output	Improvement
Office Building	0 %
3.7 Internal Lighting - Non-Residentia	100%
Score Contribution	This credit contributes 10.0% towards the category score.
Criteria	Does the maximum illumination power density (W/m2) in at least 90% of the area of the
	relevant building class meet the requirements in Table J6.2a of the NCC 2019 Vol 1?
Question	Criteria Achieved ?
Office Building	Yes
4.1 Combined Heat and Power (coge	neration / N/A \diamond Scoped Out
This anality was according	No operation autien system in the
I his credit was scoped out	INO COGENERATION OF TRIGENERATION SYSTEM IN USE.

4.2 Renewable Energy Systems - So	lar 100%		
Score Contribution	This credit contributes 5.0% towards the category score.		
Criteria	What % of the estimated energy consumption of the building class	it supplies	does the
	solar power system provide?		
Output	Solar Power - Energy Generation per year		
Office Building	12,118 kWh		
Output	% of Building's Energy		
Office Building	152 %		
4.4 Renewable Energy Systems - Otl	her N/A	0	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	153
Output	Min STORM Score
Project	100

IEQ Overall contribution 11% Minimum required 50%

1.4 Daylight Access - Non-Residentia	l	100% Achieved
Score Contribution	This credit contributes 35.3% towards the category sco	pre.
Criteria	What % of the nominated floor area has at least 2% da	ylight factor?
Question	Percentage Achieved?	
Office Building	100 %	
2.3 Ventilation - Non-Residential		72% Achieved
Score Contribution	This credit contributes 35.3% towards the category sco	pre.
Criteria	What % of the regular use areas are effectively naturally	ventilated?
Question	Percentage Achieved?	
Office Building	-	
Criteria	What increase in outdoor air is available to regular use a	areas compared to the minimum
	required by AS 1668.2:2012?	
Question	What increase in outdoor air is available to regular use a required by AS 1668:2012?	areas compared to the minimum
Office Building	50 %	
Criteria	What CO2 concentrations are the ventilation systems d	esigned to achieve, to monitor
	and to maintain?	
Question	Value	
Office Building	700 ppm	
3.4 Thermal comfort - Shading - Non	residential	0%
Score Contribution	This credit contributes 17.6% towards the category sco	re.
Criteria	What percentage of east, north and west glazing to reg	ular use areas is effectively
	shaded?	
Question	Percentage Achieved?	
Office Building	0 %	
3.5 Thermal Comfort - Ceiling Fans -	Non-Residential	0%
Score Contribution	This credit contributes 5.9% towards the category score	е.
Criteria	What percentage of regular use areas in tenancies have	ceiling fans?
Question	Percentage Achieved?	
Office Building	0 %	
4.1 Air Quality - Non-Residential		100%
Score Contribution	This credit contributes 5.9% towards the category score	е.
Criteria	Do all paints, sealants and adhesives meet the maximu	m total indoor pollutant
Criteria	Do all paints, sealants and adhesives meet the maximum emission limits?	m total indoor pollutant
Criteria	Do all paints, sealants and adhesives meet the maximum emission limits? Criteria Achieved ?	m total indoor pollutant

BESS, 313-317 Kings Way South Melbourne 3205

Criteria	Does all carpet meet the maximum total indoor pollutant emission limits?
Question	Criteria Achieved ?
Project	No carpet
Criteria	Does all engineered wood meet the maximum total indoor pollutant emission limits?
Criteria Question	Does all engineered wood meet the maximum total indoor pollutant emission limits? Criteria Achieved ?

Transport Overall contribution 7%

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 Building	Yes	
Question	Bicycle Spaces Provided ?	
Office Building	32	
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 Building	Yes	
Question	Bicycle Spaces Provided ?	
Office Building	12	
1.6 End of Trip Facilities - Non-Reside	ntial 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 Building	4	
Question	Number of lockers provided ?	
Office Building	32	
Output	Min Showers Required	
Office Building	1	
Output	Min Lockers Required	
Office Building	32	
2.1 Electric Vehicle Infrastructure	100%	
Score Contribution	This credit contributes 25.0% towards the category score.	
Score Contribution	This credit contributes 25.0% towards the category score. Are facilities provided for the charging of electric vehicles?	
Score Contribution Criteria Question	This credit contributes 25.0% towards the category score. Are facilities provided for the charging of electric vehicles? Criteria Achieved ?	

