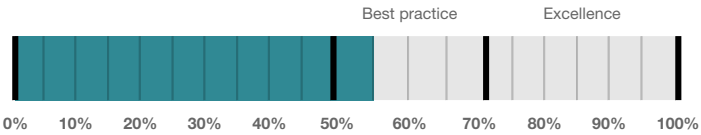
BESS Report

Built Environment Sustainability Scorecard

This BESS report outlines the sustainable design commitments of the proposed development at 750 Barkly St West Footscray Victoria 3012. 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 Maribyrnong 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



54%

Project details

Name	750 Barkly St, West Footscray VIC 3012, Australia
Address	750 Barkly St West Footscray Victoria 3012
Project ID	6CF8739F-R2
BESS Version	BESS-8
Site type	Multi dwelling (dual occupancy, townhouse, villa unit etc)
Account	thang.l@arczero.com.au
Application no.	TP 470/2024(1)
Site area	871 m²
Building floor area	855 m²
Date	07 April 2025
Software version	2.1.0-B.596

Performance by category

This project Maximum available

Category	Weight	Score	Pass
Management	5%	0%	
Water	9%	59%	✓
Energy	28%	52%	✓
Stormwater	14%	100%	✓
IEQ	17%	60%	✓
Transport	9%	66%	
Waste	6%	50%	
Urban Ecology	6%	50%	
Innovation	9%	0%	

Dwellings & Non Res Spaces

Dwellings

Name	Quantity	Area	% of total area
Townhouse			
Townhouse 3,4,5,6	4	118 m^2	55%
Townhouse 7	1	104 m^2	12%
Townhouse 2	1	100 m^2	11%
Townhouse 1	1	94.3 m^2	11%
Townhouse 8	1	86.5 m^2	10%
Total	**8**	**855 m^2**	**100%**

Supporting Evidence

Shown on Floor Plans

Credit	Requirement	Response	Status
Water 3.1	Annotation: Water efficient garden details	To be printed	✔
Energy 3.3	Annotation: External lighting controlled by motion sensors	To be printed	✔
Energy 3.4	Location of clothes line (if proposed)	To be printed	✔
Stormwater 1.1	Location of any stormwater management systems (rainwater tanks, raingardens, buffer strips)	To be printed	✔
IEQ 2.2	Annotation: Dwellings designed for 'natural cross flow ventilation' (If not all dwellings, include a list of compliant dwellings)	To be printed	✔
IEQ 3.1	Annotation: Glazing specification (U-value, SHGC)	To be printed	✔
Transport 1.2	Location of residential visitor bicycle parking spaces	To be printed	✔
Transport 2.1	Location of electric vehicle charging infrastructure	To be printed	✔
Waste 2.1	Location of food and garden waste facilities	To be printed	✔
Urban Ecology 2.1	Location and size of vegetated areas	To be printed	✔
Urban Ecology 2.4	Location of taps and floor waste on balconies / courtyards	To be printed	✔

Supporting Documentation

Credit	Requirement	Response	Status
Energy 3.5	Average lighting power density and lighting type(s) to be used		-
Stormwater 1.1	STORM report or MUSIC model		-
IEQ 2.2	A list of dwellings with natural cross flow ventilation		-
IEQ 3.1	Reference to floor plans or energy modelling showing the glazing specification (U-value and Solar Heat Gain Coefficient, SHGC)		-

Credit summary

Management Overall contribution 4.5%

		0%
1.1 Pre-Application Meeting		0%
2.2 Thermal Performance Modelling - Multi-Dwelling Residential		0%
4.1 Building Users Guide		0%

Water Overall contribution 9.0%

	Minimum required 50%	59%	✔ Pass
1.1 Potable Water Use Reduction		51%	
3.1 Water Efficient Landscaping		100%	

Energy Overall contribution 27.5%

	Minimum required 50%	52%	✔ Pass
1.2 Thermal Performance Rating - Residential		0%	✔ Achieved
2.1 Greenhouse Gas Emissions		0%	
2.6 Electrification		100%	
2.7 Energy consumption		100%	
3.3 External Lighting		100%	
3.4 Clothes Drying		100%	
3.5 Internal Lighting - Houses and Townhouses		100%	
4.4 Renewable Energy Systems - Other		N/A	⌖ Scoped Out
		No other (non-solar PV) renewable energy is in use.	
4.5 Solar PV - Houses and Townhouses		0%	⊘ Disabled
		No solar PV renewable energy is in use.	

