

Attachment 5 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A ESD Report

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142-144 Coppin Street, Richmond  
Sustainability Management Plan



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**Proposed Mixed Use Development  
142-144 Coppin Street, Richmond**

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Sustainability Management Plan

February 2020

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S3801 SMP.V3

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Revision	Date of Issue	Description	Author	Approved
V1	30-05-2019	Final for Council Submission	NC	BdW
V2	31-07-2019	Final for Council Submission - updated energy ratings and daylight modelling information	NC	BdW
V3	12-02-2020	Final for Council Submission – updated energy ratings and daylight modelling information	NC	BdW

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**1. Introduction**

This Sustainability Management Plan (SMP) has been prepared to assist the design, construction and operation of the proposed mixed-use development (offices and residential apartments) located at 142-144 Coppin Street, Richmond, to achieve a range of best-practice sustainable development objectives.

Sustainable Development Consultants have assessed the proposed development and provided input to the design team. This SMP captures initiatives necessary to ensure that the development meets the sustainability requirements of the City of Yarra, in particular the ESD requirements as set out in Local Planning Policy Clause 22.17 *Environmentally Sustainable Development*, and Clause 53.18 *Stormwater Management in Urban Development* of the Yarra Planning Scheme.

**1.1 Site and Development Description**

The site is located at 142-144 Coppin Street, Richmond, approximately 3km south-east of the Melbourne CBD. The proposed development consists of four levels comprising eight residential apartments and two offices. The site is located within a well-established inner urban area with convenient access to many services, entertainment options, cultural assets, and the Swan Street major activity centre. There are several train, tram and bus routes within easy walking distance of the site, which will provide good public transport access to other inner suburbs and the Melbourne CBD.

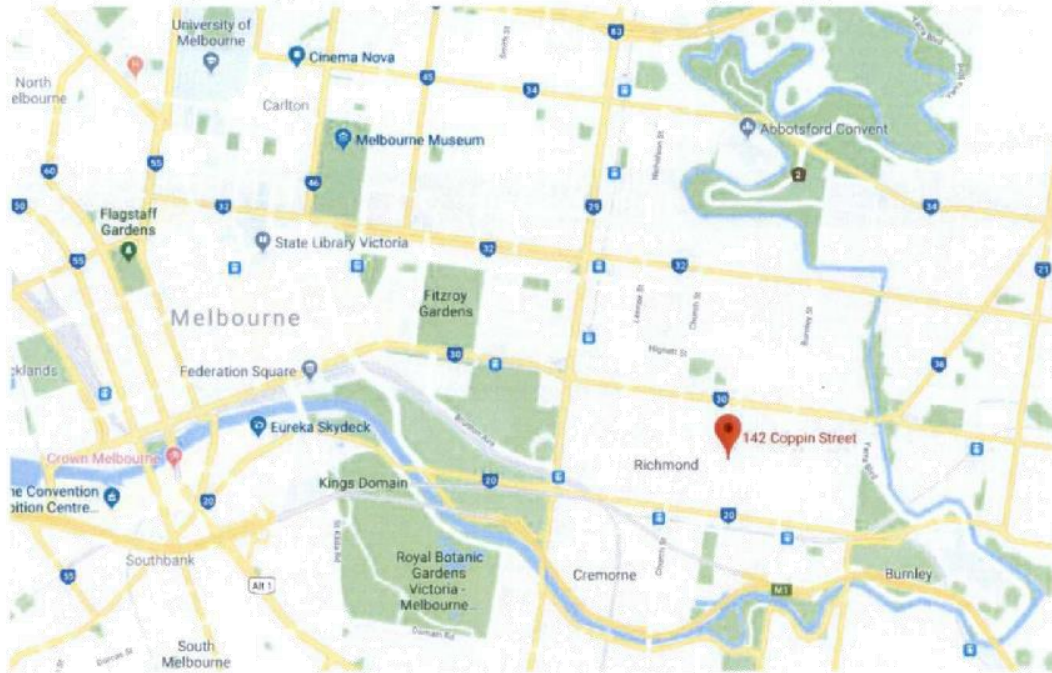


Figure 1: Location of 142-144 Coppin Street, Richmond (Source: Google Maps)

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Figure 2: Aerial view of site (Source: Nearmap marked by SDC)

The Development Summary is as follows:

Area Type	Inclusions
Total Site Area	512m <sup>2</sup>
Ground	Office 1 - 75m <sup>2</sup>
	Office 2 - 70m <sup>2</sup>
	14 x bicycle parking spaces
	4 x tenant car parking spaces
Level 1	Apartment 101 - 60m <sup>2</sup>
	Apartment 102 - 79m <sup>2</sup>
	Apartment 103 - 79m <sup>2</sup>
	Apartment 104 - 60m <sup>2</sup>
Level 2	Apartment 201 - 60m <sup>2</sup>
	Apartment 202 - 57m <sup>2</sup>
	Apartment 301 (lower level) - 125m <sup>2</sup>
Level 3	Apartment 301 (upper level) - 122m <sup>2</sup>

This SMP is based on town planning drawings by CBG Architects, Ref No. 1726, Revision B, dated 10.12.19.

### 1.2 City of Yarra Requirements

The City of Yarra requires proposed developments to include a Sustainability Management Plan (SMP) as part of the town planning application. The SMP will need to establish how the proposed development will address the objectives of Clause 22.17 *Environmentally Sustainable Development* and achieve best-practice standards from

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the building design stage through to construction and operation. This SMP also addresses Building Materials, Building Management, and Innovation considerations and incorporates initiatives to demonstrate improved stormwater management relative to objectives outlined in Clause 53.18 *Stormwater Management in Urban Development* of the Yarra Planning Scheme.

As per the *Environmentally Sustainable Development Local Planning Policy*, the City of Yarra has identified the following key elements to be addressed as part of Clause 22.17:

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

Key Council Nominated Objectives from the Environmentally Sustainable Development Policy Clause 22.17 are as follows:

<b>Energy performance:</b>	<ul style="list-style-type: none"> <li>• Improve the efficient use of energy, by ensuring development demonstrates design potential for ESD initiatives at the planning state;</li> <li>• Reduce total operating greenhouse gas emissions; and</li> <li>• Reduce energy peak demand through particular design measures (e.g. appropriate building orientation, shading to glazed surfaces, optimise glazing to exposed surfaces, space allocation for solar panels and external heating and cooling systems).</li> </ul>
<b>Water efficiency and stormwater management:</b>	<ul style="list-style-type: none"> <li>• Improve water efficiency;</li> <li>• Reduce total operating potable water use;</li> <li>• Encourage collection and reuse of stormwater;</li> <li>• Achieve best practice stormwater quality outcomes;</li> <li>• Incorporate water sensitive urban design, including stormwater re-use;</li> <li>• Reduce stormwater run-off impacts; and</li> <li>• Improve water quality.</li> </ul>
<b>IEQ:</b>	<ul style="list-style-type: none"> <li>• Healthy indoor environmental quality for wellbeing of natural occupants;</li> <li>• Achieve thermal comfort levels with minimised need for mechanical heating, ventilation and cooling;</li> <li>• Reduce indoor air pollutants by encouraging use of materials with low toxic chemicals; and</li> <li>• Minimise noise levels and noise transfer within and between buildings.</li> </ul>
<b>Waste Management:</b>	<ul style="list-style-type: none"> <li>• Promote waste avoidance, reuse and recycling during the design, construction and operation stages of development; and</li> <li>• Ensure durability and long-term reusability of building materials.</li> </ul>
<b>Transport:</b>	<ul style="list-style-type: none"> <li>• Ensure that the built environment is designed to promote the use of walking, cycling and public transport and minimise car dependency.</li> </ul>
<b>Urban Ecology</b>	<ul style="list-style-type: none"> <li>• Protect and enhance biodiversity within the municipality;</li> <li>• Provide environmentally sustainable landscapes and natural habitats, and minimise the urban heat island effect;</li> <li>• Encourage the retention of significant trees;</li> <li>• Encourage the planting of indigenous vegetation; and</li> <li>• Encourage the provision of space for productive gardens.</li> </ul>

### 1.3 ESD Assessment Tools

There are a number of calculators and modelling programs available in Victoria to help assess proposed developments against benchmarks set by the Victorian government, city councils and the Building Code of Australia. Different tools are designed to assess different aspects of the development including:

- Built Environment Sustainability Scorecard (BESS) which covers the overall sustainability of the development;
- FirstRate5, which covers the energy efficiency performance of the building fabric; and
- The Stormwater Treatment Objective – Relative Measure (STORM) calculator, which addresses stormwater quality considerations for the development.

All tools have minimum compliance requirements. FirstRate5 and STORM has requirements that are mandatory for Victoria. The BESS tool is typically used to demonstrate that a development meets sustainability benchmark requirements as part of a planning permit application for the participating council.

#### 1.3.1 BUILT ENVIRONMENT SUSTAINABILITY SCORECARD (BESS)

BESS was developed by the Council Alliance for a Sustainability Built Environment (CASBE). 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 that new developments meet sustainability requirements as part of a planning permit application.

A BESS assessment has been conducted for the proposed development. This provides a guide as to the level of sustainability achieved by the proposed development in line with the ESD of the objective.

Each target area within the BESS tool generally receives a score between 1% and 100%. A minimum score of 50% is required for the energy, water, stormwater and IEQ areas. An overall score of 50% for the project represents 'Best Practice' while a score over 70% represents 'Excellence.' Results of the BESS assessment can be found in Appendix 1.

#### 1.3.2 FIRSTRATE5

The energy efficiency of the dwelling's thermal envelope has been assessed using FirstRate5, which is an energy modelling software program to rate dwellings on a 10-Star scale. The tool uses the AccuRate engine (as a nationally recognised energy benchmarking) to rate dwellings based on climate zone, materials used in a structure, positioning, orientation and building sealing. Higher scores are achieved primarily through better material selection, improvements in glazing, and insulation. It is noted that the 2017 BCA (Building Code of Australia) will apply to this development. The development has been modelled to predict the average heating and cooling energy use of the development. The results of the FirstRate5 assessments can be found in Appendix 2.

#### 1.3.3 MELBOURNE WATER STORM TOOL

Melbourne Water has developed the STORM calculator to simplify the analysis of stormwater treatment methods. The calculator is designed for the general public to be able to assess simple Water Sensitive Urban Design (WSUD) measures on their property and has been developed specifically for small developments. The STORM Calculator is able to display the amount of treatment that typical WSUD measures will provide in relation to best practice targets. However, it does not include all of the types of treatment measures available. It has been restricted to rainwater tanks, ponds, wetlands, rain garden trenches, infiltration systems, buffers and swales. The results of the STORM assessment can be found in Appendix 3.



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**2. Sustainability Initiatives**

The following sections outline the initiatives which will be included in the development and implemented throughout the design and construction process. Initiatives that go towards meeting BESS include the tool reference associated (e.g. BESS Management 4.1). Some initiatives without the BESS reference have also been included, since they also contribute to the overall sustainability of the development.

These sections, as well as nominating the sustainability initiatives, also identify the party/parties responsible for implementation of the initiative, and the stage at which implementation will be demonstrated. The following are the broad project stages:

1	Design Development	<ul style="list-style-type: none"> <li>• Consultants develop conceptual design drawing to a detailed stage suitable as a basis for preparing working drawings - Integration of architectural, services, structure and site attributes</li> <li>• Checking compliance with all statutory requirements, codes and standards</li> <li>• Arranging special surveys or reports as required</li> </ul>
2	Construction Documentation	<ul style="list-style-type: none"> <li>• Architectural and services drawing sets completed</li> <li>• All specialist reports completed</li> <li>• All necessary planning and building consents obtained as required by authorities</li> </ul>
3	Construction	<ul style="list-style-type: none"> <li>• All work carried out onsite – site preparation, construction, alteration, extension, demolition</li> <li>• Purchase of all materials / certification</li> <li>• Evidence gathering from subcontractors</li> <li>• Commissioning</li> </ul>
4	Post Occupancy	<ul style="list-style-type: none"> <li>• Operation and Maintenance</li> <li>• Education – Building Users Guides</li> </ul>

**2.1 Energy Efficiency**

The proposed development will minimise energy use through efficiently designed building envelopes, and efficient hot water systems, heating & air conditioning and lighting.

Design Requirements	Responsibility & Implementation	Project Stage
<b>Building Envelope (Management 2.2; Energy 1.2)</b> The residential dwellings will achieve an average energy rating of 6.6 Stars with no apartment achieving less than 5 stars. Additionally, all apartment samples for the development meet the cooling load requirement of ≤30 MJ/m <sup>2</sup> (Victorian Planning Provisions, Clause 55.07 Standard B35). These results will be achieved with a choice of appropriate building fabric (e.g. double glazing with energy efficient frames) that are outlined within the preliminary sample energy report provided as Appendix 2.  A 10% improvement on heating and cooling consumption in comparison to a reference case defined by the NCC 2016 BCA Section J will be provided for the offices.	Architect	Construction Documentation
<b>Heating and Cooling Systems (BESS Energy 2.1 &amp; 2.3)</b> Heating and cooling in the residential dwellings and offices will be provided by energy efficient split system air conditioners (within one-star energy rating of the best available).	Mechanical Engineer	Design Development
<b>Hot Water System (BESS Energy 2.4; BESS Energy 3.2)</b> Hot water will be provided via individual instantaneous gas hot water units. The selected systems will be within one-star energy/gas rating of the best available.	Services Consultant	Design Development
<b>Indoor Lighting (BESS Energy 3.5)</b>		

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Design Requirements	Responsibility & Implementation	Project Stage
<p>Energy consumption from artificial lighting within the development will be reduced by using LED lighting and by optimising the daylight diffusion. A lighting level of 4.0 W/m<sup>2</sup> will not be exceeded in the dwellings and minimum 20% reduction will be achieved in other areas such as corridors.</p> <p>The office spaces will provide a 20% improvement on the BCA maximums as listed in Table J6.2a of the 2016 BCA.</p>	Electrical Engineer/ Architect	Design Development
<b>External Lighting (BESS Energy 3.3)</b>		
<p>External lighting will be controlled by daylight sensors and-or motion detectors. This will reduce energy consumption by ensuring the lights are only switched on when required.</p>	Electrical Engineer	Design Documentation
<b>Energy Efficient Appliances</b>		
<p>All appliances provided as part of the base building work (e.g. dishwashers) will be selected within one energy efficiency star of the best available.</p>	Developer	Construction Documentation
<b>Lifts</b>		
<p>Lifts will be specified that include:</p> <ul style="list-style-type: none"> <li>• Suspension specifically designed to reduce friction;</li> <li>• Adjustable speed motors;</li> <li>• Gearless or planet drive gears to reduce drive losses;</li> <li>• Measures to specifically reduce stand-by consumption such as:                             <ul style="list-style-type: none"> <li>○ Switching off control devices when the lift is not in motion &amp; using more efficient power supply units (e.g. Switched units, transformers); and</li> <li>○ LED lights and displays.</li> </ul> </li> </ul> <p>The design places the lift directly opposite stairs in the development, thus making it easier for occupants to have the choice of using the stairs.</p>	Services Consultant	Construction Documentation
<b>Building Sealing</b>		
<p>All windows, doors, and pipe penetrations will be constructed to minimise air leakage as required by the provisions outlined in Section J3 of the 2016 BCA. This will include the use of seals around operable windows and doors as well as caulking to pipe penetrations, and the addition of self-closing louvers or dampers to exhaust fans.</p>	Architect	Design Development
<b>Solar Photovoltaic (PV) System (BESS Energy 4.2)</b>		
<p>The development will include a solar PV system minimum 2kW (8 x 250 watt panels, typically 1.0m x 1.6m each in size) for renewable energy generation. This will offset a portion of greenhouse gas emissions and energy use from central services for the development (lighting, pumps etc.) by producing approximately 2,932kWh of renewable electricity on-site per year<sup>1</sup>.</p>	Electrical Engineer	Construction Documentation
<b>Clothes Drying</b>		
<p>A private outdoor clothesline will be provided for each dwelling.</p>	Architect	Construction Documentation

<sup>1</sup> Energy generation estimate based on automated BESS calculations.

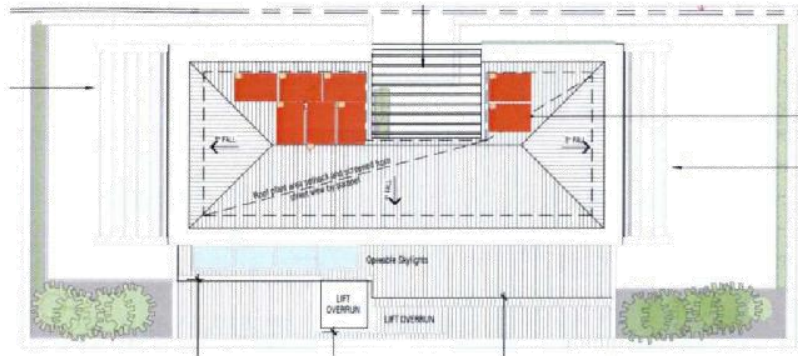


Figure 3: Location of the solar PV on the roof level

### 2.2 Water Efficiency & Stormwater Treatment

Water will be used efficiently in the development through the installation of efficient fixtures and fittings, and via collection and reuse of rainwater which helps to reduce mains water requirements and divert stormwater from drains during rainfall events.

Design Requirements	Responsibility & Implementation	Project Stage
<p><b>Fixtures and Fittings (BESS Water 1.1)</b></p> <p>The development will include efficient fittings and fixtures to reduce the volume of mains water used in the development. The following Water Efficiency Labelling Scheme (WELS) star ratings will be specified:</p> <ul style="list-style-type: none"> <li>• Toilets – 4 Star;</li> <li>• Taps (bathroom) – 5 Star; and</li> <li>• Showerheads – 3 Star (&gt;6.0 but ≤7.5L/min); and</li> <li>• Bath – Medium Sized Contemporary</li> </ul>	Architect / Services Consultant	Construction Documentation
<p><b>Rainwater Collection and Reuse (Water 2.1 &amp; STORM Requirement)</b></p> <p>Runoff from all roof area and Level 3 balcony areas will be stored in a rainwater tank(s) with an effective capacity of 10,000L and will be located in the ground floor storage/services area.</p> <p>The rainwater system will include a Rainceptor (or equivalent device), which will act as a filter to prevent any pollutants entering the tank from the trafficable balcony areas. The stored water will be used for toilet flushing for all toilets. The rainwater tank(s) will help to reduce the mains water demand of the development.</p> <p>For more detail on the WSUD response, refer to Appendix 3.</p>	Services Consultant	Design Development
<p><b>Water Efficient Appliances (BESS Water)</b></p> <p>All water-using appliances (e.g. dishwasher) provided in the development as part of the base building work will be selected within one WELS rating star of the best available.</p>	Developer	Design Development
<p><b>Landscape Irrigation (BESS Water 3.1)</b></p> <p>Drought tolerant plants will be preferred for the proposed landscaping/ planting included on site. Native species of plants are to be grown throughout the development where possible. The selected plants should require no irrigation system.</p>	Landscape Architect	Construction Documentation

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2.3 Indoor Environment Quality

Indoor Environment Quality (IEQ) addresses initiatives which help to create a healthy indoor environment free from toxins with ample supply of daylight and outside air.

Design Requirements	Responsibility & Implementation	Project Stage
<b>Volatile Organic Compounds (VOCs)</b>		
All paints, adhesives and sealants and flooring will not exceed limits outlined in Appendix 5. Alternatively, products will be selected with no VOCs.  Paints such as eColour, or equivalent, should be considered.	Architect	Construction Documentation
<b>Formaldehyde Minimisation</b>		
All engineered wood products will have 'low' formaldehyde emissions, certified as E0 or better. Alternatively, products will be specified with no formaldehyde. Emissions limits are listed in Appendix 5.  Products such as Ecological Panel – 100% post-consumer recycled wood (or similar) will be considered for use within the development.	Architect	Construction Documentation
<b>Commercial Premises Ventilation</b>		
Standard natural or mechanically ventilation with air flow rates exceeding AS1668.1 requirements by at least 50% will be provided in the office tenancies.	Services Consultant	Construction Documentation
<b>Artificial Lighting Level</b>		
An illuminance of 300 lux (min.) will be provided for task areas to ensure that there is adequate light to carry out tasks in these areas.	Electrical Engineer	Construction Documentation
<b>Daylight Access and Improvement (BESS IEQ 1.1, 1.2, 1.3, 1.4, 1.5)</b>		
Ample daylight will be provided to the office spaces via large windows to the eastern aspect of the building. Using the Green Star daylight hand calculation method, it has been demonstrated that 42% of primary office spaces achieve a daylight factor of 2% or greater.  For dwellings it has been shown that: <ul style="list-style-type: none"> <li>• 100% living areas achieve a daylight factor greater than 1%;</li> <li>• 82% bedrooms achieve a daylight factor greater than 0.5%; and</li> <li>• At least 70% of dwellings receive at least 3 hours of direct sunlight in all living areas between 9am and 3pm in mid-winter.</li> </ul> Additionally, to supplement daylight penetration through windows/openings, light internal colours will be used to allow for a better internal reflection of daylight. Please refer to Appendix 4 for further details.	Architect	Construction Documentation
<b>Effective Natural Ventilation (BESS IEQ 2.1)</b>		
All dwellings will have access to natural ventilation through the provision of operable windows. Refer Figure 4 for example breeze paths.  Fly screens, window locks, and magnetic door catches will be included in breeze paths (to prevent openings slamming shut) to further encourage natural ventilation in the dwellings.	Architect	Construction Documentation
<b>Acoustic Comfort</b>		
Acoustic comfort will be achieved in the building by limiting the internal ambient noise levels. Acoustic insulation will be installed as required by the BCA. Noise from mechanical services will be kept to a minimum using good quality, quiet air conditioners and fans.	Acoustic/Mechanical Engineer	Construction Documentation
<b>Mechanical Exhaust</b>		

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Design Requirements	Responsibility & Implementation	Project Stage
All kitchens and bathrooms will have a separate dedicated exhaust fan which will not be recycled to any enclosed space within the building.	Mechanical Engineer	Construction Documentation



Figure 4: Example breeze paths

2.4 Transport

The development is close to a variety of commercial and retail businesses which will provide occupants with access to a number of cafes, grocery stores, restaurants and community facilities. In addition, there is convenient access to a variety of train and bus routes which enable commuting without requiring a car.

Design Requirements	Responsibility & Implementation	Project Stage
<b>Cycling Facilities (BESS Transport 1.1)</b> Eight staggered wall mounted bicycle racks will be provided in a secure storage space on the ground level for residents, one for each dwelling, accessible from the external entrance walkway. Two secure floor mounted bicycle hoops will be provided for office tenancies allowing for the storage of two bicycles, located in the external entrance walkway. End of trip facilities in offices include the provision of one shower and changing facilities, and two storage lockers, in each office. Two secure floor mounted bicycle hoops will be provided for residential and non-residential visitor use allowing for the storage of four bikes, located on the Coppin Street footpath.	Architect	Design Development

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Design Requirements	Responsibility & Implementation	Project Stage
<b>Car Parking</b>		
Four car parking spaces will be provided for residents in a secure garage accessible from the rear of the development via Wall Place.	Architect	Design Development
<b>Public Transport</b>		
<p>The site is located close to Swan Street and within a 1km walking distance of numerous public transport options, including:</p> <p><b>Train Lines (from Richmond &amp; East Richmond Stations)</b></p> <ul style="list-style-type: none"> <li>- Alamein</li> <li>- Belgrave</li> <li>- Cranbourne</li> <li>- Frankston</li> <li>- Glen Waverley</li> <li>- Lilydale</li> <li>- Pakenham</li> <li>- Sandringham</li> </ul> <p><b>Tram Routes</b></p> <ul style="list-style-type: none"> <li>- 48: North Balwyn – Victoria Harbour Docklands</li> <li>- 70: Waterfront City Docklands – Wattle Park</li> <li>- 75: Vermont South – Etihad Stadium Docklands</li> <li>- 78: Balaclava – North Richmond</li> </ul> <p><b>Bus Routes</b></p> <ul style="list-style-type: none"> <li>- 246: Elsternwick – Clifton Hill</li> <li>- 605: Flagstaff Station – Gardenvale</li> <li>- 969: City - Ringwood</li> </ul>		Inherent in Location

Residents and office staff will be able to access many daily needs on foot or by bicycle instead of requiring a car. One of the tools used to assess the amenities available around a development is Walk Score. This tool identifies walkable neighbourhoods - neighbourhoods which encourage occupants to live and shop locally. High scores are up to 100 points, while an average score is around 50. The proposed site at 142-144 Coppin Street, Richmond achieves a Walk Score of 94 points (deemed a "Walker's Paradise") due to the site's proximity to a large number of services and amenities. Daily errands will not require a car.

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### 142 Coppin Street

[Add scores to your site](#)

Richmond, Melbourne, 3121

Commute to **Downtown Melbourne**

8 min 24 min 19 min 54 min View Routes

Favorite

Map

Nearby Apartments

Walk Score  
**94**

#### Walker's Paradise

Daily errands do not require a car.

Transit Score  
**86**

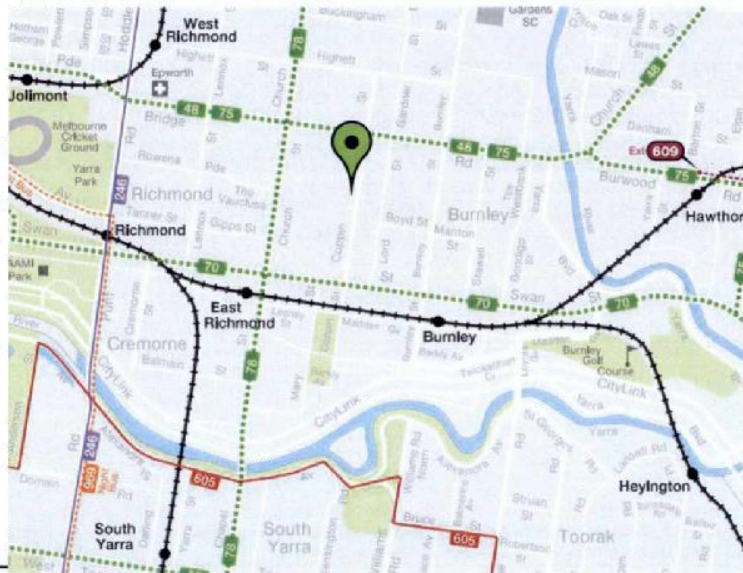
#### Excellent Transit

Transit is convenient for most trips.

About your score



Figure 5: Walk Score result for the project site (Source: www.walkscore.com)



142-144 COPPIN STREET, RICHMOND | S3801 | SMP.V3

PG. 15

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Figure 6: PTV Local Area Map indicating the public transport options surrounding 142-144 Coppin Street, Richmond (green balloon)

**2.5 Building Materials**

Materials initiatives help to reduce the use of virgin materials, reduce waste, and promote the use of materials with lower embodied energy and environmental impacts generally.

Design Requirements	Responsibility & Implementation	Project Stage
<b>Timber</b>		
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.	Architect	Construction Documentation
<b>Steel</b>		
Unless prevented by structural engineering considerations or product unavailability, steel for the development will be sourced from a Responsible Steel Maker <sup>2</sup> .	Builder / Structural Engineer	Construction Documentation
<b>PVC</b>		
All standard uses of cables, pipes, flooring and blinds within the development will either not contain any PVC or will be sourced from an ISO 14001 (Environmental Management System) certified supplier.	Architect	Construction Documentation
<b>Flooring</b>		
All flooring will be selected from products/materials certified under any of the following: <ul style="list-style-type: none"> <li>• Carpet Institute of Australia Limited, Environmental Certification Scheme (ECS) v1.2;</li> <li>• Ecospecifier GreenTag GreenRate v3.2;</li> <li>• Good Environmental Choice (GECA); and/or</li> <li>• The Institute for Market Transformation to Sustainability (MTS) Sustainable Materials Rating Technology Standard Version 4.0 – SmART 4.0.</li> </ul> Alternatively, flooring coverings must be durable, include some eco-preferred content, be modular and/or come from a manufacturer with a product stewardship program and ISO 14001 certification.	Architect	Construction Documentation
<b>Insulation Recycled Content</b>		
Any bulk insulation specified and installed in the development will have a minimum 20% post-consumer recycled material content.	Architect	Construction Documentation

<sup>2</sup> 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).



