

# BESS Report

Built Environment Sustainability Scorecard

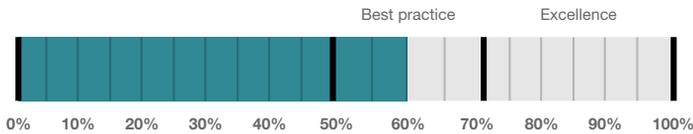


This BESS report outlines the sustainable design commitments of the proposed development at 485 Golf Links Rd Langwarrin South Victoria 3911. The BESS report and accompanying documents and evidence are submitted in response to the requirement for a Sustainable Design Assessment or Sustainability Management Plan at Frankston 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.

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

## Your BESS Score



# 62%

## Project details

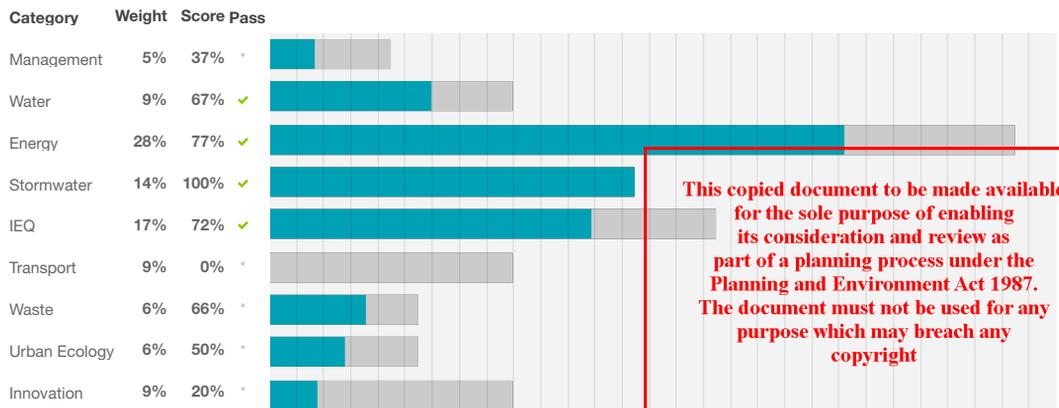
Address 485 Golf Links Rd Langwarrin South Victoria 3911  
 Project no 47B7CBAD  
 BESS Version BESS-8  
 Site type Non-residential development  
 Account frazer@brt.com.au  
 Application no.  
 Site area 1,274.00 m<sup>2</sup>  
 Building floor area 632.00 m<sup>2</sup>  
 Date 12 September 2023  
 Software version 1.8.0-B.402

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## Performance by category

● Your development ● Maximum available



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## Buildings

Name	Height	Footprint	% of total footprint
Year 10 Futures Studio	1	1,274 m <sup>2</sup>	100%

## Dwellings & Non Res Spaces

### Non-Res Spaces

Name	Quantity	Area	Building	% of total area
<b>Public building</b>				
Collaborate/Explore/Reflect	1	434 m <sup>2</sup>	Year 10 Futures Studio	68%
Staff/Meet/WC	1	112 m <sup>2</sup>	Year 10 Futures Studio	17%
Homestead/Cowork	1	86.0 m <sup>2</sup>	Year 10 Futures Studio	13%
<b>Total</b>	<b>3</b>	<b>632 m<sup>2</sup></b>	<b>100%</b>	

## Supporting information

### Floorplans & elevation notes

Credit	Requirement	Response	Status
Management 3.2	Annotation: Individual utility meters to be provided to all individual commercial tenancies		-
Management 3.3	Annotation: Sub-meters to be provided to all major common area services (list each)		-
Water 3.1	Annotation: Water efficient garden details		-
Energy 4.2	Location and size of solar photovoltaic system		-
Stormwater 1.1	Location of any stormwater management systems (rainwater tanks, raingardens, buffer strips)		-
Waste 2.1	Location of food and garden waste facilities		-
Waste 2.2	Location of recycling facilities		-
Urban Ecology 1.1	Location and size of communal spaces		-
Urban Ecology 2.1	Location and size of vegetated areas		-
Urban Ecology 2.2	Location and size of green roof		-

