

Sustainability Management Plan

1 Baynes Road, Monbulk,
VIC

10/11/2022

ADVERTISED



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Sustainability

Tech Partners Pty Ltd



Sustainability Management Plan(SMP)

Proposed Childcare Facility Development

Table of Contents

Initiatives to be Marked on Drawings	3
Introduction.....	4
Site Description.....	5
Proposed Development	5
Energy Efficiency	6
Water Efficiency & Stormwater Management.....	7
Indoor Environment Quality.....	8
Construction, Building & Waste management	10
Transport	11
Building Materials	11
Urban Ecology	12
Implementation & Monitoring	13
Appendix A – WSUD Report / STORM Assessment.....	14
Appendix B – Daylight Access – Green Star Calculation	18
Appendix C – VOC & Formaldehyde Emission Limits	21
Appendix D – BESS Assessment.....	23

DOCUMENT VERSION

Version 0: Issued on 10/11/2022 for Client review



INITIATIVES TO BE MARKED ON DRAWINGS

Water & Stormwater Management

- Mark-up showing roof catchment area to be diverted to the Rainwater tank for the childcare – If required, the use of charged pipe system will be explicitly acknowledged on the drawings and charged pipes will not be running underneath the building footprint.
- Rainwater tank location and size
- Note showing connection to the toilets.
- Note showing use of native or drought tolerant species for landscaped area. Watering will not be required after an initial period when plants are getting established.
- Note showing WELS rating for water fittings/fixtures (refer to report) – Fixtures provided as part of base building work have to be chosen within one WELS star of best available at the time of purchase.

Energy Efficiency

- Note showing commitment to exceeding section J energy efficiency requirement of NCC 2019
- Note showing the maximum illumination power density (W/m^2) of the development meet the requirements in NCC 2019
- Lighting sensors for external lighting (motion detectors, timers etc.)
- 5kW Solar PV system on the roof of the development

Indoor Environment Quality

- Note showing ceiling fans installed in all children's activity rooms
- Activity rooms will be provided with O/A fans which will commit to provide 50% increase on O/A provision from AS1668.

Transport

- Minimum of 2 bike space location for employees and 1 bike space for visitors

Urban Ecology

- Show extent of vegetated areas around the site (includes lawn)



INTRODUCTION

Frater Consulting Services have been engaged to undertake a Sustainable Management Plan for the proposed childcare development located at 1 Baynes Road, Monbulk. This has been prepared to address the Yarra Ranges Council as part of the CASBE (Council Alliance for a Sustainable Built Environment) has identified the following key categories to be addressed:

- Energy Performance;
- Water Resources;
- Stormwater Management;
- Indoor Environment Quality;
- Construction, Building & Waste Management;
- Building Materials;
- Transport; and
- Urban Ecology.

The site has been assessed using the BESS tool. BESS was developed by association of councils led by Merri-bek City Council. This tool assesses the energy and water efficiency, thermal comfort and overall environmental sustainability performance of new buildings or alterations. It was created to demonstrate how new development can meet sustainability requirements as part of a planning permit application for the participating council.

Each target area within the BESS tool generally receives a score of between 1% and 100%. A minimum score of 50% is required for the energy, water, stormwater and IEQ areas. An overall score of 50% represents 'Best Practice' while a score over 70% represent 'Excellence'. The result of the BESS assessment is included as Appendix D.

The Stormwater Treatment Objective – Relative Measure (STORM) calculator, which addresses stormwater quality considerations, has been used for the development to ensure that stormwater management best practice requirements have been achieved. The result of the STORM assessment is included as Appendix A.





SITE DESCRIPTION

The proposed site is located at 1 Baynes Road, Monbulk. The 1,559m² site is currently occupied by a single-story building which is proposed to be demolished prior to the construction of the development. It is located within an established residential area approximately 51 kms east of the Melbourne CBD.

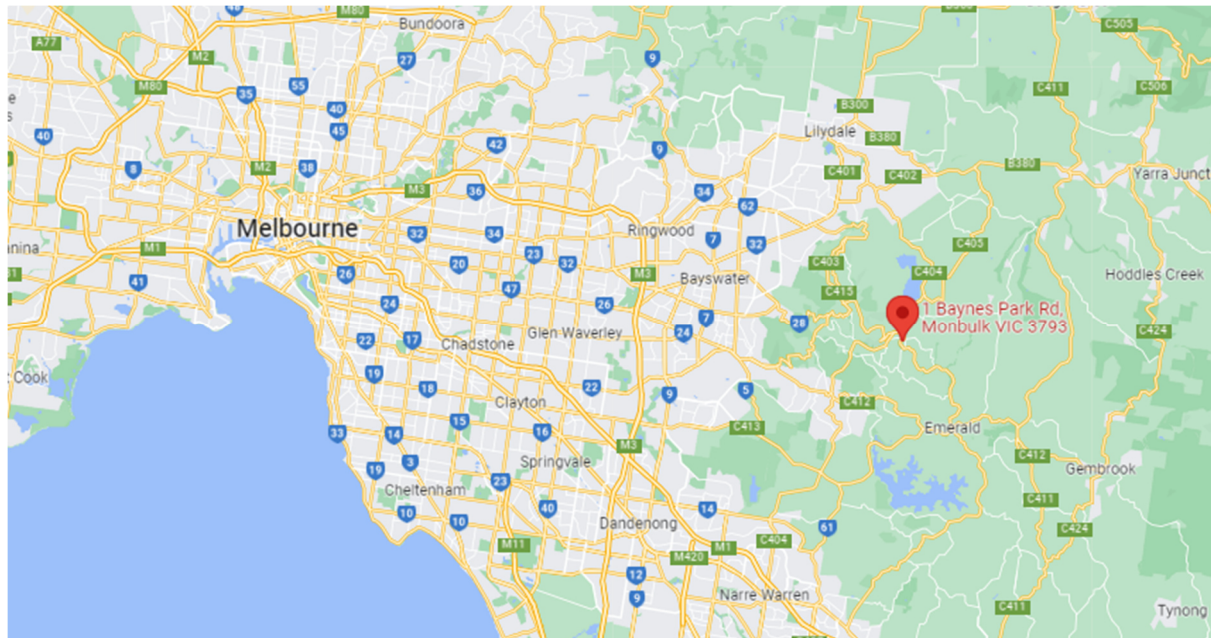


Figure 1: Location of the proposed childcare in Monbulk with relation to Melbourne CBD (Source: Google Maps)

PROPOSED DEVELOPMENT

The proposal consists of development of the site into a two-storey childcare facility to accommodate up to 88 children. The area of the site is approximately 1,559m². The facility will include five children in-door activity rooms, a laundry, staff room, kitchen, offices as well as large outdoor play areas on ground and first floor.





ENERGY EFFICIENCY

Energy and its key elements should be integrated into the design of the proposed development. These elements contribute to reducing greenhouse gas emissions by utilising energy efficient appliances, energy conservation measures and renewable energy.

Energy Efficiency

During the building construction stage of the project, energy modelling will occur with the aim of exceeding requirement of NCC 2019, using a NCC JV3 modelling process. This will be achieved through the use of high-performance building fabric and glazing, low energy lighting and building services.

Please note a preliminary JV3 assessment cannot be provided as the required information to prepare it (sections, elevations, RCPs, etc.) are not available. This requirement should be conditioned in the planning permit 'prior to construction'. As soon as working drawings are available and before commencement of construction, a JV3 modelling report will be prepared showing exceeding NCC 2019 compliance requirements. Solar panel and other commitments in this report will help achieving this commitment.

The total energy consumption input in the BESS assessment is based on similar building type and size.

Heating and Cooling Systems

To reduce the energy consumption heating and cooling will be provided by energy efficient air conditioners (chosen within one star of the best available product in the range at the time of purchase or COP/EER 85% or better than most efficient equivalent capacity unit available if no star rating is available).

Hot Water Heating

Hot water will be provided with gas system chosen within one star of the best available or 85% or better than most efficient equivalent capacity unit available if no star rating is available.

Lighting

The maximum illumination power density (W/m^2) of the development will meet NCC 2019 requirements in by the use of LED throughout the development.

Common, external, service areas lighting will be controlled using occupancy sensor and/or daylight sensors. Ventilation in these areas will be controlled using timers and other sensors.



Energy Efficient Appliances

All appliances provided in the development as part of the base building will be chosen within one energy efficiency star of the best available.

Variable Speed Drives

Variable speed drives will be installed on all major pumps and fans.

Solar PV System

A 5kW solar photovoltaic systems for renewable energy generation will be installed on the roof of the childcare. This will off-set a portion of greenhouse gas emissions and energy use for the project (lighting, pumps etc.).