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Figure 7: Examples of approved environmental labels for products which may be incorporated for the development

2.6 Construction, Building and Waste Management

Design Requirements	Responsibility & Implementation	Project Stage
<b>Construction Waste Management Plan</b>		
<p>The builder will develop a construction waste management plan for the pre-construction, infrastructure service works and construction phases. This will include the following:</p> <ul style="list-style-type: none"> <li>• Waste generation;</li> <li>• Any waste systems;</li> <li>• Minimisation Strategy;</li> <li>• Performance / Reduction targets;</li> <li>• Bin quantity and size;</li> <li>• Collection frequency;</li> <li>• Waste contractors;</li> <li>• Signage; and</li> <li>• Monitoring and reporting including frequency and method.</li> </ul> <p>The development will target 80% of all demolition, land clearing, infrastructure works and built form construction waste to be re-used or recycled.</p> <p>The waste management plan will require that all hazardous substances, pollutants and contaminants must be managed and disposed of in accordance with all state regulatory requirements. Where these materials are treated or used on site, they must be in accordance with a sanctioned remediation process.</p>	Builder	Construction Documentation
<b>Metering and Monitoring (BESS Management 3.1, 3.2, 3.3)</b>		
<p>Separate utility meters (electricity, water and gas) will be provided for all dwellings and office spaces, which will allow occupants to monitor and reduce their consumption.</p> <p>Separate utility meters will also be provided for all central services (such as residential lobby and lift).</p>	Services Consultant	Construction Documentation
<b>Building Users' Guide (BUG) (BESS Management 4.1)</b>		
<p>A BUG will be developed for residents and office tenants, building facilities management and the building owner. The BUG will be comprehensive and will include descriptions of the systems installed in the building, and sustainable transport in the area.</p>	Owner/ Building Facilities Manager	Design Development
<b>Operational Waste Management &amp; Storage (BESS Waste 2.2)</b>		

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Design Requirements	Responsibility & Implementation	Project Stage
<p>The development will contain a central bin storage area on the ground floor for residents, accessible via the southern external walkway. The area will be sufficiently sized for both waste and recycling.</p> <p>General waste and the recycling bins will be located adjacent to each other, so that it is equally convenient to access each type of bin. Labelling and colour coordination will be used to clearly distinguish the two types of bins.</p>	Architect	Design Development

2.7 Urban Ecology

Design Requirements	Responsibility & Implementation	Project Stage
<b>Vegetation (BESS Urban Ecology 2.1)</b>		
Approximately 10% of the site will comprise vegetation, through a combination of permeable ground floor landscaped areas and upper storey landscaping on balconies and terraces. This will enhance the urban ecology of the site.	Landscape Planner	Design Development
<b>Private Open Space (BESS Urban Ecology 2.4)</b>		
A tap and floor waste will be provided for each primary outdoor space to allow occupants to more easily water plants and thus encourage urban landscaping around the development.	Architect/ Landscape Architect	Design Development
<b>Refrigerant ODP</b>		
All HVAC refrigerants used in the development will be selected to have an Ozone Depletion Potential (ODP) of zero.	Services Consultant	Construction Documentation
<b>Insulation Ozone Depleting Potential</b>		
All thermal insulation used in the development will not contain any ozone-depleting substances and will not use any in its manufacturing.	Architect	Design Development

3. Implementation of Initiatives

The proposed development will meet best practice sustainability requirements through a number of initiatives such as an optimised thermal envelope, a solar PV system, and the specification of environmentally preferred materials.

The initiatives that have been included within this SMP are all have a proven track record to serve their individual purpose and can be easily maintained with any failures obvious to the occupants of the development. This helps to ensure the ongoing sustainability of the development as the systems installed in the beginning are maintained for purpose throughout the life of the office tenancies.

The provisions, recommendations and requirements of this endorsed SMP must be implemented and complied with to the satisfaction of the Responsible Authority. With appropriate implementation, management, monitoring

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and maintenance the initiatives outlined within this SMP will serve to provide the building tenants with lower running costs, as well as benefit the environment.

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**Appendix 1 – BESS Assessment**

142-144 Coppin St, Richmond 3121 Richmond

Site area: 512 m<sup>2</sup> · Building Floor Area: 787 m<sup>2</sup> ·  
 Date of Assessment: 11 Feb 2020 · Version: V3, 1.6.1-B.260 ·  
 Applicant: nick@sdconsultants.com.au

Project Identifier

**348AEC52**

(Previously #32795)

Published

<http://bess.net.au/projects/348AEC52-V1>

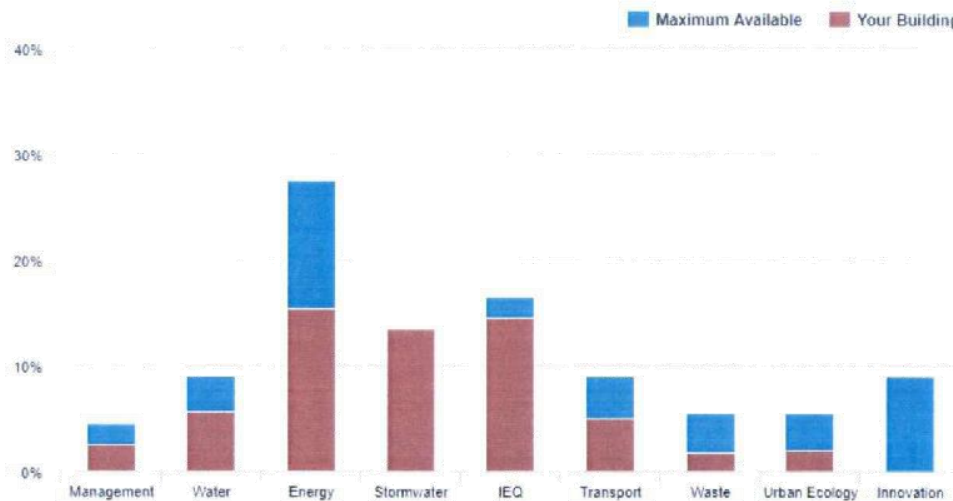
Your BESS score is

**+ 60%**



% of Total	Category	Score	Pass
3 %	Management	56 %	
6 %	Water	62 %	✓
15 %	Energy	56 %	✓
14 %	Stormwater	100 %	✓
15 %	IEQ	88 %	✓
5 %	Transport	55 %	
2 %	Waste	33 %	
2 %	Urban Ecology	36 %	
0 %	Innovation	0 %	

**How did this Development Perform in each Environmental Category?**



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## Appendix 2 – FirstRate5 Sample Energy Rating Results

The FirstRate5 energy rating program is the primary modelling method used in Victoria to indicate the required energy for heating and cooling based on the building's thermal envelope. It does not take into account any heating or cooling systems installed; it only assesses walls, roof and floor materials; levels of insulation, building orientation, glazing and the area layout. The 142-144 Coppin Street, Richmond development is located in Climate Zone 21 (Melbourne) and is required by the BCA to achieve an average energy rating of at least 6.0 stars (114MJ/m<sup>2</sup>) for the overall development, with each dwelling achieving a minimum energy rating of at least 5.0 stars (149MJ/m<sup>2</sup>).

Table 1: The following are the scores achieved by the sample dwellings assessed for the development

Dwelling	Star Rating	Energy Use (MJ/m <sup>2</sup> )	Heating Energy (MJ/m <sup>2</sup> )	Cooling Energy (MJ/m <sup>2</sup> )	Net Conditioned Floor Area (m <sup>2</sup> )
102	7.3	73.7	60.1	13.6	71.3
103	6.7	91.5	75.9	15.6	69.9
104	6.6	94.1	79.3	14.8	53.3
202	6.3	104.4	82.2	22.2	50.8
301	6.7	92.6	64.7	27.9	230.2

Table 2: Justification of thermally similar dwellings

Dwelling	Thermally Similar Dwelling	Justification	Star Rating
102	-	Thermally unique	7.3
103	-	Thermally unique	6.7
104	101 & 201	Similar layout, orientation and exposed sides	6.6
202	-	Thermally unique	6.3
301	-	Thermally unique	6.7
Average			6.6

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The sample ratings have been completed with the following inputs:

Building Element	Description
<b>External Walls</b>	<p>External walls were modelled as a mix of brick veneer and concrete based on elevations.</p> <p>All external wall types will require additional <u>R2.5</u> insulation to be added.</p> <p>Some options include:</p> <ul style="list-style-type: none"> <li>• CSR Bradford Gold Wall Batts (R2.5)</li> <li>• Knauf Earthwool External Wall Batts HD (R2.5)</li> </ul> <p>Insulation material with minimum 20% recycled material content will be selected.</p>
<b>Party Walls</b>	<p>Party walls separating neighbouring dwellings are assumed as double stud walls with total <u>R2.0</u> insulation added to both studs.</p> <p>Party walls separating a dwelling from a lift shaft, or communal hallway or stairwell, are assumed to have total <u>R2.0</u>.</p>
<b>Internal Walls</b>	<p>Internal walls within a dwelling do not require insulation.</p>
<b>Floor</b>	<p>Floors on grade are assumed as concrete slab and do not require additional insulation to be added beneath the slab. Floors between levels are assumed as suspended concrete slab with air gap and plasterboard with no additional insulation.</p> <p>Floors exposed to outside (overhangs or over garage) will require <u>R2.5</u> insulation.</p>
<b>Floor Coverings</b>	<p>Floor coverings are assumed as carpets in bedrooms, floating timber in living/kitchen, living, corridors and stairs, and tiles in bathrooms and laundry rooms.</p>
<b>Roof Insulation</b>	<p>The top-level roof has been modelled as flat metal deck and will require a minimum <u>R5.0</u> insulation and antiglare foil to be added within the ceiling space.</p> <p>The sections of lower level ceiling/roof which are exposed to open air above will require a minimum <u>R2.5</u> insulation provided within the ceiling/roof space.</p>
<b>Windows and Glazing</b>	<p><b><u>Apartments 101, 102, 103, 104 &amp; 201:</u></b></p> <p>All glazing must achieve the following window system specifications (glass and frame combined):</p> <ul style="list-style-type: none"> <li>• U value = 4.1, SHGC = 0.47 (awning)</li> <li>• U value = 4.1, SHGC = 0.52 (fixed and sliding)</li> </ul> <p>These values are typically found in double glazed argon-filled clear low-e windows with aluminium frames. Other glass/frame systems may be used provided they meet the thermal performance values outlined above.</p> <p><b><u>Apartment 202 &amp; 301:</u></b></p> <p>All glazing must achieve the following window system specifications (glass and frame combined):</p> <ul style="list-style-type: none"> <li>• U value = 2.4, SHGC = 0.4 (sliding)</li> <li>• U value = 2.0, SHGC = 0.55 (fixed)</li> <li>• U value = 2.7, SHGC = 0.42 (hinged)</li> </ul> <p>These values are typically found in Capral Futureline double glazed argon-filled clear low-e windows with thermally broken aluminium frames. Other glass/frame systems may be used provided they meet the thermal performance values outlined above.</p>
<b>External blinds to windows</b>	<p><b><u>Apartment 202:</u></b></p> <p>External adjustable awning on east facing glazing.</p>

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Building Element	Description
	<p><b>Apartment 301:</b> External adjustable awnings on all west facing bedroom glazing, and top floor east and west facing sliding door glazing.</p>
External shading	<p><b>Apartment 301:</b> North, east and west pergola shading on top floor will be adjustable, allowing 100% shading in summer and 50% shading in winter.</p>
Ceiling fans	<p><b>Apartment 202:</b> One ceiling fan in the Kitchen/Living area.</p> <p><b>Apartment 301:</b> One ceiling fan per bedroom, and three in the top floor Kitchen/Living area.</p>
Building Sealing	<p>All doors, windows, exhaust fans and openings will be sealed so as to not allow for air infiltration into the dwelling.</p> <p>Exhaust fans have been assumed in all kitchens and bathrooms and must include a self-closing louvre or damper which seal shut when not in use.</p>
Downlights	<p>All recessed down light fittings that have openings allowing air to pass through to a ceiling cavity (e.g. adjustable down lights) shall be fitted with a cover that allows for ceiling insulation to closely enclose the sides and top of the down light.</p>

Note: The above building elements may vary as the plans are refined for building approval, however the development will maintain a minimum average energy rating of 6.6 Stars.

### Appendix 3 – STORM Assessment & WSUD Report

#### Objectives

The quality and quantity of stormwater leaving a site can have a significant impact on the surrounding infrastructure and waterways. Impervious surfaces move water quickly and efficiently out of built up areas straight into stormwater infrastructure, which in turn quickly moves the untreated water into natural watercourses. This process does not treat the stormwater and as the water flows into natural water courses, it causes erosion and pollution of those waterways with the rubbish, sediments, pathogens, and other pollutants off the impervious surfaces into the stormwater drains.

The City of Yarra recognises the importance of stormwater management and the effects on the surrounding environment as required by Clause 53.18. Part of this SMP includes addressing how the proposed development responds to the principles and requirements of Water Sensitive Urban Design (WSUD). The main objectives for WSUD are:

- To achieve the best practice water quality performance objectives as set out in the Urban Stormwater Best Practice Environmental Management Guidelines, Victoria Stormwater Committee 1999 (as amended). Currently, these water quality performance objectives are:
  - 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; and
  - Litter - 70% reduction of typical urban annual load.
- To promote the use of water sensitive urban design, including stormwater re-use.
- To mitigate the detrimental effect of development on downstream waterways, by the application of best practice stormwater management through water sensitive urban design for new developments.
- To minimise peak stormwater flows and stormwater pollutants to improve the health of water bodies, including creeks, rivers and bays.
- To reintegrate urban water into the landscape to facilitate a range of benefits including microclimate cooling, local habitat and provision of attractive spaces for community use and wellbeing.

New developments must also incorporate treatment measures that improve the quality of water and reduce flow of water discharged into waterways (such as collection and use of rainwater/stormwater on site) and encourage the use of measures to prevent litter being carried off-site in stormwater flows. The proposed development has addressed these requirements by identifying the impervious surfaces within the site and implementing treatments to mitigate the impacts of stormwater leaving the site. To assess these initiatives, the STORM tool – which is an industry accepted tool – was used to determine the treatment effectiveness of these initiatives.






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Stormwater Management Initiatives

Stormwater treatment initiatives will need to be implemented. The following section presents the different surfaces that have been identified for treatment, and the required treatment. The initiatives to manage stormwater flows for the building area will underpin the overall performance of the building and its ability to meet stormwater management objectives. Refer Figure 8 and Figure 9 for site catchment delineation.

Table 3: List of areas and stormwater treatment measures:

Surfaces	Marking	Topographic Area (m <sup>2</sup> )	Required Treatment
Roof Catchment Area		189	Runoff from the non-trafficable roof areas and third floor balcony areas will be diverted to rainwater tank(s) with an effective storage capacity of at least 10,000L. It will include a Rainceptor (or equivalent), which will act as a filter to prevent any pollutants entering the tank from the trafficable balcony areas. Collected rainwater will be used for all toilet flushing in the development. Any overflow from the tank(s) or runoff from the remaining impervious areas will be diverted to the legal point of discharge (LPD).
Balcony Catchment Area		108	
Remaining impervious Area		202	Runoff from remaining impervious areas will be diverted directly to the Legal Point of Discharge (LPD) onsite.
Permeable		13	Ground floor landscaped area unobstructed by upper levels assumed to be 100% permeable, therefore requires no further treatment.

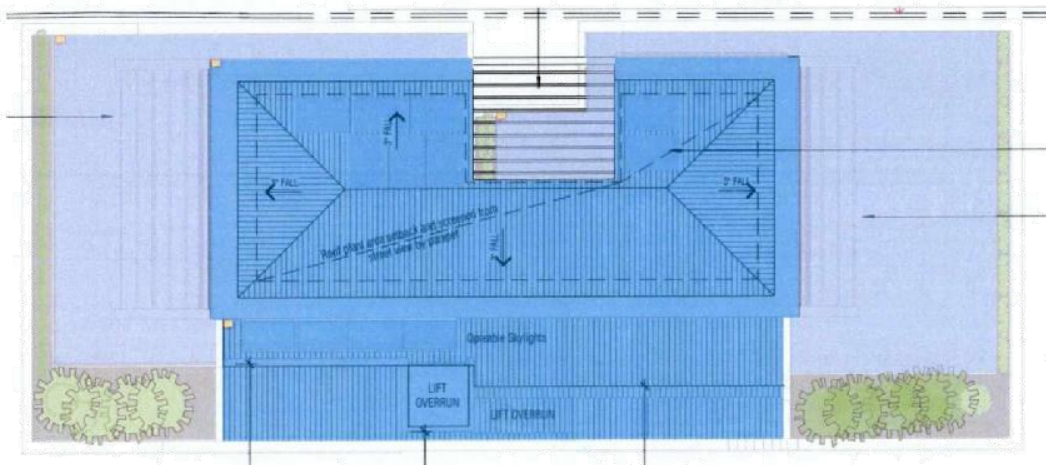


Figure 8: Site catchment delineation (roof and third floor balconies)

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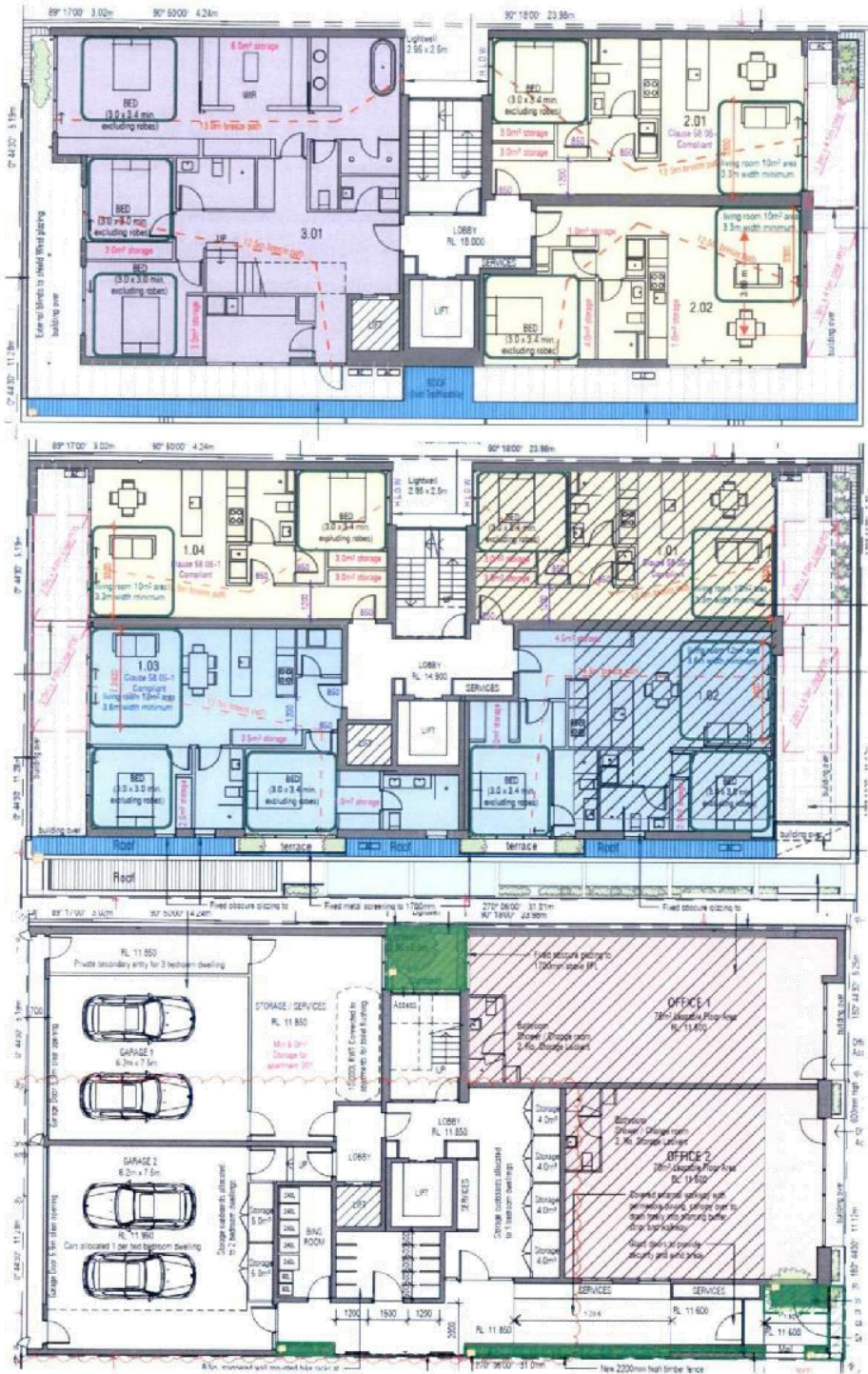


Figure 9: Site catchment delineation (lower level roof catchment and ground level permeable area)

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Stormwater Quality Modelling Results

The impervious surfaces and recommended treatments have been applied to the STORM tool and as a result, the proposed development has achieved a score of 101%. With the proposed stormwater treatment measures incorporated into the development at 142-144 Coppin Street, Richmond, the design will meet the minimum performance standards required by the City of Yarra.

Note that 20 occupants have been selected for the assessment based on 11 bedrooms in residential dwellings in addition to an assumption of 4 employees for each office space.



**STORM Rating Report**

TransactionID: 910445  
 Municipality: YARRA  
 Rainfall Station: YARRA  
 Address: 142-144 Coppin Street

3121  
 VIC VIC  
 Assessor: SDC  
 Development Type: Residential - Mixed Use  
 Allotment Site (m2): 512.00  
 STORM Rating %: 101

Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
Roof & 3F balconies	297.00	Rainwater Tank	10,000.00	20	170.00	82.00
Remaining impervious	202.00	None	0.00	0	0.00	0.00

Figure 10: STORM Assessment

Stormwater Runoff Treatment during the Construction Stage

Treatment – Various

Stormwater management in the construction stage will include measures which will be put in place to minimise the likelihood of contaminating stormwater discharge from the site as well as reduce the velocity of the flows generated from the building as it is being constructed. This will mean ensuring buffer strips are in place, and the site will be kept clean from any loose rubbish. More information is available from "Keeping Our Stormwater Clean – A Builder's Guide" by Melbourne Water<sup>3</sup>. The diagram below is an illustration of the various objectives which assist in minimising the impacts of stormwater runoff typical during the construction phase. Typical pollutants that are generated from a construction site during a rainfall event include:

- Dust
- Silt
- Mud
- Gravel
- Stockpiled materials
- Spills/oils
- Debris/litter

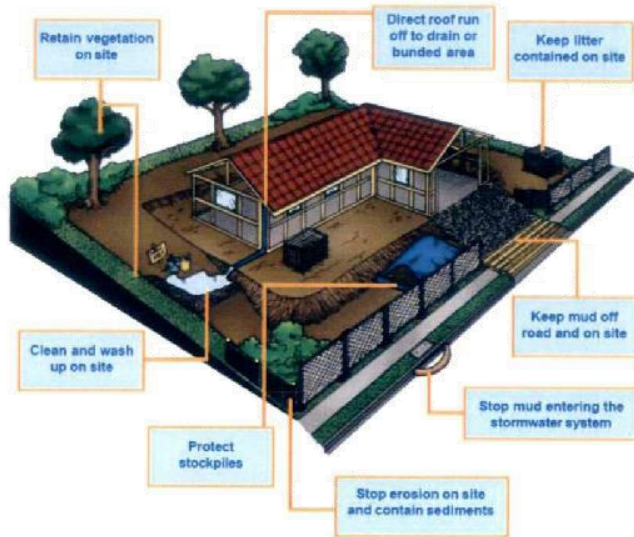


Figure 11: Stormwater will be effectively managed during construction phase according to the requirements listed in "Keeping Our Stormwater Clean – A Builder's Guide".

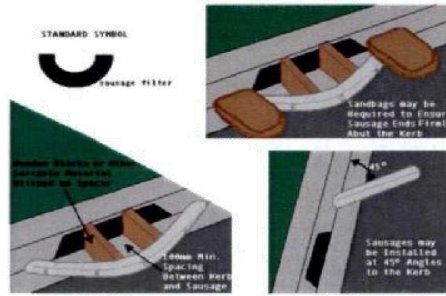
To reduce the impacts and minimise the generation of these pollutants the following measures are proposed. The symbols embedded within each image are typically used for Construction Environmental Management Plans.

<sup>3</sup> For copies please contact Melbourne Water on 131 722.

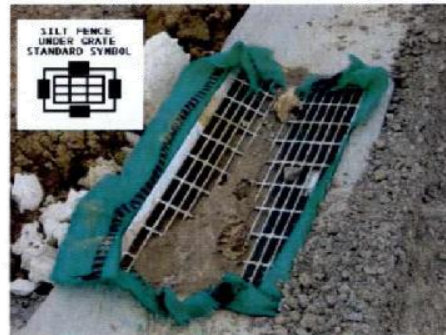
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Gravel Sausage filters – to be placed at the entrance of pits/side stormwater inlets. These permeable sacks will filter the suspended soils and sediments and any other litter carried by the stormwater to prevent the pollutants entering the system.



Silt Fences Under Grates - Silt fence material may be placed under the grate of surface-entry inlets to prevent sediment from entering the stormwater system.



Temporary Rumble Grids – these are designed to open the tread on tires and vibrate mud and dirt off the vehicle (in particular the chassis). This will heavily minimise the amount of soil/dirt deposited on local roads where it can be washed (by rainfall or other means) into the stormwater drains.



## Rainwater Tank/OSD Maintenance

### PEST CONTROL

The rainwater harvesting and detention systems will be installed with a mesh insect cover over the inlet pipe to ensure the tanks do not become a breeding ground for pests. Mesh needs to be installed over overflow pipes. If an access opening is present, it needs to be properly sealed. The tanks should be washed or flushed out prior to use. All inlets and outlets should be correctly sealed to prevent insects entering. Connection to the toilets in the building should be tested (e.g. dye test or equivalent).

### INSPECTIONS

Inspections of roof areas and gutters leading to the tanks should take place every 6 months. Rainwater in the tanks should be checked every 6 months for mosquito infestation. The rainwater tanks should be examined annually for sediment build up. The following tips for inspection have been sourced from City of Port Phillip's "Maintenance Manual - Rainwater Tanks<sup>4</sup>."

#### Leaf litter/debris in gutters

Inspect the gutters for presence of litter/debris.

#### Blocked downpipe

Check if water is spilling from the edge of the gutters and ensure that the downpipes are not blocked.

#### First flush diverter clogging

To ensure the diverters function properly, clean out by unscrewing the cap at the base of the diverters and remove the filter. Wash the filter with clean water as well as the flow restrictor inside the cap.

#### Debris on the mesh cover over inlets/outlets

Ensure that the mesh cover over inlets and outlets are clean of leaves and debris.

#### Dirt and debris around the tank base or side

Keep leaf build-up, sticks, and other items off the lid of the rainwater tanks and ensure there is no debris on the base, bottom lip and walls of the tanks.

#### Stagnant water or mosquitos

Ensure that the harvested rainwater does not smell. Check for signs of mosquito infestation.

#### Pump condition

Ensure the pumps are operating regularly by monitoring the sound. Check that pumps are kept clear of surface water (flooding), vegetation, and have adequate ventilation.

#### Mains backup or pump operation

If the mains backup switching device fails, it may not be noticed for a long time. Consider a manual operating system to ensure continuous operation.

#### Overflow

Check that the overflow is not blocked and that there is a clear path for water to safely spill from the tank through the overflow pipe when full. Check that a clean mesh screen is safely in place to prevent mosquitoes entering the tank.

#### Sediment/debris build-up in tank (more than 20mm)

Inspect the sludge build-up in the bottom of the tank and ensure that it is no more than 20mm thick. When the sludge builds up to be more than 20mm, the rainwater tank can be emptied and washed with a high-pressure washer or hose.

<sup>4</sup> From the City of Port Phillip website: [www.portphillip.vic.gov.au/Maintenance\\_Manual\\_Rainwater\\_Tank.pdf](http://www.portphillip.vic.gov.au/Maintenance_Manual_Rainwater_Tank.pdf)

**Base area**

Tanks must be fully supported by a flat and level base. Check for any movement, cracks or damage to the slab or pavers. If damage is observed, empty the tank and have the fault corrected to prevent further damage.

**Monitoring the water level**

Ensure the monitoring system (be it digital or a simple float system) is functioning properly by checking the water level in the rainwater tanks.

**Rainwater Tank Maintenance**

The following diagram identifies the key items which are important for rainwater tanks and their maintenance.

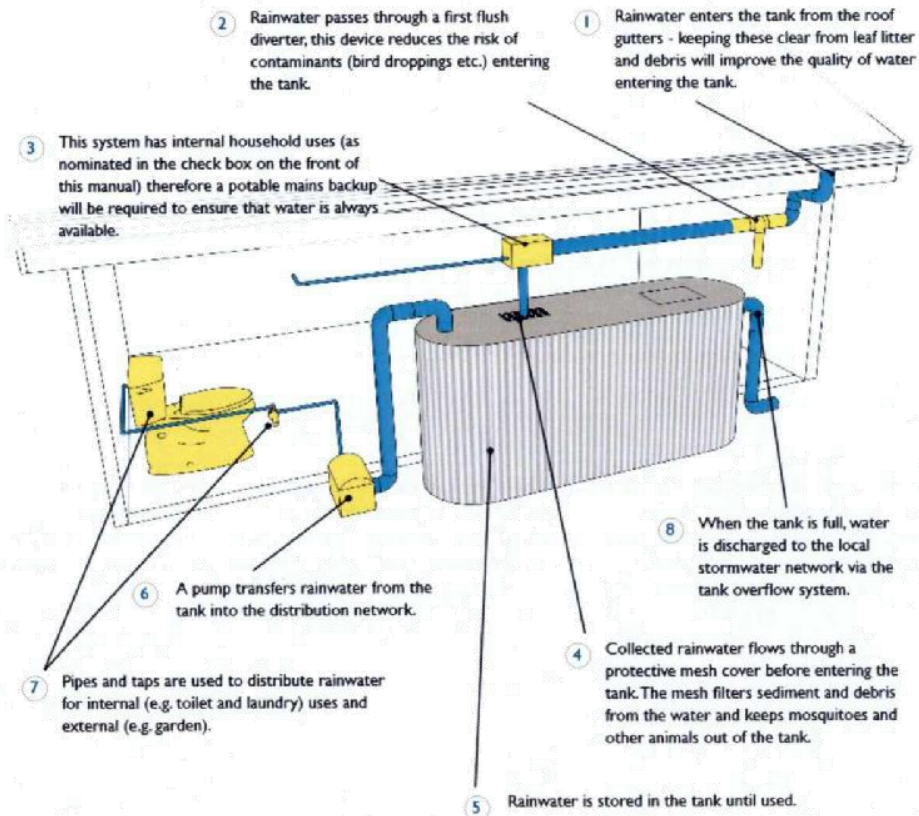


Figure 12: Diagram identifying the key items for rainwater tanks and their operation and maintenance (Source: City of Port Phillip Maintenance Manual Rainwater Tanks)

Please note that the above image is not representative of the type of tank to be installed for this project, however the maintenance aspects are very similar. This should be used as a guide along with the As Built drawings for the site which will be provided in the developments Operations and Maintenance manual.