### Supporting evidence

Credit	Requirement	Response	Status
Energy 1.1	Energy Report showing calculations of reference case and proposed buildings		-
Energy 3.7	Average lighting power density and lighting type(s) to be used		-
Energy 4.2	Specifications of the solar photovoltaic system(s)		-
Stormwater 1.1	STORM report or MUSIC model		-
IEQ 1.4	A short report detailing assumptions used and results achieved.		-

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### Credit summary

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#### Management Overall contribution 4.5%

		<b>37%</b>
1.1 Pre-Application Meeting		0%
2.3 Thermal Performance Modelling - Non-Residential		0%
3.2 Metering - Non-Residential		100%
3.3 Metering - Common Areas		100%
4.1 Building Users Guide		100%

#### Water Overall contribution 9.0%

	<b>Minimum required 50%</b>	<b>67%</b> <span style="color: green;">✔ Pass</span>
1.1 Potable Water Use Reduction		61%
3.1 Water Efficient Landscaping		100%
4.1 Building Systems Water Use Reduction		N/A <span style="color: orange;">✦ Scoped Out</span>
No chillers or sprinklers		

#### Energy Overall contribution 27.5%

	<b>Minimum required 50%</b>	<b>77%</b> <span style="color: green;">✔ Pass</span>
1.1 Thermal Performance Rating - Non-Residential		37%
2.1 Greenhouse Gas Emissions		100%
2.2 Peak Demand		100%
2.6 Electrification		100%
2.7 Energy consumption		100%
3.1 Carpark Ventilation		N/A <span style="color: orange;">✦ Scoped Out</span>
No carpark		
3.2 Hot Water		100%
3.7 Internal Lighting - Non-Residential		100%
4.1 Combined Heat and Power (cogeneration / trigeneration)		N/A <span style="color: orange;">✦ Scoped Out</span>
No cogeneration or trigeneration system in use.		
4.2 Renewable Energy Systems - Solar		100%
4.4 Renewable Energy Systems - Other		N/A <span style="color: orange;">✦ Scoped Out</span>
No other (non-solar PV) renewable energy is in use.		

#### Stormwater Overall contribution 13.5%

	<b>Minimum required 100%</b>	<b>100%</b> <span style="color: green;">✔ Pass</span>
1.1 Stormwater Treatment		100%

**IEQ Overall contribution 16.5%**

		<b>Minimum required 50%</b>	<b>72%</b>	<b>✓ Pass</b>
1.4 Daylight Access - Non-Residential			33%	✓ Achieved
2.3 Ventilation - Non-Residential			88%	✓ Achieved
3.4 Thermal comfort - Shading - Non-Residential			100%	
3.5 Thermal Comfort - Ceiling Fans - Non-Residential			100%	
4.1 Air Quality - Non-Residential			100%	

**Transport Overall contribution 9.0%**

			<b>0%</b>	
1.4 Bicycle Parking - Non-Residential			0%	
1.5 Bicycle Parking - Non-Residential Visitor			0%	
1.6 End of Trip Facilities - Non-Residential			0%	⊘ Disabled
				Credit 1.4 must be complete first.
2.1 Electric Vehicle Infrastructure			N/A	⚡ Scoped Out
				No EV Charging on site
2.2 Car Share Scheme			N/A	⚡ Scoped Out
				No additional car parking or sharing required. Refer Transport Impact Assessment
2.3 Motorbikes / Mopeds			N/A	⚡ Scoped Out
				No additional motorbike/moped parking required. Refer Transport Impact Assessment

**Waste Overall contribution 5.5%**

			<b>66%</b>	
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%**

			<b>50%</b>	
1.1 Communal Spaces			100%	
2.1 Vegetation			50%	
2.2 Green Roofs			100%	
2.3 Green Walls and Facades			0%	
3.2 Food Production - Non-Residential			0%	

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**Innovation Overall contribution 9.0%**



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## Credit breakdown

### Management Overall contribution 2%

<b>1.1 Pre-Application Meeting</b>	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
<b>2.3 Thermal Performance Modelling - Non-Residential</b>	0%
Score Contribution	This credit contributes 25.0% towards the category score.
Criteria	Has a preliminary facade assessment been undertaken in accordance with NCC2022 Section J4D6?
Question	Criteria Achieved ?
Public building	No
Criteria	Has preliminary modelling been undertaken in accordance with either NCC2022 Section J (Energy Efficiency), NABERS or Green Star?
Question	Criteria Achieved ?
Public building	No
<b>3.2 Metering - Non-Residential</b>	100%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Have utility meters been provided for all individual commercial tenants?
Annotation	Utility meters to be provided
Question	Criteria Achieved ?
Public building	Yes
<b>3.3 Metering - Common Areas</b>	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 ?
Public building	Yes
<b>4.1 Building Users Guide</b>	100%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Will a building users guide be produced and issued to occupants?
Question	Criteria Achieved ?
Project	Yes