WATER EFFICIENCY & STORMWATER MANAGEMENT

Water saving-use and reuse and its key elements should be integrated into the design of the proposed development. These principles contribute to reducing the water demand in addition to promoting water reuse. Stormwater management and its key elements should be integrated into the design of the proposed development. These principles contribute to ensuring natural systems are protected and enhanced whilst promoting on-site retention and aims to reduce runoff or peak flows.

Water Efficient Fittings

The development will include efficient fittings and fixtures to reduce the volume of mains water used in the development. The following WELS star ratings will be specified;

- Toilets – 4 Star;
- Taps (bathroom and kitchen) – 5 Star; and
- Showerhead if provided – 4 Star with aeration device (6.0-7.5L/min)

Rainwater Collection & Use

Rainwater runoff from the entire roof areas (540.4m²) will be collected and stored in rainwater tanks¹ with a total effective capacity of 17,000L for the development.

If required, a charged pipe system or multiple tanks will be installed to collect water from the entire roof of child care.

In the case of a charged pipe system, the charged pipes will not be running underneath the building footprint (slab) and the stakeholders (builder/developer/architect) will be required to explicitly acknowledge this solution and have the capacity to install it.

¹ Please note that any stormwater detention volume requirement for the site will be in addition to the proposed rainwater retention and that the proposed tank will not be directly topped up by mains water.



Rainwater collected will be used for toilet flushing throughout the development. These initiatives will reduce significantly the stormwater impacts of the development and help achieve compliance with the STORM calculator (See Appendix A).

Water Efficient Appliances

All appliances provided in the development as part of the base building will be chosen within one WELS star of the best available.

Water Efficient Landscaping

Native or drought-tolerant plants will be implemented for the landscaped areas on site. Use of water or irrigation will not be required after an initial period when plants are getting established.

INDOOR ENVIRONMENT QUALITY

Indoor Environment Quality and its key elements should be integrated into the design of the proposed development. These elements play a significant role in the health, wellbeing and satisfaction of the development occupants. Facilitating a good (IEQ) design provides a naturally comfortable indoor environment and less dependence on building services such as, artificial lighting, mechanical ventilation and heating and cooling device.

Volatile Organic Compounds

All paints, adhesives and sealants and flooring will have low VOC content. Alternatively, products will be selected with no VOCs. Paints such as eColour, or equivalent should be considered. Please refer to Appendix C for VOC limits.

Formaldehyde Minimisation

All engineered wood products will have 'low' formaldehyde emissions, certified as E0 or better. Alternatively, products will be specified with no Formaldehyde. Products such as ecological panel – 100% post-consumer recycled wood (or similar) will be considered for use within the development. Please refer to Appendix C for formaldehyde limits.

Daylight Levels

Daylight penetration will be enhanced with the use of light internal colours to improve daylight reflection. All children room will be provided with large windows (2.4m head height). The depth of most child room from a window will be limited to 9m and multiple windows on different façade will be implemented wherever possible which will allow for large amount of daylight to penetrate the rooms.

Internal windows will also be provided between rooms and between the room and the internal corridor within the development improving further the daylight spreading within the development.

Please refer to Appendix B for the daylight access hand calculation showing daylight best practice requirements is achieved by the development.

Mechanical Ventilation – Improved Outside Air Rates

Activity rooms will be provided with O/A fans which will commit to provide 50% increase on O/A provision from AS1668.

Alternatively, O/A will be provided in each activity room to ensure that CO2 concentration in the rooms remains below 800ppm.

Ceiling Fans

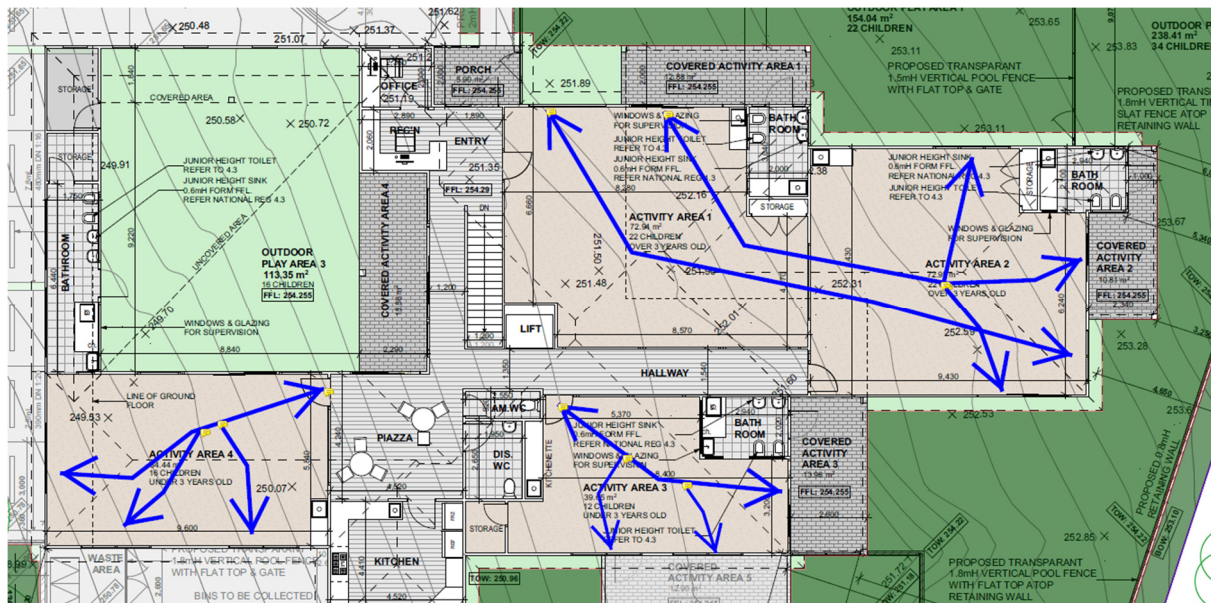
Ceiling fans to be installed in each children’s activity rooms to provide comfort and reduce energy needed for heating and cooling.

Ventilation – Breeze Paths

Wherever possible, the design should allow for cross flow ventilation as it will reduce the need for mechanical ventilation. Operable windows will be specified throughout the children rooms to enable natural ventilation. Every children room will have doors with direct access to outdoor play areas.

81% of children activity rooms will have access to cross-flow ventilation in addition to the proposed mechanical ventilation through the use of adjacent operable windows or windows on multiple façade which allows for fresh air and breezes to flow through.

The diagram below illustrates potential breezeways for fresh air natural ventilation between activity area 1 and 2 as well as in activity room 3 and 4.



Acoustic Insulation



Each unit will be designed to meet the NCC requirement for acoustic insulation to minimise noise levels and noise transfer within and between buildings.

CONSTRUCTION, BUILDING & WASTE MANAGEMENT

Building Management and its key elements will be integrated into the design of the proposed development. These principles contribute to ensuring efficient and effective on-going building performance. Waste management and its key elements will be integrated into the design of the proposed development. These principles contribute to ensuring minimal waste is transported to landfill by means of disposal, recycling and on-site waste storage and/or collection methods.

Metering and Monitoring

The childcare will be separately metered for potable water and energy. Effective metering ensures that tenants are responsible for their consumption, and they can reduce their consumption.

Construction Waste Management

A waste management plan will be introduced to all on-site staff at a site orientation session to ensure that the waste generated on site is minimised and disposed of correctly. A minimum 80% of all construction waste generated on site will be reused or recycled.

Construction Environmental Management

The builder will identify environmental risks related to construction and include management strategies such as maintaining effective erosion and sediment control measures during construction and operation and ensure that appropriate staging of earthworks (e.g. avoid bare earthworks in high risk areas of the site during dominant rainfall period).

Operational Waste

A dedicated storage area will be provided in the car park on ground floor. The storage area will be sufficiently sized to accommodate the general and recycling waste. Recycling facilities will be as conveniently accessible as the general waste facilities.

Universal Access

The development will be designed for universal access in accordance with AS1428.2 to allow persons with limited mobility to enter and use the premises.



TRANSPORT

Bicycle Parking & End-Of-Trip Facilities

Employees and visitors will be able to store their bicycle within the dedicated bicycle storage areas. Two bicycle spaces will be provided for staff, and additional one space for visitors.

BUILDING MATERIALS

Materials selection should be integrated into the design of the proposed development. The criteria for appropriate materials used are based on economic and environmental cost.

Timber

All timber used in the development will be Forest Stewardship Council (FSC) or Program for the Endorsement of Forest Certification (PEFC) certified, or recycled / reused.

Flooring

Wherever possible, flooring will be selected from products/materials certified under any of the following:

- Carpet Institute of Australia Limited, Environmental Certification Scheme (ECS) v1.2;
- Ecospecifier GreenTag GreenRate V3.2; and/or
- Good Environmental Choice (GECA).