### CLEAN OUT PROCEDURES

Maintenance of the rainwater tanks and all pump systems will be in accordance with the manufacturer's specifications.

To reduce blockage, a 100-micron screen filter and 5-micron cartridge filter should be installed. With this leaf blocking system installed, the roof and gutters onsite should be checked, maintained and cleaned annually to avoid blockages from occurring.

Gutters should be inspected to ensure they do not contain ponded water and be cleaned if necessary. Water ponding in gutters should be avoided as this provides a breeding ground for mosquitos; tank(s) should also not become breeding grounds for mosquitos. If mosquitos are detected in the tank(s), remedial steps need to occur to prevent breeding. If mosquitos or other insects are found in rainwater tanks, the point of entry should be located and repaired.

There is no ideal treatment to kill mosquito larvae present in rainwater. The two commonly recognized treatments involve adding chemicals (medicinal or liquid paraffin, or kerosene) to tanks, which defeats one of the advantages of collecting rainwater. In addition, problems have been reported with both types of treatment. Tanks can be treated by adding a small quantity of medicinal or liquid paraffin or kerosene. The recommended dose of kerosene is 35mL or two and a half tablespoon for a 15,000L tank. When using paraffin, the dose is double that required for kerosene. Paraffin can be used in all types of tanks, but there have been reports of coagulation after a time and of deposits forming on the sides of tanks. Kerosene is not suitable for use in tanks coated with Aguaplate® and may not be suitable for use in tanks constructed of, or lined with, plastic. If in doubt, consult the manufacturer of the tank. Used carefully, kerosene will not result in risks to human health, but excess quantities can taint the water and very high doses can be poisonous to humans. Kerosene added to the surface will not mix through the body of rainwater in the tank and it will either evaporate or be washed out of the tank by overflow. Kerosene should not be added to tanks when water levels are low. Another option would be adding a very small amount of chlorine (approximately 4 parts per million) to kill off mosquitos and bacteria causing odours. The chlorine will disinfect the water and then evaporate. Chlorine tablets from a pool supplier can be used.

Note: Commercial or industrial kerosene, for example power kerosene for tractors etc. **should not** be used in rainwater tanks.

### MONITORING SYSTEM

A simple way to ensure the tanks are operating as intended would be through the installation of a smart monitoring device such as OneBox. These systems allow users to operate tanks remotely from internet or smartphone, monitor and control the tanks in real time, allow automatic release of stored water prior to storm events, alert users if there is any blockage and view tank history and usage patterns. Alternatively, on site tank gauges can help those familiar with the tank know if the tank is not working correctly.



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## MAINTENANCE SUMMARY

The following need to take place onsite to ensure compliance with WSUD requirements and maintain operation of the rainwater tanks/OSD and connections onsite.

Table 1: List of maintenance tasks for rainwater tanks and recommended frequencies

Task	When?	Requirement
Inspect rainwater tank	Every 6 months	Check for any damage/compression
		Check any blockage of first flush diverter
		Correct operation of potable mains back up switch
		Check that mesh covers have not deteriorated and intact.
		Check that supporting base is free of cracks and movement.
Inspect pumps	Every 1 year	Mosquito infestation
	Every 1 year	Remove sediment build up
Inspect roofs & gutters	Every 6 months	Serviced to prolong the pump life
		Clean out of leaves / debris
		Remove any overhanging branches onsite

## GUIDELINES AND FURTHER INFORMATION

Melbourne Water resources:

- <https://www.melbournewater.com.au/planning-and-building/stormwater-management/options-treating-stormwater/raingardens>
- <https://www.melbournewater.com.au/community-and-education/help-protect-environment/raingardens>

Guidelines for raingarden planning, design, construction and maintenance guidelines, developed by the Cooperative Research Centre for Water Sensitive Cities, with support from Melbourne Water:

- <https://watersensitivecities.org.au/content/stormwater-biofilter-design/>

For further detail on raingarden design, see Chapter 5 and 6 WSUD Engineering Procedures:

- <http://www.publish.csiro.au/book/4974>

Appendix 4 – Indoor Environment Quality Daylight Assessment

Office areas

The following hand calculations are included to show the daylight amenity in the office areas of the proposed development. The daylight mark-ups are included below, with the red area showing the nominated net floor space and the yellow area showing the amount of nominated net floor space with a Daylight Factor of 2% or greater (based on the Green Star Daylight Hand Calculation methodology).

From the hand calculation, it has been found that 42% of the nominated floor area achieves a daylight factor of at least 2%.

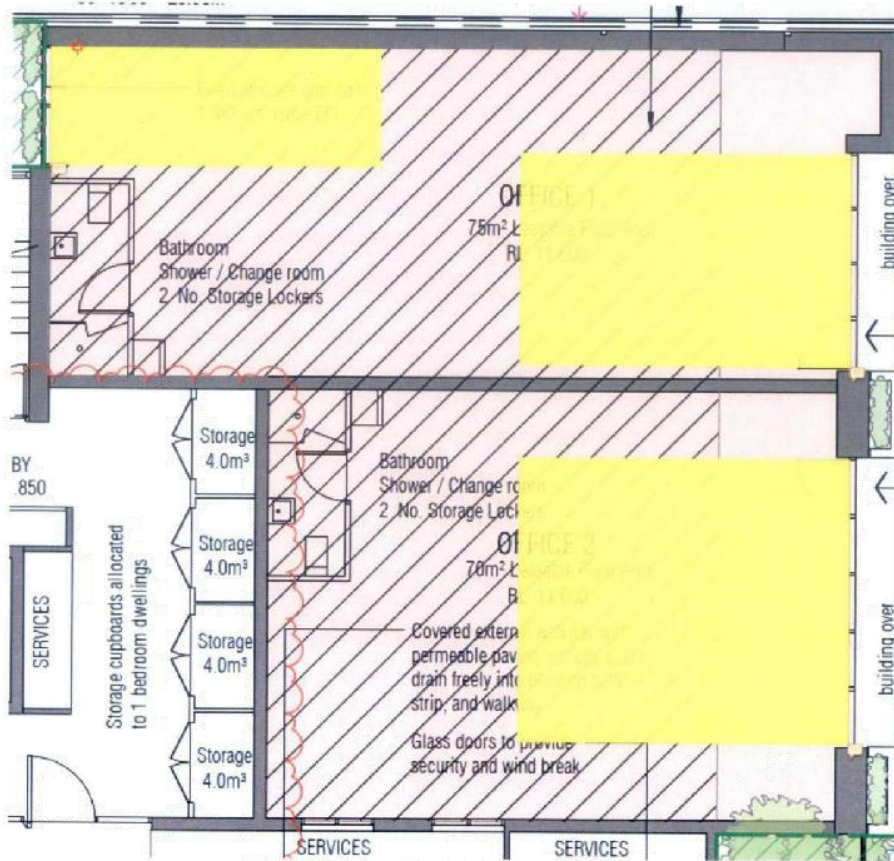


Table 5: Nominated and daylight compliant areas

Area	Nominated Area (m <sup>2</sup> )	Daylight Compliant Area (m <sup>2</sup> )
Office 1	70	30
Office 2	64	26
<b>Total</b>	<b>134</b>	<b>56</b>

$$\% \text{ Area Daylight Compliant} = \frac{\text{Daylight Compliant Area}}{\text{Nominated Area}} = \frac{56}{134} = 41.8\%$$

## Attachment 5 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A ESD Report

SUSTAINABLE DEVELOPMENT CONSULTANTS

## Dwellings

Sustainable Development Consultants have modelled the design of the mixed-use residential development proposed for 142-144 Coppin Street, Richmond using the 3D modelling program Autodesk Ecotect Analysis 2011 and the Radiance plugin.

The daylight modelling was undertaken to check on the effectiveness of the proposed design in a set of future equitable development scenarios for the sites to the north and south. The future scenario modelled can be viewed in Figure 1 below, but is essentially based on a replication of the height and setbacks provided within the subject site.

## DESIGN AND PERFORMANCE

We have made the assumption that the windows will be clear low-e glazing (VLT of 60%).

Windows in the light courts and which are noted to be privacy up to 1.7m have been modelled as obscured privacy glass with a VLT of 40%.

The floors were modelled with a reflectivity of 0.3 (30%) as is typical for a carpet or dark wooden floor.

The balconies / terraces were modelled with a reflectivity of 0.4 (40%) as is typical for a light-coloured external floor tile.

The external walls were modelled with a reflectivity of 0.5 (50%) and the internal walls modelled as being lighter in colour with a reflectivity of 0.7 (70%).

Ceilings were assumed as white with a reflectivity of 0.7 (70%).

Balustrades and privacy screening was modelled solid to reflect a worst case scenario.

Window heights (vision glass) to the bedrooms and living areas are modelled as per the elevations, typically with 2400mm high vision glazing.

The apartments on level 1 have been modelled in detail with the internal partitions and windows built into the model. All elements that could overshadow or reflect light into the bedrooms and living rooms are deemed important for the assessment and were included in the model. In addition, all balustrades were included at a height of 1m high, with privacy screening modelled to 1.7m.

## RESULTS

The modelling was undertaken using a uniform design sky which is used to generate daylight factors across the bedrooms and living zones. The desired daylight factor for a bedroom as outlined in the SDAPP guidelines is 0.5% achieved across 90% of the floor area of the room, with living zones required to provide 1% daylight factor across 90% of the floor area of the room.

Please see the results of the modelling below for confirmation of the predicted daylight factors within the development and an analysis of the appropriateness of the design to provide good internal daylight amenity and energy efficiency (i.e. not relying on artificial lighting during the day).

The figures below have the following colour scale:

- Yellow (acceptable daylight in bedrooms and living rooms (over 1% daylight factor));
- Red to orange and dark yellow (acceptable daylight in bedrooms, only acceptable in living zones if small amounts present (0.5%-1% daylight factor)); and
- Blue to purple (typically unacceptable in living zones and bedrooms, small amounts acceptable in bedrooms (<0.5% daylight factor)).

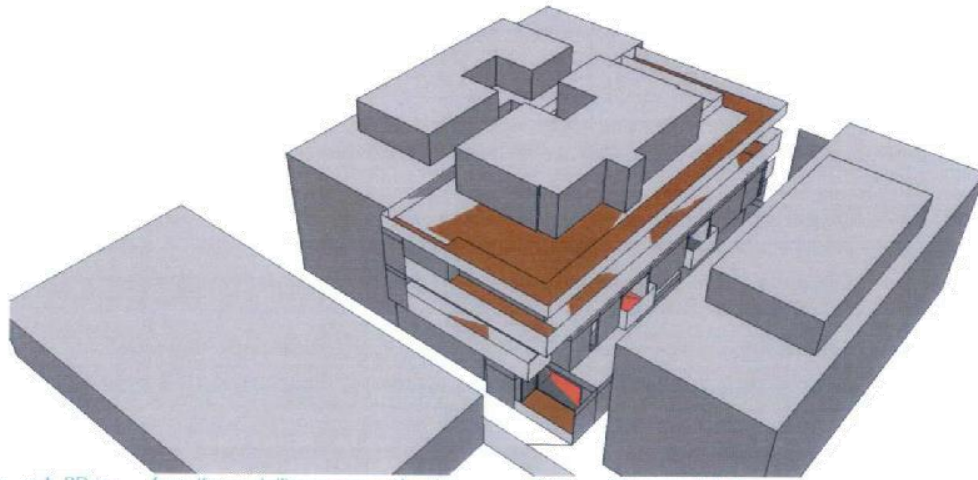


Figure 1: 3D image from the modelling program showing surrounding conditions modelled.



Figure 2: Level 1 Apartments Daylight Modelling Results

The results above demonstrate that the proposed design works very well for the provision of daylight throughout the development.

The living zones achieve excellent internal daylight amenity due to the east and west outlook away from future large development sites. Additionally, even with large balcony overhangs, the depth of the living zones is very reasonable and with wide windows provides excellent daylight across the whole living zone in all these apartments. The apartments on Level 2 and 3 will only perform better.

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SUSTAINABLE DEVELOPMENT CONSULTANTS

All bedrooms except for 2 are predicted to achieve the best practice internal daylight amenity. The two bedrooms which fall slightly below this level (they achieve 75% of the room area at over 0.5% daylight factor and 25% of the room at 0.4% daylight factor, instead of the desired 90% of the room over 0.5% daylight factor) are bedroom of Apartment 1.01 and 1.04 which come off the northern light well.

Under the future scenario modelled with a total light well size of 3m wide by 5m deep (2.5m deep on each side of the boundary) this is a good outcome. Certainly, under the current surrounding development scenario these bedrooms will achieve much higher levels of daylight.

To optimise these rooms to achieve the desired daylight level I recommend that a requirement be made to use a higher VLT obscure glazing (such as fluted glass or acid etched glass) which will allow more light into the room and tip it over the desired daylight level (see figure 3 below). These solutions provide the privacy required to stop overlooking whilst allowing more daylight to penetrate the rooms, this is done by refracting the light through the glazing in a way that people can't make out the shape on the other side, whilst still letting all the light in that a clear window would.

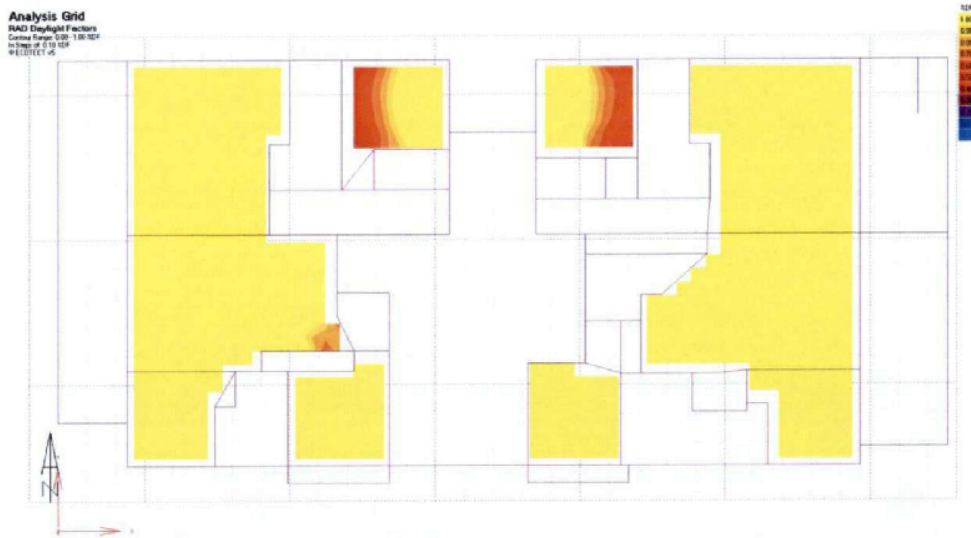


Figure 3: Level 1 Apartments Daylight Modelling Results (Optimised)

Overall the daylight modelling assessment has demonstrated that the proposed project will provide good internal daylight amenity to all occupants and can provide best practice to all occupants under a future equitable development scenario with a minor specification note added to plans.

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SUSTAINABLE DEVELOPMENT CONSULTANTS

## Appendix 5 – VOC and Formaldehyde Emissions Limits

Table 6: Maximum Volatile Organic Compound Levels for construction materials (Source: Green Building Council Australia - Green Star Design and As Built v1.2 2017 Manual)

Product Type/Subcategory	Max TVOC Content (g/L of ready-to-use product)
<b>Paints, Adhesives and Sealants</b>	
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
<b>Carpets</b>	
ASTM D5116 - Total VOC limit	0.5 mg/m <sup>2</sup> per hour
ASTM D5116 - 4-PC (4-Phenylcyclohexene)	0.05mg/m <sup>2</sup> per hour
ISO 16000 / EN 13419 - TVOC at three days	0.5 mg/m <sup>2</sup> per hour
ISO 10580 / ISO/TC 219 (Document N238) - TVOC at 24 hours	0.5 mg/m <sup>2</sup> per hour

Table 7: Maximum Formaldehyde levels for processed wood products. (Source: Green Building Council Australia - Green Star Design and As Built v1.2 2017 Manual)

Formaldehyde emission limit values for different testing methods	
Test Method	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 <sup>3</sup> hr
ASTM D5116 (applicable to high pressure laminates and compact laminates)	≤0.1 mg/m <sup>3</sup> 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 <sup>3</sup> hr (at 3 days)
ASTM D6007	≤0.12mg/m <sup>3</sup>
ASTM E1333	≤0.12mg/m <sup>3</sup>
EN 717-1 (also known as DIN EN 717-1)	≤0.12mg/m <sup>3</sup>
EN 717-2 (also known as DIN EN 717-2)	≤3.5mg/m <sup>3</sup> hr

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11/02/2020

BESS - 142-144 Coppin St (SMP.V3)

# BESS Report



This BESS report outlines the sustainable design commitments of the proposed development at 142-144 Coppin St Richmond VIC 3121. 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 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.

142-144 Coppin St, Richmond 3121 Richmond

Site area: 512 m<sup>2</sup> · Building Floor Area: 787 m<sup>2</sup> ·

Date of Assessment: 11 Feb 2020 ·

Version: V3, 1.6.1-B.260 ·

Applicant: nick@sdconsultants.com.au

Project Identifier

**348AEC52**

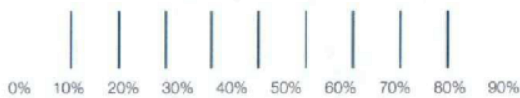
(Previously #32795)

Published

<http://bess.net.au/projects/348AEC52-V1>

Your BESS score is

**+ 60%**



50% +  
Best Practice

70% +  
Excellence

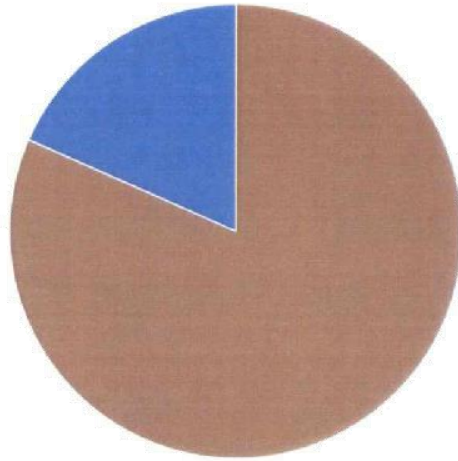
% of Total Category	Category	Score	Pass
3 %	Management	56 %	
6 %	Water	62 %	✓
15 %	Energy	56 %	✓
14 %	Stormwater	100 %	✓
15 %	IEQ	88 %	✓
5 %	Transport	55 %	
2 %	Waste	33 %	
2 %	Urban Ecology	36 %	
0 %	Innovation	0 %	

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Building Composition



Apartment Office Building

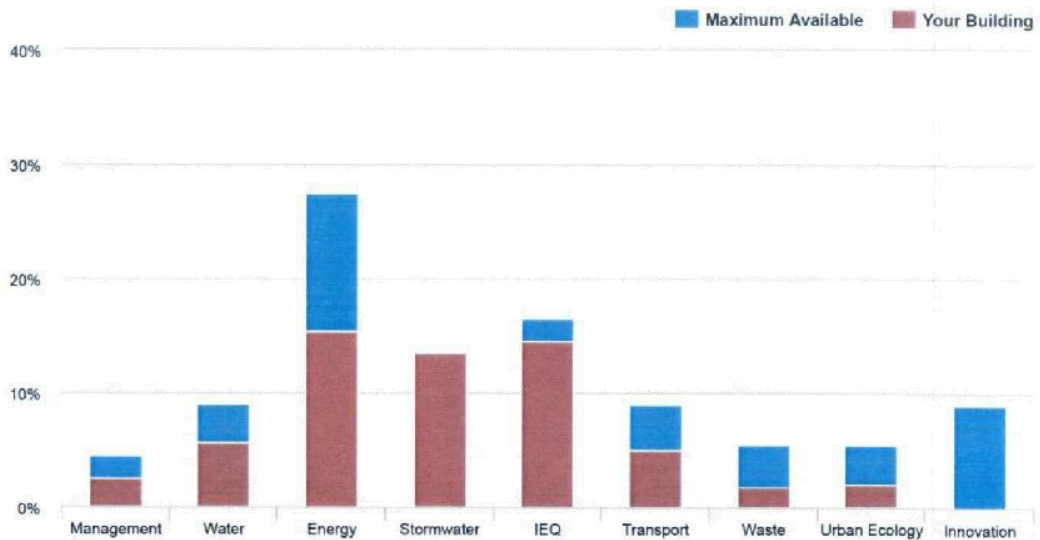
Dwellings

Type	Name	Quantity	Area
Apartment	102	1	79 m <sup>2</sup>
Apartment	103	1	79 m <sup>2</sup>
Apartment	104	3	60 m <sup>2</sup>
Apartment	202	1	57 m <sup>2</sup>
Apartment	301	1	247 m <sup>2</sup>

Non-Residential Spaces

Office Building 145 m<sup>2</sup>

How did this Development Perform in each Environmental Category?

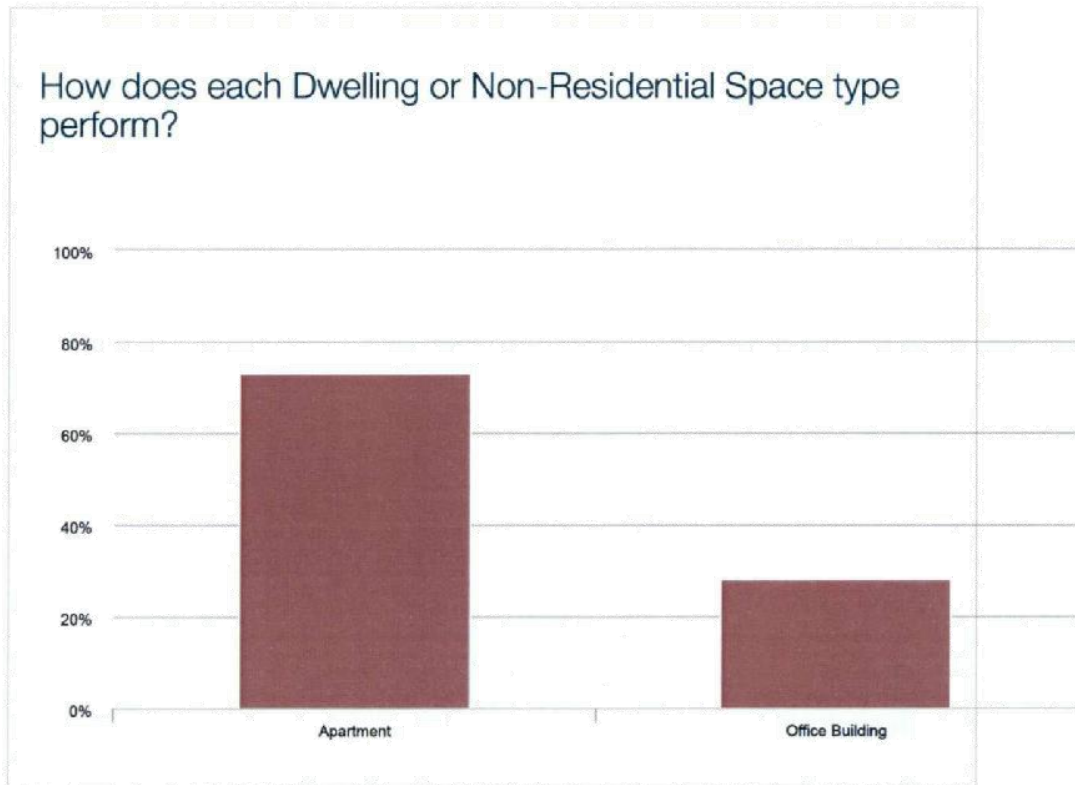




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BESS - 142-144 Coppin St (SMP.V3)



**Sustainable design commitments by category**

The sustainable design commitments for this project are listed below. These are to be incorporated into the design documentation and subsequently implemented.

Management		56% - contributing 3% to overall score
Credit	Disabled	Scoped out
Management 2.2 Thermal Performance Modelling - Multi-Dwelling Residential		Score 100 %
Management 3.1 Metering		Score 100 %
Management 3.2 Metering		Score 100 %
Management 3.3 Metering		Score 82 %
Management 4.1 Building Users Guide		Score 100 %
Management 2.2 Thermal Performance Modelling - Multi-Dwelling Residential		Score 100%
<b>Score Contribution</b>	This credit contributes 20.4% towards this section's score.	

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**Aim** To encourage and recognise developments that have used modelling to inform passive design at the early design stage.

**Questions**

Have preliminary NatHERS ratings been undertaken for all thermally unique dwellings?

**Apartment**

Yes

**Management 3.1 Metering**

100%

**Score Contribution** This credit contributes 10.2% towards this section's score.

**Aim** To provide building users with information that allows monitoring of energy and water consumption.

**Questions**

Have utility meters been provided for all individual dwellings?

**Apartment**

Yes

**Management 3.2 Metering**

100%

**Score Contribution** This credit contributes 2.3% towards this section's score.

**Aim** To provide building users with information that allows monitoring of energy and water consumption.

**Questions**

Have utility meters been provided for all individual commercial tenants?

**Office Building**

Yes

**Management 3.3 Metering**

82%

**Score Contribution** This credit contributes 12.5% towards this section's score.

**Aim** To provide building users with information that allows monitoring of energy and water consumption.

**Notes** Office spaces do not have common area services.

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Questions

Have all major common area services been separately submetered?

**Apartment**

Yes

Management 4.1 Building Users Guide

100%

**Score Contribution**

This credit contributes 12.5% towards this section's score.

**Aim**

To encourage and recognise initiatives that will help building users to use the building efficiently

Questions

Will a building users guide be produced and issued to occupants?

**Project wide**

Yes

**Water**

62% - contributing 6% to overall score

**Credit**

Disabled Scoped out Score

Water 1.1 Potable Water Use Reduction (Interior Uses)

50 %

Water 2.1 Rainwater Collection & Reuse (Additional Uses)

100 %

Water 3.1 Water Efficient Landscaping

100 %

Water Approachs

What approach do you want to use Water?

Use the built in calculation tools

Are you installing a rainwater tank?

Yes

Water fixtures, fittings and connections

		Office Building	102	103
Showerhead	Scope out	3 Star WELS (> 6.0 but <=3 Star WELS (> 6.0 but <= 7.5)		
Bath	Scope out	Scope out	Scope out	Scope out
Kitchen Taps	> 5 Star WELS rating	> 5 Star WELS rating	> 5 Star WELS rating	> 5 Star WELS rating
Bathroom Taps	> 5 Star WELS rating	> 5 Star WELS rating	> 5 Star WELS rating	> 5 Star WELS rating

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	Office Building	102	103
Dishwashers	> 5 Star WELS rating	> 5 Star WELS rating	> 5 Star WELS rating
WC	> 4 Star WELS rating	> 4 Star WELS rating	> 4 Star WELS rating
Urinals	Scope out	Scope out	Scope out
Washing Machine Water Efficiency	Scope out	> 5 Star WELS rating	> 5 Star WELS rating
Rainwater connected to: Toilets	Yes	Yes	Yes
	104	202	301
Showerhead	3 Star WELS (> 6.0 but <= 7.5)	3 Star WELS (> 6.0 but <= 7.5)	3 Star WELS (> 6.0 but <= 7.5)
Bath	Scope out	Scope out	Medium Sized Contemporary Bath
Kitchen Taps	> 5 Star WELS rating	> 5 Star WELS rating	> 5 Star WELS rating
Bathroom Taps	> 5 Star WELS rating	> 5 Star WELS rating	> 5 Star WELS rating
Dishwashers	> 5 Star WELS rating	> 5 Star WELS rating	> 5 Star WELS rating
WC	> 4 Star WELS rating	> 4 Star WELS rating	> 4 Star WELS rating
Urinals	Scope out	Scope out	Scope out
Washing Machine Water Efficiency	> 5 Star WELS rating	> 5 Star WELS rating	> 5 Star WELS rating
Rainwater connected to: Toilets	Yes	Yes	Yes

Rainwater Tanks

		Tank
What is the total roof area connected to the rainwater tank?	Square Metres	297.0
Tank Size	Litres	10000.0

Water 1.1 Potable Water Use Reduction (Interior Uses)

50%

<b>Score Contribution</b>	This credit contributes 50.0% towards this section's score.
<b>Aim</b>	Water 1.1 Potable water use reduction (interior uses) What is the reduction in total water use due to efficient fixtures, appliances, and rainwater use? To achieve points in this credit there must be >25% potable water reduction. You are using the built in calculation tools. This credit is calculated from information you have entered above.
<b>Criteria</b>	Percentage reduction in potable water use

Questions

Percentage Achieved ? Percentage %

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BESS - 142-144 Coppin St (SMP.V3)

Project wide

%

Calculations

Annual Water Consumption (kL) (Reference)

Project wide

1104

Annual Water Consumption (kL) (Proposed)

Project wide

640

% Reduction in Potable Water Consumption Percentage %

Project wide

42 %

Water 2.1 Rainwater Collection & Reuse (Additional Uses) 100%

Score Contribution This credit contributes 25.0% towards this section's score.

Aim What is the additional reduction in potable (mains) water use due to rainwater harvesting? Additional water uses for rainwater include non-potable demands such as irrigation, pools, commercial process uses and taps for washdown. Note: tank water will only be available for additional uses if it not required for internal uses. If the property uses an alternative water source, the alternative water source is deemed to meet 90% of additional non-potable water use requirements. You are using the built in calculation tools. This credit is calculated from information you have entered above in the rainwater tanks section.