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**Water** Overall contribution 6% 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?:	No
Are you installing a swimming pool?:	No
Are you installing a rainwater tank?:	Yes
<b>Water fixtures, fittings and connections</b>	
<b>Showerhead:</b>	
Collaborate/Explore/Reflect	Scope out
Homestead/Cowork	
Staff/Meet/WC	4 Star WELS (>= 4.5 but <= 6.0)
Bath: All	Scope out
Kitchen Taps: All	>= 4 Star WELS rating
Bathroom Taps: All	>= 4 Star WELS rating
Dishwashers: All	Scope out
WC: All	>= 4 Star WELS rating
<b>Urinals:</b>	
Collaborate/Explore/Reflect	Scope out
Homestead/Cowork	
Staff/Meet/WC	>= 4 Star WELS rating
Washing Machine Water Efficiency: All	Scope out
Which non-potable water source is the dwelling/space connected to?:	
Collaborate/Explore/Reflect	-1
Homestead/Cowork	RWT.1
Staff/Meet/WC	
Non-potable water source connected to Toilets:	
Collaborate/Explore/Reflect	No
Homestead/Cowork	Yes
Staff/Meet/WC	
Non-potable water source connected to Laundry (washing machine): All	
	No
Non-potable water source connected to Hot Water System: All No	
<b>Rainwater Tank</b>	
What is the total roof area connected to the rainwater tank?:	730 m <sup>2</sup>
RWT.1	
Tank Size: RWT.1	30,000 Litres
Irrigation area connected to tank: RWT.1	150 m <sup>2</sup>
Is connected irrigation area a water efficient garden?: RWT.1	Yes
Other external water demand connected to tank?: RWT.1	640 Litres/Day

<b>1.1 Potable Water Use Reduction</b>		61%
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	1546 kL	
Output	Proposed (excluding rainwater and recycled water use)	
Project	1302 kL	
Output	Proposed (including rainwater and recycled water use)	
Project	913 kL	
Output	% Reduction in Potable Water Consumption	
Project	40 %	
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	452 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?	
Question	Criteria Achieved ?	
Project	Yes	
<b>4.1 Building Systems Water Use Reduction</b>		N/A  Scoped Out
This credit was scoped out	No chillers or sprinklers	

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**Energy** Overall contribution 21% Minimum required 50%

Use the BESS Deem to Satisfy (DtS) method for Energy?:	Yes
Do all exposed floors and ceilings (forming part of the envelope) demonstrate meeting the required NCC2022 insulation levels (total R-value upwards and downwards)?:	Yes
Does all wall and glazing demonstrate meeting the required NCC2022 facade calculator (or better than the total allowance)?:	Yes
Are heating and cooling systems within one Star of the most efficient equivalent capacity unit available, or Coefficient of Performance (CoP) & Energy Efficiency Ratios (EER) not less than 85% of the CoP & EER of the most efficient equivalent capacity unit available?:	Yes
Are water heating systems within one star of the best available, or 85% or better than the most efficient equivalent capacity unit?:	Yes
<b>Non-Residential Building Energy Profile</b>	
Heating, Cooling & Comfort Ventilation - Electricity Reference fabric & services:	-
Heating, Cooling & Comfort Ventilation - Electricity - proposed fabric and reference services:	-
Heating, Cooling & Comfort Ventilation - Electricity Proposed fabric & services:	-
Heating - Wood - reference fabric and services:	-
Heating - Wood - proposed fabric and reference services:	-
Heating - Wood - proposed fabric and services:	-
Hot Water - Electricity - Reference:	-
Hot Water - Electricity - Proposed:	-
Lighting - Reference:	-
Lighting - Proposed:	-
Peak Thermal Cooling Load - Reference:	-
Peak Thermal Cooling Load - Proposed:	-
<b>Solar Photovoltaic system</b>	
System Size (lesser of inverter and panel capacity):	PV.1 50.0 kW peak
Orientation (which way is the system facing)?:	PV.1 North
Inclination (angle from horizontal):	PV.1 30.0 Angle (degrees)
<b>1.1 Thermal Performance Rating - Non-Residential</b>	37%
Score Contribution	This credit contributes 36.4% towards the category score.
Criteria	What is the % reduction in heating and cooling energy consumption against the reference case (NCC2022 Section J)?
Annotation	To be confirmed