Joinery

Where possible, joinery will be manufactured from materials/products certified under any of the following:

- Ecospecifier GreenTag GreenRate V3.1;
- Good Environmental Choice (GECA); and/or
- The Institute for Market Transformation to Sustainability (MTS) Sustainable Materials Rating Technology standard Version 4.0 – SmarT 4.0.

The use of Ecological Panel (or equivalent) will be investigated, which is created from 100% post-consumer recycled products.

PVC

All PVC products for cables, pipes and flooring will meet the Best Practice Manufacturing Guidelines – The manufacturer's facility will be certified ISO14001.



Steel

Wherever possible, steel for the development will be sourced from a Responsible Steel Maker². Reinforcing steel for the project will be manufactured using energy reducing processes commonly used by large manufacturers such as Bluescope or OneSteel.



URBAN ECOLOGY

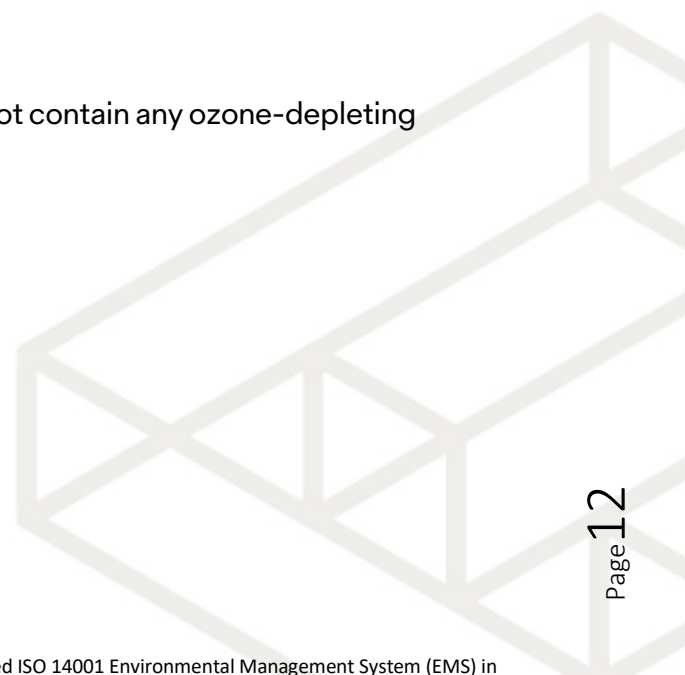
In highly urbanised environments, such as metropolitan Melbourne, it is important to recognise the importance of maintaining and increasing the health of our urban ecosystems to improve living conditions not only for the fauna but also ourselves. We can improve our urban ecosystem through the incorporation of vegetation through landscaping for both new and existing developments.

Landscaping

The landscaping onsite will provide the occupants with a pleasant surrounding environment. The design will incorporate a mix of native species to help maintain local biodiversity.

Insulant ODP

All thermal insulation used in the development will not contain any ozone-depleting substances and will not use any in its manufacturing.



² A Responsible Steel Maker must have facilities with a currently valid and certified ISO 14001 Environmental Management System (EMS) in place, and be a member of the World Steel Association's (WSA) Climate Action Program (CAP).

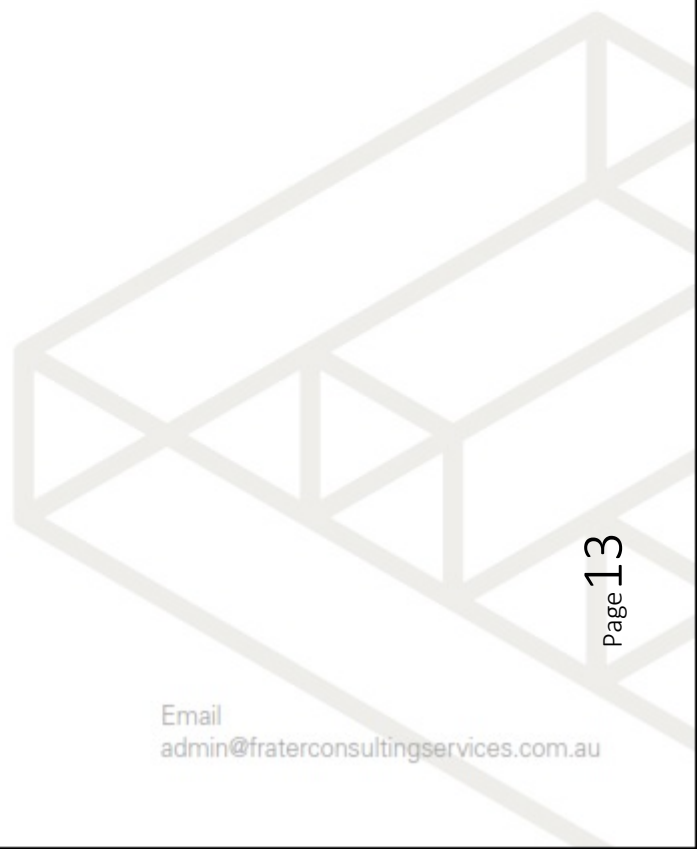


IMPLEMENTATION & MONITORING

The proposed Baynes Road development will meet the best practice requirement of Yarra Ranges Shire through the different initiatives describe in this SMP such as thermally efficient building envelope, efficient air conditioning and hot water system and sustainable materials. An appropriate implementation and monitoring of the initiatives outlined within this SMP will be required.

Implementation of the ESD initiatives outlined in this report requires the following processes:

- Full integration with architectural plans and specifications
- Full integration with building services design drawings and specifications
- Endorsement of the ESD Report with town planning drawings
- ESD initiatives to be included in plans and specifications for building approval





APPENDIX A – WSUD REPORT / STORM ASSESSMENT

New development must comply with the best practice performance targets for suspended solids, total phosphorous and total nitrogen, as set out in the Urban Stormwater Best Practice Environmental Management Guidelines, Victoria Stormwater Committee 1999. Currently, these water quality performance targets require:

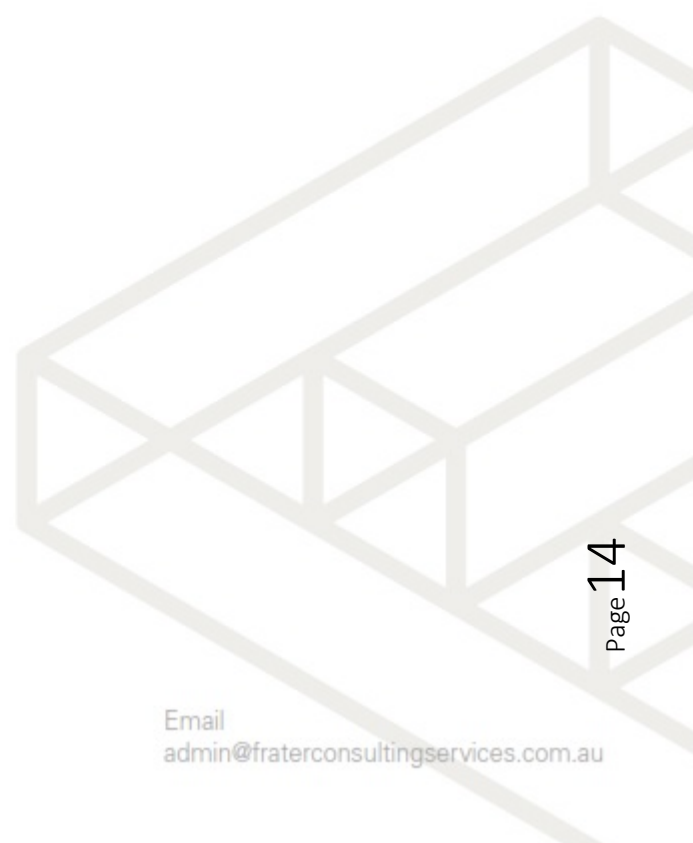
- Suspended Solids - 80% retention of typical urban annual load.
- Total Nitrogen - 45% retention of typical urban annual load.
- Total Phosphorus - 45% retention of typical urban annual load.
- Litter - 70% reduction of typical urban annual load.

The STORM tool, an industry accepted tool, was used to assess the development and ensure that the best practice targets described above are met. A minimum compliance score of 100% is required to achieve for the development.

Site Delineation

For the purpose of the assessment, the development has been delineated into the following surface types:

- Site area of 1,559m²;
- Roof area runoff of 540.4m² which will be diverted into rainwater tank(s);
- Permeable area of 717.1m² comprised of landscaped area, kids outdoor play areas and other pervious areas around the site;
- Remainder of impervious areas of 301.5m² comprised of the untreated driveways and other impervious areas around the site.