Criteria What is the additional reduction in potable (mains) water use due to using rainwater or an alternative water source?

Questions

Percentage Achieved ? Percentage %

Project wide

%

Calculations

Rainwater collection & reuse (additional uses) Percentage %

Project wide

100 %

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BESS - 142-144 Coppin St (SMP.V3)

**Water 3.1 Water Efficient Landscaping** 100%

<b>Score Contribution</b>	This credit contributes 12.5% towards this section's score.
<b>Aim</b>	Are water efficiency principles used for landscaped areas? This includes low water use plant selection (e.g. xeriscaping) and specifying water efficient irrigation (e.g. drip irrigation with timers and rain sensors). Note: food producing landscape areas and irrigation areas connected to rainwater or an alternative water source are excluded from this section.
<b>Notes</b>	Native species of plants to be grown throughout the development where possible

**Questions**

Will water efficient landscaping be installed?

**Project wide**

Yes

**Energy** 56% - contributing 15% to overall score

Credit	Disabled	Scoped out	Score
Energy 1.1 Thermal Performance Rating - Non-Residential			12 %
Energy 1.2 Thermal Performance Rating - Residential			17 %
Energy 2.1 Greenhouse Gas Emissions			82 %
Energy 2.3 Electricity Consumption			100 %
Energy 2.4 Gas Consumption			82 %
Energy 3.1 Carpark Ventilation			N/A
Energy 3.2 Hot Water			82 %
Energy 3.4 Clothes Drying			100 %
Energy 3.6 Internal Lighting - Residential Multiple Dwellings			100 %
Energy 3.7 Internal Lighting - Non-Residential			100 %
Energy 4.1 Combined Heat and Power (cogeneration / trigeneration)			N/A
Energy 4.2 Renewable Energy Systems - Solar			82 %

OFFICE ENERGY CONSUMPTION FIGURES Office tenancies average Victorian energy intensity = 424 MJ/m2.a; Office NFA = 141m2 HVAC consumption = energy intensity x 18% = 424 x 141m2 x 18% / 3.6 = 2,989kWh Hot Water consumption = energy intensity x 3% = 424 x 141m2 x 3% = 1,794MJ Note: 18% and 3% are used as an average proportion of energy end use in an office

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BESS - 142-144 Coppin St (SMP.V3)

Dwellings Energy Approachs

What approach do you want to use for Energy?	Use the built in calculation tools
Are you installing a solar photovoltaic (PV) system?	Yes
Gas Supply	Natural Gas

Dwelling Energy Profiles

	102	103	104
Below the floor is	Another Occupancy	Ground or Carpark	Ground or Carpark
Above the ceiling is	Another Occupancy	Another Occupancy	Outside
Exposed sides	2	2	3
NatHERS Annual Energy Loads - Heat MJ/sqm	60.1	75.9	79.3
NatHERS Annual Energy Loads - Cool MJ/sqm	13.6	15.6	14.8
NatHERS star rating	7.3	6.7	6.6
Type of Heating System	D Reverse cycle space	D Reverse cycle space	D Reverse cycle space
Heating System Efficiency	5 Star	5 Star	5 Star
Type of Cooling System	Refrigerative space	Refrigerative space	Refrigerative space
Cooling System Efficiency	5 Stars	5 Stars	5 Stars
Type of Hot Water System	J Gas Instantaneous 6 star	6J Gas Instantaneous 6 star	6J Gas Instantaneous 6 star
Clothes Line	D Private outdoor clothesline	D Private outdoor clothesline	D Private outdoor clothesline
Clothes Dryer	A No clothes dryer	A No clothes dryer	A No clothes dryer
	<b>202</b>	<b>301</b>	
Below the floor is	Another Occupancy	Another Occupancy	
Above the ceiling is	Another Occupancy	Outside	
Exposed sides	2	4	
NatHERS Annual Energy Loads - Heat MJ/sqm	82.2	64.7	
NatHERS Annual Energy Loads - Cool MJ/sqm	22.2	27.9	
NatHERS star rating	6.3	6.7	
Type of Heating System	D Reverse cycle space	D Reverse cycle space	
Heating System Efficiency	5 Star	5 Star	
Type of Cooling System	Refrigerative space	Refrigerative space	
Cooling System Efficiency	5 Stars	5 Stars	
Type of Hot Water System	J Gas Instantaneous 6 star	J Gas Instantaneous 6 star	
Clothes Line	D Private outdoor clothesline	D Private outdoor clothesline	

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BESS - 142-144 Coppin St (SMP.V3)

	202	301
Clothes Dryer	A No clothes dryer	A No clothes dryer

Non-Residential Spaces Energy Profiles

	Office Building
Heating, Cooling & Comfort Ventilation - Electricity - baseline kWh	2989.0
Heating, Cooling & Comfort Ventilation - Electricity - proposed kWh	2690.0
Hot Water - Gas - baseline MJ	1794.0
Hot Water - Gas - proposed MJ	1794.0

Solar Photovoltaic systems

	Solar
System Size (lesser of inverter and panel capacity) kW peak	2.0
Orientation (which way is the system facing)?	North
Inclination (angle from horizontal) Angle (degrees)	30.0
Which Building Class does this apply to?	Apartment

Energy 1.1 Thermal Performance Rating - Non-Residential 12%

<b>Score Contribution</b>	This credit contributes 7.7% towards this section's score.
<b>Aim</b>	Reduce reliance on mechanical systems to achieve thermal comfort in summer and winter - improving comfort, reducing greenhouse gas emissions, energy consumption, and maintenance costs.
<b>Criteria</b>	What is the % reduction in heating and cooling energy consumption against the reference case (NCC 2016 BCA Volume 1 Section J).

Questions

Criteria Achieved ?

**Office Building**

Yes

Calculations

Total Improvement Percentage %

**Office Building**

10 %

Energy 1.2 Thermal Performance Rating - Residential 17%



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BESS - 142-144 Coppin St (SMP.V3)

<b>Score Contribution</b>	This credit contributes 25.5% towards this section's score.
<b>Aim</b>	Reduce reliance on mechanical systems to achieve thermal comfort in summer and winter - improving comfort, reducing greenhouse gas emissions, energy consumption, and maintenance costs.
<b>Criteria</b>	What is the average NatHERS rating?

Questions

NATHERS Rating ? Stars

**Apartment**

6.0

Calculations

Average NATHERS Rating (Weighted) Stars

**Apartment**

6.7

Energy 2.1 Greenhouse Gas Emissions 82%

<b>Score Contribution</b>	This credit contributes 10.4% towards this section's score.
<b>Aim</b>	Reduce the building's greenhouse gas emissions
<b>Criteria</b>	Are greenhouse gas emissions >10% below the benchmark

Questions

Criteria Achieved ?

Calculations

Reference Building with Reference Services (BCA only) kg CO2

Apartment	Office Building
36266.2	3649.0

Proposed Building with Proposed Services (Actual Building) kg CO2

Apartment	Office Building
10504.8	3293.2

% Reduction in GHG Emissions Percentage %

Apartment	Office Building
71 %	9 %

Energy 2.3 Electricity Consumption 100%

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BESS - 142-144 Coppin St (SMP.V3)

**Score Contribution** This credit contributes 10.4% towards this section's score.

**Aim** Reduce consumption of electricity

**Criteria** Is the annual electricity consumption >10% below the benchmark

Questions

Criteria Achieved ?

Calculations

Reference kWh

Apartment	Office Building
26353.9	2989.0

Proposed kWh

Apartment	Office Building
6562.5	2690.0

Improvement Percentage %

Apartment	Office Building
75 %	10 %

Energy 2.4 Gas Consumption 82%

**Score Contribution** This credit contributes 10.4% towards this section's score.

**Aim** Reduce consumption of electricity

**Criteria** Is the annual gas consumption >10% below the benchmark?

Questions

Criteria Achieved ?

Calculations

Reference MJ

Apartment	Office Building
95559.2	1794.0

Proposed MJ

Apartment	Office Building
52511.9	1794.0

Improvement Percentage %

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BESS - 142-144 Coppin St (SMP.V3)

Apartment	Office Building
45 %	0 %

Energy 3.1 Carpark Ventilation N/A

This credit was scoped out: N/A - proposed development doesn't not include basement carpark

Energy 3.2 Hot Water 82%

**Score Contribution** This credit contributes 5.2% towards this section's score.

**Criteria** Does the hot water system use >10% less energy (gas and electricity) than the reference case?

Questions

Criteria Achieved ?

Calculations

Reference <sup>kWh</sup>

Apartment	Office Building
26544.2	498.3

Proposed <sup>kWh</sup>

Apartment	Office Building
14629.6	498.3

Improvement <sup>Percentage %</sup>

Apartment	Office Building
44 %	0 %

Energy 3.4 Clothes Drying 100%

**Score Contribution** This credit contributes 4.3% towards this section's score.

**Criteria** Does the combination of clothes lines and efficient dryers reduce energy (gas+electricity) consumption by more than 10%?

Questions

Criteria Achieved ?

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BESS - 142-144 Coppin St (SMP.V3)

Calculations

Reference kWh

**Apartment**

3400.9

Proposed kWh

**Apartment**

680.2

Improvement Percentage %

**Apartment**

80 %

Energy 3.6 Internal Lighting - Residential Multiple Dwellings 100%

**Score Contribution** This credit contributes 8.5% towards this section's score.

**Aim** Reduce energy consumption associated with internal lighting

Questions

Is the maximum illumination power density (W/m2) in at least 90% of the relevant Building Class at least 20% lower than required by Table J6.2a of the NCC BCA (2013) Volume 1 Section J (Class 2 to 9) and clause 3.12.5.5 NCC BCA (2013) Volume 2 Section J (Class 1 and 10)

**Apartment**

Yes

Energy 3.7 Internal Lighting - Non-Residential 100%

**Score Contribution** This credit contributes 1.9% towards this section's score.

**Aim** Reduce energy consumption associated with internal lighting

Questions

Is the maximum illumination power density (W/m2) in at least 90% of the relevant building class at least 20% lower than required by Table J6.2a of the NCC 2016 BCA Volume 1 Section J (Class 2 to 9)

**Office Building**

Yes

Energy 4.1 Combined Heat and Power (cogeneration / trigeneration) N/A

This credit was scoped out: No cogeneration or trigeneration system in use.

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BESS - 142-144 Coppin St (SMP.V3)

This credit was disabled: No cogeneration or trigeneration system in use.

<b>Aim</b>	Reduce energy consumption
<b>Criteria</b>	Does the CHP system reduce the class of buildings GHG emissions by more than 25%?

Energy 4.2 Renewable Energy Systems - Solar 82%

<b>Score Contribution</b>	This credit contributes 5.2% towards this section's score.
<b>Aim</b>	To encourage the installation of on-site renewable energy generation
<b>Criteria</b>	Does the solar power system provide 5% of the developments estimated energy consumption?

Questions

Criteria Achieved ?

Calculations

Solar Power - Energy Generation per year <sup>kWh</sup>

**Apartment**

2606.1

% of Building's Energy <sup>Percentage %</sup>

**Apartment**

12 %

**Stormwater** 100% - contributing 14% to overall score

Credit	Disabled	Scoped out	Score
<b>Stormwater 1.1 Stormwater Treatment</b>			100 %

**Notes**  
 Runoff from the non-trafficable roof areas and third floor balcony areas (totalling 297m2) will be diverted to rainwater tank(s) with an effective storage capacity of at least 10,000L. It will include a Rainceptor (or equivalent), which will act as a filter to prevent any pollutants entering the tank from the trafficable balcony areas. Collected rainwater will be used for all toilet flushing in the development. Any overflow from the tank(s) or runoff from the remaining impervious areas will be diverted to the legal point of discharge (LPD).

**Which stormwater modelling are you using?** Melbourne Water STORM tool

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BESS - 142-144 Coppin St (SMP.V3)

Stormwater 1.1 Stormwater Treatment 100%

**Score Contribution** This credit contributes 100.0% towards this section's score.

**Aim** To achieve best practice stormwater quality objectives through reduction of pollutant load (suspended solids, nitrogen and phosphorus)

**Criteria** Has best practice stormwater management been demonstrated?

Questions

STORM score achieved

**Project wide**

101

Flow (ML/year) % Reduction

**Project wide**

-

Total Suspended Solids (kg/year) % Reduction

**Project wide**

-

Total Phosphorus (kg/year) % Reduction

**Project wide**

-

Total Nitrogen (kg/year) % Reduction

**Project wide**

-

Calculations

Min STORM Score

**Project wide**

100

**IEQ** 88% - contributing 15% to overall score

Credit	Disabled	Scoped out	Score
IEQ 1.1 Daylight Access - Living Areas			100 %
IEQ 1.2 Daylight Access - Bedrooms			67 %

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BESS - 142-144 Coppin St (SMP.V3)

IEQ 1.3 Winter Sunlight	100 %
IEQ 1.4 Daylight Access - Non-Residential	33 %
IEQ 1.5 Daylight Access - Minimal Internal Bedrooms	100 %
IEQ 2.1 Effective Natural Ventilation	100 %

**Notes** Refer Appendix 4 of SMP for more detail

Are all living areas and bedrooms less than 8m deep (5m if south facing)?	Yes
Does all glazing to living areas achieve at least 60% Visible Light Transmittance (VLT)?	Yes
Do all living areas have an external facing window (not into a courtyard, light well or other major obstruction)?	Yes
What approach do you want to use for IEQ?	Provide our own calculations

IEQ 1.1 Daylight Access - Living Areas 100%

<b>Score Contribution</b>	This credit contributes 25.7% towards this section's score.
<b>Aim</b>	To provide a high level of amenity and energy efficiency through design for natural light.
<b>Criteria</b>	What % of living areas achieve a daylight factor greater than 1%

Questions

Percentage Achieved ? Percentage %

**Apartment**

100 %

Calculations

Calculated percentage Percentage %

**Apartment**

100 %

IEQ 1.2 Daylight Access - Bedrooms 67%

<b>Score Contribution</b>	This credit contributes 25.7% towards this section's score.
<b>Aim</b>	To provide a high level of amenity and energy efficiency through design for natural light.
<b>Criteria</b>	What % of bedrooms achieve a daylight factor greater than 0.5%
<b>Notes</b>	9 of the 11 bedrooms

Questions

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BESS - 142-144 Coppin St (SMP.V3)

Percentage Achieved ? Percentage %

**Apartment**

82 %

**Calculations**

Calculated percentage Percentage %

**Apartment**

100 %

**IEQ 1.3 Winter Sunlight**

100%

**Score Contribution** This credit contributes 8.6% towards this section's score.

**Aim** To provide a high level of amenity and reduce need for artificial heating in winter.

**Criteria** Do 70% of dwellings receive at least 3 hours of direct sunlight in all Living areas between 9am and 3pm in mid-winter?

**Notes** Result demonstrated using BESS calculator in Version 1 of BESS assessment

**Questions**

Criteria Achieved ?

**Apartment**

Yes

**IEQ 1.4 Daylight Access - Non-Residential**

33%

**Score Contribution** This credit contributes 5.8% towards this section's score.

**Aim** To provide a high level of amenity and energy efficiency through design for natural light.

**Criteria** What % of the nominated floor area has at least 2% daylight factor?

**Notes** Using the Green Star daylight hand calculation method, it has been demonstrated that 42% of primary office spaces achieve a daylight factor of 2% or greater. Please refer to Appendix 4 of the SMP for further details.

**Questions**

% Achieved ?

**Office Building**

42 %



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BESS - 142-144 Coppin St (SMP.V3)

IEQ 1.5 Daylight Access - Minimal Internal Bedrooms 100%

**Score Contribution** This credit contributes 8.6% towards this section's score.

**Aim** To provide a high level of amenity and energy efficiency through design for natural light and ventilation.

Questions

Do at least 90% of dwellings have an external window in all bedrooms?

**Apartment**

Yes

IEQ 2.1 Effective Natural Ventilation 100%

**Score Contribution** This credit contributes 25.7% towards this section's score.

**Aim** To provide fresh air and passive cooling opportunities.

**Criteria** What % of dwellings are effectively naturally ventilated?

Questions

% Achieved ?

**Apartment**

100 %

## Transport

55% - contributing 5% to overall score

Credit	Disabled	Scoped out	Score
Transport 1.1 Bicycle Parking - Residential			100 %
Transport 1.2 Bicycle Parking - Residential Visitor			100 %
Transport 1.3 Bicycle Parking - Convenience Residential			100 %
Transport 1.4 Bicycle Parking - Non-Residential			100 %
Transport 1.5 Bicycle Parking - Non-Residential Visitor			100 %
Transport 1.6 End of Trip Facilities - Non-Residential			100 %
Transport 1.1 Bicycle Parking - Residential			100%

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BESS - 142-144 Coppin St (SMP.V3)

**Score Contribution** This credit contributes 18.5% towards this section's score.

**Aim** To encourage and recognise initiatives that facilitate cycling

**Criteria** Is there at least one secure bicycle space per dwelling?

Questions

Bicycle Spaces Provided ?

**Apartment**

8

Calculations

Min Bicycle Spaces Required

**Apartment**

7

Transport 1.2 Bicycle Parking - Residential Visitor 100%

**Score Contribution** This credit contributes 18.5% towards this section's score.

**Aim** To encourage and recognise initiatives that facilitate cycling

**Criteria** Is there at least one visitor bicycle space per 4 dwellings?

Questions

Visitor Bicycle Spaces Provided ?

**Apartment**

2

Calculations

Min Visitor Bicycle Spaces Required

**Apartment**

2

Transport 1.3 Bicycle Parking - Convenience Residential 100%

**Score Contribution** This credit contributes 9.3% towards this section's score.

**Aim** To facilitate cycling by providing easily accessible parking infrastructure

Questions

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BESS - 142-144 Coppin St (SMP.V3)

Are bike parking facilities for residents located at ground level?

**Apartment**

Yes

Transport 1.4 Bicycle Parking - Non-Residential

100%

**Score Contribution** This credit contributes 4.2% towards this section's score.

**Aim** To encourage and recognise initiatives that facilitate cycling

**Notes** Office employee requirement: 1 to each 300 sq m of net floor area if the net floor area exceeds 1000 sqm. Proposed offices totalling 141sqm have a requirement of zero spaces, therefore provision of two spaces in the external entrance walkway exceeds requirement by 50%

Questions

Have the planning scheme requirements for employee bicycle parking been exceeded by at least 50%?

**Office Building**

Yes

Transport 1.5 Bicycle Parking - Non-Residential Visitor

100%

**Score Contribution** This credit contributes 2.1% towards this section's score.

**Aim** To encourage and recognise initiatives that facilitate cycling

**Notes** Office visitor requirement: 1 to each 1000 sq m of net floor area if the net floor area exceeds 1000 sq m. Proposed offices totalling 141sqm have a requirement of zero spaces, therefore availability of two spaces on Coppin Street exceeds requirement by 50%

Questions

Have the planning scheme requirements for visitor bicycle parking been exceeded by at least 50%?

**Office Building**

Yes

Transport 1.6 End of Trip Facilities - Non-Residential

100%

**Score Contribution** This credit contributes 2.1% towards this section's score.

**Aim** To encourage and recognise initiatives that facilitate cycling

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BESS - 142-144 Coppin St (SMP.V3)

**Criteria** Adequate bicycle parking has been provided. Is there also: \* 1 shower for the first 5 bicycle spaces plus 1 to each 10 bicycles spaces thereafter, \* changing facilities adjacent to showers, and \* one secure locker per bicycle space in the vicinity of the changing / shower facilities?

**Questions**

Number of showers provided ?

**Office Building**

2

Number of lockers provided ?

**Office Building**

4

**Calculations**

Min Showers Required

**Office Building**

2

Min Lockers Required

**Office Building**

1

**Waste**

33% - contributing 2% to overall score

Credit	Disabled	Scoped out	Score
Waste 2.2 - Operational Waste - Convenience of Recycling			100 %

Waste 2.2 - Operational Waste - Convenience of Recycling 100%

**Score Contribution** This credit contributes 33.3% towards this section's score.

**Aim** To minimise recyclable material going to landfill

**Questions**

Are the recycling facilities at least as convenient for occupants as facilities for general waste?

**Project wide**

Yes

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BESS - 142-144 Coppin St (SMP.V3)

## Urban Ecology

36% - contributing 2% to overall score

Credit	Disabled	Scoped out	Score
Urban Ecology 1.1 Communal Spaces			N/A
Urban Ecology 2.1 Vegetation			50 %
Urban Ecology 2.4 Private Open Space - Balcony / Courtyard Ecology			100 %

Urban Ecology 1.1 Communal Spaces N/A

This credit was scoped out: No communal spaces part of the proposed development

<b>Aim</b>	To encourage and recognise initiatives that facilitate interaction between building occupants
<b>Criteria</b>	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

Urban Ecology 2.1 Vegetation 50%

<b>Score Contribution</b>	This credit contributes 51.2% towards this section's score.
<b>Aim</b>	To encourage and recognise the use of vegetation and landscaping within and around developments
<b>Criteria</b>	How much of the site is covered with vegetation, expressed as a percentage of the total site area.
<b>Notes</b>	53m <sup>2</sup> - Combination of permeable ground floor landscaped areas and upper storey landscaping on balconies and terraces

Questions

Percentage Achieved ? Percentage %

**Project wide**

10 %

Urban Ecology 2.4 Private Open Space - Balcony / Courtyard Ecology 100%

<b>Score Contribution</b>	This credit contributes 10.4% towards this section's score.
---------------------------	---

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BESS - 142-144 Coppin St (SMPV3)

**Aim** Encourage plants to be grown on balconies and courtyards.

**Questions**

Is there a tap and floor waste on every balcony / in every courtyard?

**Apartment**

Yes

**Innovation**

0% - contributing 0% to overall score

**Items to be marked on floorplans**

0 / 22 floorplans & elevation notes complete.

Management 3.1: Individual utility meters annotated	Incomplete
Management 3.2: Individual utility meters annotated	Incomplete
Management 3.3: Common area submeters annotated	Incomplete
Water 2.1: Location of rainwater tanks as described	Incomplete
Water 3.1: Water efficient garden annotated	Incomplete
Energy 3.4: External lighting sensors annotated	Incomplete
Energy 4.2: Floor plans showing location of photovoltaic panels as described.	Incomplete
Stormwater 1.1: Location of any stormwater management systems used in STORM or MUSIC modelling (e.g. Rainwater tanks, raingarden, buffer strips)	Incomplete
IEQ 1.1: If using BESS daylight calculator, references to floorplans and elevations showing window sizes and sky angles.	Incomplete
IEQ 1.2: If using BESS daylight calculator, references to floorplans and elevations showing window sizes and sky angles.	Incomplete
IEQ 1.3: If using BESS daylight calculator, references to floorplans and elevations showing window sizes and sky angles.	Incomplete
IEQ 1.5: Floor plans with compliant bedrooms marked	Incomplete
IEQ 2.1: Dwellings meeting the requirements for being 'naturally ventilated'	Incomplete
Transport 1.1: All nominated residential bicycle parking spaces	Incomplete
Transport 1.2: All nominated residential visitor bicycle parking spaces	Incomplete

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BESS - 142-144 Coppin St (SMP.V3)

Transport 1.3: Residential bicycle parking spaces at ground level	Incomplete
Transport 1.4: All nominated non-residential bicycle parking spaces	Incomplete
Transport 1.5: All nominated non-residential visitor bicycle parking spaces	Incomplete
Transport 1.6: Showers, change rooms and lockers as nominated	Incomplete
Waste 2.2: Location of recycling facilities	Incomplete
Urban Ecology 2.1: Vegetated areas	Incomplete
Urban Ecology 2.4: Taps and floor waste on balconies / courtyards	Incomplete

**Documents and evidence**

0 / 12 supporting evidence documentation complete.

Management 2.2: Preliminary NatHERS assessments	Incomplete
Energy 1.1: Energy Report showing calculations of reference case and proposed buildings	Incomplete
Energy 3.6: 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.	Incomplete
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.	Incomplete
Energy 4.2: Specifications of the solar photovoltaic system(s).	Incomplete
Stormwater 1.1: STORM report or MUSIC model	Incomplete
IEQ 1.1: If using an alternative daylight modelling program, a short report detailing assumptions used and results achieved.	Incomplete
IEQ 1.2: If using an alternative daylight modelling program, a short report detailing assumptions used and results achieved.	Incomplete
IEQ 1.3: If using an alternative daylight modelling program, a short report detailing assumptions used and results achieved.	Incomplete
IEQ 1.4: A short report detailing assumptions used and results achieved.	Incomplete
IEQ 1.5: A list of compliant bedrooms	Incomplete
IEQ 2.1: A list of naturally ventilated dwellings	Incomplete

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BESS - 142-144 Coppin St (SMP.V3)



**Attachment 6 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A Traffic Assessment Report**



## **Traffic Engineering Assessment**

**Proposed Mixed Use Development  
at  
142-144 Coppin Street, Richmond**

**Prepared For  
Bacolas Group Pty Ltd**

**December, 2019  
G26758R-01C**

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**Attachment 6 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A Traffic Assessment Report**



# Traffic Engineering Assessment

**Proposed Mixed Use Development  
at  
142-144 Coppin Street, Richmond**

**Document Control**

Issue No.	Type	Date	Prepared By	Approved By
01A	Draft	29/05/2019	J. Young	L. Furness
01B	Final	31/05/2019	J. Young	L. Furness
01C	Final	11/12/2019	J. Young	L. Furness

**Our Reference: G26758R-01C**

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**G26758R-01C**

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**Traffic Engineering Assessment**  
 142-144 Coppin Street, Richmond: Proposed Mixed Use Development

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**Traffic Engineering Assessment**

142-144 Coppin Street, Richmond: Proposed Mixed Use Development

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# Attachment 6 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A Traffic Assessment Report



## Traffic Engineering Assessment

142-144 Coppin Street, Richmond: Proposed Mixed Use Development

## 1 Introduction

Traffix Group has been engaged by Bacolas Group Pty Ltd to prepare a traffic engineering report for a proposed mixed use development at 142-144 Coppin Street, Richmond.

This report provides a detailed traffic engineering assessment of the parking and traffic issues associated with the proposed development.

## 2 Proposal

The proposal is for a mixed use development on the site. The development consists of the following:

- 7 x apartments comprising:
  - 4 x one-bedroom apartment
  - 2 x two-bedroom apartment
  - 1 x three-bedroom apartment
- 140m<sup>2</sup> office space (two tenancies)

Four car spaces will be provided via two double garages, accessed from Wall Place along the western boundary of the site. Two spaces (one of the garages) will be allocated to the three-bedroom dwelling, while the two other spaces will be allocated to the two-bedroom apartments (i.e. 1 car space each).

A total of 10 bicycle spaces will be provided on-site, and a further 2 spaces are proposed along the site's frontage to Coppin Street.

A copy of the development plans, prepared by CBG Architects, is attached in Appendix A.

## 3 Existing Conditions

### 3.1 Subject Site

The subject site is located on the western side of Coppin Street, approximately 10m south of Wall Street in Richmond. A locality plan, aerial photograph and photograph of the site's frontage to Coppin Street is presented in Figure 1, Figure 2 and Figure 3, respectively.

The site is rectangular in shape and has an area of approximately 509m<sup>2</sup>. The site is comprised of two separate properties as follows:

- No. 142 – a single storey commercial building. No vehicle access is provided to the site.
- No. 144 – a single storey dwelling with vehicle access provided via a single-width crossover towards the site's southern boundary. On-site car parking for one car is provided via a sealed at-grade driveway.

**Attachment 6 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A Traffic Assessment Report**



There are a total of 2 on-street car spaces along the site's frontage to Coppin Street, subject to 'No Stopping 9am-10am Wed, 2P 10am-11pm' restrictions.

The site is located within a Commercial 1 Zone under the Planning Scheme as presented at Figure 4.

The site is located within the Principal Public Transport Network (PPTN) area, as shown at Figure 5.

Significant non-residential land uses in the nearby area include:

- **Swan Street Activity Centre**, located approximately 350m south of the site,
- **Bridge Road Activity Centre**, located approximately 400m north of the site,
- **St Kevin's Waterford Campus**, located approximately 400m west of the site,
- **Richmond Town Hall**, located approximately 500m north of the site,
- **Citizens Park**, located approximately 600m north of the site,
- **Burnley Station**, located approximately 850m south-east of the site,
- **Epworth Hospital Richmond**, located approximately 1km north-west of the site.