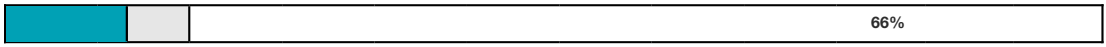
Stormwater Overall contribution 13.5%

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

IEQ Overall contribution 16.5%

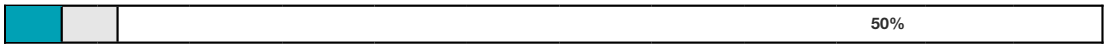
	Minimum required 50%	60%	✔ Pass
2.2 Cross Flow Ventilation		100%	
3.1 Thermal comfort - Double Glazing		100%	
3.2 Thermal Comfort - External Shading		0%	
3.3 Thermal Comfort - Orientation		0%	

Transport Overall contribution 9.0%



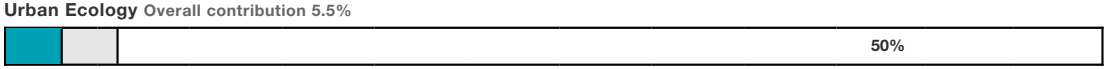
1.1 Bicycle Parking - Residential	0%
1.2 Bicycle Parking - Residential Visitor	100%
2.1 Electric Vehicle Infrastructure	100%

Waste Overall contribution 5.5%



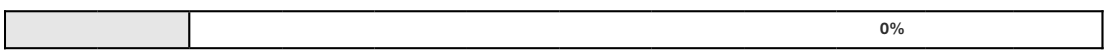
1.1 - Construction Waste - Building Re-Use	0%
2.1 - Operational Waste - Food & Garden Waste	100%

Urban Ecology Overall contribution 5.5%



2.1 Vegetation	75%
2.2 Green Roofs	0%
2.3 Green Walls and Facades	0%
2.4 Private Open Space - Balcony / Courtyard Ecology	100%
3.1 Food Production - Residential	0%

Innovation Overall contribution 9.0%



1.1 Innovation	0%

Credit breakdown

Management Overall contribution 4.5%

	0%

1.1 Pre-Application Meeting	0%
Score Contribution	This credit contributes 50% 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

2.2 Thermal Performance Modelling - Multi-Dwelling Residential	0%
Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	Have preliminary NatHERS ratings been undertaken for all thermally unique dwellings?
Question	Criteria Achieved ?
Townhouse	No

4.1 Building Users Guide	0%
Score Contribution	This credit contributes 16.7% towards the category score.
Criteria	Will a building users guide be produced and issued to occupants?
Question	Criteria Achieved ?
Project	No

Water Overall contribution 9.0%

		Minimum required 50%	59%	✔ Pass

Water Approach	
What approach do you want to use for Water?:	Use the built in calculation tools
Do you have a reticulated third pipe or an on-site water recycling system?:	No
Are you installing a swimming pool?:	No
Are you installing a rainwater tank?:	Yes
Fixtures, fittings & connections profile	
Showerhead: All	4 Star WELS (>= 4.5 but <= 6.0)
Bath: All	Small Square Tub/ Combined Shower
Kitchen Taps: All	>= 5 Star WELS rating
Bathroom Taps: All	>= 5 Star WELS rating
Dishwashers: All	>= 4 Star WELS rating
WC: All	>= 4 Star WELS rating
Urinals: All	Scope out
Washing Machine Water Efficiency:	
Townhouse 1	>= 4 Star WELS rating
Townhouse 2 Townhouse 3,4,5,6 Townhouse 7 Townhouse 8	Default or unrated
Which non-potable water source is the dwelling/space connected to?: All	Common RWT
Non-potable water source connected to Toilets: All	Yes
Non-potable water source connected to Laundry (washing machine): All	No
Non-potable water source connected to Hot Water System: All	No
Rainwater tank profile	
What is the total roof area connected to the rainwater tank?: Common RWT	517 m²
Tank Size: Common RWT	7,500 Litres
Irrigation area connected to tank: Common RWT	0.0 m²
Is connected irrigation area a water efficient garden?: Common RWT	Yes
Other external water demand connected to tank?: Common RWT	-
1.1 Potable Water Use Reduction	51%