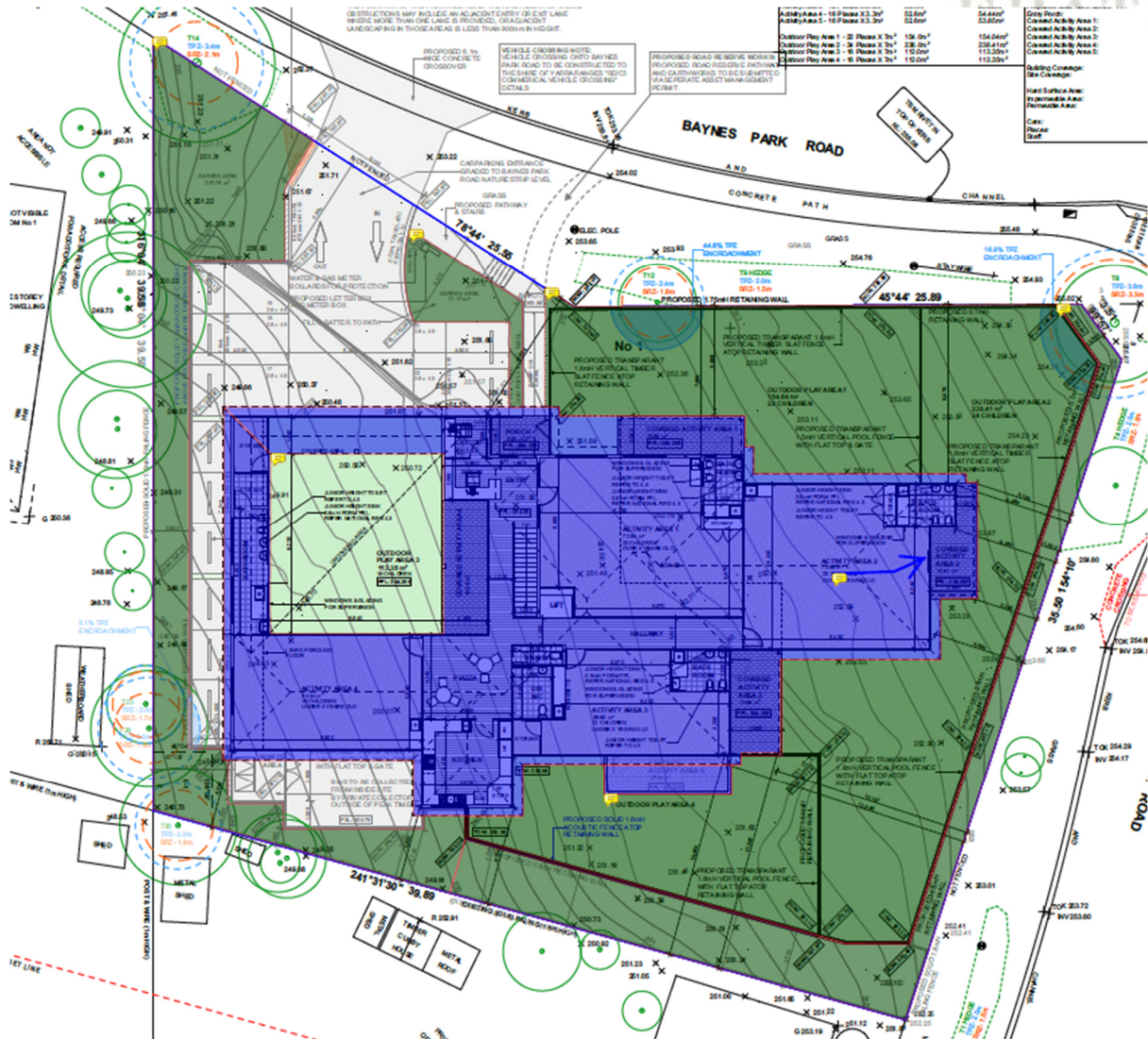


Figure 2: Driveway to be permeable (orange.) landscape areas and permeable outdoor play areas (dark green). Roof catchment (blue).

Stormwater initiatives

Rainwater Tank *(17,000L Rainwater tank for toilet flushing)*

The roof catchment area of 540.4m² (as described above) will be diverted to rainwater tank(s) with a total effective capacity of 17,000L for the development. The rainwater collected will be used for toilet flushing in the development.

If required, a charged pipe system or multiple tanks will be installed to collect water from part of the roof of each development.

In the case of a charged pipe system, the charged pipes will not be running underneath the slab and the stakeholders (builder/developer/architect) will be required to explicitly acknowledge this solution and have the capacity to install it.



The remainder of impervious areas will directly be released at the legal point of discharge on site.

Permeable areas are excluded from the STORM assessment.

Stormwater Results

The initiatives and areas described above have been applied to the STORM calculator and the proposed development has achieved a score of 100%.



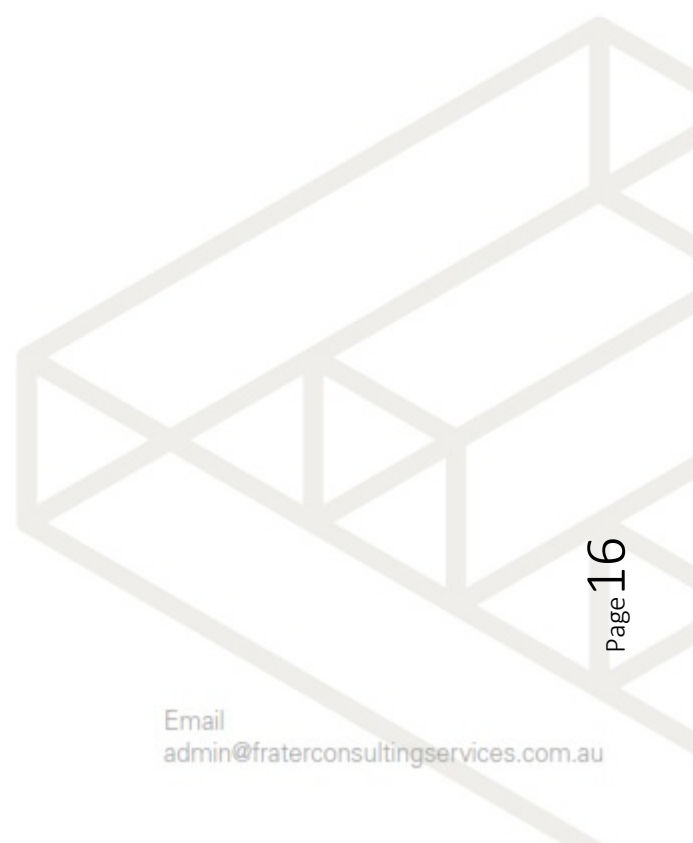
STORM Rating Report

TransactionID: 1483358
Municipality: YARRA RANGES
Rainfall Station: YARRA RANGES
Address: 1 Baynes Road

Monbulk
VIC 3793
Assessor: Frater Consulting Services
Development Type: Commercial/Retail
Allotment Site (m2): 1,559.00
STORM Rating %: 100

Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
Roof to RWT	540.40	Rainwater Tank	17,000.00	100	155.40	82.00
Remainder of Impervious Areas	301.50	None	0.00	0	0.00	0.00