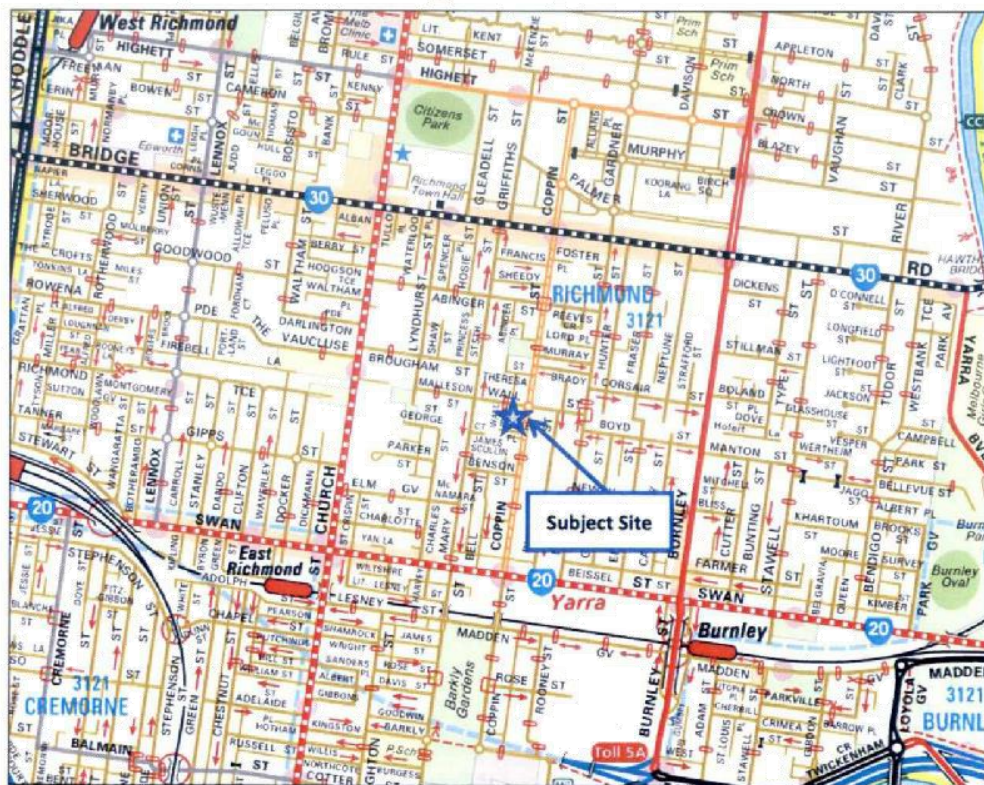


Figure 1: Locality Plan

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**Traffic Engineering Assessment**  
142-144 Coppin Street, Richmond: Proposed Mixed Use Development



Source: Nearmap

**Figure 2: Aerial View**

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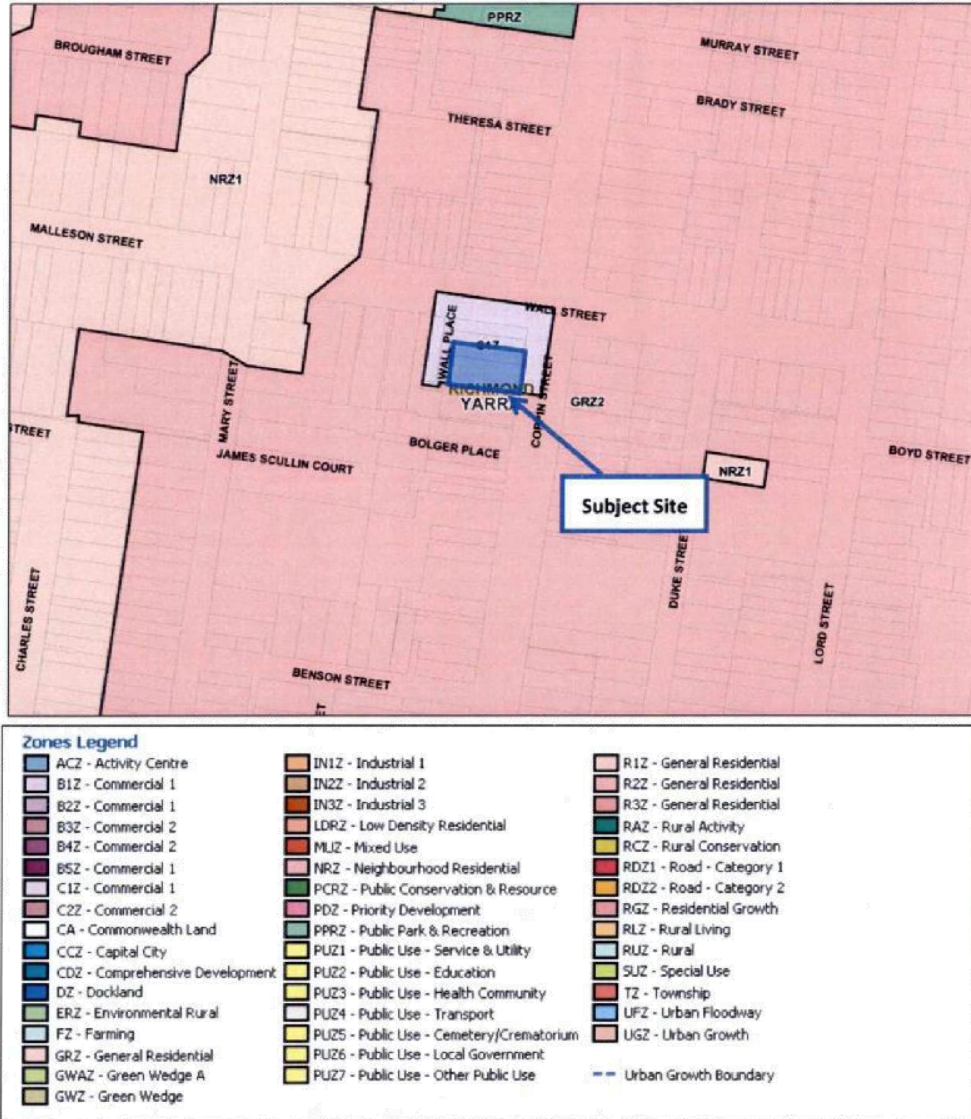
**Figure 3: Subject Site Frontage to Coppin Street – view south-west**



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Traffic Engineering Assessment  
142-144 Coppin Street, Richmond: Proposed Mixed Use Development



Source: <http://planningschemes.dpcd.vic.gov.au>

Figure 4: Planning Scheme Zoning Map

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Figure 5: Principal Public Transport Network Area

3.2 Road Network

**Coppin Street** is a local road aligned in a north-south direction. Coppin Street has a linemarked traffic lane, bicycle lane and kerbside parking lane in each direction.

A '40km/h Area' speed limit applies to Coppin Street.

**Wall Street** is a local road aligned in an east-west direction. Wall Street has a carriageway width of approximately 13.6m, which allows for parking on both sides of the road and simultaneous two-way traffic flow.

Linemarked 90° parking is provided on the south side of Wall Street, and parallel kerbside parking is available on the north side of the road.

A '40km/h Area' speed limit applies to Wall Street.

**Wall Place** is a dead end Right-Of-Way (ROW), which runs along the western boundary of the site from Wall Street in the north to a dead end in the south. Wall Place has a carriageway width of approximately 3.1m and is constructed of asphalt.

Photographs depicting the surrounding road network are presented in Figure 6 to Figure 11.

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**Traffic Engineering Assessment**

142-144 Coppin Street, Richmond: Proposed Mixed Use Development



**Figure 6: Coppin Street – view north**



**Figure 7: Coppin Street – view south**



**Figure 8: Wall Street – view east**



**Figure 9: Wall Street – view west**



**Figure 10: Wall Place – view north**



**Figure 11: Wall Place – view south**



**Traffic Engineering Assessment**

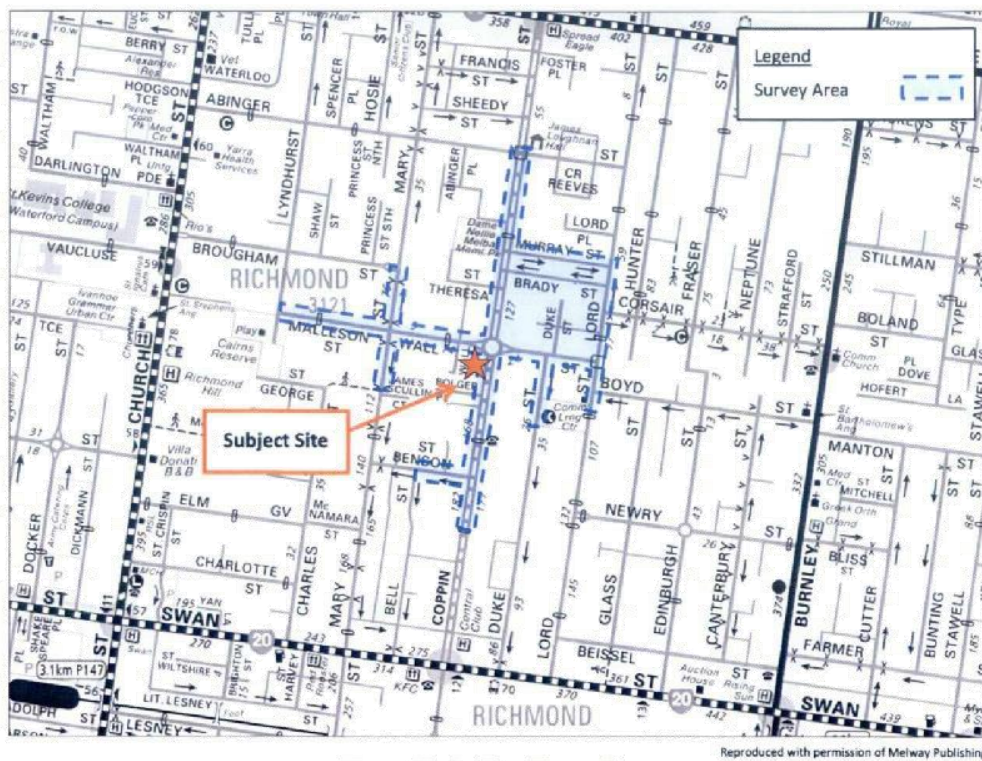
142-144 Coppin Street, Richmond: Proposed Mixed Use Development

**3.3 Existing Car Parking Conditions**

A series of parking occupancy surveys have been conducted by Traffix Group. The surveys were chosen to cover the peak times for the proposed mixed use development (office and residential) and the nearby area. The surveys were undertaken at the following times:

- 12pm, 1pm, 7pm and 8pm on Thursday 23<sup>rd</sup> May, 2019
- 12pm, 1pm, 7pm and 8pm Saturday 25<sup>th</sup> May, 2019

The area surveyed is shown in Figure 12 below and the detailed results of the parking surveys are provided at Appendix B.



**Figure 12: Parking Survey Area**

A total of between 171 to 279 publically accessible on-street car spaces are available within the survey area, consisting of a mixture of short-term (2P) and 'Permit Zone' parking spaces. There is no unrestricted parking within the survey area.

There are a total of 2 on-street car spaces along the site's frontages, subject to 'No Stopping 9am-10am Wed, 2P 10am-11pm' restrictions.

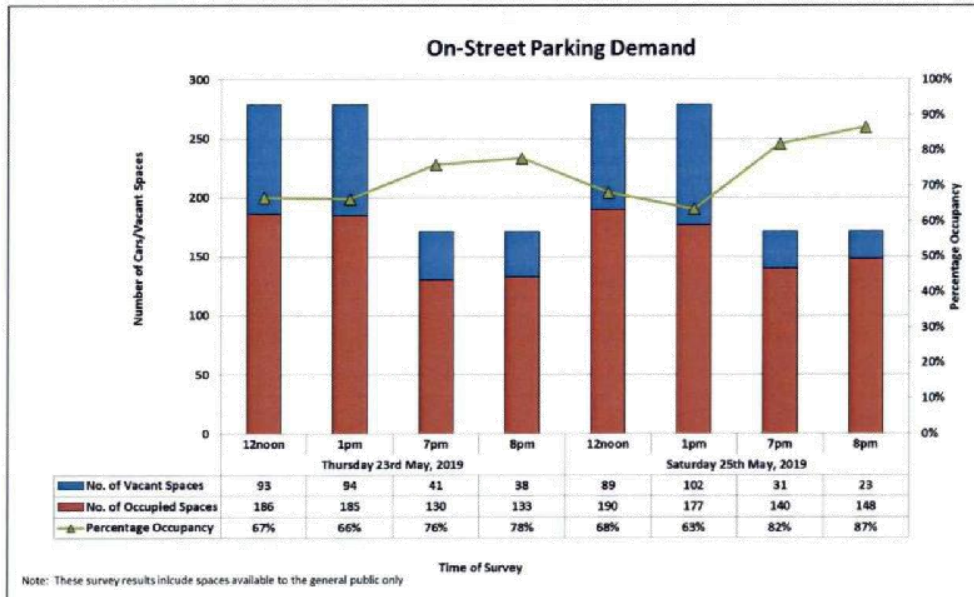
The following analysis only includes car parking available to the general public and excludes parking such as 'Permit Zone' and other no stopping areas during the relevant enforcement times.

A profile of on-street parking demand for the survey area is provided at Figure 13.

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**Figure 13: Profile of On-Street Parking Demand**

The results of the surveys indicate that there is a moderate to high demand for car parking in the area, with a minimum of 23 vacant spaces recorded at 7pm on Saturday 25<sup>th</sup> May, 2019 (87% occupancy).

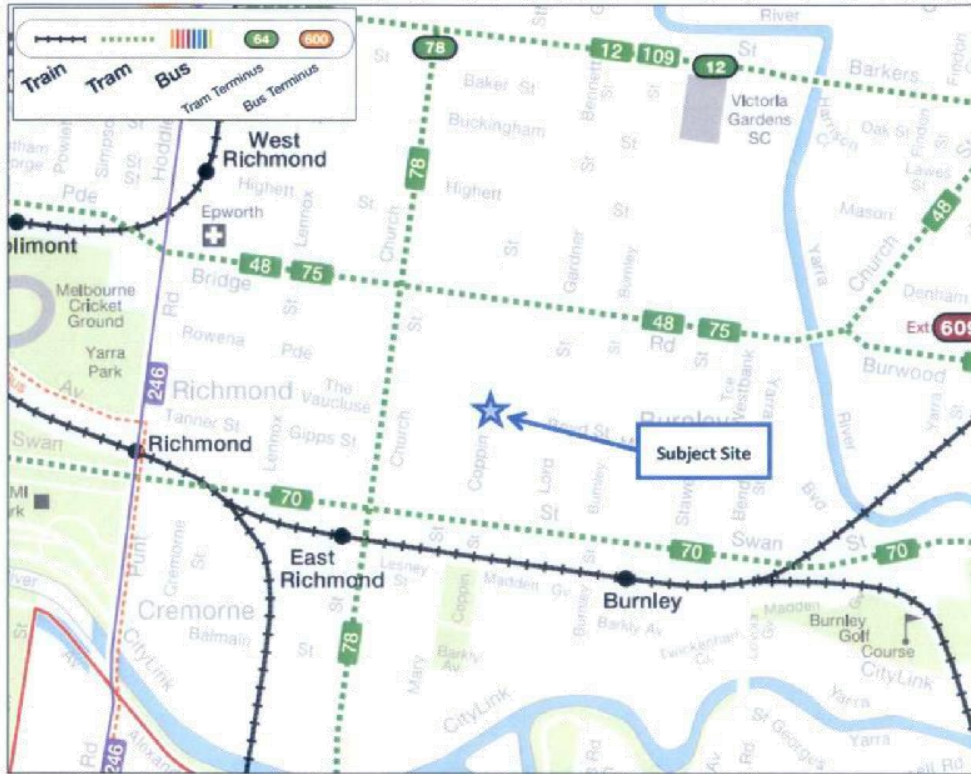
**3.4 Alternative Transport Modes**

**3.4.1 Public Transport**

The site is well serviced by public transport services with train and tram services within walking distance of the site. The available public transport services within proximity of the site are shown in Figure 14 and a summary is provided at Table 1.

The site is also within the PPTN area, as previously identified at Section 3.1.

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Source: Public Transport Victoria, ptv.vic.gov.au

Figure 14: Public Transport Map

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**Table 1: Summary of Public Transport Services**

Service	Between	Via
<b>Swan Street – approximately 350m walking distance south of the site</b>		
Tram Route 70	Docklands & Wattle Park	Surrey Hill, Richmond & City
<b>Bridge Road – approximately 400m walking distance north of the site</b>		
Tram Route 48	North Balwyn & Docklands	Kew, Richmond & City
Tram Route 75	Docklands & Vermont South	Burwood, Hawthorn, Richmond & City
<b>Church Street – approximately 450m walking distance west of the site</b>		
Tram Route 78	North Richmond & Balaclava	South Yarra, Prahran & Windsor
<b>Burnley Railway Station – approximately 850m walking distance south-east of the site</b>		
Alamein, Belgrave, Lilydale and Glen Waverley Lines	City & Alamein/Belgrave /Lilydale/Glen Waverley	Richmond, Box Hill, Camberwell & Ringwood

### 3.4.2 Walkability

Walking is the most sustainable travel mode. The subject site scores 94 out of a possible 100 using the 'Walk Score'<sup>1</sup>, a measure of ease of accessibility to everyday services by walking. This score classifies the site as a 'walker's paradise', meaning that that daily errands do not require a car.

The site is located in close proximity to the Swan Street and Bridge Street activity centres and provides access to a range of everyday services with comfortable travel distance of the site such as supermarkets, banks, specialty shops and medical centres.

### 3.4.3 Bicycle Infrastructure

The site is well served by bicycle infrastructure with on-road bicycle lanes and informal bicycle routes surrounding the site, as shown in the excerpt from the City of Yarra TravelSmart Map shown in Figure 15.

Coppin Street and Burnley Street provide on-road cycle lanes and the Yarra Trail bicycle off-road route is located approximately 1km south of the site. The CBD is a 3km cycle from the subject site.

### 3.4.4 Car Share Vehicles

Yarra City Council supports 'car sharing' schemes by allocating on-street spaces throughout the municipality for the purposes of accommodating 'car share' cars operated by Flexicar, GoGet and Green Share Car, three Council supported schemes.

There are currently five car share vehicles within 500m of the site. The nearest car share pods are located on Lord Street, approximately 400m to the north of the site, as detailed in Figure 15.

Car sharing schemes provide an alternative to driving to work for staff and actively encourage the use of alternate transport modes. If required, a car can be available by joining the local 'car share' schemes, which allows for work based business trips by car. The use of a non-private car for these

<sup>1</sup> <https://www.walkscore.com/score/142-coppin-st-richmond-vic-australia>

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trips allows staff to avoid drive their own car to work during the commuter peak hours, because they do not need it for business trips during the day.

Car sharing schemes provide an alternative to car ownership for residents and actively encourage the use of alternate transport modes. Residents of this development can be actively discouraged from owning a car as they will have easy access to public transport and are within convenient walking and cycling distance of many activities within the Swan Street and Bridge Road Activity Centre.

If required, a car can be available to these residents by joining the local 'car share' schemes, which will cater for the limited number of times that they may require a car for longer-distance travel and other trips or when they need to transport larger goods.

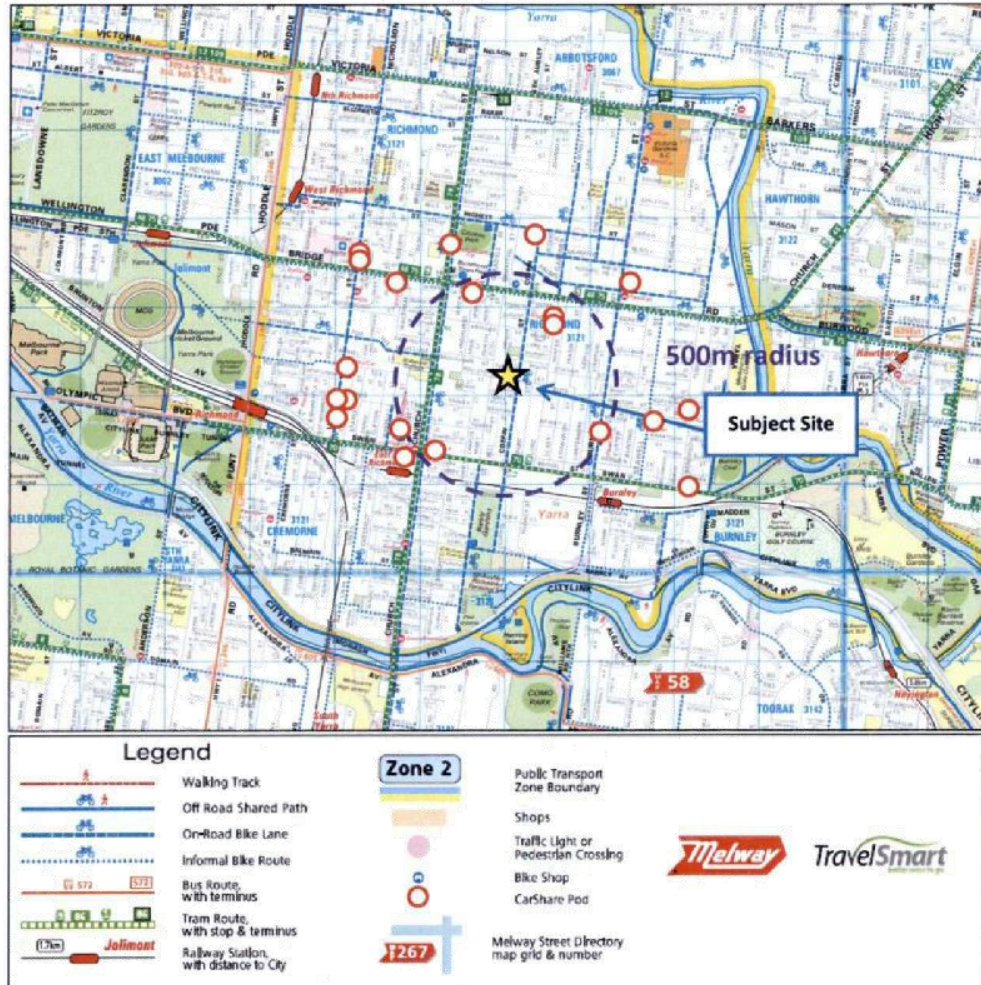
The existing 'car share' schemes in this area provide a safety net (and fill a mobility gap) for residents by providing convenient access to a car to cater for the limited number of times that they may require a car. This car access is both convenient and cost-effective as they can hire the car on an hourly or daily basis.



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Source: Yarra City Council

Figure 15: Sustainable Transport Infrastructure

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# 4 Traffic Engineering Assessment

## 4.1 Statutory Car Parking Assessment

The proposed development falls under the land-use categories of 'office' and 'dwelling' under Clause 73.03 of the Planning Scheme

The Planning Scheme sets out the parking requirements for new developments under Clause 52.06.

The purpose of Clause 52.06 is:

- *To ensure that car parking is provided in accordance with the Municipal Planning Strategy and the Planning Policy Framework.*
- *To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality.*
- *To support sustainable transport alternatives to the motor car.*
- *To promote the efficient use of car parking spaces through the consolidation of car parking facilities.*
- *To ensure that car parking does not adversely affect the amenity of the locality.*
- *To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.*

Clause 52.06 of the Planning Scheme states that:

*"The car parking requirement specified in Table 1 does not apply if there is a car parking requirement for the particular use under another provision or if a schedule to the Parking Overlay or the schedule to Clause 52.06 varies the number of car parking spaces required."*

Furthermore, Clause 52.06-5 of the Planning Scheme states that:

*Column A applies unless Column B applies. Column B applies if:*

- *Any part of the land is identified as being within the Principal Public Transport Network Area as shown on the Principal Public Transport Network Area Maps (State Government of Victoria, 2018); or*
- *A schedule to the Parking Overlay or another provision of the planning scheme specifies that Column B applies.*

The car parking requirements for the proposed use are set out under Clause 52.06 and the car parking table at Clause 52.06-5 of the Planning Scheme.

The site is also located within the PPTN area (refer to Figure 5), and accordingly, the Column B rates set out at Table 1 of Clause 52.06 apply to this site.

The assessment of the car parking requirements associated with the proposed development is set out in the following table.

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**Table 2: Statutory Car Parking Assessment – Column B Rates**

Use	Size/No.	Statutory Parking Rate	Car Parking Requirement (Note 1)	Car Parking Provision	Shortfall/ Surplus
One/Two-bedroom apartment	6	1 space per one or two-bedroom dwelling	6	2	-4
Three-bedroom apartment	1	2 spaces per three or more bedroom dwelling	2	2	0
Residential visitors	7	<i>No visitor car parking required</i>	-	-	-
Office	140	3 spaces per 100m <sup>2</sup>	4	0	-4
<b>TOTAL</b>			<b>12</b>	<b>4</b>	<b>-8</b>

Notes:

1. Clause 52.06-5 specifies that where a car parking calculation results in a requirement that is not a whole number, the number of spaces should be rounded down to the nearest whole number.

Based on the above, the development has a statutory requirement for 12 car spaces.

The provision of 4 car spaces results in a shortfall of 8 spaces, comprising 4 resident and 4 office spaces. Accordingly, a car parking reduction is required under Clause 52.06-7.

## 4.2 Reducing the Requirement for Car Parking

Clause 52.06-7 allows for the statutory car parking requirement to be reduced (including to zero). An application to reduce (including reduce to zero) the number of car spaces required under Clause 52.06-5 or in a schedule to the Parking Overlay must be accompanied by a Car Parking Demand Assessment.

Clause 52.06-7 sets out that a Car Parking Demand Assessment must have regard to the following key factors:

- *The likelihood of multi-purpose trips within the locality which are likely to be combined with a trip to the land in connection with the proposed use.*
- *The variation of car parking demand likely to be generated by the proposed use over time.*
- *The short-stay and long-stay car parking demand likely to be generated by the proposed use.*
- *The availability of public transport in the locality of the land.*
- *The convenience of pedestrian and cyclist access to the land.*
- *The provision of bicycle parking and end of trip facilities for cyclists in the locality of the land.*
- *The anticipated car ownership rates of likely or proposed visitors to or proposed occupants (residents or employees) of the land.*
- *Any empirical assessment or case study.*

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Practice Note 22 (June, 2015) specifies that the provisions for reducing the car parking requirement draw a distinction between the assessment of likely demand for parking spaces (the Car Parking Demand Assessment), and whether it is appropriate to allow the supply of fewer spaces than assessed by the Car Parking Demand Assessment. These are two separate considerations, one technical while the other is more strategic. Different factors are taken into account in each consideration.

Accordingly, the applicant must satisfy the responsible authority that the provision of car parking is appropriate on the basis of a two-step process, which has regard to:

- *The car parking demand likely to be generated by the use.*
- *Whether it is appropriate to allow fewer spaces to be provided than the number likely to be generated by the site.*

An assessment of the appropriateness of reducing the car parking provision below the statutory requirement is set out below.

### 4.3 Car Parking Demand Assessment

This application requires consideration of the sustainable transport policies and attributes that apply to the site, which is consistent with the purposes of Clause 52.06 set out previously and include “to support sustainable transport alternatives to the motor car”.

The site is suitably located to implement travel demand management strategies to reduce car dependence, increase public transport usage and walking/cycling trips and achieve the Council’s broader sustainable transport policies.

The key attributes of the site’s location are as follows:

- the site is located within walking distance of extensive public transport services and other alternative transport modes,
- the site is located in close proximity to the Swan Street and Bridge Road Activity Centres, with access to many everyday services within close proximity to the site,
- there is no unrestricted on-street parking available in close proximity to the site during the daytime and occupants of this development will not be eligible to access parking permits,
- the proposed development provides a high level of bicycle parking and end of trip facilities, which will assist in encouraging alternative modes of travel, and
- the site has access to local car share vehicles.

Given the availability of nearby public transport services and the ease of cycling trips to the site, we are satisfied that suitable alternatives to car-based travel exist in this locality to support a significant reduction in the on-site parking provisions for staff.

It is important to take a forward looking approach to increasing employment densities in inner areas and that public transport accessibility and access to services will continue to improve in line with government initiatives.

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#### 4.3.1 Empirical Assessment of Parking Demand

The following Car Parking Demand Assessment has regard to the above factors as appropriate.

##### Resident Demands

The two and three-bedroom apartments are provided with the required car parking rate, so this assessment focuses on the one-bedroom apartments only.

It is recognised that car ownership is influenced by a number of factors and that in inner areas many households do not own a car for a range of reasons. While the reasons may vary from household to household, they are likely to include one or more of the following:

- affordability issues – some residents may not be able to afford to own, insure, register and maintain a car, or may not travel sufficient distances over the year that makes car ownership worthwhile,
- public transport and service access – residents may live within close proximity to daily services such as shops, banks, activity centre etc., and can conveniently access these by public transport or via non car-based modes (walking, cycling, etc.),
- public transport and employment/study access – residents may have convenient access (via public transport, bicycle, or walking) to their place of work, study, recreation, etc.,
- disability or unlicensed – some residents may be unable to drive due to disability, age or being unlicensed, and therefore are more reliant on alternative transport modes, and
- environmental concerns – some residents may actively minimise their car usage for environmental reasons, preferring to use more sustainable transport modes to meet their daily travel needs.

A review of car ownership statistics for 'flats, units and apartments' within the suburb of Richmond and the City of Yarra recorded for the 2016 Census identified the following average car ownership rates for Richmond:

- Studio/bed-sit apartment – 0.4 cars per dwelling (with 67% not owning a car), and
- One-bedroom apartment – 0.8 cars per dwelling (with 34% not owning a car).

The above statistics relate to the whole of suburb and includes areas with a lower level of access to public transport and services compared with the subject site. These also include owner occupied dwellings in addition to rental properties.

The ABS statistics illustrate a reasonable demand for dwellings without car parking in Richmond. This approach does not recognise that whether a household requires parking or not will factor into the decision-making of that household to reside (as either an owner or a tenant) within a development that does not have on-site parking.

The ABS data indicates that 34% of existing households occupying one-bedroom apartments within Richmond (and 38% in Yarra) do not own a car. This suggests that there is a significant demand within this area for apartments without parking.

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In the vicinity of the site, there will be hundreds if not thousands of new apartments approved and constructed in this area, that will include developments on larger sites that offer a greater opportunity to provide most (if not all) apartments with a car space.

In contrast, there may also be similar developments on sites where it will be impractical to provide every (or most) apartments with a car space due to the size of the site and/or access constraints.

It needs to be recognised that within any area, there will always be a proportion of households that do not require parking. This decision will also be influenced by the site's convenient proximity to public transport, employment and education and everyday needs (i.e. bank, supermarkets, doctors, etc.).

In this case, the site is located in close proximity to the Swan Street and Bridge Road activity centres and is also located within close proximity public transport services as detailed in Section 3.4.1.