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<b>2.1 Greenhouse Gas Emissions</b>		100%	
Score Contribution	This credit contributes 9.1% towards the category score.		
Criteria	What is the % reduction in annual greenhouse gas emissions against the benchmark?		
Annotation	To be confirmed		
<b>2.2 Peak Demand</b>		100%	
Score Contribution	This credit contributes 4.5% towards the category score.		
Criteria	What is the % reduction in the instantaneous (peak-hour) demand against the benchmark?		
Annotation	To be confirmed		
<b>2.6 Electrification</b>		100%	
Score Contribution	This credit contributes 13.6% towards the category score.		
Criteria	Is the development all-electric?		
Question	Criteria Achieved?		
Project	Yes		
<b>2.7 Energy consumption</b>		100%	
Score Contribution	This credit contributes 18.2% towards the category score.		
Criteria	What is the % reduction in annual energy consumption against the benchmark?		
Annotation	To be confirmed		
<b>3.1 Carpark Ventilation</b>		N/A	✦ Scoped Out
This credit was scoped out	No carpark		
<b>3.2 Hot Water</b>		100%	
Score Contribution	This credit contributes 4.5% towards the category score.		
Criteria	What is the % reduction in annual energy consumption (gas and electricity) of the hot water system against the benchmark?		
Annotation	To be confirmed		
<b>3.7 Internal Lighting - Non-Residential</b>		100%	
Score Contribution	This credit contributes 9.1% towards the category score.		
Criteria	Does the maximum illumination power density (W/m2) in at least 90% of the area of the relevant building class meet the requirements in Table J7D3a of the NCG 2022 Vol 1?		
Question	Criteria Achieved ?		
Public building	Yes		
<b>4.1 Combined Heat and Power (cogeneration / trigeneration)</b>		N/A	✦ Scoped Out
This credit was scoped out	No cogeneration or trigeneration system in use.		

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<b>4.2 Renewable Energy Systems - Solar</b>		100%
Score Contribution	This credit contributes 4.5% towards the category score.	
Criteria	What % of the estimated energy consumption of the building class it supplies does the solar power system provide?	
Output	Solar Power - Energy Generation per year	
Public building	65,152 kWh	
Output	% of Building's Energy	
Public building	278 %	
<b>4.4 Renewable Energy Systems - Other</b>		N/A <span style="color: orange;">✦</span> Scoped Out
This credit was scoped out	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
<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	

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**IEQ** Overall contribution 12% Minimum required 50%

<b>1.4 Daylight Access - Non-Residential</b>		33%	✓ Achieved
Score Contribution	This credit contributes 35.3% towards the category score.		
Criteria	What % of the nominated floor area has at least 2% daylight factor?		
Annotation	At least 33% of the floor area to have 2% daylight factor		
Question	Percentage Achieved?		
Public building	33 %		
<b>2.3 Ventilation - Non-Residential</b>		88%	✓ Achieved
Score Contribution	This credit contributes 35.3% towards the category score.		
Criteria	What % of the regular use areas are effectively naturally ventilated?		
Question	Percentage Achieved?		
Public building	100 %		
Criteria	What increase in outdoor air is available to regular use areas compared to the minimum required by AS 1668.2:2012?		
Question	What increase in outdoor air is available to regular use areas compared to the minimum required by AS 1668:2012?		
Public building	0 %		
Criteria	What CO2 concentrations are the ventilation systems designed to achieve, to monitor and to maintain?		
Question	Value		
Public building	700 ppm		
<b>3.4 Thermal comfort - Shading - Non-Residential</b>		100%	
Score Contribution	This credit contributes 17.6% towards the category score.		
Criteria	What percentage of east, north and west glazing to regular use areas is effectively shaded?		
Question	Percentage Achieved?		
Public building	100 %		
<b>3.5 Thermal Comfort - Ceiling Fans - Non-Residential</b>		100%	
Score Contribution	This credit contributes 5.9% towards the category score.		
Criteria	What percentage of regular use areas in tenancies have ceiling fans?		
Question	Percentage Achieved?		
Public building	100 %		
<b>4.1 Air Quality - Non-Residential</b>		100%	
Score Contribution	This credit contributes 5.9% towards the category score.		
Annotation	Confirm material list		
Criteria	Do all paints, sealants and adhesives meet the maximum total indoor pollutant emission limits?		
Question	Criteria Achieved ?		
Public building	Yes		