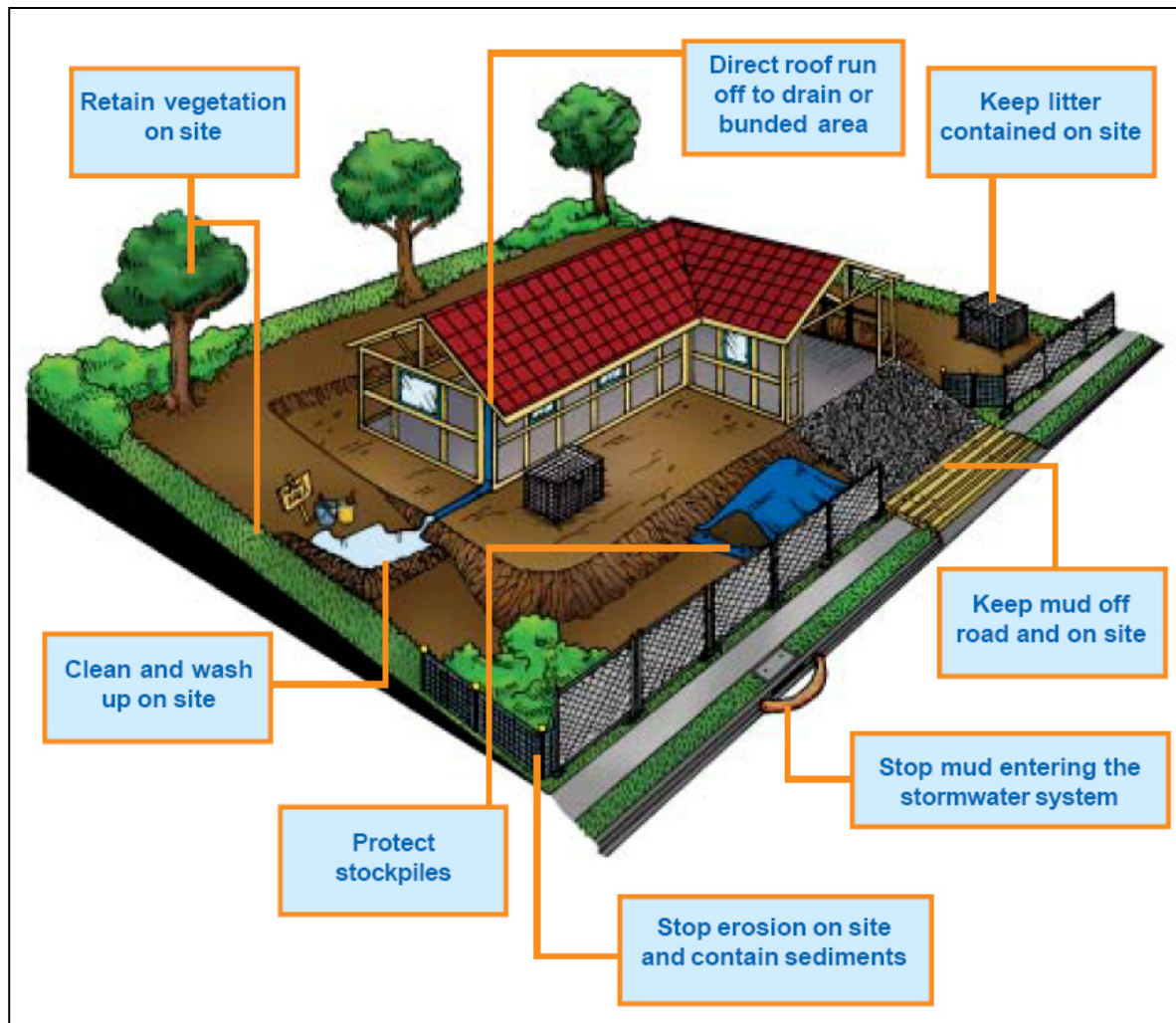
It should be noted that the entire development is connected to the rainwater tank. 100 occupants have been chosen for the childcare occupancy.





Stormwater Management at Construction Site

To manage stormwater management in the construction stage, measures will be put in place to minimise the likelihood of contaminating stormwater. This will mean ensuring buffer strips are in place, sediment traps are installed, and the site will be kept clean from any loose rubbish. The builder will follow the process outlined in “Keeping Our Stormwater Clean – A Builder’s Guide” by Melbourne Water.



Copies of “Keeping Our Stormwater Clean – A Builder’s Guide” booklet can be obtained from Melbourne Water by ringing on 131 722 or can be downloaded from the following website.

<https://www.clearwatervic.com.au/resource-library/guidelines-and-strategy/keeping-our-stormwater-clean-a-builders-guide.php>



APPENDIX B – DAYLIGHT ACCESS – GREEN STAR CALCULATION

The Green Building Council of Australia (GBCA) has created a daylight access calculation method within the Green Star benchmarking tool. This tool is widely recognised by Councils and Industry.

The Green Star Daylight Hand Calculation method is used to determine if there are risks associated with the current design, particularly with respect to meeting the desired daylight factors referenced in the Sustainable Management Plan in the Planning Process (SDAPP) Indoor Environment Quality guidelines.

According to the SDAPP guidelines, best practice is achieved where 2% daylight factor is achieved across 30% of the floor area of the nominated area.

The calculation method is based on one simple formula to calculate a zone of compliance within a nominated room. The compliant zone is the area of the room achieving 2% daylight factor and can be calculated as follows:

$$\text{Zone of Compliance} = 2 \times h \times w$$

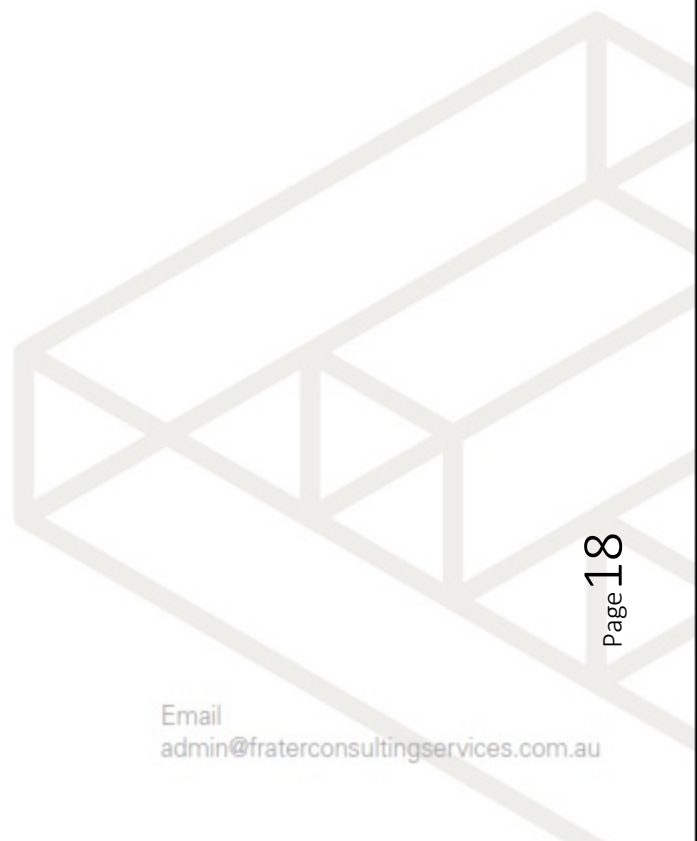
w is the width of the glazing serving the room

h is the height of the window head above the desktop/table level

Windows serving the nominated area are required to have a minimum 40% VLT to use the formula.

The percentage of compliant area within the nominated area can then be easily calculated with the following formula:

$$\text{Percentage of compliant area} = \frac{\text{Zone of Compliance}}{\text{Nominated Area}} \times 100$$





Site Description

The nominated areas for the Hand Calculation are children activity areas (light blue). Storage rooms and kitchen sink areas are considered as secondary space and are excluded from the assessment.

The desktop/table level has been estimated to be 400mm.

See below for the mark-up of the compliant zone (orange) within each nominated area (light blue).