Accordingly, this application needs to be seen as one where it represents only 4 one-bedroom apartments without parking in an area where there will be numerous new apartments built over time and in an area where there is a demonstrated demand for a proportion of apartments without parking. It is also not necessary that each individual development achieve an exact mix of parking rates as some will be able to readily provide more and some will not.

Residents or tenants will be fully aware of the whether their apartment has access to a car space before deciding to live within the development. As the supply and market for apartments is significant in this locality, we are satisfied that providing apartments without car parking for residents is acceptable.

Accordingly, there is an excellent opportunity to provide apartments without on-site parking in this particular development and we are satisfied with the level of resident parking proposed.

#### Office

No car parking is to be provided on-site for the proposed office tenancies. Parking demands associated with office land uses are typically long-term in nature associated with staff.

In unconstrained parking circumstances, it is not unusual for offices to experience demands at parking rates in the order of 3 spaces per 100m<sup>2</sup>, consistent with the Planning Scheme requirement. That is, if parking is supplied at the Planning Scheme rate and/or is readily available off-site and free of charge, employees are likely to utilise the parking.

On the other hand, in constrained parking circumstances with convenient public transport access, that is where the availability of long-term parking is restricted and/or where parking fees for such parking apply, parking demands will be suppressed and office workers will be encouraged to take advantage of public transport or consider alternative travel modes (i.e. walking or cycling).

The proposed development has good accessibility to public transport and alternative transport modes. Further, on-street parking in the surrounding area is predominantly subject to short-term parking restrictions especially during business hours. Accordingly, future employees of the proposed office tenancy will most likely seek alternative modes of transport to access the site, rather than utilise a private motor vehicle.

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On this basis and given the small size of the proposed office tenancy, it is considered appropriate for the proposed office tenancy to not be provided with on-site car parking.

#### Summary

The car parking demand assessment is summarised as follows:

- There is considerable demand for small apartments in this area without parking and that no parking for 4 one-bedroom apartments is acceptable.
- Office staff will use alternative transport modes. There is no opportunity to use on-street parking for long-term parking during business hours.
- There is ample opportunity for residents and staff to rely on alternative transport modes, instead of private cars.

#### 4.4 Appropriateness of providing fewer car spaces than the number likely to be generated

The second step is to consider whether it is appropriate to allow fewer spaces to be provided than the number likely to be generated by the site as assessed by the Car Parking Demand Assessment.

The Car Parking Demand Assessment indicates that:

- The non-provision of resident parking for the smaller one bedroom apartments is acceptable.
- Short-term parking by residential visitors will need to be accommodated off-site.
- Office staff will use alternative transport modes or pay for off-site car parking. There is no opportunity to use on-street parking for long-term parking during business hours.

Clause 52.06-7 sets out a series of car parking provision factors that should be considered when assessing the appropriateness of providing fewer car spaces on the site than are likely to be generated by the use. The car parking provision factors are as follows, with the most relevant factors highlighted:

- **The Car Parking Demand Assessment.**
- Any relevant local planning policy or incorporated plan.
- **The availability of alternative car parking in the locality of the land, including:**
  - **Efficiencies gained from the consolidation of shared car parking spaces.**
  - **Public car parks intended to serve the land.**
  - **On street parking in non residential zones.**
  - **Streets in residential zones specifically managed for non-residential parking.**
- On street parking in residential zones in the locality of the land that is intended to be for residential use.
- The practicality of providing car parking on the site, particularly for lots of less than 300 square metres.

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- Any adverse economic impact a shortfall of parking may have on the economic viability of any nearby activity centre.
- The future growth and development of any nearby activity centre.
- Any car parking deficiency associated with the existing use of the land.
- Any credit that should be allowed for car parking spaces provided on common land or by a Special Charge Scheme or cash-in-lieu payment.
- Local traffic management in the locality of the land.
- The impact of fewer car parking spaces on local amenity, including pedestrian amenity and the amenity of nearby residential areas.
- The need to create safe, functional and attractive parking areas.
- Access to or provision of alternative transport modes to and from the land.
- The equity of reducing the car parking requirement having regard to any historic contributions by existing businesses.
- The character of the surrounding area and whether reducing the car parking provision would result in a quality/positive urban design outcome.
- Any other matter specified in a schedule to the Parking Overlay.
- Any other relevant consideration.

These factors are considered below.

#### 4.4.1 Availability of Car Parking

As detailed in Section 3.3, Traffix Group has undertaken parking surveys of the surrounding area. The results of the surveys indicate that there is a moderate to high demand for car parking in the area, with a minimum of 23 vacant spaces recorded at 8pm on Saturday 25<sup>th</sup> May, 2019 (87% occupancy).

Importantly, there was no unrestricted car parking within close proximity of the site, meaning that there would be no opportunities for staff or residents to park their car nearby to the site during the day. Furthermore, the presence of a significant amount of 'Permit Zone' car parking in the area, protects on-street parking for existing residents of the area during evenings.

Residents and staff will be ineligible for car parking permits to exempt them from on-street parking restrictions, and the lack of long-term on-street parking in the area means that residents will not be able to own a car. Staff will use alternative transport modes available to the site, and will not impact on the availability of on-street car parking.

Any Short-term visitor and customer demands can be readily accommodated on-street, including along the site's frontage to Coppin Street.

#### 4.4.2 Existing Car Parking Deficiency

The site is made up of two separate properties.

No. 142 has historically operated as a shop tenancy and has an overall area of approximately 163m<sup>2</sup>.



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Applying the statutory car parking of 3.5 spaces per 100m<sup>2</sup> rate results in a requirement for 5 car spaces. As no car parking is provided for the site, an existing deficiency of 5 car spaces applies to No. 142.

No. 144 is a four-bedroom dwelling that provides a single car space on-site within a sealed driveway.

Dwellings of three or more bedrooms require two spaces under Clause 52.06-5, and as such, there is an existing deficiency of 1 car space.

Overall, considering both properties, there is an existing shortfall of 6 car spaces.

Given the proposal has a shortfall of 8 car spaces, there is a net shortfall of 2 car spaces when considering the existing deficiency.

#### 4.4.3 Availability of Alternative Transport Modes

As detailed in Section 3.4.1, the site is well served by efficient public transport services that are within an appropriate walking distance of the development site. These services include Burnley Railway Station and tram services along Swan Street, Bridge Road and Church Street.

Bicycle parking is provided well above the statutory requirements set out at Clause 52.34 of the Planning Scheme, as detailed in Section 4.5. This encourages the use of bicycles as a mode of transport for residents, visitors and staff. The site is well served by bicycle infrastructure and there are many local destinations that are readily accessible by bicycle.

Alternatively, there are many local destinations that are also readily accessible via a short walk.

There are also a number of car share pods in the vicinity of the site that provide residents with vehicle access and staff with the opportunity to use a car for work based business trips.

Given the above, the development site represents an excellent location to support the reduced rate of car parking.

#### 4.4.4 Impact on Activity Centre

Practice Note 22 (Using the Car Parking Provisions, April, 2013) states that:

In an Activity Centre, car parking issues have a part to play, but should not dominate when assessing an application for a use or development.

*Where a change of use or relatively small extension is consistent with the strategic plan for the centre and car parking cannot easily be provided, it will often be more sensible to reduce the car parking requirement, rather than prevent the use or development. Some activity centres will have excellent public transport access, ample car parking or mainly serve local customers who arrive on foot. In such circumstances, an increase in business and activity would increase the overall viability of the centre, and the reduced number of car trips would have a positive impact.*

In this instance, the development is relatively small (7 dwellings and 140m<sup>2</sup> of office) and is unlikely to significantly increase the level of parking activity through additional housing within the nearby Activity Centres.

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#### 4.4.5 Summary

Based on the decision factors of Clause 52.06-7, we are satisfied that the proposed level of car parking for this development is acceptable and that providing fewer car spaces on the site than required under Clause 52.06-7 is supported for the following reasons:

- the site is in close proximity to the Swan Street and Bridge Road Activity Centres and is well served by public transport and alternative transport modes and provides a high level of bicycle parking,
- residents without car parking will not be able to own a car given the lack of on-street parking and inability to access parking permits,
- staff will not be able to drive to work using on-street parking given the local parking restrictions and inability to access parking permits,
- short-term visitor and customer parking demands can be accommodated in the nearby area, including along the subject site's frontages,
- there is an existing car parking shortfall associated with the current site, and
- the development is unlikely to significantly increase the level of parking activity in the nearby activity centres.

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#### 4.5 Bicycle Parking Assessment

Clause 52.34 of the Planning Scheme specifies bicycle parking requirements for new developments. The statutory bicycle parking requirement of the development under Clause 52.34 is set out in the table below.

**Table 3: Statutory Bicycle Parking Assessment – Clause 52.34**

Use	Size/No.	Statutory Bicycle Parking Requirement		No. Bicycle spaces required
		Employees/Residents	Customers/Visitors	
Residential	7 (apts.)	1 space to each 5 dwellings	1 space to each 10 dwellings	1 resident 1 visitor
Office	140m <sup>2</sup>	1 space to each 300m <sup>2</sup> of NFA, if the NFA >1000m <sup>2</sup>	1 space to each 1,000m <sup>2</sup> of NFA, if the NFA >1000m <sup>2</sup>	0 employee 0 customer
<b>TOTAL</b>				<b>2</b>

Based on the above, the development is required to provide 2 bicycle spaces, which is met on-site by the provision of 10 bicycle spaces.

A further 2 spaces are proposed on-street along the site's frontage to Coppin Street.

Secure bicycle parking spaces will be provided via 8 x 'Ned Kelly' style wall mounted bicycle racks and 2 x wall hugging 'Towel Rails' as per the *Bicycle Victoria Bicycle Parking Handbook* and AS2890.3-2015'.

The two spaces along the site's frontage are provided via a single horizontal 'Flat Top' rail.

While shower/change room facilities are technically not required, given the level of bicycle parking and non-provision of car parking, end of trip facilities have been provided for cyclists. One shower/change room has been provided for each office tenancy.

Based on the above, we are satisfied that a high level of bicycle facilities have been provided in this development.

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### 4.6 Review of Car Park Layout and Access Arrangements

The carpark layout and vehicle access arrangements detailed in the development plans (attached at Appendix A) have been assessed under the following guidelines:

- Clause 52.06-9 of the Planning Scheme (Design standards for car parking), and
- AS2890.1-2004 – Part 1: Off-Street car parking, where relevant.

Key elements of the design include:

#### Clause 52.06-9 Design Standard 1 – Accessways

- A passing area is not required under Clause 52.06-9.
- A headroom clearance of at least 2.2m is provided across all trafficable areas in accordance with the requirements of Clause 52.06-9 and AS2890.1-2004.
- All cars can enter and exit the site in a forwards direction in accordance with Clause 52.06-9.
- Pedestrian sight triangles are not required under Clause 52.06-9, given access is provided via a ROW with low volume of vehicles and pedestrians and provides for a low speed environment.

#### Clause 52.06-9 Design Standard 2 – Car parking spaces

- The double garages are 6.2m wide by 7.5m long in accordance with Clause 52.06-9.
- Access to and from all critical car spaces has been checked using a turning template based on the B85 design car presented in AS2890.1-2004 and we are satisfied that vehicles will be able to safely manoeuvre to and from each space. Swept path diagrams demonstrating access to and from critical car spaces are attached at Appendix C.

#### Clause 52.06-9 Design Standard 3 – Gradients

- Grades across the site will be negligible and accord with the requirements of Clause 52.06-9.

Overall, we are satisfied that the parking layout and vehicle access arrangements are acceptable and accord with requirements of Clause 52.06-9 and AS2890.1-2004, where relevant.

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**4.7 Waste Collection and Loading Arrangements****Waste Collection**

A Waste Management Plan has been prepared by RB Waste Consulting Service (dated 22<sup>nd</sup> May, 2019).

Waste bins will be collected from the Coppin Street kerbside along the site's frontage. Prior to collection, the Owner's Corporation will arrange for the transfer of bins from the bin store (accessed via the pedestrian walkway along the site's southern boundary) to the kerbside. After collection, the bins will be transferred back to the bin store.

For both residential and office waste, collection will be undertaken via Council's existing waste services.

We are satisfied that these waste collection arrangements are acceptable from a traffic engineering perspective.

**Loading Arrangements**

Clause 65.01 of the Planning Scheme specifies that:

*Before deciding on an application or approval of a plan, the responsible authority must consider, as appropriate:*

- *The adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.*

Loading activity associated with the dwellings will be minimal and infrequent. The dwellings may require loading from time-to-time associated with removal trucks or vans. We are satisfied that the frequency of these movements does not warrant the inclusion of a dedicated on-site loading bay.

Loading activities associated with the proposed offices will, in practice, be undertaken by smaller type vehicles, such as vans, which can easily be accommodated on-street, including within the 2 car spaces along the site's frontage to Coppin Street. We are satisfied that given the small size of the office tenancies that the development does not warrant the inclusion of a dedicated on-site loading bay.

Based on the above, we are satisfied that there is no need to provide a loading bay in this case.

**Traffic Engineering Assessment**

142-144 Coppin Street, Richmond: Proposed Mixed Use Development

## 5 Conclusions

Having undertaken a detailed traffic engineering assessment of the proposed mixed use development at 142-144 Coppin Street, Richmond, we are of the opinion that:

- a) the proposed development has a statutory car parking requirement of 12 car spaces under Clause 52.06-5 and the provision of 4 resident car spaces results in a shortfall of 8 spaces, comprising 4 resident and 4 office spaces,
- b) The Car Parking Demand Assessment indicates that:
  - i) There is a significant market for small dwellings without car parking and the no provision of parking for these apartments is acceptable.
  - ii) Short-term parking by residential visitors will need to be accommodated off-site.
  - iii) Office staff will use alternative transport modes. There is no opportunity to use on-street parking for long-term parking during business hours.
- c) the required reduction in parking under Clause 52.06-7 is supported on the following grounds:
  - i) the site is located nearby to multiple Activity Centres and is well served by public transport and alternative transport modes and provides a high level of bicycle parking,
  - ii) residents will not be able to own a car given the lack of on-street parking and inability to access parking permits,
  - iii) staff will not be able to drive to work using on-street parking given the local parking restrictions and inability to access parking permits,
  - iv) short-term visitor and customer parking demands can be accommodated in the nearby area, including along the subject site's frontages,
  - v) there is an existing car parking shortfall associated with the current site,
  - vi) the development is unlikely to significantly increase the level of parking activity in the nearby activity centres.
- d) bicycle parking is provided well above the minimum requirements set out at Clause 52.34 of the Planning Scheme,
- e) parking layout and vehicle access arrangements are acceptable and accord with requirements of Clause 52.06-9 and AS2890.1-2004, where relevant,
- f) loading and waste collection arrangements are acceptable, and
- g) there are no traffic engineering reasons why a planning permit for the proposed mixed use development at 142-144 Coppin Street, Richmond should be refused, subject to appropriate conditions.

**Attachment 6 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A Traffic Assessment Report**

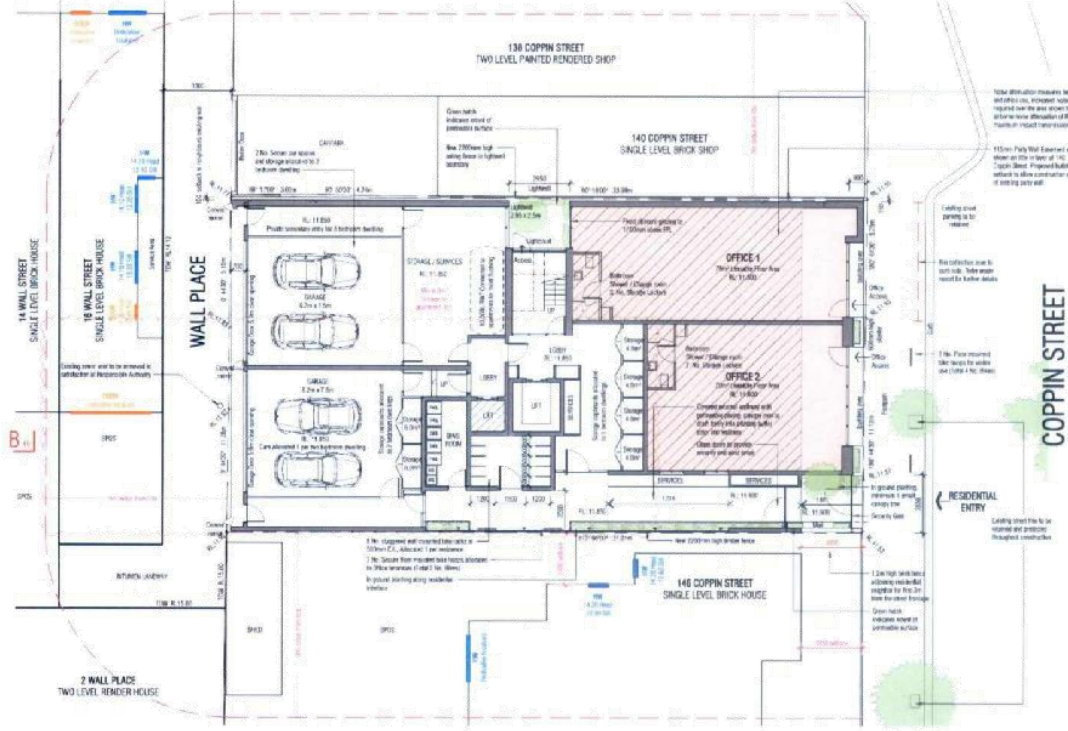


**Traffic Engineering Assessment**  
142-144 Coppin Street, Richmond: Proposed Mixed Use Development

## Appendix A: Development Plans

G26758R-01C

Attachment 6 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A Traffic Assessment Report



GENERAL NOTES

- All apartments to have a minimum energy rating and overall development average energy rating in accordance with Sustainability Management Plan S360: SMP V2 Dated July 2019.
- All apartments to have individual high efficiency instantaneous gas hot water systems on balconies and screened from view.
- Windows to have high performance glazing as required to meet energy requirements.
- High quality indoor environment to be achieved through the use of better materials, more natural light and the provision of fresh air to occupants.
- Native species of plants to be grown throughout the development where possible.
- All A/C condensers to be screened from view by parapets or screening.

ACCESSIBILITY NOTES

- Apartments noted as 'Clause 58.05-1 (comply)' will have minimum:
- A clear opening width of at least 850mm at the entrance to the dwelling and main bedroom.
  - A clear path with a minimum width of 1.2 metres that connects the dwelling entrance to the main bedroom, an accessible bathroom and the living area.
  - A main bedroom with access to an accessible bathroom in accordance with Dets D4 of clause 58.05-1.

PRIVATE OPEN SPACE

The development proposal provides the following:

DWELLING TYPE	MINIMUM AREA	MINIMUM DIMENSION
1 BED	1 square metres	1.8 metres
2 BED	2 square metres	2.8 metres
3 BED	3 square metres	3.8 metres

NOTE: Where minimums are more than 10 metres, an additional 10% has been provided.

FUNCTIONAL LAYOUT OBJECTIVE

TABLE 011

DWELLING TYPE	MINIMUM METRE	MINIMUM DEPTH
Main Bedroom	2.6 metres	2.4 metres
All Other Bedrooms	2.2 metres	2.2 metres

NOTE: Where the depth is provided in an addition to the minimum, internal door dimensions.

TABLE 012

DWELLING TYPE	MINIMUM METRE	MINIMUM AREA
Studio & 1 Bedroom	2.2 metres	10.0 square metres
2 or More Bedrooms	2.4 metres	12.0 square metres

NOTE: Where the dimension area is not applicable, see section 58.05-1.

MINIMUM WINDOW GLAZING

1.5% - PERMITS BREACH  
 4.5% - HIGH LEVEL OPERABLE WINDOW  
 7.5% - PERMITS 2.0M OPEN

NOTE: Refer to Victorian Planning Provisions (VPP) for further information. Compliance address and area must be provided to comply with sustainability objectives.

LANDSCAPE NOTE

Landscaping shown is INDICATIVE ONLY. Exact number and location of planting and planter pots and painting to be confirmed on site.

COLOUR LEGEND

[Light Blue Box]	1 Bedroom Apartment
[Medium Blue Box]	2 Bedroom Apartment
[Dark Blue Box]	3 Bedroom Apartment
[Light Grey Box]	Commercial Area
[White Box]	Balcony / Terrace Area

DATE	BY	DESCRIPTION
14/12/2019	E	PL 03/2019 (18) DRAFTING CONSULTANT TRAFFIC ASSESSMENT 1. Finalised for council (proposed) 1 set of Apartment DCA, submitted changes to council and council in suit

NOT FOR CONSTRUCTION

REVISIONS	DATE	DESCRIPTION
	06/06/19	ISSUED FOR TOWN PLANNING
A	10/07/19	RE-ISSUED FOLLOWING COUNCIL REF
	10/09/19	RE-ISSUED FOLLOWING COUNCIL FURTHER REF
B	10/12/19	RE-ISSUED FOLLOWING COUNCIL TNS/RE-ACTIVE

MIXED USE DEVELOPMENT  
**TOWN PLANNING**  
 CBG ARCHITECTS & INTERIOR DESIGNERS  
 15 Toop Street, East Melbourne VIC 3002  
 T +61 3 9429 3600

DRAWING SCALE  
 1:100 @ A1  
 1:200 @ A3

142-144 COPPIN STREET RICHMOND, VIC	1728
PRELIMINARY ISSUE	TP100 - B
GROUND FLOOR PLAN	





**Attachment 6 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A Traffic Assessment Report**

**Traffic Engineering Assessment**

142-144 Coppin Street, Richmond: Proposed Mixed Use Development



**Appendix B:  
Parking Survey Results**

G26758R-01C

Attachment 6 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A Traffic Assessment Report

142-144 Coppin Street, Richmond  
26758 Parking Surveys



Supervised By: James Young  
Surveyed By: Frank Felber

Survey Dates & Times: See below

Location	Restriction	Capacity Min - Max	Thursday 23rd May, 2019				Saturday 25th May, 2019			
			12noon	1pm	7pm	8pm	12noon	1pm	7pm	8pm
<b>ON STREET CARPARKING</b>										
<b>COPPIN STREET</b>										
<b>West Side</b>										
Speed Bump at SB #194 to Benson Street	No Stopping 9am-10am Wed, 2P 10am-6pm, Permit Zone all other times	6	3	4	4	4	5	5	5	3
	No Stopping 8am-10am Wed, P Disabled all other times	1	0	0	0	0	0	0	0	0
	No Stopping 9am-10am Wed, 2P 10am-6pm, Permit Zone all other times	1	0	0	0	0	0	0	0	0
Benson Street to Bolger Place	No Stopping	-	0	0	0	0	0	0	0	0
	No Stopping 9am-10am Wed, 2P 10am-6pm, Permit Zone all other times	9	2	4	2	2	5	4	2	2
	No Stopping	-	0	0	0	0	0	0	0	0
Bolger Place to SB #144	No Stopping	-	0	0	0	0	0	0	0	0
	No Stopping 9am-10am Wed, 2P 10am-6pm, Permit Zone all other times	3	1	1	1	1	2	2	2	2
SB #144 to Wall Street (Subject Site)	No Stopping 9am-10am Wed, 2P 10am-11pm	2	2	1	0	1	0	0	2	2
	No Stopping	-	0	0	0	0	0	0	0	0
Wall Street to Theresa Street	No Stopping	-	0	0	0	0	0	0	0	0
	No Stopping 9am-10am Wed, 2P 10am-6pm, Permit Zone all other times	8	5	5	5	5	3	3	2	2
	No Stopping	-	0	0	0	0	0	0	0	0
Theresa Street to ROW	No Stopping	-	0	0	0	0	0	0	0	0
	No Stopping 9am-10am Wed, 2P 10am-6pm, Permit Zone all other times	7	2	2	3	4	4	2	5	5
	No Stopping 7am-5pm Mon-Fri, Permit Zone all other times	1	0	0	1	1	0	0	0	0
	No Stopping 9am-10am Wed, 2P 10am-6pm, Permit Zone all other times	2	2	2	1	1	1	1	0	0
ROW to Abinger Street	No Stopping 9am-10am Wed, 2P 10am-6pm, Permit Zone all other times	10	10	4	10	10	8	8	9	9

N/Sb- Northern/Southern Property Boundary  
E/Wb- Eastern/Western Property Boundary  
M/C - Mid point  
ROW - Right of Way

Prepared by Traffix Group Pty Ltd

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Attachment 6 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A Traffic Assessment Report

142-144 Coppin Street, Richmond  
26758 Parking Surveys



Supervised By: James Young  
Surveyed By: Frank Feller

Survey Dates & Times: See below

Location	Restriction	Capacity Min - Max	Thursday 23rd May, 2019				Saturday 25th May, 2019			
			12noon	1pm	7pm	8pm	12noon	1pm	7pm	8pm
<b>East Side</b>										
Abinger Street to Murray Street	No Stopping	-	0	0	0	0	0	0	0	0
	No Stopping 9am-10am Tues 2P 10am-11pm	13	12	11	13	12	10	10	12	12
	No Stopping 9am-10am, P Disabled Only all other times	1	1	1	1	1	1	1	1	1
	No Stopping 9am-10am Tues 2P 10am-11pm	1	1	0	0	1	0	0	1	1
	No Stopping	-	0	0	0	0	0	0	0	0
Murray Street to Brady Street	No Stopping	-	0	0	0	0	0	0	0	0
	No Stopping 9am-10am Tues 2P 10am-11pm	2	2	2	2	2	1	1	2	2
	No Stopping	-	0	0	0	0	0	0	0	0
Brady Street to Wall Street	No Stopping	-	0	0	0	0	0	0	0	0
	No Stopping 9am-10am Tues 2P 10am-11pm	4	4	3	3	3	4	2	4	4
	No Stopping 9am-10am, P Disabled Only all other times	1	1	1	1	1	1	1	1	1
	No Stopping 9am-10am Tues 2P 10am-11pm	4	3	3	4	4	3	2	2	3
	No Stopping	-	0	0	0	0	0	0	0	0
Wall Street to First Speed Bump	No Stopping	-	0	0	0	0	0	0	0	0
	No Stopping 9am-10am Tues 2P 10am-11pm	11	4	4	10	10	4	3	11	10
First Speed Bump to Second Speed Bump	No Stopping 9am-10am Tues 2P 10am-11pm	2	2	2	2	2	1	2	2	2
	No Stopping 9am-10am Tues 2P 10am-6pm, Permit Zone all other times	9	5	6	9	9	9	8	8	9
<b>COPPIN STREET</b>	Capacity	42 - 97	97	97	42	42	97	97	42	42
	Total Number of Cars Parked		62	56	36	37	63	55	37	38
	Total Number of Vacant Spaces		35	41	6	5	34	42	5	4
	Percentage Occupancy		64%	58%	86%	88%	65%	57%	88%	90%

N/S/B - Northern/Southern Property Boundary  
E/W - Eastern/Western Property Boundary  
Mid pt - Mid point  
R/W - Right of Way

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Attachment 6 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A Traffic Assessment Report

142-144 Coppin Street, Richmond  
26758 Parking Surveys



Supervised By: James Young  
Surveyed By: Frank Feller

Survey Dates & Times: See below

Location	Restriction	Capacity Min - Max	Thursday 23rd May, 2019				Saturday 25th May, 2019			
			12noon	1pm	7pm	8pm	12noon	1pm	7pm	8pm
<b>BENSON STREET</b>										
North Side										
Coppin Street to Bell Street	No Stopping	-	0	0	0	0	0	0	0	0
	2P 7am-7pm	6	3	3	4	4	5	5	5	6
	No Stopping	-	0	0	0	0	0	0	0	0
South Side										
Coppin Street to Bell Street	No Stopping	-	0	0	0	0	0	0	0	0
	2P 7am-7pm	6	2	3	4	4	5	5	5	5
	No Stopping	-	0	0	0	0	0	0	0	0
<b>BENSON STREET</b>	Capacity	12 - 12	12	12	12	12	12	12	12	12
	Total Number of Cars Parked		5	6	8	8	10	10	10	11
	Total Number of Vacant Spaces		7	6	4	4	2	2	2	1
	Percentage Occupancy		42%	50%	67%	67%	83%	83%	83%	92%
<b>DUKE STREET</b>										
West Side										
End to Wall Street	Work Zone 7am-6pm Mon-Fri, 3am-3pm Sat, Permit Zone all other times	1	1	1	0	1	1	1	1	1
	2P 7am-6pm, Permit Zone all other times	5	4	4	4	4	4	4	3	4
	P Disabled Only	1	1	0	1	1	0	0	0	1
	No Stopping	-	0	0	0	0	0	0	0	0
Wall Street to SB #32	No Stopping	-	0	0	0	0	0	0	0	0
	2P 7am-6pm, Permit Zone all other times	7	3	4	0	2	1	1	2	4
East Side										
SB Pre School to Wall Street	2P 7am-7pm Mon-Sat	7	3	3	3	2	3	0	3	3
	P Disabled Only 7am-7pm Mon-Fri	1	0	0	0	0	0	0	0	0
	2P 7am-7pm Mon-Sat	5	5	5	3	3	4	4	3	5
	No Stopping	-	0	0	0	0	0	0	0	0
Wall Street to End	No Stopping	-	0	0	0	0	0	0	0	0
	2P 7am-7pm Mon-Sat	3	3	3	0	2	2	2	2	3
	No Stopping	-	0	0	0	0	0	0	0	0
2P 7am-7pm Mon-Sat	2P 7am-7pm Mon-Sat	3	2	2	2	3	1	2	3	3
	2P 7am-7pm Mon-Sat	3	2	2	2	3	1	2	3	3
<b>DUKE STREET</b>	Capacity	20 - 32	32	32	20	20	32	32	20	20
	Total Number of Cars Parked		21	21	9	11	15	13	11	15
	Total Number of Vacant Spaces		11	11	11	9	17	19	9	5
	Percentage Occupancy		66%	66%	45%	55%	47%	41%	55%	75%