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

## Transport Overall contribution 0%

<b>1.4 Bicycle Parking - Non-Residential</b>	0%
Score Contribution	This credit contributes 50.0% 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)?
Annotation	No additional bicycle parking required. Refer Transport Impact Assessment
Question	Criteria Achieved ?
Public building	No
Question	Bicycle Spaces Provided ?
Public building	0
<b>1.5 Bicycle Parking - Non-Residential Visitor</b>	0%
Score Contribution	This credit contributes 25.0% 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)?
Annotation	No additional bicycle parking required. Refer Transport Impact Assessment
Question	Criteria Achieved ?
Public building	No
Question	Bicycle Spaces Provided ?
Public building	0
<b>1.6 End of Trip Facilities - Non-Residential</b>	0% <input type="checkbox"/> Disabled
This credit is disabled	Credit 1.4 must be complete first.
<b>2.1 Electric Vehicle Infrastructure</b>	N/A <input checked="" type="checkbox"/> Scoped Out
This credit was scoped out	No EV Charging on site
<b>2.2 Car Share Scheme</b>	N/A <input checked="" type="checkbox"/> Scoped Out
This credit was scoped out	No additional car parking or sharing required. Refer Transport Impact Assessment
<b>2.3 Motorbikes / Mopeds</b>	N/A <input checked="" type="checkbox"/> Scoped Out
This credit was scoped out	No additional motorbike/moped parking required. Refer Transport Impact Assessment

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**Waste** Overall contribution 4%

<b>1.1 - Construction Waste - Building Re-Use</b>		0%
Score Contribution	This credit contributes 33.3% towards the category score.	
Criteria	If the development is on a site that has been previously developed, has at least 30% of the existing building been re-used?	
Annotation	New build	
Question	Criteria Achieved ?	
Project	No	
<b>2.1 - Operational Waste - Food &amp; Garden Waste</b>		100%
Score Contribution	This credit contributes 33.3% towards the category score.	
Criteria	Are facilities provided for on-site management of food and garden waste?	
Annotation	Refer Waste Management Plan	
Question	Criteria Achieved ?	
Project	Yes	
<b>2.2 - Operational Waste - Convenience of Recycling</b>		100%
Score Contribution	This credit contributes 33.3% towards the category score.	
Criteria	Are the recycling facilities at least as convenient for occupants as facilities for general waste?	
Annotation	Refer Waste Management Plan	
Question	Criteria Achieved ?	
Project	Yes	

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**Urban Ecology** Overall contribution 3%

<b>1.1 Communal Spaces</b>	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 : * 1m <sup>2</sup> for each of the first 50 occupants * Additional 0.5m <sup>2</sup> for each occupant between 51 and 250 * Additional 0.25m <sup>2</sup> for each occupant above 251?
Question	Common space provided
Public building	56.0 m <sup>2</sup>
Output	Minimum Common Space Required
Public building	56 m <sup>2</sup>
<b>2.1 Vegetation</b>	50%
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?
Annotation	30% of total site area to be covered in vegetation to get a maximum score
Question	Percentage Achieved ?
Project	10. %
<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>3.2 Food Production - Non-Residential</b>	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
Public building	0.0 m <sup>2</sup>
Output	Min Food Production Area
Public building	16 m <sup>2</sup>

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**Innovation** Overall contribution 2%

<b>Innovation</b>	
<b>Description:</b> Battery Storage	Battery storage provided for PV system to ensure site is self-sufficient
<b>Points Targeted:</b> Battery Storage	2
<b>1.1 Innovation</b>	20%
Score Contribution	This credit contributes 100.0% towards the category score.
Criteria	What percentage of the Innovation points have been claimed (10 points maximum)?
Annotation	2

**Note**

This is a DRAFT and not suitable for submission to council.

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