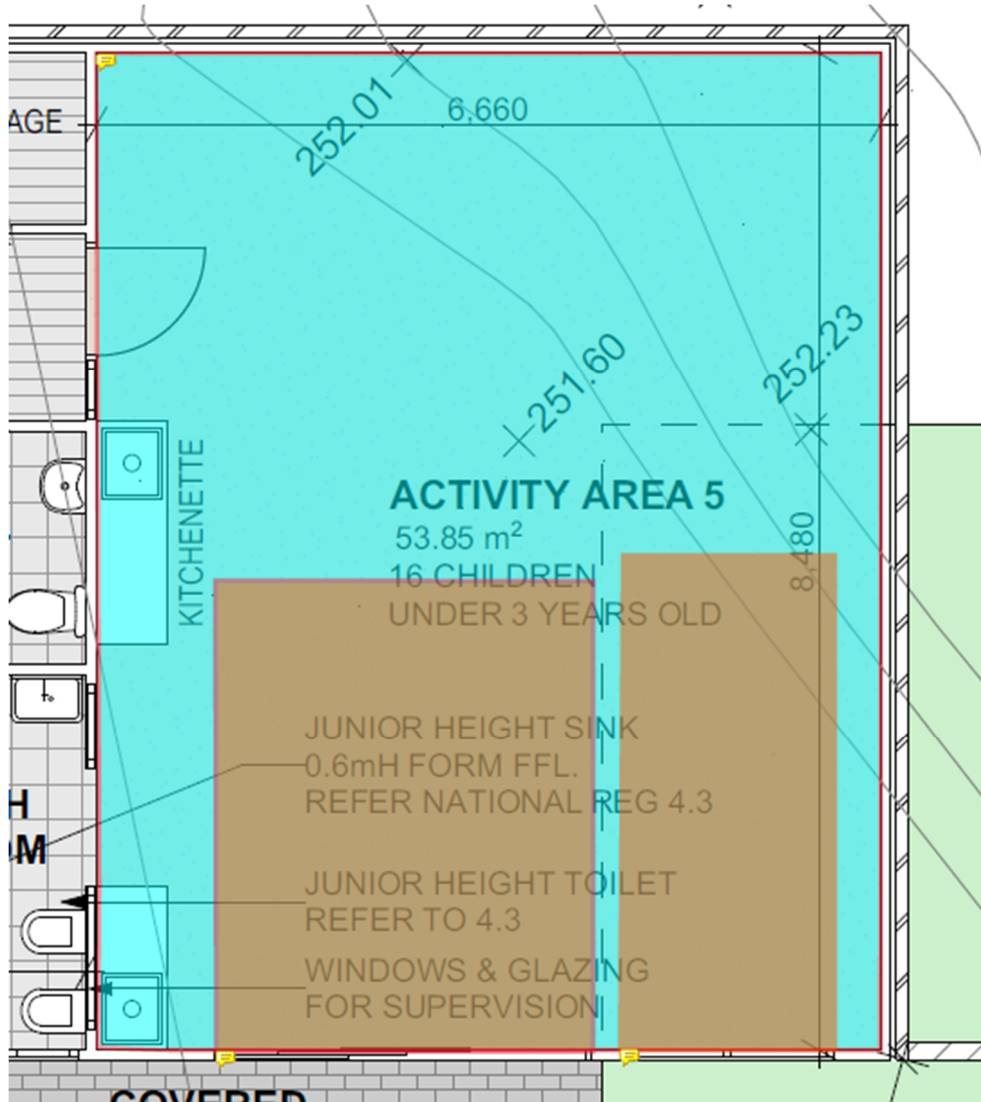


Figure 3: Compliance zone for ground floor activity areas

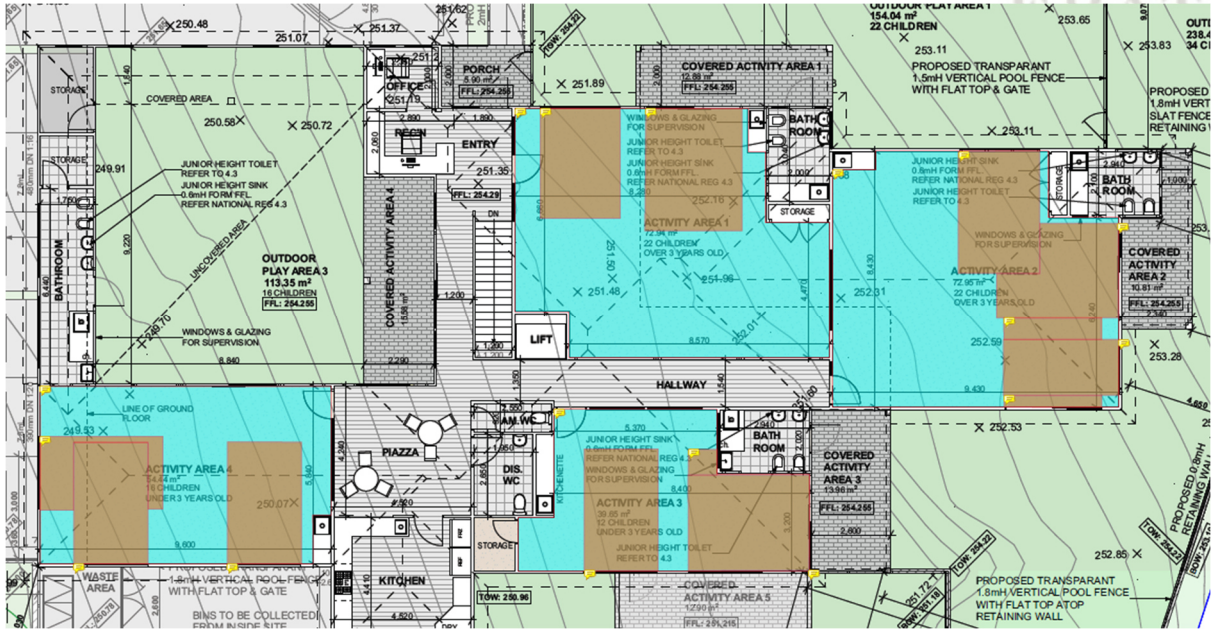


Figure 4: Compliance zone for first floor activity areas.

	Nominated Areas (m ²)	Compliant Areas (m ²)	Compliant Areas (%)
ACTIVITY AREA 1	74	22	
ACTIVITY AREA 2	74	31	
ACTIVITY AREA 3	40	23	
ACTIVITY AREA 4	55	24	
ACTIVITY AREA 5	56	20	
TOTAL	298	120	40%

The green star hand calculation for the proposed office shows that the development will achieve and exceed SDAPP best practice requirement with each office achieving over 40% of floor area at 2% daylight factor.



APPENDIX C – VOC & FORMALDEHYDE EMISSION LIMITS

The following table are an extract of the Green Star Design and as built submission guidelines:

Table 13.1.1: Maximum TVOC Limits for Paints, Adhesives and Sealants

Product Category	Max TVOC content in grams per litre (g/L) of ready to use product.
General purpose adhesives and sealants	50
Interior wall and ceiling paint, all sheen levels	16
Trim, varnishes and wood stains	75
Primers, sealers and prep coats	65
One and two pack performance coatings for floors	140
Acoustic sealants, architectural sealant, waterproofing membranes and sealant, fire retardant sealants and adhesives	250
Structural glazing adhesive, wood flooring and laminate adhesives and sealants	100

The product complies with the Total VOC (TVOC) limits specified in the Table below.

Carpet Test Standards and TVOC Emissions Limits

Test protocol	Limit
ASTM D5116 - Total VOC limit	0.5mg/m ² per hour
ASTM D5116 - 4-PC (4-Phenylcyclohexene)	0.05mg/m ² per hour
ISO 16000 / EN 13419 - TVOC at three days	0.5 mg/m ² per hour
ISO 10580 / ISO/TC 219 (Document N238) - TVOC at 24 hours	0.5mg/m ² per hour



Table 13.2: Formaldehyde Emission Limit Values for Engineered Wood Products

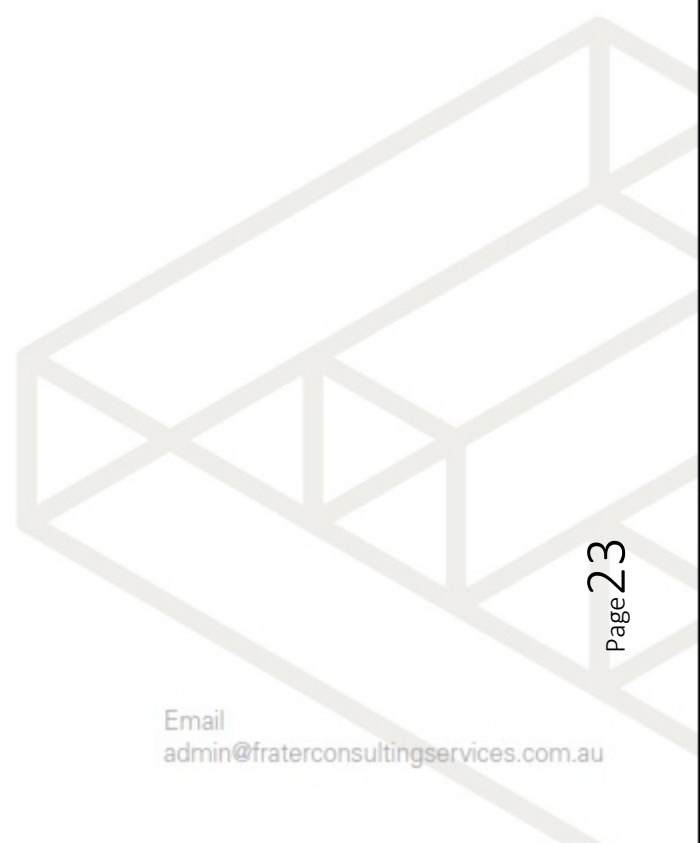
Test Protocol	Emission Limit/ Unit of Measurement
AS/NZS 2269:2004, testing procedure AS/NZS 2098.11:2005 method 10 for Plywood	≤1mg/ L
AS/NZS 1859.1:2004 - Particle Board, with use of testing procedure AS/NZS 4266.16:2004 method 16	≤1.5 mg/L
AS/NZS 1859.2:2004 - MDF, with use of testing procedure AS/NZS 4266.16:2004 method 16	≤1mg/ L
AS/NZS 4357.4 - Laminated Veneer Lumber (LVL)	≤1mg/ L
Japanese Agricultural Standard MAFF Notification No.701 Appendix Clause 3 (11) - LVL	≤1mg/ L
JIS A 5908:2003- Particle Board and Plywood, with use of testing procedure JIS A 1460	≤1mg/ L
JIS A 5905:2003 - MDF, with use of testing procedure JIS A 1460	≤1mg/ L
JIS A1901 (not applicable to Plywood, applicable to high pressure laminates and compact laminates)	≤0.1 mg/m ² hr*
ASTM D5116 (applicable to high pressure laminates and compact laminates)	≤0.1 mg/m ² hr
ISO 16000 part 9, 10 and 11 (also known as EN 13419), applicable to high pressure laminates and compact laminates	≤0.1 mg/m ² hr (at 3 days)
ASTM D6007	≤0.12mg/m ³ **
ASTM E1333	≤0.12mg/m ³ **
EN 717-1 (also known as DIN EN 717-1)	≤0.12mg/m ³
EN 717-2 (also known as DIN EN 717-2)	≤3.5mg/m ² hr

*mg/m²hr may also be represented as mg/m²/hr.