N/S/O - Northern/Southern Property Boundary  
E/W/O - Eastern/Western Property Boundary  
Mid pt - Mid point  
RCW - Right of Way

Prepared by Traffix Group Pty Ltd

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Attachment 6 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A Traffic Assessment Report

142-144 Coppin Street, Richmond  
26758 Parking Surveys



Supervised By: James Young  
Surveyed By: Frank Feller

Survey Dates & Times: See below

Location	Restriction	Capacity Min - Max	Thursday 23rd May, 2019				Saturday 25th May, 2019				
			12noon	1pm	7pm	8pm	12noon	1pm	7pm	8pm	
<b>LORD STREET</b>											
<b>West Side</b>											
Speed Bump to Wall Street	2P 7am-7pm, Permit Zone all other times	9	5	6	8	8	8	8	6	7	
	No Stopping	-	0	0	0	0	0	0	0	0	
Wall Street to Brady Street	No Stopping	-	0	0	0	0	0	0	0	0	
	2P 7am-7pm, Permit Zone all other times	10	9	9	8	9	7	7	8	8	
Brady Street to Murray Street	2P 7am-7pm, Permit Zone all other times	1	1	1	1	1	1	1	1	1	
	No Stopping	-	0	0	0	0	0	0	0	0	
<b>East Side</b>											
Opposite Murray Street to Corsair Street	2P 7am-6pm, Permit Zone all other times	7	3	3	7	7	6	5	5	5	
	No Stopping	-	0	0	0	0	0	0	0	0	
Corsair Street to Wall Street	No Stopping	-	0	0	0	0	0	0	0	0	
	2P 7am-7pm Mon-Sat	2	2	2	2	2	2	2	2	2	
	No Stopping	-	0	0	0	0	0	0	0	0	
Wall Street to Boyd Street	No Stopping	-	0	0	0	0	0	0	0	0	
	2P 7am-7pm	4	4	4	4	4	3	4	4		
	P Disabled Only	1	1	1	1	1	1	1	1		
	No Stopping	-	0	0	0	0	0	0	0	0	
<b>LORD STREET</b>		<b>Capacity</b>	14 - 34	34	34	14	14	34	34	14	14
		<b>Total Number of Cars Parked</b>		25	26	7	7	29	27	7	7
		<b>Total Number of Vacant Spaces</b>		9	8	7	7	5	7	7	7
		<b>Percentage Occupancy</b>		74%	76%	50%	50%	85%	79%	50%	50%

N/S/B - Northern/Southern Property Boundary  
E/W/b - Eastern/Western Property Boundary  
MB pt - Mid point  
R/W - Right of Way

Prepared by Traffic Group Pty Ltd

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Attachment 6 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A Traffic Assessment Report

142-144 Coppin Street, Richmond  
26758 Parking Surveys



Supervised By: James Young  
Surveyed By: Frank Keller

Survey Dates & Times: See below

Location	Restriction	Capacity Min - Max	Thursday 23rd May, 2019				Saturday 25th May, 2019			
			12noon	1pm	7pm	8pm	12noon	1pm	7pm	8pm
<b>MURRAY STREET</b>										
North Side										
Lord Street to Coppin Street	No Stopping	--	0	0	0	0	0	0	0	0
	P Disabled Only	1	0	0	1	1	0	0	0	0
	Permit Zone	13	5	5	7	7	8	6	6	6
	No Stopping	--	0	0	0	0	0	0	0	0
South Side										
Coppin Street to Lord Street	No Stopping	--	0	0	0	0	0	0	0	0
<b>MURRAY STREET</b>	Capacity	1 - 1	1	1	1	1	1	1	1	1
	Total Number of Cars Parked		0	0	1	1	0	0	0	0
	Total Number of Vacant Spaces		1	1	0	0	1	1	1	1
	Percentage Occupancy		0%	0%	100%	100%	0%	0%	0%	0%
<b>BRADY STREET</b>										
North Side										
Lord Street to Coppin Street	No Stopping	--	0	0	0	0	0	0	0	0
South Side										
Coppin Street to Lord Street	No Stopping	--	0	0	0	0	0	0	0	0
	Permit Zone	10	2	2	3	3	3	3	3	3
	No Stopping	--	0	0	0	0	0	0	0	0
<b>BRADY STREET</b>	Capacity	0 - 0	--	--	--	--	--	--	--	--
	Total Number of Cars Parked		--	--	--	--	--	--	--	--
	Total Number of Vacant Spaces		--	--	--	--	--	--	--	--
	Percentage Occupancy		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Nb:NB - Northern/Southern Property Boundary  
Ea:EW - Eastern/Western Property Boundary  
Mid pt - Mid point  
ROW - Right of Way

Attachment 6 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A Traffic Assessment Report

142-144 Coppin Street, Richmond  
26758 Parking Surveys



Supervised By: James Young  
Surveyed By: Frank Feller

Survey Dates & Times: See below

Location	Restriction	Capacity Min - Max	Thursday 23rd May, 2019				Saturday 25th May, 2019			
			12noon	1pm	7pm	8pm	12noon	1pm	7pm	8pm
<b>WALL STREET</b>										
North Side										
Lord Street to Duke Street	No Stopping	-	0	0	0	0	0	0	0	0
	2P 7am-7pm Mon-Sat	4	0	3	3	3	3	2	4	4
Duke Street to Coppin Street	No Stopping	-	0	0	0	0	0	0	0	0
	2P 7am-7pm Mon-Sat	6	1	2	5	5	5	4	3	5
Coppin Street to Wall Place	No Stopping	-	0	0	0	0	0	0	0	0
	2P 7am-7pm Mon-Sat	3	2	2	3	3	1	0	4	4
Wall Place to Mary Street	2P 7am-7pm Mon-Sat	7	7	6	8	8	6	6	6	6
	P Disabled Only	1	1	1	1	1	1	1	1	1
	2P 7am-7pm Mon-Sat	1	1	1	0	0	0	1	1	1
	No Stopping	-	0	0	0	0	0	0	0	0
South Side										
Mary Street to Wall Place	No Stopping	-	0	0	0	0	0	0	0	0
	2P 90 degree angle 7am-7pm Mon-Sat	15	11	13	11	11	12	11	12	12
Wall Place to Coppin Street	No Stopping	-	0	0	0	0	0	0	0	0
	2P 7am-7pm Mon-Sat	4	3	3	3	3	3	3	4	4
Coppin Street to Duke Street	No Stopping	-	0	0	0	0	0	0	0	0
	2P 90 degree angle 7am-7pm Mon-Sat, Permit Zone all other times	7	6	6	5	6	4	3	7	7
Duke Street to Lord Street	No Stopping	-	0	0	0	0	0	0	0	0
	2P 90 degree angle 7am-7pm Mon-Sat, Permit Zone all other times	14	10	8	8	11	8	12	8	11
<b>WALL STREET</b>	Capacity	41 - 62	62	62	41	41	62	62	41	41
	Total Number of Cars Parked		42	45	34	34	43	43	35	37
	Total Number of Vacant Spaces		20	17	7	7	19	19	6	4
	Percentage Occupancy		68%	73%	83%	83%	69%	68%	85%	90%

N/S - Northern/Southern Property Boundary  
E/W - Eastern/Western Property Boundary  
Mpl - Mid point  
ROW - Right of Way

Prepared by Traffix Group Pty Ltd

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Attachment 6 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A Traffic Assessment Report

142-144 Coppin Street, Richmond  
26758 Parking Surveys



Supervised By: James Young  
Surveyed By: Frank Feller

Survey Dates & Times: See below

Location	Restriction	Capacity Min - Max	Thursday 23rd May, 2019				Saturday 25th May, 2019			
			12noon	1pm	7pm	8pm	12noon	1pm	7pm	8pm
<b>MARY STREET</b>										
<b>West Side</b>										
Brougham Street to Wall Street	No Stopping	-	0	0	0	0	0	0	0	0
	2P 7am-7pm Mon-Sat	4	5	4	5	5	2	3	5	5
	No Stopping	-	0	0	0	0	0	0	0	0
Wall Street to SB #110	No Stopping	-	0	0	0	0	0	0	0	0
	2P 7am-7pm Mon-Sat	1	0	0	1	1	1	1	1	1
	P Disabled Only	1	1	1	1	1	1	1	1	1
	2P 7am-7pm Mon-Sat	5	4	4	4	4	2	2	4	4
<b>East Side</b>										
SB #107 to Wall Street	Permit Zone	5	3	3	4	4	4	3	4	5
	No Stopping	-	0	0	0	0	0	0	0	0
Wall Street to Brougham Street (NB #73)	No Stopping	-	0	0	0	0	0	0	0	0
	Permit Zone	10	6	6	9	9	5	5	5	5
<b>MARY STREET</b>	<b>Capacity</b>	<b>11 - 11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>
	<b>Total Number of Cars Parked</b>	<b>10</b>	<b>9</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>6</b>	<b>7</b>	<b>11</b>	<b>11</b>
	<b>Total Number of Vacant Spaces</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>
	<b>Percentage Occupancy</b>		<b>91%</b>	<b>82%</b>	<b>100%</b>	<b>100%</b>	<b>55%</b>	<b>64%</b>	<b>100%</b>	<b>100%</b>

MS/S - Northern/Southern Property Boundary  
EW/W - Eastern/Western Property Boundary  
Mid - Mid point  
ROW - Right of Way

Prepared by Traffix Group Pty Ltd

Page 7 of 8



Attachment 6 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A Traffic Assessment Report

142-144 Coppin Street, Richmond  
26758 Parking Surveys



Supervised By: James Young  
Surveyed By: Frank Feller

Survey Dates & Times: See below

Location	Restriction	Capacity Min - Max	Thursday 23rd May, 2019				Saturday 25th May, 2019			
			12noon	1pm	7pm	8pm	12noon	1pm	7pm	8pm
<b>MALLESON STREET</b>										
North Side										
Mary Street to Bend	No Stopping	-	0	0	0	0	0	0	0	0
	2P 7am-7pm Mon-Sat	14	10	10	12	12	12	11	14	14
	No Stopping	-	0	0	0	0	0	0	0	0
South Side										
Bend to Mary Street	No Stopping	-	0	0	0	0	0	0	0	0
	2P 7am-7pm Mon-Sat	16	11	12	12	12	12	11	15	15
	No Stopping	-	0	0	0	0	0	0	0	0
<b>MALLESON STREET</b>	Capacity	30 - 30	30	30	30	30	30	30	30	30
	Total Number of Cars Parked		21	22	24	24	24	22	29	29
	Total Number of Vacant Spaces		9	8	6	6	6	8	1	1
	Percentage Occupancy		70%	73%	80%	80%	80%	73%	97%	97%
<b>SUMMARY -&gt; ON-STREET CARPARKING</b>										
Car Parking Supply		171	171	171	171	171	171	171	171	171
Total Number of Cars Parked		186	185	130	133	193	177	140	148	
Total Number of Vacant Spaces		91	94	41	38	89	102	31	23	
Percentage Occupancy		67%	66%	76%	78%	88%	63%	82%	87%	
<p>Note: Public parking includes spaces that are available to the general public and excludes 'No Stopping', 'Loading Zones' and 'No Parking' areas, etc., during the relevant enforcement periods</p> <p><b>LEGEND: Public Parking</b></p> <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 15px; background-color: #90EE90; border: 1px solid black; margin-right: 5px;"></span> Public Parking</li> <li><span style="display: inline-block; width: 15px; height: 15px; background-color: #FFB6C1; border: 1px solid black; margin-right: 5px;"></span> Not available to the general public</li> <li><span style="display: inline-block; width: 15px; height: 15px; background-color: #FFFF00; border: 1px solid black; margin-right: 5px;"></span> Not Available, illegally parked cars included in analysis</li> <li><span style="display: inline-block; width: 15px; height: 15px; background-color: #FFFFFF; border: 1px solid black; margin-right: 5px;"></span> No Stopping/ Other No Parking</li> </ul>										

N/S/B - Northern/Southern Property Boundary  
E/W/B - Eastern/Western Property Boundary  
M/O - Mid over  
R/W - Right of Way

Prepared by: Traffix Group Pty Ltd

**Attachment 6 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A Traffic Assessment Report**

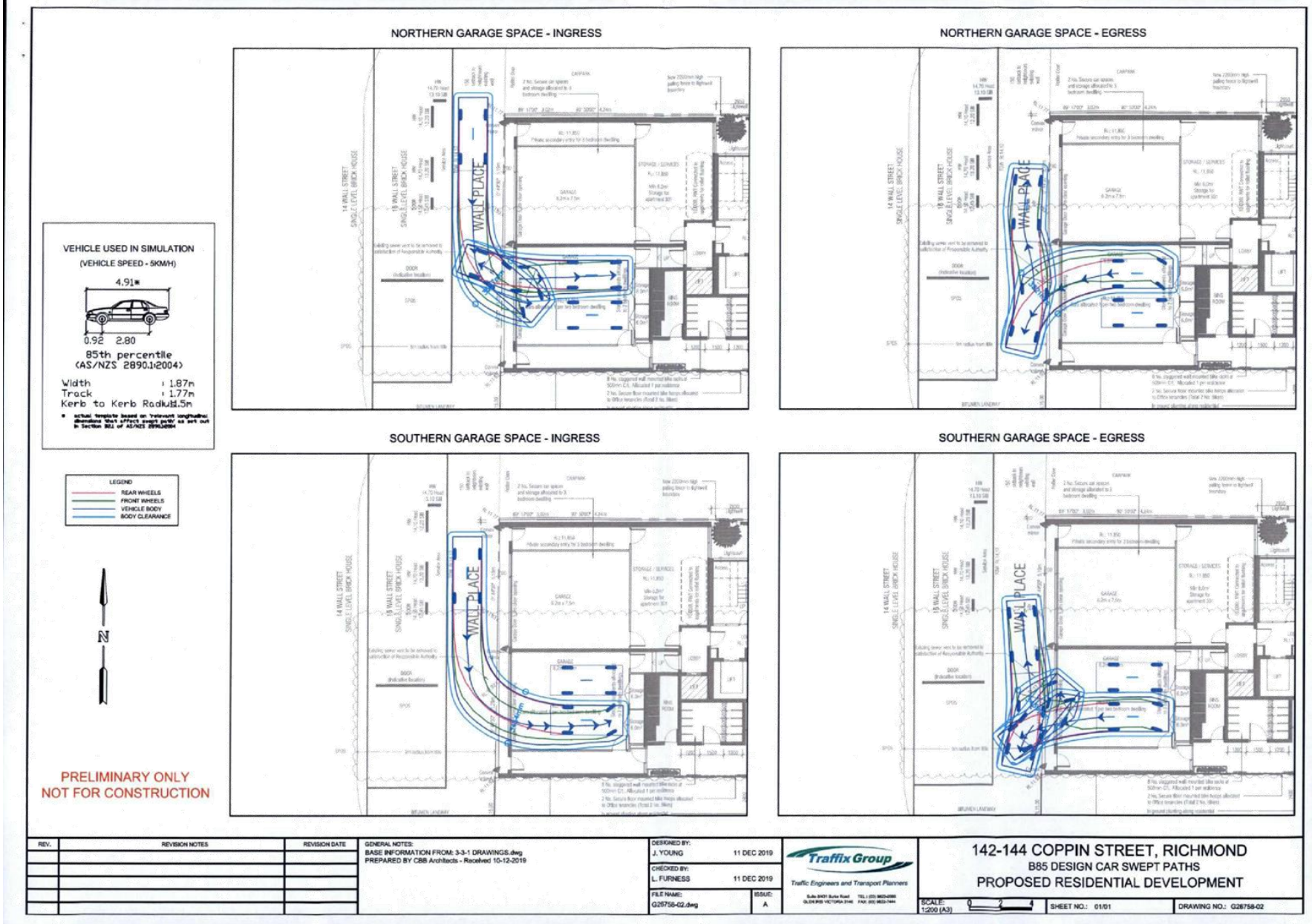
Traffic Engineering Assessment  
142-144 Coppin Street, Richmond: Proposed Mixed Use Development



Appendix C:  
Swept Path Diagrams

G26758R-01C

Attachment 6 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A Traffic Assessment Report



**Attachment 7 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A - Waste Management Plan**

# ***RB WASTE CONSULTING SERVICE***

*7/21 – 25 Wensley Street, Diamond Creek Vic 3089*

*Tel: 0400 345 078 / 9438 5183*

*ABN: 88 363 141 893*

*Email: [robertburr4@bigpond.com](mailto:robertburr4@bigpond.com)*

**RB/RBWC/103-2019**

Bacolas Group

29<sup>th</sup> January 2020

C/- CBG Architects Pty Ltd

33 Tope Street

South Melbourne Vic 3205

Attention: Bill Katsabis

## **WASTE MANAGEMENT PLAN**

**142-144 COPPIN STREET RICHMOND**

### **AMENDMENT**

I refer to your request for Waste Services. Based on CBG Architects plans for 7 Apartments and Office areas, the following Waste Management Plan is proposed.

**Attachment 7 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A - Waste Management Plan**

**CONTENTS AS FOLLOWS**

**1). RESPONSIBILITY**

- 1a). Tenements
- 1b). Owner's Corporation/Management
- 1c). Developers
- 1d). Operators

**2). WASTE GENERATION & AVAILABLE SPACE**

- 2a). Waste Generation - Weekly
- 2b) Available Space

**3). SERVICES & ALLOCATION**

- 3a). Bin Details
- 3b). Recommended Bin Colouring

**4). NOISE & ODOUR MANAGEMENT, SAFETY AND SIGNAGE**

- 4a). Noise & Odour Management
- 4b). Safety & Signage

**5). WASTE REMOVAL**

- 5a). Waste Removal-Private Waste Contractor

**6). SUSTAINABILITY & SUMMARY**

- 6a).Sustainability
- 6b).Summary

**7). CONTACTS**

**Attachment 7 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A - Waste Management Plan**

**1). RESPONSIBILITY**

The submission of this waste plan is consistent with the City of Yarra Council guidelines for preparing a Waste Management Plan and the guide to best practice for Waste Management in multi-unit developments.

**1a). TENEMENTS**

The proposed Development consists of 7 only apartments on 3 levels plus ground level, 2 Office areas and a communal bin room also on the ground level.

There are 4 x 1 bedrooms, 2 x 2 bedrooms and 1 x 3 bedrooms apartments and 2 office areas totalling 145m<sup>2</sup>. A communal bin room is provided on the ground level adjacent to the Bike store.

Each apartment will have 2 receptacles, 1 for general waste and 1 for recycling waste located within the kitchen cupboard area of the apartment for storage.

Residential tenants will transfer General waste in suitable bags and tied, to the communal bin room on the ground level and deposit directly into the appropriately marked bins.

Residential tenants will transfer Commingled waste to the communal bin room on the ground level and deposit directly into the appropriately marked bins.

Cardboard will be flattened and folded prior to depositing into the appropriately marked bins.

Access to the communal refuse room on the ground level is via lift or stairwell.

Offices will provide their own in office bin storage whilst cleaners/ staff members will transfer each waste stream to the communal bin room and deposit into the appropriately marked bins for offices.

Access to the communal bin room on the ground level by office staff or cleaners is via the rear door of each office area.

Collection day for each of the waste streams is a Monday from 6.00am onward; bins are placed at kerbside the evening prior.

**1b).**

**EACH RATEABLE TENEMENT IS LIABLE TO BE CHARGED FOR MUNICIPAL SERVICES IRRESPECTIVE OF THE LEVEL OF COLLECTION SERVICES PROVIDED BY COUNCIL.**

**Attachment 7 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A - Waste Management Plan**

**1c).**

The communal bin room will be ventilated by extraction fan or a similar mechanical device and have available 24 hour sensor lighting for tenant safety, running water and a suitable grate for spillage or bin wash down.

The door on the communal bin room for collection of bins must be a minimum of 900mm wide to allow bins to fit through safely without causing damage to the surrounding structure.

**1d).**

**All aspects of the Waste Management System including the transfer of waste streams to the communal bin room on ground level of the proposed development and to kerbside for collection, will be the responsibility of the occupants/tenants or the Owner's Corporation- not the Council waste collector.**

**2). WASTE GENERATION & ALLOCATION**

**2a). WASTE GENERATION-WEEKLY**

<b>Waste source</b>	<b>Waste stream</b>	<b>Waste total</b>
Apartments 4(1b/r)	General waste	160 Litres
	Commingled waste	240 Litres
Apartments 2 (2b/r)	General waste	100 Litres
	Commingled waste	160 Litres
Apartments 1 (3b/r)	General waste	60 Litres
	Commingled waste	100 Litres
Offices 145 m2	General waste	75 Litres
	Commingled waste	75 Litres
<b>Waste Total</b>		<b>970 Litres</b>

**Attachment 7 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A - Waste Management Plan**

**2B). AVAILABLE SPACE**

Waste source	Waste stream	Bin size	Number of bins	Collections per week	Bin area required
Apartments	General	240L	2	1	0.96 m2
	Commingled	240L	3	1	1.44 m2
Hard Waste					1.00 m2
E-Waste		80L	1	as required	0.26 m2
Organic waste		80L	1	as required	0.26 m2
<b>Total area required for bins</b>					<b>3.92 m2</b>

Recycling and Cardboard will be combined as Commingled waste.

The communal bin room shown on the current plans for this proposed development is 9.24 m2 and suitable in size and complies with guidelines set by Council.

Green waste will be removed from the proposed development by the person/s appointed by the Owner's Corporation to care for the Landscaping of the proposed development.

Disposal of liquid waste/electronics and paint/chemicals etc. will be organised for tenants by the Owner's Corporation Management Team.

Hard waste will be collected twice yearly by contacting Yarra Council on (03) 9205 5555

This service can be altered to reflect increased/decreased waste volumes and/or unforeseen requirements.

**3). SERVICES & ALLOCATION**

**3a). BIN DETAILS**

Capacity (Litres)	Height (mm)	Width (mm)	Depth (mm)	Empty (weight kg)	Maximum (weight kg)	Typical (ave. density kg)
120	1000	500	600	9.30	44.00	37.00
240	1100	600	800	15.00	55.00	46.00
660	1200	1400	700	45.00	270.00	220.00
1100	1390	1360	1090	58.00	385.00	310.00



**Attachment 7 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A - Waste Management Plan**

\*Details are a guide only, variations will occur with different branding.

\*Weight variations will occur subject to density when disposing of wet or compacted waste.

**3b). RECOMMENDED BIN COLOUR CODING-METRO COUNCILS**

<b>Bins</b>	<b>Garbage/Food</b>	<b>Commingled/Recycling /Cardboard</b>
Lid	Green	Yellow
Body	Green	Green

\*Councils will vary with colours, check council for further information.

**4). NOISE & ODOUR MANAGEMENT, SAFETY & SIGNAGE**

**4a). NOISE & ODOUR MANAGEMENT**

All bins are to be kept within the communal refuse room at all times except during servicing.

(MGB) Mobile Garbage Bins have rubber wheels for quieter performance during operation.

Council waste contractors will ensure council and EPA guidelines are met at all times.

The Owner's Corporation will ensure this does occur.

Waste collection services offer little or no disturbance to all tenants including surrounding tenants.

Keeping lids closed at all times to prevent overflow of bin maintenance within the refuse area will assist in the control of odour and vermin management.

Professional bin cleaning contractors can be engaged on a regular basis, this will assist in the control of odour and vermin management.

**4b). SAFETY & SIGNAGE**

Bins will be identified by different colours. Stickers or embossing on each bin will clearly indicate the direction of each waste stream.

Signage on walls in the communal bin room will clearly assist tenants in the direction of each waste stream.

Conditions of entry to the communal refuse room will be displayed on the entrance for tenants to see prior to entry.

Advertising and promotional material will be on offer from Council to remind tenants of their recycling obligation.

**Attachment 7 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A - Waste Management Plan**

**5). WASTE REMOVAL**

**5a). WASTE REMOVAL-COUNCIL**

Person/s appointed by the Owner's Corporation to care for the communal bin room will transfer each bin to kerbside the evening prior to collection or prior to 6.00am on the day of collection.

The bins must be placed 300mm apart for easy access by Council vehicles and 1.5 metres from the Development boundary for safe pedestrian access, bins must be placed with wheels not facing the kerb and approximately 100mm back from the kerbside.

Once collection has taken place by Council vehicles, the person/s responsible for the removal of bins will do so within 24 hours and place them back within the communal bin room as before.

This procedure will take place weekly for each waste stream.

Collection times will be between 6.00am-10.00pm on a Monday or as otherwise advised by Council under Local By-Laws and EPA guidelines.

**6). SUSTAINABILITY & SUMMARY**

**6a).** Victoria's **Getting Full Value – Waste and Resources Recovery Policy 2013** sets targets for increasing the recovery rate of solid waste for refuse and recycling.

Further information can be sought from Sustainability Victoria website;  
[www.sustainability.vic.gov.au](http://www.sustainability.vic.gov.au)

Tenants should be made aware of this website on occupant to this Development and be encouraged to participate in the programs made available by the Owner's Corporation.

**6b). SUMMARY:**

The use of MGB 240 and 120 Litre bins for Residential and Office tenants is the most effective method of Managing waste at this Development

The use of Council vehicle to collect bins from the front of this Development is the most effective method of servicing this Development.

**Attachment 7 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A - Waste Management Plan**

**7). CONTACTS**

**CITY OF YARRA COUNCIL**

**333 BRIDGE ROAD**

**RICHMOND VIC 3121**

**TEL: (03) 9205 5555**

**WEBSITE: [www.yarracity.vic.gov.au](http://www.yarracity.vic.gov.au)**

**GI Asset Management (e-waste recycling)**

**7/225 Lonsdale Street**

**Dandenong**

**Robert Burr**

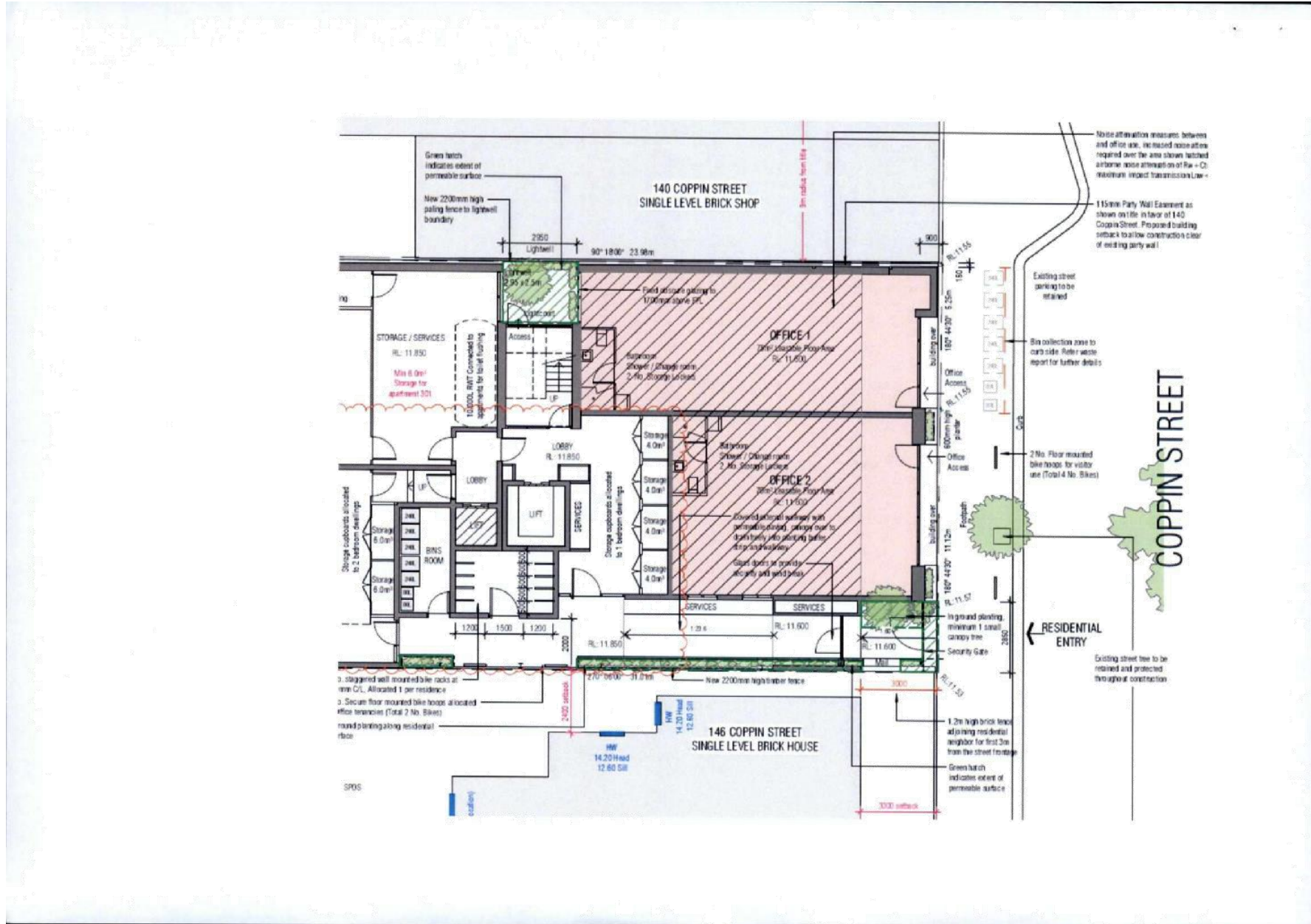
**R B Waste Consulting Service**

**ABN: 88 363 141 893**

**Email: [robertburr4@bigpond.com](mailto:robertburr4@bigpond.com)**

**Tel: 0400 345 078 / (03) 9438 5183**

Attachment 7 - PLN19/0364 - 142 - 144 Coppin Street Richmond - S57A - Waste Management Plan



## Attachment 8 - PLN19/0364 - 142 - 144 Coppin Street Richmond - Urban Design Comments Based on Originally Advertised Plans



# MEMO

---

**TO:** Nish Goonetilleke (Statutory Planner)  
**FROM:** Lucy Ferguson (Urban Designer)  
**DATE:** 12 December 2019  
**SUBJECT:** 142-144 Coppin Street, Richmond  
**APPLICATION NO:** PLN19/0364  
**DESCRIPTION:** Construction of a four-storey building for dwellings and offices.