Score Contribution	This credit contributes 83.3% 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	1353 kL
Output	Proposed (excluding rainwater and recycled water use)
Project	1018 kL
Output	Proposed (including rainwater and recycled water use)
Project	898 kL
Output	% Reduction in Potable Water Consumption
Project	33 %
Output	% of connected demand met by rainwater
Project	100 %
Output	How often does the tank overflow?
Project	Very Often
Output	Opportunity for additional rainwater connection
Project	462 kL

3.1 Water Efficient Landscaping	100%

Score Contribution	This credit contributes 16.7% towards the category score.
Criteria	Will water efficient landscaping be installed?
Question	Criteria Achieved ?
Project	Yes

Energy Overall contribution 27.5%

		Minimum required 50%	52%	✔ Pass

Dwellings Energy Approach	
What approach do you want to use for Dwellings?:	Use the built in calculation tools
Are you installing any solar photovoltaic (PV) system(s)?:	No
Are you installing any other renewable energy system(s)?:	No
Energy Supply:	All-electric
Dwelling Energy Profiles	
Below the floor is: All	Ground or Carpark
Above the ceiling is: All	Outside
Exposed sides:	
Townhouse 1 Townhouse 2 Townhouse 3,4,5,6 Townhouse 7	2
Townhouse 8	3
NatHERS Annual Energy Loads - Heat: All	110 MJ/sqm
NatHERS Annual Energy Loads - Cool: All	27.6 MJ/sqm
NatHERS star rating: All	7.0
Type of Heating System: All	Reverse cycle space
Heating System Efficiency: All	3 Stars (2019 MEPS)
Type of Cooling System: All	Refrigerative space
Cooling System Efficiency: All	5 Stars (2019 MEPS)
Type of Hot Water System: All	Electric Storage
% Contribution from solar hot water system: All	50 %
Clothes Line: All	Private outdoor clothesline
Clothes Dryer: All	No clothes dryer

1.2 Thermal Performance Rating - Residential		0%	✔ Achieved
Score Contribution	This credit contributes 17.6% towards the category score.		
Criteria	What is the average NatHERS rating?		
Output	Average NATHERS Rating (Weighted)		
Townhouse	7.0 Stars		

2.1 Greenhouse Gas Emissions		0%
Score Contribution	This credit contributes 17.6% 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)	
Townhouse	20,740 kg CO2	
Output	Proposed Building with Proposed Services (Actual Building)	
Townhouse	22,977 kg CO2	
Output	% Reduction in GHG Emissions	
Townhouse	-11 %	

2.6 Electrification	100%
Score Contribution	This credit contributes 17.6% towards the category score.
Criteria	Is the development all-electric?
Question	Criteria Achieved?
Project	Yes

2.7 Energy consumption	100%
Score Contribution	This credit contributes 23.5% towards the category score.
Criteria	What is the % reduction in annual energy consumption against the benchmark?
Output	Reference Building with Reference Services (BCA only)
Townhouse	180,639 MJ
Output	Proposed Building with Proposed Services (Actual Building)
Townhouse	97,315 MJ
Output	% Reduction in total energy
Townhouse	46 %

3.3 External Lighting	100%
Score Contribution	This credit contributes 2.9% towards the category score.
Criteria	Is the external lighting controlled by a motion detector?
Question	Criteria Achieved ?
Townhouse	Yes

3.4 Clothes Drying	100%
Score Contribution	This credit contributes 5.9% towards the category score.
Criteria	What is the % reduction in annual energy consumption (gas and electricity) from a combination of clothes lines and efficient driers against the benchmark?
Output	Reference
Townhouse	3,884 kWh
Output	Proposed
Townhouse	777 kWh
Output	Improvement
Townhouse	80 %

3.5 Internal Lighting - Houses and Townhouses	100%
Score Contribution	This credit contributes 2.9% towards the category score.
Criteria	Does the development achieve a maximum illumination power density of 4W/sqm or less?
Question	Criteria Achieved?
Townhouse	Yes

4.4 Renewable Energy Systems - Other	N/A ⌖ Scoped Out
	No other (non-solar PV) renewable energy is in use.
This credit was scoped out	No other (non-solar PV) renewable energy is in use.

