

This BESS report outlines the sustainable design commitments of the proposed development at 9 wroxham crt Fawkner Victoria 3060. 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 Merri-bek City Council (Moreland).

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.

**Note:** This is a DRAFT and not suitable for submission to council

PLANNING ENVIRONMENT ACT 1987

MERRI-BEK PLANNING SCHEME

Advertised Document

Advertised Plan Sheet:1 of 14

Application No: MPS/2023/728

Date : 21/02/2024

Your BESS Score

Best practice

Excellence

0%

10%

20%

30%

40%

50%

60%

70%

80%

90%

100%

65%

Project details

Address

9 wroxham crt Fawkner Victoria 3060

Project no

781FD5E0

BESS Version

BESS-8

Site type

Multi dwelling (dual occupancy, townhouse, villa unit etc)

Account

phillip.ferrotto@gmail.com

Application no.

Site area

715.00 m<sup>2</sup>

Building floor area

196.90 m<sup>2</sup>

Date

17 January 2024

Software version

1.8.1-B.407

QR Code

Performance by category

● Your development

● Maximum available

Category	Weight	Score	Pass
Management	5%	100%	•
Water	9%	50%	✓
Energy	28%	47%	✗
Stormwater	14%	100%	✓
IEQ	17%	100%	✓
Transport	9%	100%	•
Waste	6%	50%	•
Urban Ecology	6%	25%	•
Innovation	9%	0%	•

The Built Environment Sustainability Scorecard is an initiative of the Council Alliance for a Sustainable Built Environment (CASBE).  
For more details see [www.bess.net.au](http://www.bess.net.au)

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## Dwellings & Non Res Spaces

### Dwellings

Name	Quantity	Area	% of total area
<b>Townhouse</b>			
th2	1	197 m <sup>2</sup>	100%
<b>Total</b>	<b>1</b>	<b>196 m<sup>2</sup></b>	<b>100%</b>

## Supporting information

### Floorplans & elevation notes

Credit	Requirement	Response	Status
Water 3.1	Annotation: Water efficient garden details		-
Energy 3.3	Annotation: External lighting controlled by motion sensors		-
Energy 3.4	Location of clothes line (if proposed)		-
Stormwater 1.1	Location of any stormwater management systems (rainwater tanks, raingardens, buffer strips)		-
IEQ 2.2	Annotation: Dwellings designed for 'natural cross flow ventilation' (If not all dwellings, include a list of compliant dwellings)		-
IEQ 3.1	Annotation: Glazing specification (U-value, SHGC)		-
IEQ 3.2	Adjustable shading systems		-
IEQ 3.3	North-facing living areas		-
Transport 1.1	Location of residential bicycle parking spaces		-
Transport 2.1	Location of electric vehicle charging infrastructure		-
Waste 2.1	Location of food and garden waste facilities		-
Urban Ecology 2.2	Location and size of green roof		-
Urban Ecology 2.4	Location of taps and floor waste on balconies / courtyards		-

### Supporting evidence

Credit	Requirement	Response	Status
Management 2.2	Preliminary NatHERS assessments		-
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)		-
IEQ 3.2	Reference to floor plans and elevations showing shading devices		-
IEQ 3.3	Reference to the floor plans showing living areas orientated to the north		-

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Credit summary

Management Overall contribution 4.5%

<div><div></div></div>		100%
1.1 Pre-Application Meeting	<div><div></div></div>	100%
2.2 Thermal Performance Modelling - Multi-Dwelling Residential	<div><div></div></div>	100%
4.1 Building Users Guide	<div><div></div></div>	100%

Water Overall contribution 9.0%

<div><div></div><div></div></div>		Minimum required 50%	50%	✔ Pass
1.1 Potable Water Use Reduction	<div><div></div></div>		40%	
3.1 Water Efficient Landscaping	<div><div></div></div>		100%	