---

### COMMENTS SOUGHT

Urban design comments have been sought on:

- The design response and its reference/relationship to the streetscapes;
- Siting, bulk and height of the proposed development and any impacts; and
- The proposed materials and finishes.

*These comments are provided on Revision A – RFI Response Plans (CBG Architects).*

---

### COMMENTS SUMMARY

The proposal is not supported in its current form. In summary, the following changes are recommended to make the proposal more acceptable from an urban design perspective (detailed overleaf):

- Reduce the fence height to the common pedestrian entrance on Coppin Street (maximum 1.8m) and specify the materiality of the fence, roofing and structure along the entrance.
  - Introduce vertical articulation to the Coppin Street frontage to respond to the prevailing streetscape grain. The current composition and heavy horizontal banding increases the bulk and
  - Reduce the bulk of the form as it presents to Wall Place, by increasing the Second Floor and Third Floor balcony setback to Wall Place.
  - Rationalise the stepped built form response along the southern interface to simplify the form and reduce visual bulk.
  - Minimise the bulk of the Third Floor and associated pergola structures, through the removal of brick pergola walls utilising a light weight structure in its place and use of darker recessive materials in lieu of brick to distinguish the upper form from the base.
- 

### SITE AND CONTEXT

- The subject site is an amalgamated allotment on the western side of Coppin Street, Richmond. The site has a frontage of approximately 16.4m, an average depth of approximately 31.2m, with an overall site area of approximately 510sqm.

## Attachment 8 - PLN19/0364 - 142 - 144 Coppin Street Richmond - Urban Design Comments Based on Originally Advertised Plans

- The site is subject to Commercial Zone 1 (C1Z) and forms part of a small commercial pocket at the corner of Coppin Street and Wall Street. The surrounding area is generally zoned General Residential Zone (GRZ2).
- No Heritage Overlay applies to the site or the immediate streetscape context on Coppin Street. Heritage Overlay HO319 (Elm Grove Precinct) applies to Wall Street, immediately west of the site.
- The site has the following immediate interfaces:
  - To the north at 140 Coppin Street is a single storey commercial building. Further north at 139 Coppin Street is a double storey commercial building. The second storey addition is setback approximately 5m from the frontage and presents as two storey sheer to Wall Street.
  - To the east is Coppin Street a two way street approximately 19.5m in width.
  - To the south at 146 Coppin Street is a single storey brick dwelling setback approximately 3m from the Coppin Street frontage, with private open space to the rear.
  - To the west is Wall Place a no through laneway (approximately 3.3m wide). Further west at 16 Wall Street is a single storey terrace.

### DEVELOPMENT PROPOSAL

- Four (4) storey mixed use development, comprising 2 x office tenancies at Ground Floor (totalling 145sqm) and 8 dwellings (5 x 1bdr, 2 x 2bdr and 1 x 3bdr). Rear car parking (2 x spaces) is proposed, accessed via Wall Place.

### URBAN DESIGN FEEDBACK

#### Built Form and Massing

- The proposal seeks a maximum building height of four storeys (approximately 13.1m from NGL). The compositional proposition is broadly a stepped three storey base with recessive upper fourth storey. The southern boundary marks the transition to 146 Coppin Street within the General Residential Zone and requires a considered and massing response and sensitive transition. It is recommended to rationalise setbacks and balconies along this interface to simplify the overly stepped and bulky form.
- Pursuant to the Design Guidelines at Clause 22.10-3.3 new development which abuts a laneway should be no higher than two storeys. The Second Floor is proposed to be setback between 950mm to 2.25m. Above this, the Third Floor terrace is setback a modest 950mm. It is recommended that the solid component (horizontal concrete) of the street wall at the northwest corner be reconsidered and the Second Floor and Third Floor balcony be set back further (minimum 2.25m) to achieve a recessed upper level.

#### Design Detail and Materiality

- In conjunction with the above recommended massing amendments, the following design suggestions are offered to resolve the outcome:
  - The proposal adopts a dominant horizontal proportion utilising banding, a stronger vertical division/break (centrally to the frontage between dwellings) is required to the Coppin Street frontage to reference the prevailing rhythm of the immediate streetscape pursuant to Clause 22.10.
  - The treatment and materiality of the Third Floor and associated terrace structures is crucial in ensuring the upper form is recessive. It is recommended that the brick wing walls be removed and light weight structural form be pursued. Additionally the Third Floor should be considered 'in the round' and each elevation finished in recessive dark finish (i.e. monument).
- The proposal's material palette generally consists of acrylic render (monument), brick (white wash), concrete (patterned natural finish), perforated metal (monument), metal (natural bronze) and glazing. Broadly the proposed materials and finish palette is supported, subject to the receipt of additional details including front fence and communal entrance (translucent roofing and structural framing element).

## Attachment 8 - PLN19/0364 - 142 - 144 Coppin Street Richmond - Urban Design Comments Based on Originally Advertised Plans

### Public Realm

- The Ground Floor Coppin Street interface is broadly acceptable, the presence of two office tenancies strengthens the presence of the small commercial pocket. The 900mm setback and planters assist in defining the tenancies. The entrances could be further enhanced and differentiated through the introduction of a plinth below the window glazing.
- The communal residential entrance is located along the southern boundary. The partially undercover corridor is double gated for security. The proposed height of the wrought iron gate as shown in elevation (TP201-A) is approximately 2.7m, it is recommended this be reduced to 1.8m maximum.
- Generally the provision of habitable spaces to activate the Wall Place frontage is supported. However there are concerns as to the internal amenity of dwelling G01. Should the Wall Place Ground Floor program be amended and be predominantly car parking, adequate consideration should be given to the lighting and garage door treatment.

### Streetscapes

- 2 x bicycle hoops (equating to 4 visitor spaces) are proposed on the Coppin Street footpath. Nominated bicycle hoops should be as per Technical Notes: City of Yarra Public Domain Manual.
- The George Street footpath is to be reinstated as asphalt footpath. All proposed streetscape materials should be as per *Technical Notes: City of Yarra Public Domain Manual* and *Yarra Standard Drawings*. Existing kerb and channel should be reinstated as per in-situ materials.
- Any on-street parking re-instated as a result of development works must be approved by Council's Parking Management Unit.

### Other Considerations

- The use of wide planters and balustrades to preclude downward views whilst maintaining access to daylight and outlook is supported. Sufficient additional information should be provided to demonstrate how the proposed landscape can be achieved and maintained.

## Attachment 9 - PLN190364 - 142 - 144 Coppin Street Richmond - ESD Comments on Originally Advertised Plans

### Sustainable Management Plan (SMP)

Referral Response by Yarra City Council



#### Assessment Summary:

Responsible Planner:	Nish Goonetilleke
ESD Advisor:	Gavin Ashley
Date:	02.12.2019
Subject Site:	PLN19/0364VIC
Site Area:	Approx. 512m2
Project Description:	Construction of 4 level mixed use building comprising two offices and 8 apartments.
Pre-application meeting(s):	Unknown.
Documents:	PLN190364 - 142-144 Coppin Str-ichmond - S52 Advertised Plans PLN190364 - 142-144 Coppin Str-nd - S52 Advertised ESD Report – Sustainability Management Plan V2, dated July 2019

**The standard of the ESD meets Council's Environmental Sustainable Design (ESD) standards.** Should a permit be issued, the following ESD commitments (1) and deficiencies (2) should be conditioned as part of a planning permit to ensure Council's ESD standards are fully met.

The SMP includes:

- a. A BESS assessment showing a score of 60% which is 10% better than "Best Practice" standard.
- b. FirstRate5 results for a sample of 6 apartments
- c. A STORM report with a 102% STORM score has been submitted that demonstrates best practice and relies on ~188m<sup>2</sup> of roof and 108m<sup>2</sup> balconies connected to a 10,000 litre rainwater tank connected to toilet flushing in apartments
- d. Daylight modelling results

#### (1) Applicant ESD Commitments:

- The residential dwellings will achieve an average energy rating of 6.5 Stars with no apartment achieving less than 6 stars
- A 10% improvement on heating and cooling consumption in comparison to a reference case defined by the NCC 2016 BCA Section J will be provided for the offices.
- Solar PV system: minimum 2kWp
- A private outdoor clothesline will be provided for each dwelling
- Rainwater tank(s) with an effective capacity of 10,000L
- Daylight: 100% living areas achieve a daylight factor greater than 1%; 83% bedrooms achieve a daylight factor greater than 0.5%;
- Eight staggered wall mounted bicycle racks will be provided plus two hoops for office users/visitors.
- Building User Guide will be provided to building occupants with the intent to reduce energy and water consumption.

#### (2) Application ESD Deficiencies:



## Attachment 9 - PLN190364 - 142 - 144 Coppin Street Richmond - ESD Comments on Originally Advertised Plans

### Sustainable Management Plan (SMP)

Referral Response by Yarra City Council



#### **(3) Outstanding Information:**

- Show location of outdoor clothes line

#### **(4) ESD Improvement Opportunities**

- Extend application of ceiling fans to all bedrooms.
- Use permeable paving to reduce run-off.
- Increase the size of the PV system.
- Natural ventilation to office spaces.

#### **Further Recommendations:**

The applicant is encouraged to consider the inclusion of ESD recommendations, detailed in this referral report. Further guidance on how to meet individual planning conditions has been provided in reference to the individual categories. The applicant is also encouraged to seek further advice or clarification from Council on the individual project recommendations.

## Attachment 9 - PLN190364 - 142 - 144 Coppin Street Richmond - ESD Comments on Originally Advertised Plans

### Sustainable Management Plan (SMP) for planning applications being considered by Yarra Council



## Applicant Response Guidelines

### Project Information:

Applicants should state the property address and the proposed development's use and extent. They should describe neighbouring buildings that impact on or may be impacted by the development. It is required to outline relevant areas, such as site permeability, water capture areas and gross floor area of different building uses. Applicants should describe the development's sustainable design approach and summarise the project's key ESD objectives.

### Environmental Categories:

Each criterion is one of the 10 Key Sustainable Building Categories. The applicant is required to address each criterion and demonstrate how the design meets its objectives.

### Objectives:

Within this section the general intent, the aims and the purposes of the category are explained.

### Issues:

This section comprises a list of topics that might be relevant within the environmental category. As each application responds to different opportunities and constraints, it is not required to address all issues. The list is non-exhaustive and topics can be added to tailor to specific application needs.

### Assessment Method Description:

Where applicable, the Applicant needs to explain what standards have been used to assess the applicable issues.

### Benchmarks Description:

The applicant is required to briefly explain the benchmark applied as outlined within the chosen standard. A benchmark description is required for each environmental issue that has been identified as relevant.

### How does the proposal comply with the benchmarks?

The applicant should show how the proposed design meets the benchmarks of the chosen standard through making references to the design brief, drawings, specifications, consultant reports or other evidence that proves compliance with the chosen benchmark.

### ESD Matters on Architectural Drawings:

Architectural drawings should reflect all relevant ESD matters where feasible. As an example, window attributes, sun shading and materials should be noted on elevations and finishes schedules, water tanks and renewable energy devices should be shown on plans. The site's permeability should be clearly noted. It is also recommended to indicate water catchment areas on roof- or site plans to confirm water re-use calculations.

## Attachment 10 - PLN19/0364 - 142 - 144 Coppin Street Richmond - Council Arborist Comments

### Goonetilleke, Nish

---

**From:** Bates, Justin  
**Sent:** Thursday, 16 July 2020 12:39 PM  
**To:** Goonetilleke, Nish; Williames, Glen  
**Subject:** RE: PLN19/0364 - 142 - 144 Coppin Street Richmond - Streetscapes

Hi Nish,

I have sent the Amenity Value to Glen for both trees at 142-144 Coppin St Richmond

T-1 DBH 350 \$9,034  
T-2 DBH 390 \$11,217

Both Trees will require TPZ fencing and a Bond.

Please let me know if you need anything else.

Regards  
Justin

---

**From:** Goonetilleke, Nish  
**Sent:** Tuesday, 14 July 2020 9:07 AM  
**To:** Williames, Glen <Glen.Williames@yarracity.vic.gov.au>; Bates, Justin <Justin.Bates@yarracity.vic.gov.au>  
**Subject:** RE: PLN19/0364 - 142 - 144 Coppin Street Richmond - Streetscapes

Hi Justin,

Hope you're well.

I was wondering if you had a chance to look at the email below?

Thank you.

**Kind Regards,**  
**Nish Goonetilleke**  
Senior Statutory Planner  
STATUTORY PLANNING  
City of Yarra PO Box 168 Richmond 3121  
ABN 98 394 086 520

T (03) 9205 5005  
E [Nish.Goonetilleke@yarracity.vic.gov.au](mailto:Nish.Goonetilleke@yarracity.vic.gov.au)  
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Yarra City Council acknowledges the Wurundjeri as the Traditional Owners of this country, pays tribute to all Aboriginal and Torres Strait Islander people in Yarra, and gives respect to the Elders past and present.

## Attachment 10 - PLN19/0364 - 142 - 144 Coppin Street Richmond - Council Arborist Comments

---

**From:** Williames, Glen  
**Sent:** Friday, 10 July 2020 2:36 PM  
**To:** Bates, Justin <[Justin.Bates@yarracity.vic.gov.au](mailto:Justin.Bates@yarracity.vic.gov.au)>  
**Cc:** Goonetilleke, Nish <[Nish.Goonetilleke@yarracity.vic.gov.au](mailto:Nish.Goonetilleke@yarracity.vic.gov.au)>  
**Subject:** FW: PLN19/0364 - 142 - 144 Coppin Street Richmond - Streetscapes

Hi JB,

Can you please give me an amenity value of these trees?

Thanks

Glen

---

**From:** Goonetilleke, Nish  
**Sent:** Friday, 10 July 2020 12:01 PM  
**To:** Williames, Glen <[Glen.Williames@yarracity.vic.gov.au](mailto:Glen.Williames@yarracity.vic.gov.au)>  
**Subject:** PLN19/0364 - 142 - 144 Coppin Street Richmond - Streetscapes

Hi Glen,

Hope you're well.

I am currently writing up an IDAC report for the abovementioned application. The application is for the construction of a four-storey building and reduction in the car parking requirements associated with the use of the land for dwellings and offices.

Please find plans attached. There are two trees at the front of the subject site. See circled below:



The Applicant is proposing to retain these trees. Would you recommend conditioning the requirement for a TMP?  
Or TPZ?

Thank you.

**Kind Regards,**  
**Nish Goonetilleke**  
Senior Statutory Planner

**Attachment 10 - PLN19/0364 - 142 - 144 Coppin Street Richmond - Council Arborist Comments**

STATUTORY PLANNING

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## Attachment 11 - PLN19/0364 - 142 - 144 Coppin Street Richmond - Waste Management Referral Comments Based on S57A Plans

### Goonetilleke, Nish

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**From:** Athanasi, Atha  
**Sent:** Tuesday, 30 June 2020 1:24 PM  
**To:** Goonetilleke, Nish  
**Subject:** RE: PLN19/0364 - 142 - 144 Coppin Street Richmond - WMP Referral

Hi Nish,

The waste management plan for 142 - 144 Coppin Street, Richmond authored by RB Waste Consulting Service and dated 20/1/2020 is not satisfactory from a City Works Branch's perspective. Issues to be rectified include, but may not be limited to the following:

1. Council provides 1x80L waste and 1x120L recycle bin for individually rated commercial properties.
2. The commercial and residential streams should be calculated separately and appropriate bins allocated.
3. Commercial bins and residential bins should be separated.
4. Please detail the bin store plan showing path of access to collection point, hard waste area etc
5. Council does not offer hard waste services for commercial properties.
6. Council does not alter collection services on request.
7. Space must be available to accommodate extra bins that will be required once Councils new kerbside service is introduced later this year.(glass bin and food and green waste bin)
8. Please provide an explanation of how any risk relating to waste service will be managed.
9. A clause must be included in the plan regarding potential review into the service if operational requirements change.

Regards,

Atha Athanasi  
Contract Management Officer

City of Yarra – City Works Depot  
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Yarra City Council acknowledges the Wurundjeri Woi Wurrung as the Traditional Owners of this country, pays tribute to all Aboriginal and Torres Strait Islander people in Yarra, and gives respect to the Elders past and present.

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**From:** Goonetilleke, Nish  
**Sent:** Monday, 29 June 2020 10:35 AM

## Attachment 11 - PLN19/0364 - 142 - 144 Coppin Street Richmond - Waste Management Referral Comments Based on S57A Plans

**To:** Athanasi, Atha <Atha.Athanasi@yarracity.vic.gov.au>  
**Subject:** PLN19/0364 - 142 - 144 Coppin Street Richmond - WMP Referral

Hi Atha,

Thank you for taking my call today.

I was hoping you could provide comments on the WMP for the following planning application:

Application No.: PLN19/0364  
Address: 142 – 144 Coppin Street Richmond  
Description: Construction of a four-storey building and reduction in the car parking requirements associated with the use of the land for dwellings and offices (no permit required for office use).

Please find documents attached. Two offices at ground floor and 7 apartments between first to third floors.

If you have any queries or need any further information, please let me know.

THANK YOU!

Kind Regards,  
Nish Goonetilleke  
Senior Statutory Planner  
STATUTORY PLANNING  
City of Yarra PO Box 168 Richmond 3121  
ABN 98 394 086 520

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# Attachment 12 - PLN19/0364 - 142 - 144 Coppin Street Richmond - Engineering Comments Based on S57A Plans



## MEMO

**To:** Nish Goonetilleke  
**From:** Artemis Bacani  
**Date:** 21 May 2020  
**Subject:** Application No: PLN19/0364  
 Description: Mixed-Use Development  
 Site Address: 142-144 Coppin Street, Richmond

I refer to the above Planning Application received on 17 April 2020 in relation to the proposed development at 142-144 Coppin Street, Richmond. Council's Civil Engineering unit provides the following information:

### Drawings and Documents Reviewed

	Drawing No. or Document	Revision	Dated
CBG Architects & Interior Designers	TP100 - B Ground Floor Plan	B	10 December 2019
	TP220 - B Sections	B	10 December 2019
Traffic Group	Traffic Engineering Assessment	Issue 01C	11 December 2019

### CAR PARKING PROVISION

#### Proposed Development

Under the provisions of Clause 52.06-5 of the Yarra Planning Scheme, the development's parking requirements are as follows:

Proposed Use	Quantity/ Size	Statutory Parking Rate*	No. of Spaces Required	No. of Spaces Allocated
One-bedroom dwelling	4	1 space per dwelling	4	0
Two-bedroom dwelling	2	1 space per dwelling	2	2
Three-bedroom dwelling	1	2 spaces per dwelling	2	2
Office (2 Tenancies)	140 m <sup>2</sup>	3 spaces per 100 m <sup>2</sup> of net floor area	4	0
<b>Total</b>			<b>12 Spaces</b>	<b>4 Spaces</b>

\* Since the site is located within the Principal Public Transport Network Area, the parking rates in Column B of Clause 52.06-5 now apply.

A reduction of eight car spaces (consisting of four residential spaces and four spaces for the office use) is sought by the applicant.

The four on-site car spaces will be allocated for the two-bedroom and three-bedroom dwellings to satisfy the car parking requirement of *Clause 52.06-9*.



## Attachment 12 - PLN19/0364 - 142 - 144 Coppin Street Richmond - Engineering Comments Based on S57A Plans

To reduce the number of car parking spaces required under Clause 52.06-5 (including to reduce to zero spaces), the application for the car parking reduction must be accompanied by a Car Parking Demand Assessment.

### Car Parking Demand Assessment

In reducing the number of parking spaces required for the proposed development, the Car Parking Demand Assessment would assess the following:

- *Parking Demand for the One-Bedroom Dwelling.*  
The one-bedroom dwellings will have no on-site car spaces. Traffix Group have sourced car ownership data for the Richmond area from the 2016 ABS Census. The data indicates that the one-bedroom dwellings have an average car of 0.80 cars per dwelling. The Census also suggests that there is a strong market for dwellings that have no on-site car parking. It is recognised that car ownership is influenced by a number of factors (public transport access, proximity to employment and education centres, affordability issues, environmental concerns, and access to services) and that in inner areas many households do not own a car for a range of reasons. The area's coverage of 2P restrictions should provide regular turnover of parking throughout the day and provide opportunities for visitors to find a parking space near the site.
- *Parking Demand for Office Use.*  
The proposed office use would also not be allocated with on-site car parking. Staff, clients and visitors to the site would be inclined to parking on-street or commute by sustainable transportation modes. The actual parking demand generated by the office is expected to be lower than the statutory parking rate of 3.0 spaces per 100 square metres of floor space, since the area has very good access to public transport services.

Throughout the municipality, a number of developments have been approved with no car spaces or a reduced office rate, as shown in the following table:

Development Site	Approved Office Parking Rate
<b>Cremorne</b>	
60-88 Cremorne Street PLN17/0626 issued 21 June 2018	0.85 spaces per 100 m <sup>2</sup> (233 on-site spaces; 27,306 m <sup>2</sup> )
9-11 Cremorne Street PLN16/0171 (Amended) issued 13 June 2017	0.85 spaces per 100 m <sup>2</sup> (20 on-site spaces; 2,329 m <sup>2</sup> )
<b>Collingwood</b>	
2-16 Northumberland Street PLN16/1150 issued 14 June 2017	0.89 spaces per 100 m <sup>2</sup> (135 on-site spaces; 15,300 m <sup>2</sup> )

The provision of no on-site parking for the office use is considered appropriate, having regard to the site's accessibility to public transport services and its proximity to Melbourne.

- *Multi-Purpose Trips within the Area.*  
Visitors and clients could combine their visit to the site by engaging in other business or activities whilst in the Richmond area.
- *Convenience of Pedestrian and Cyclist Access.*  
The site has very good pedestrian access to shops, businesses, essential facilities and public transport nodes. The site also has good connectivity to the Principal Bicycle Network.

## Attachment 12 - PLN19/0364 - 142 - 144 Coppin Street Richmond - Engineering Comments Based on S57A Plans

### Appropriateness of Providing Fewer Spaces than the Likely Parking Demand

Clause 52.06 lists a number of considerations for deciding whether the required number of spaces should be reduced. For the subject site, the following considerations are as follows:

- *Availability of Car Parking.*  
 Traffix Group had undertaken on-street parking occupancy surveys of the surrounding area on Thursday 23 May 2019 and Saturday 25 May 2019 at 12:00pm, 1.00pm, 7.00pm, and 8.00pm. The survey area included Coppin Street, Mary Street, Duke Street, Lord Street, Malleson Street, Wall Street, Brady Street, and Murray Street. The times and extent of the survey are considered appropriate. An inventory of between 171 to 279 publicly available parking spaces were identified. The results of the survey indicate that the peak parking occupancy in the study area had occurred at 8.00pm on Saturday with 87 % of spaces occupied or 23 vacant spaces. The survey data suggests that any shortfall of parking for the site can be accommodated in the surrounding streets.
- *Relevant Local Policy or Incorporated Document.*  
 The proposed development is considered to be in line with the objectives contained in Council's *Strategic Transport Statement*. The site is ideally located with regard to sustainable transport alternatives and the lack of on-site car parking would discourage private motor vehicle ownership and use.
- *Access to or Provision of Alternative Transport Modes.*  
 The site has very good accessibility to public transport and connectivity to the on-road bicycle network. The site is also in proximity to on-street car share pods. A Flexicar car share pod is located in Lyndhurst Street, approximately 450 metres north-west of the site.

### Adequacy of Car Parking

From a traffic engineering perspective, the waiver of eight spaces associated with the site is considered appropriate in the context of the development and the surrounding area.

The Civil Engineering unit has no objection to the reduction in the car parking requirement for this site.

## DEVELOPMENT LAYOUT DESIGN

### Layout Design Assessment

Item	Assessment
<b>Access Arrangements</b>	
Carriageway Width of Wall Place	According to the applicant, Wall Place has a carriageway width of 3.3 metres.
Two Double Garage – Entrance via Wall Place	The width of each garage entrance is 5.9 metres wide which satisfies AS/NZS 2890.1:2004.
Garage - Headroom Clearance	A minimum headroom clearance of 2.2 metres has been provided to satisfy <i>Design standard 1 – Accessways</i> .
Visibility	Convex mirrors are proposed on the north and south walls at the rear of the garage/pedestrian entrance.
Vehicle Turning Movements	The swept path diagrams adequately demonstrate entry and exit movements into and out of the garage using the B85 design template.

**Attachment 12 - PLN19/0364 - 142 - 144 Coppin Street Richmond - Engineering Comments Based on S57A Plans**

**Layout Design Assessment**

Item	Assessment
<b>Car Parking Modules</b>	
Garage	The double garage is 6.2 metres wide by 7.5 metres depth to satisfy <i>Design standard 2 – Car parking spaces</i> .

**Design Items to be Addressed**

Item	Details
Visibility Sight Triangles	The convex mirrors are to be relocated inside the property line, at the corner of the garage.
Internal Concrete Slab	<p>For any new internal concrete works, the finished floor levels along the edge of the slab must be set 40 mm above the edge of Wall Place – Council Infrastructure requirement.</p> <p>Since the property has vehicle access off the laneway, the applicant is to demonstrate by a ground clearance check, that a B85 design vehicle can enter and exit the property without scraping or bottoming-out.</p> <p>The applicant should demonstrate there is adequate ground clearance by providing an accurate cross section of the internal slab and laneway showing:</p> <ul style="list-style-type: none"> <li>▪ The finished floor level of the garages;</li> <li>▪ The finished floor level at the front edge of the internal slab (i.e. - the 40 mm above the laneway);</li> <li>▪ The level at the edge of the laneway; and</li> </ul> <p>The cross section should run along the centre of each garage and be fully dimensioned.</p>
Bicycle Considerations	The bicycle requirements for this development are to be referred to Council's Strategic Transport unit for comments.

**ENGINEERING CONDITIONS**

**Civil Works**

Upon the completion of all building works and connections for underground utility services,

- The footpath along the property's Coppin Street frontage must be stripped and re-sheeted to Council's satisfaction and at the Permit Holder's cost. The footpath must have a cross-fall of 1 in 40 or unless otherwise specified by Council.

**Road Asset Protection**

- Any damaged roads, footpaths and other road related infrastructure adjacent to the development site as a result of the construction works, including trenching and excavation for utility service connections, must be reconstructed to Council's satisfaction and at the developer's expense.

**Attachment 12 - PLN19/0364 - 142 - 144 Coppin Street Richmond - Engineering Comments Based on S57A Plans**

**Construction Management Plan**

- A Construction Management Plan must be prepared and submitted to Council. The Plan must be approved by Council prior to the commencement of works. A detailed dilapidation report should detail and document the existing and post construction conditions of surrounding road infrastructure and adjoining private properties.

**Impact of Assets on Proposed Development**

- Any services poles, structures or pits that interfere with the proposal must be adjusted, removed or relocated at the owner's expense after seeking approval from the relevant authority.
- Areas must be provided inside the property line and adjacent to the footpath to accommodate pits and meters. No private pits, valves or meters on Council property will be accepted.

**ADDITIONAL ENGINEERING ADVICE FOR THE APPLICANT**

Item	Details
Legal Point of Discharge	The applicant must apply for a Legal Point of Discharge under Regulation 133 – Stormwater Drainage of the <i>Building Regulations</i> 2018 from Yarra Building Services unit. Any storm water drainage within the property must be provided and be connected to the nearest Council pit of adequate depth and capacity (legal point of discharge), or to Council's satisfaction under Section 200 of the <i>Local Government Act</i> 1989 and Regulation 133.
Tree Protection	The applicant is to liaise with Council's Open Space unit regarding the protection of the street tree along the property's Coppin Street road frontage.

# Attachment 13 - PLN190364 - 142 - 144 Coppin Street Richmond - Engineering Comments Based on Sketch Plans (dated 03.06.2020)



## MEMO

**To:** Nish Goonetilleke  
**From:** Artemis Bacani  
**Date:** 15 June 2020  
**Subject:** Application No: PLN19/0364  
 Description: Mixed-Use Development  
 Site Address: 142-144 Coppin Street, Richmond

I refer to the above Planning Application received on 17 April 2020 in relation to the proposed development at 142-144 Coppin Street, Richmond. Council's Civil Engineering unit provides the following information:

### Drawings and Documents Reviewed

	Drawing No. or Document	Revision	Dated
CBG Architects & Interior Designers	TP100 - C Ground Floor Plan	C	3 June 2020

### DEVELOPMENT LAYOUT DESIGN

#### Layout Design Assessment

Item	Assessment
<b>Access Arrangements</b>	
Visibility	Convex mirrors are proposed on the north and south walls at the rear of the garage/pedestrian entrance. The Civil Engineering unit has no objection to the use and locations of the convex mirrors as shown on the drawings.
Internal Concrete Slab	The edge of the internal concrete slab is set 40 millimetres above the eastern edge of the laneway to satisfy Council's Infrastructure requirement.