APPENDIX D – BESS ASSESSMENT

FR



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East Brunswick VIC 3057

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BESS Report

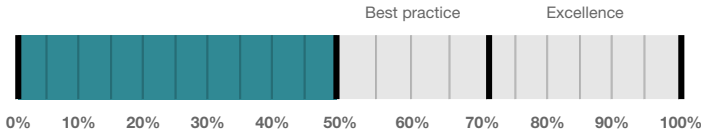
Built Environment Sustainability Scorecard



This BESS report outlines the sustainable design commitments of the proposed development at 1 Baynes Park Rd Monbulk VIC 3793. The BESS report and accompanying documents and evidence are submitted in response to the requirement for a Sustainable Design Assessment or Sustainability Management Plan at Yarra Ranges Shire 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



50%

Project details

Address	1 Baynes Park Rd Monbulk VIC 3793
Project no	2A6724B4-R4
BESS Version	BESS-6
<hr/>	
Site type	Non-residential development
Account	wali@fraterconsultingservices.com.au
Application no.	
Site area	1,559.00 m ²
Building floor area	544.70 m ²
Date	10 November 2022
Software version	1.7.0-B.388



Performance by category ● Your development ● Maximum available

Category	Weight	Score	Pass	Visual
Management	5%	0%	*	[0% teal, 5% gray]
Water	9%	50%	✓	[50% teal, 9% gray]
Energy	28%	55%	✓	[55% teal, 28% gray]
Stormwater	14%	100%	✓	[100% teal, 14% gray]
IEQ	17%	52%	✓	[52% teal, 17% gray]
Transport	9%	42%	*	[42% teal, 9% gray]
Waste	6%	33%	*	[33% teal, 6% gray]
Urban Ecology	6%	57%	*	[57% teal, 6% gray]
Innovation	9%	0%	*	[0% teal, 9% gray]

Buildings

Name	Height	Footprint	% of total footprint
CHILDCARE	2	545 m ²	100%

Dwellings & Non Res Spaces

Non-Res Spaces

Name	Quantity	Area	Building	% of total area
Other building				
CHILDCARE	1	545 m ²	CHILDCARE	100%
Total	1	544 m²	100%	

Supporting information

Floorplans & elevation notes

Credit	Requirement	Response	Status
Water 3.1	Water efficient garden annotated		-
Energy 4.2	Floor plans showing location of photovoltaic panels as described.		-
Stormwater 1.1	Location of any stormwater management systems used in STORM or MUSIC modelling (e.g. Rainwater tanks, raingarden, buffer strips)		-
Transport 1.4	All nominated non-residential bicycle parking spaces		-
Transport 1.5	All nominated non-residential visitor bicycle parking spaces		-
Waste 2.2	Location of recycling facilities		-
Urban Ecology 2.1	Vegetated areas		-

Supporting evidence

Credit	Requirement	Response	Status
Energy 1.1	Energy Report showing calculations of reference case and proposed buildings		-
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	STORM report or MUSIC model		-
IEQ 1.4	A short report detailing assumptions used and results achieved.		-

Credit summary

Management Overall contribution 4.5%

		0%
1.1 Pre-Application Meeting		0%
2.3 Thermal Performance Modelling - Non-Residential		0%
3.2 Metering - Non-Residential		N/A ✦ Scoped Out
ONLY ONE TENANT		
3.3 Metering - Common Areas		0%
4.1 Building Users Guide		0%

Water Overall contribution 9.0%

		Minimum required 50%	50% ✔ Pass
1.1 Potable water use reduction		40%	
3.1 Water Efficient Landscaping		100%	
4.1 Building Systems Water Use Reduction		N/A ✦ Scoped Out	
NO FIRE SPRINKLER			







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		100%	
3.1 Carpark Ventilation		N/A ✦ Scoped Out	
Carpark is not enclosed			
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 ⊘ Disabled	
No other (non-solar PV) renewable energy is in use.			



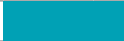
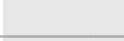
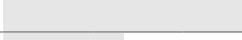


Stormwater Overall contribution 13.5%

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



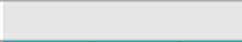

IEQ Overall contribution 16.5%

	Minimum required 50%	52%	✓ Pass
1.4 Daylight Access - Non-Residential		40%	✓ Achieved
2.3 Ventilation - Non-Residential		75%	✓ Achieved
3.4 Thermal comfort - Shading - Non-residential		0%	
3.5 Thermal Comfort - Ceiling Fans - Non-Residential		100%	
4.1 Air Quality - Non-Residential		100%	







Transport Overall contribution 9.0%

	42%		
1.4 Bicycle Parking - Non-Residential		100%	
1.5 Bicycle Parking - Non-Residential Visitor		100%	
1.6 End of Trip Facilities - Non-Residential		0%	
2.1 Electric Vehicle Infrastructure		0%	
2.2 Car Share Scheme		N/A	✦ Scoped Out
			NO CAR SHARING SCHEME
2.3 Motorbikes / Mopeds		0%	

Waste Overall contribution 5.5%

	33%		
1.1 - Construction Waste - Building Re-Use		0%	
2.1 - Operational Waste - Food & Garden Waste		0%	
2.2 - Operational Waste - Convenience of Recycling		100%	

Urban Ecology Overall contribution 5.5%

	57%		
1.1 Communal Spaces		N/A	✦ Scoped Out
			NOT APPLICABLE FOR CHILDCARE
2.1 Vegetation		100%	
2.2 Green Roofs		0%	
2.3 Green Walls and Facades		0%	
3.2 Food Production - Non-Residential		0%	

Innovation Overall contribution 9.0%

		0%
1.1 Innovation		0%


Credit breakdown

Management Overall contribution 0%

1.1 Pre-Application Meeting		0%
Score Contribution	This credit contributes 42.9% 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		0%
Score Contribution	This credit contributes 28.6% towards the category score.	
Criteria	Has a preliminary facade assessment been undertaken in accordance with NCC2019 Section J1.5?	
Question	Criteria Achieved ?	
Other building	No	
Criteria	Has preliminary modelling been undertaken in accordance with either NCC2019 Section J (Energy Efficiency), NABERS or Green Star?	
Question	Criteria Achieved ?	
Other building	No	
3.2 Metering - Non-Residential		N/A Scoped Out
This credit was scoped out	ONLY ONE TENANT	
3.3 Metering - Common Areas		0%
Score Contribution	This credit contributes 14.3% towards the category score.	
Criteria	Have all major common area services been separately submetered?	
Question	Criteria Achieved ?	
Other building	No	
4.1 Building Users Guide		0%
Score Contribution	This credit contributes 14.3% towards the category score.	
Criteria	Will a building users guide be produced and issued to occupants?	
Question	Criteria Achieved ?	
Project	No	


Water Overall contribution 4% 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:	CHILDCARE
Showerhead:	4 Star WELS (≥ 6.0 but ≤ 7.5)
Bath:	Scope out
Kitchen Taps:	≥ 5 Star WELS rating
Bathroom Taps:	≥ 5 Star WELS rating
Dishwashers:	Default or unrated
WC:	≥ 4 Star WELS rating
Urinals:	Scope out
Washing Machine Water Efficiency:	Occupant to Install
Which non-potable water source is the dwelling/space connected to?:	RWT
Non-potable water source connected to Toilets:	Yes
Non-potable water source connected to Laundry (washing machine):	No
Non-potable water source connected to Hot Water System:	No
Rainwater Tank	
What is the total roof area connected to the rainwater tank?: RWT	540 m ²
Tank Size: RWT	17,000 Litres
Irrigation area connected to tank: RWT	-
Is connected irrigation area a water efficient garden?: RWT	Yes
Other external water demand connected to tank?: RWT	-

1.1 Potable water use reduction		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	1325 kL	
Output	Proposed (excluding rainwater and recycled water use)	
Project	1111 kL	
Output	Proposed (including rainwater and recycled water use)	
Project	947 kL	
Output	% Reduction in Potable Water Consumption	
Project	28 %	
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	567 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	
4.1 Building Systems Water Use Reduction		N/A  Scoped Out
This credit was scoped out	NO FIRE SPRINKLER	