2.2 Car Share Scheme	0%
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	No
2.3 Motorbikes / Mopeds	0%
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
Criteria	Are a minimum of 5% of vehicle parking spaces designed and labelled for motorbikes (must be at least 5 motorbike spaces)?
Criteria Question	Are a minimum of 5% of vehicle parking spaces designed and labelled for motorbikes (must be at least 5 motorbike spaces)? Criteria Achieved ?

Waste Overall contribution 4%

1.1 - Construction Waste - Building F	Re-Use	0%
Score Contribution	This credit contributes 33.3% towards the category sc	ore.
Criteria	If the development is on a site that has been previously	v 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%		100%
Score Contribution	This credit contributes 33.3% towards the category sc	ore.
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%		100%
Score Contribution	This credit contributes 33.3% towards the category sc	ore.
Criteria	Are the recycling facilities at least as convenient for oc	cupants as facilities for general
	waste?	
Question	Criteria Achieved ?	
Project	Yes	

Urban Ecology Overall contribution 3%

1.1 Communal Spaces	100%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Is there at least the following amount of common space measured in square meters : st
	1m ² for each of the first 50 occupants * Additional 0.5m ² for each occupant between 51
	and 250 * Additional 0.25m ² for each occupant above 251?
Question	Common space provided
Office Building	286 m ²
Output	Minimum Common Space Required
Office Building	212 m ²
2.1 Vegetation	75%
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	24 %
2.2 Green Roofs	0%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Does the development incorporate a green roof?
Question	Criteria Achieved ?
Project	No
2.3 Green Walls and Facades	0%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Does the development incorporate a green wall or green façade?
Question	Criteria Achieved ?
Project	No
3.2 Food Production - Non-Residenti	al 0%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	What area of space per occupant is dedicated to food production?
Question	Food Production Area
Office Building	0.0 m ²
Output	Min Food Production Area
Office Building	75 m ²

Innovation Overall contribution 10%

Innovations	
Description:	
Contractor Education	Deliver training on the core concepts of global warming, climate change and the health impacts of minimum building practices. Deliver site-specific training that highlights the sustainable solutions of your project (attended by ≥80% of site personnel).
Ultra-Low VOC Paints	50% of paints (by volume) have a maximum TVOC content of 5g/ L.
Electric Charging Point and Bicycle Repair Station	1 electric bicycle charging point and a bicycle repair station including tools and pumps is to be provided for residents and employees.
EV infrastructure	EV infrastructure for all car spots complete with load management system
>150% STORM Score	The project achieves 153% STORM Score.
Indoor environmental quality sensors throughout the tenancies + display or app	Each level will be provided with an IEQ sensor, measuring PM levels, CO2, humidity and temperature (or equivalent parameters).
ESD Checkpoint during Construction Phase	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.
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.
Carbon Neutral Power Agreement - Base Build and Tenancies	10 year carbon neutral power agreement between developer, owners corporation and electrical retailer / embedded network provider to provide GreenPower to both communal areas and tenancies.
Air Tightness	Air Permeability testing by a member of the member of the Air Tightness Testing and Measurement Association (ATTMA) or the Air Infiltration and Ventilation Association of Australia (AIVAA) is to be undertaken for a typical floor.

	Points Targeted:				
	Contractor Education		1		
ľ	Ultra-Low VOC Paints		1		
ľ	Electric Charging Point and Bicycle Repa	air Station	1		
ĺ	EV infrastructure		1		
ľ	>150% STORM Score		1		
Ů	Indoor environmental quality sensors thre + display or app	oughout the tenancies	1		
ľ	ESD Checkpoint during Construction Phase		1		
ľ	Life Cycle Assessment		2		
ľ	Carbon Neutral Power Agreement - Base Build and Tenancies		2		
ľ	Air Tightness		1		
	1.1 Innovation		1109	%	
	Score Contribution	This credit contributes	s 100.0% towards the category score.		
	Criteria	What percentage of th	ne Innovation points have been claimed (10 points maximum)?	

Disclaimer

The Built Environment Sustainability Scorecard (BESS) has been provided for the purpose of information and communication. While we make every effort to ensure that material is accurate and up to date (except where denoted as 'archival'), this material does in no way constitute the provision of professional or specific advice. You should seek appropriate, independent, professional advice before acting on any of the areas covered by BESS.

The Municipal Association of Victoria (MAV) and CASBE (Council Alliance for a Sustainable Built Environment) member councils do not guarantee, and accept no legal liability whatsoever arising from or connected to, the accuracy, reliability, currency or completeness of BESS, any material contained on this website or any linked sites