Energy Overall contribution 27.5%

<div><div></div><div></div></div>		Minimum required 50%	47%	✘ Not Passed
1.2 Thermal Performance Rating - Residential	<div><div></div></div>		0%	✘ Not Achieved
2.1 Greenhouse Gas Emissions	<div><div></div></div>		0%	
2.6 Electrification	<div><div></div></div>		100%	
2.7 Energy consumption	<div><div></div></div>		100%	
3.3 External Lighting	<div><div></div></div>		100%	
3.4 Clothes Drying	<div><div></div></div>		100%	
3.5 Internal Lighting - Houses and Townhouses	<div><div></div></div>		100%	
4.4 Renewable Energy Systems - Other	<div><div></div></div>		0%	
4.5 Solar PV - Houses and Townhouses	<div><div></div></div>		0%	

Stormwater Overall contribution 13.5%

<div><div></div></div>		Minimum required 100%	100%	✔ Pass
1.1 Stormwater Treatment	<div><div></div></div>		100%	

IEQ Overall contribution 16.5%

<div><div></div></div>		Minimum required 50%	100%	✔ Pass
2.2 Cross Flow Ventilation	<div><div></div></div>		100%	
3.1 Thermal comfort - Double Glazing	<div><div></div></div>		100%	
3.2 Thermal Comfort - External Shading	<div><div></div></div>		100%	
3.3 Thermal Comfort - Orientation	<div><div></div></div>		100%	

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Transport Overall contribution 9.0%

		100%
1.1 Bicycle Parking - Residential		100%
1.2 Bicycle Parking - Residential Visitor		N/A    ⚠ Scoped Out
		Not enough dwellings.
2.1 Electric Vehicle Infrastructure		100%

Waste Overall contribution 5.5%

		50%
1.1 - Construction Waste - Building Re-Use		0%
2.1 - Operational Waste - Food & Garden Waste		100%

Urban Ecology Overall contribution 5.5%

		25%
2.1 Vegetation		0%
2.2 Green Roofs		100%
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%

		0%
1.1 Innovation		0%

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## Credit breakdown

### Management Overall contribution 4%

<b>1.1 Pre-Application Meeting</b>		100%
Score Contribution	This credit contributes 50.0% 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?	
Annotation	A ESD CONSULTANT WILL BE ENGAGED TO COMPLETE THE REPORT AT A LATER STAGE	
Question	Criteria Achieved ?	
Project	Yes	
<b>2.2 Thermal Performance Modelling - Multi-Dwelling Residential</b>		100%
Score Contribution	This credit contributes 33.3% towards the category score.	
Criteria	Have preliminary NatHERS ratings been undertaken for all thermally unique dwellings?	
Annotation	an energy rating consultant will be engaged at a later stage.	
Question	Criteria Achieved ?	
Townhouse	Yes	
<b>4.1 Building Users Guide</b>		100%
Score Contribution	This credit contributes 16.7% towards the category score.	
Criteria	Will a building users guide be produced and issued to occupants?	
Annotation	this will be decided at a later stage	
Question	Criteria Achieved ?	
Project	Yes	

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**Water** Overall contribution 5% Minimum required 50%

<b>Water Approach</b>	
What approach do you want to use for Water?:	Use the built in calculation tools
<b>Project Water Profile Question</b>	
Do you have a reticulated third pipe or an on-site water recycling system?:	Yes
Are you installing a swimming pool?:	No
Are you installing a rainwater tank?:	Yes
<b>Reticulated third pipe or an on-site water recycling system</b>	
Recycled Profile Name:	Third pipe
Irrigation area connected to reticulated third pipe or an on-site water recycling system only (i.e. not also connected to rainwater system):	-
Water Efficient Garden?:	-
Other external water demand connected to reticulated third pipe or an on-site water recycling system only (i.e. not also connected to rainwater system):	-
<b>Water fixtures, fittings and connections</b>	
Showerhead:	3 Star WELS (>= 7.5 but <= 9.0) (minimum requirement)
Bath:	Scope out
Kitchen Taps:	>= 6 Star WELS rating
Bathroom Taps:	>= 6 Star WELS rating
Dishwashers:	>= 6 Star WELS rating
WC:	Default or unrated
Urinals:	-
Washing Machine Water Efficiency:	>= 6 Star WELS rating
Which non-potable water source is the dwelling/space connected to?:	-1
Non-potable water source connected to Toilets:	Yes
Non-potable water source connected to Laundry (washing machine):	Yes
Non-potable water source connected to Hot Water System:	No
<b>Rainwater Tank</b>	
What is the total roof area connected to the rainwater tank?: 45f	367 m <sup>2</sup>
Will this tank be connected to the reticulated third pipe or onsite water recycling system?: 45f	Yes
Tank Size: 45f	2,000 Litres
Irrigation area connected to tank: 45f	0.0 m <sup>2</sup>
Is connected irrigation area a water efficient garden?: 45f	Yes
Other external water demand connected to tank?: 45f	0.0 Litres/Day