Energy Overall contribution 15% Minimum required 50%

Use the BESS Deem to Satisfy (DtS) method for Energy?:	No
Are you installing a cogeneration or trigeneration system?:	No
Non-Residential Building Energy Profile	
Heating, Cooling & Comfort Ventilation - Electricity - reference fabric and reference services:	50,000 kWh
Heating, Cooling & Comfort Ventilation - Electricity - proposed fabric and reference services:	50,000 kWh
Heating, Cooling & Comfort Ventilation - Electricity - proposed fabric and proposed services:	50,000 kWh
Heating - Gas - reference fabric and reference services:	0.0 MJ
Heating - Gas - proposed fabric and reference services:	0.0 MJ
Heating - Gas - proposed fabric and proposed services:	0.0 MJ
Heating - Wood - reference fabric and reference services:	-
Heating - Wood - proposed fabric and reference services:	-
Heating - Wood - proposed fabric and proposed services:	-
Hot Water - Electricity - Baseline:	0.0 kWh
Hot Water - Electricity - Proposed:	0.0 kWh
Hot Water - Gas - Baseline:	1,000 MJ
Hot Water - Gas - Proposed:	899 MJ
Lighting - Baseline:	5,000 kWh
Lighting - Proposed:	5,000 kWh
Peak Thermal Cooling Load - Baseline:	-
Peak Thermal Cooling Load - Proposed:	-
Solar Photovoltaic system	
System Size (lesser of inverter and panel capacity): SPV	5.0 kW peak
Orientation (which way is the system facing)?: SPV	North
Inclination (angle from horizontal): SPV	10.0 Angle (degrees)
1.1 Thermal Performance Rating - Non-Residential	12%
Score Contribution	This credit contributes 40.0% towards the category score.
Criteria	What is the % reduction in heating and cooling energy consumption against the reference case (NCC 2019 Section J)?
2.1 Greenhouse Gas Emissions	100%
Score Contribution	This credit contributes 10.0% 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)
Other building	51,051 kg CO2
Output	Proposed Building with Proposed Services (Actual Building)
Other building	51,046 kg CO2
Output	% Reduction in GHG Emissions
Other building	0 %

2.2 Peak Demand	0%
Score Contribution	This credit contributes 5.0% towards the category score.
Criteria	What is the % reduction in the instantaneous (peak-hour) demand against the benchmark?
2.3 Electricity Consumption	100%
Score Contribution	This credit contributes 10.0% towards the category score.
Criteria	What is the % reduction in annual electricity consumption against the benchmark?
Output	Reference
Other building	50,000 kWh
Output	Proposed
Other building	50,000 kWh
Output	Improvement
Other building	0 %
2.4 Gas Consumption	100%
Score Contribution	This credit contributes 10.0% towards the category score.
Criteria	What is the % reduction in annual gas consumption against the benchmark?
Output	Reference
Other building	1,000 MJ
Output	Proposed
Other building	899 MJ
Output	Improvement
Other building	10 %
3.1 Carpark Ventilation	N/A  Scoped Out
This credit was scoped out	Carpark is not enclosed
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
Other building	278 kWh
Output	Proposed
Other building	250 kWh
Output	Improvement
Other building	10 %
3.7 Internal Lighting - Non-Residential	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 ?
Other building	Yes

4.1 Combined Heat and Power (cogeneration / trigeneration)	N/A	✚ Scoped Out
This credit was scoped out	No cogeneration or trigeneration system in use.	
4.2 Renewable Energy Systems - Solar	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	
Other building	6,059 kWh	
Output	% of Building's Energy	
Other building	10 %	
4.4 Renewable Energy Systems - Other	N/A	⊘ Disabled
This credit is disabled	No other (non-solar PV) renewable energy is in use.	

Stormwater Overall contribution 14% Minimum required 100%


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

IEQ Overall contribution 9% Minimum required 50%

1.4 Daylight Access - Non-Residential		40%	✓ 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	Daylight penetration will be enhanced with the use of light internal colours to improve daylight reflection. All children room will be provided with large windows. The depth the children's room from a window will be limited which will allow for large amount of daylight to penetrate the rooms. More than one window per children room will be provided wherever possible which will improve further the daylight spreading within the development. Daylight diffusion will be good within the child room and typical best practice will be achieved (in line with SDAPP guidelines). Daylight modelling has been prepared and showed average 40% of floor area to achieve compliance which is beyond best practice (Please refer to the Daylight Modelling report included in the SDA report). Other IEQ initiatives have been included for the facility which are not taken into account in the BESS assessment (e.g. Low VOC paint and coating, low-e glazing)		
Question	Percentage Achieved?		
Other building	40 %		
2.3 Ventilation - Non-Residential		75%	✓ 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?		
Other building	81 %		
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?		
Other building	50 %		
Criteria	What CO2 concentrations are the ventilation systems designed to achieve, to monitor and to maintain?		
Question	Value		
Other building	-		
3.4 Thermal comfort - Shading - Non-residential		0%	
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?		
Other building	0 %		

3.5 Thermal Comfort - Ceiling Fans - Non-Residential		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?	
Other building	100 %	
4.1 Air Quality - Non-Residential		100%
Score Contribution	This credit contributes 5.9% towards the category score.	
Criteria	Do all paints, sealants and adhesives meet the maximum total indoor pollutant emission limits?	
Question	Criteria Achieved ?	
Project	Yes	
Criteria	Does all carpet meet the maximum total indoor pollutant emission limits?	
Question	Criteria Achieved ?	
Project	Yes	
Criteria	Does all engineered wood meet the maximum total indoor pollutant emission limits?	
Question	Criteria Achieved ?	
Project	Yes	

Transport Overall contribution 4%

1.4 Bicycle Parking - Non-Residential		100%
Score Contribution	This credit contributes 28.6% 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 ?	
Other building	Yes	
Question	Bicycle Spaces Provided ?	
Other building	2	
1.5 Bicycle Parking - Non-Residential Visitor		100%
Score Contribution	This credit contributes 14.3% 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 ?	
Other building	Yes	
Question	Bicycle Spaces Provided ?	
Other building	1	
1.6 End of Trip Facilities - Non-Residential		0%
Score Contribution	This credit contributes 14.3% 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 ?	
Other building	-	
Question	Number of lockers provided ?	
Other building	-	
Output	Min Showers Required	
Other building	1	
Output	Min Lockers Required	
Other building	2	
2.1 Electric Vehicle Infrastructure		0%
Score Contribution	This credit contributes 28.6% towards the category score.	
Criteria	Are facilities provided for the charging of electric vehicles?	
Question	Criteria Achieved ?	
Project	No	
2.2 Car Share Scheme		N/A  Scoped Out
This credit was scoped out		NO CAR SHARING SCHEME

2.3 Motorbikes / Mopeds	0%
Score Contribution	This credit contributes 14.3% towards the category score.
Criteria	Are a minimum of 5% of vehicle parking spaces designed and labelled for motorbikes (must be at least 5 motorbike spaces)?
Question	Criteria Achieved ?
Project	No

Waste Overall contribution 2%

1.1 - Construction Waste - Building Re-Use	0%
Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	If the development is on a site that has been previously developed, has at least 30% of the existing building been re-used?
Question	Criteria Achieved ?
Project	No

2.1 - Operational Waste - Food & Garden Waste	0%
Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	Are facilities provided for on-site management of food and garden waste?
Question	Criteria Achieved ?
Project	No

2.2 - Operational Waste - Convenience of Recycling	100%
Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	Are the recycling facilities at least as convenient for occupants as facilities for general waste?
Question	Criteria Achieved ?
Project	Yes

Urban Ecology Overall contribution 3%

1.1 Communal Spaces	N/A	✦ Scoped Out
This credit was scoped out	NOT APPLICABLE FOR CHILDCARE	
2.1 Vegetation	100%	
Score Contribution	This credit contributes 57.1% towards the category score.	
Criteria	How much of the site is covered with vegetation, expressed as a percentage of the total site area?	
Annotation	AT LEAST 30% OF TOTAL SITE ARE IS COVERED BY VEGETATION	
Question	Percentage Achieved ?	
Project	30 %	
2.2 Green Roofs	0%	
Score Contribution	This credit contributes 14.3% 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 14.3% 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-Residential	0%	
Score Contribution	This credit contributes 14.3% towards the category score.	
Criteria	What area of space per occupant is dedicated to food production?	
Question	Food Production Area	
Other building	-	
Output	Min Food Production Area	
Other building	7 m ²	

Innovation Overall contribution 0%

1.1 Innovation	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)?	

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