4.5 Solar PV - Houses and Townhouses		0%	⊘ Disabled
			No solar PV renewable energy is in use.
This credit is disabled	No solar PV renewable energy is in use.		

Stormwater Overall contribution 13.5%

	Minimum required 100%	100%	✔ Pass

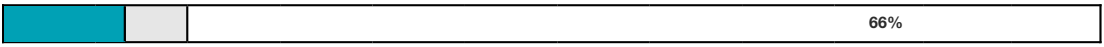
Which stormwater modelling software are you using?:	Melbourne Water STORM tool
1.1 Stormwater Treatment	100%
Score Contribution	This credit contributes 100% towards the category score.
Criteria	Has best practice stormwater management been demonstrated?
Question	STORM score achieved
Project	100
Output	Min STORM Score
Project	100

IEQ Overall contribution 16.5%

	Minimum required 50%	60%	✔ Pass

2.2 Cross Flow Ventilation	100%
Score Contribution	This credit contributes 20% towards the category score.
Criteria	Are all habitable rooms designed to achieve natural cross flow ventilation?
Question	Criteria Achieved ?
Townhouse	Yes
3.1 Thermal comfort - Double Glazing	100%
Score Contribution	This credit contributes 40% towards the category score.
Criteria	Is double glazing (or better) used to all habitable areas?
Question	Criteria Achieved ?
Townhouse	Yes
3.2 Thermal Comfort - External Shading	0%
Score Contribution	This credit contributes 20% towards the category score.
Criteria	Is appropriate external shading provided to east, west and north facing glazing?
Question	Criteria Achieved ?
Townhouse	No
3.3 Thermal Comfort - Orientation	0%
Score Contribution	This credit contributes 20% towards the category score.
Criteria	Are at least 50% of main living areas orientated to the north?
Question	Criteria Achieved ?
Townhouse	No

Transport Overall contribution 9.0%

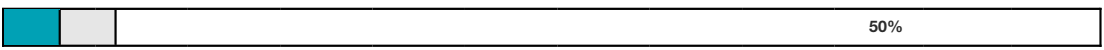


1.1 Bicycle Parking - Residential	0%
Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	How many secure and undercover bicycle spaces are there for residents?
Question	Bicycle Spaces Provided ?
Townhouse	0

1.2 Bicycle Parking - Residential Visitor	100%
Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	How many secure bicycle spaces are there for visitors?
Question	Visitor Bicycle Spaces Provided ?
Townhouse	2
Output	Min Visitor Bicycle Spaces Required
Townhouse	2

2.1 Electric Vehicle Infrastructure	100%
Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	Are facilities provided for the charging of electric vehicles?
Question	Criteria Achieved ?
Project	Yes

Waste Overall contribution 5.5%



1.1 - Construction Waste - Building Re-Use	0%
Score Contribution	This credit contributes 50% 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 50% towards the category score.
Criteria	Are facilities provided for on-site management of food and garden waste?
Question	Criteria Achieved ?
Project	Yes

Urban Ecology Overall contribution 5.5%

50%

2.1 Vegetation	75%
Score Contribution	This credit contributes 50% 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	20 %

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

2.4 Private Open Space - Balcony / Courtyard Ecology	100%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Is there a tap and floor waste on every balcony and courtyard (including any roof terraces)?
Question	Criteria Achieved ?
Townhouse	Yes

3.1 Food Production - Residential	0%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	What area of space per resident is dedicated to food production?
Question	Food Production Area
Townhouse	0.0 m²
Output	Min Food Production Area
Townhouse	5 m²

Innovation Overall contribution 9.0%

0%

1.1 Innovation	0%
Score Contribution	This credit contributes 100% towards the category score.
Criteria	What percentage of the Innovation points have been claimed (10 points maximum)?

Disclaimer

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