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<b>1.1 Potable Water Use Reduction</b>		40%
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	204 kL	
Output	Proposed (excluding rainwater and recycled water use)	
Project	152 kL	
Output	Proposed (including rainwater and recycled water use)	
Project	152 kL	
Output	% Reduction in Potable Water Consumption	
Project	25 %	
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	80 kL	
<b>3.1 Water Efficient Landscaping</b>		100%
Score Contribution	This credit contributes 16.7% towards the category score.	
Criteria	Will water efficient landscaping be installed?	
Annotation	external taps from water tank	
Question	Criteria Achieved ?	
Project	Yes	

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**Energy** Overall contribution 13% Minimum required 50%

<b>Dwellings Energy Approach</b>	
What approach do you want to use for Energy?:	Use the built in calculation tools
<b>Project Energy Profile Question</b>	
Are you installing any solar photovoltaic (PV) system(s)?:	Yes
Are you installing any other renewable energy system(s)?:	Yes
Energy Supply:	All-electric
<b>Dwelling Energy Profile</b>	
Below the floor is:	Ground or Carpark
Above the ceiling is:	Another Occupancy
Exposed sides:	3
NatHERS Annual Energy Loads - Heat:	-
NatHERS Annual Energy Loads - Cool:	-
NatHERS star rating:	-
Type of Heating System:	Reverse cycle ducted
Heating System Efficiency:	6 Stars (2011 MEPS)
Type of Cooling System:	Evaporative central
Cooling System Efficiency:	6 Stars (2011 MEPS)
Type of Hot Water System:	Electric Storage
% Contribution from solar hot water system:	-
Clothes Line:	Private outdoor clothesline
Clothes Dryer:	No clothes dryer
<b>1.2 Thermal Performance Rating - Residential</b> 0% <span style="color: red;">✗</span> Not Achieved	
Score Contribution	This credit contributes 17.6% towards the category score.
Criteria	What is the average NatHERS rating?
Annotation	The average natthers rating 7.0
<b>2.1 Greenhouse Gas Emissions</b> 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	4,121 kg CO2
Output	Proposed Building with Proposed Services (Actual Building)
Townhouse	3,848 kg CO2
Output	% Reduction in GHG Emissions
Townhouse	6 %
<b>2.6 Electrification</b> 100%	
Score Contribution	This credit contributes 11.8% towards the category score.
Criteria	Is the development all-electric?
Question	Criteria Achieved?
Project	Yes

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<b>2.7 Energy consumption</b>		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	31,285 MJ	
Output	Proposed Building with Proposed Services (Actual Building)	
Townhouse	16,299 MJ	
Output	% Reduction in total energy	
Townhouse	47 %	
<b>3.3 External Lighting</b>		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	
<b>3.4 Clothes Drying</b>		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	<b>PLANNING ENVIRONMENT ACT 1987</b> <b>MERRI-BEK PLANNING SCHEME</b>  <b>Advertised Document</b> <b>Advertised Plan Sheet:9 of 14</b> <b>Application No: MPS/2023/728</b> <b>Date : 21/02/2024</b>
Townhouse	638 kWh	
Output	Proposed	
Townhouse	128 kWh	
Output	Improvement	
Townhouse	80 %	
<b>3.5 Internal Lighting - Houses and Townhouses</b>		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	
<b>4.4 Renewable Energy Systems - Other</b>		0%
Score Contribution	This credit contributes 5.9% towards the category score.	
Criteria	Does another form of renewable energy (not solar) provide 5% of the estimated energy consumption of the building class it supplies?	
Question	Other Renewable Energy - Energy Generation per year	
Townhouse	-	
<b>4.5 Solar PV - Houses and Townhouses</b>		0%
Score Contribution	This credit contributes 11.8% towards the category score.	
Criteria	What % of the estimated energy consumption of the building class it supplies does the solar power system provide?	

**Stormwater** Overall contribution 14% Minimum required 100%

Which stormwater modelling are you using?:		Melbourne Water STORM tool
<b>1.1 Stormwater Treatment</b>		100%
Score Contribution	This credit contributes 100.0% towards the category score.	
Criteria	Has best practice stormwater management been demonstrated?	
Question	STORM score achieved	
Project	100	
Output	Min STORM Score	
Project	100	


**IEQ** Overall contribution 16% Minimum required 50%

<b>2.2 Cross Flow Ventilation</b>		100%
Score Contribution	This credit contributes 20.0% towards the category score.	
Criteria	Are all habitable rooms designed to achieve natural cross flow ventilation?	
Question	Criteria Achieved ?	
Townhouse	Yes	
<b>3.1 Thermal comfort - Double Glazing</b>		100%
Score Contribution	This credit contributes 40.0% towards the category score.	
Criteria	Is double glazing (or better) used to all habitable areas?	
Question	Criteria Achieved ?	
Townhouse	Yes	
<b>3.2 Thermal Comfort - External Shading</b>		100%
Score Contribution	This credit contributes 20.0% towards the category score.	
Criteria	Is appropriate external shading provided to east, west and north facing glazing?	
Question	Criteria Achieved ?	
Townhouse	Yes	
<b>3.3 Thermal Comfort - Orientation</b>		100%
Score Contribution	This credit contributes 20.0% towards the category score.	
Criteria	Are at least 50% of living areas orientated to the north?	
Question	Criteria Achieved ?	
Townhouse	Yes	

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**Transport** Overall contribution 9%

<b>1.1 Bicycle Parking - Residential</b>	100%
Score Contribution	This credit contributes 50.0% towards the category score.
Criteria	How many secure and undercover bicycle spaces are there for residents?
Question	Bicycle Spaces Provided ?
Townhouse	2
Output	Min Bicycle Spaces Required
Townhouse	1
<b>1.2 Bicycle Parking - Residential Visitor</b>	N/A  Scoped Out
This credit was scoped out	Not enough dwellings.
<b>2.1 Electric Vehicle Infrastructure</b>	100%
Score Contribution	This credit contributes 50.0% towards the category score.
Criteria	Are facilities provided for the charging of electric vehicles?
Question	Criteria Achieved ?
Project	Yes

**Waste** Overall contribution 3%

<b>1.1 - Construction Waste - Building Re-Use</b>	0%
Score Contribution	This credit contributes 50.0% 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
<b>2.1 - Operational Waste - Food &amp; Garden Waste</b>	100%
Score Contribution	This credit contributes 50.0% towards the category score.
Criteria	Are facilities provided for on-site management of food and garden waste?
Question	Criteria Achieved ?
Project	Yes

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**Urban Ecology** Overall contribution 1%

<b>2.1 Vegetation</b>	0%
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	< 1 %
<b>2.2 Green Roofs</b>	100%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Does the development incorporate a green roof?
Question	Criteria Achieved ?
Project	Yes
<b>2.3 Green Walls and Facades</b>	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
<b>2.4 Private Open Space - Balcony / Courtyard Ecology</b>	100%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Is there a tap and floor waste on every balcony / in every courtyard?
Question	Criteria Achieved ?
Townhouse	Yes
<b>3.1 Food Production - Residential</b>	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	-
Output	Min Food Production Area
Townhouse	1 m²

**Innovation** Overall contribution 0%

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

**Note**

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**DRAFT**



# STORM Rating Report

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Date : 21/02/2024

TransactionID: 0  
Municipality: MERRI-BEK  
Rainfall Station: MORELAND  
Address: 9 wroxham crt  
  
FAWKNER  
VIC vic  
  
Assessor:  
Development Type: Residential - Multiunit  
Allotment Site (m2): 715.00  
STORM Rating %: 136

Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
ROOF 1	69.00	Rainwater Tank	2,000.00	4	164.80	82.00
ROOF 2	40.00	Rainwater Tank	1,100.00	4	164.00	82.00
ROOF 3	23.00	None	0.00	0	0.00	0.00
ROOF 4	85.00	Rainwater Tank	2,000.00	3	137.40	87.20