



SUMMATION

Henderson Business Hub

Sustainable Design Assessment Report

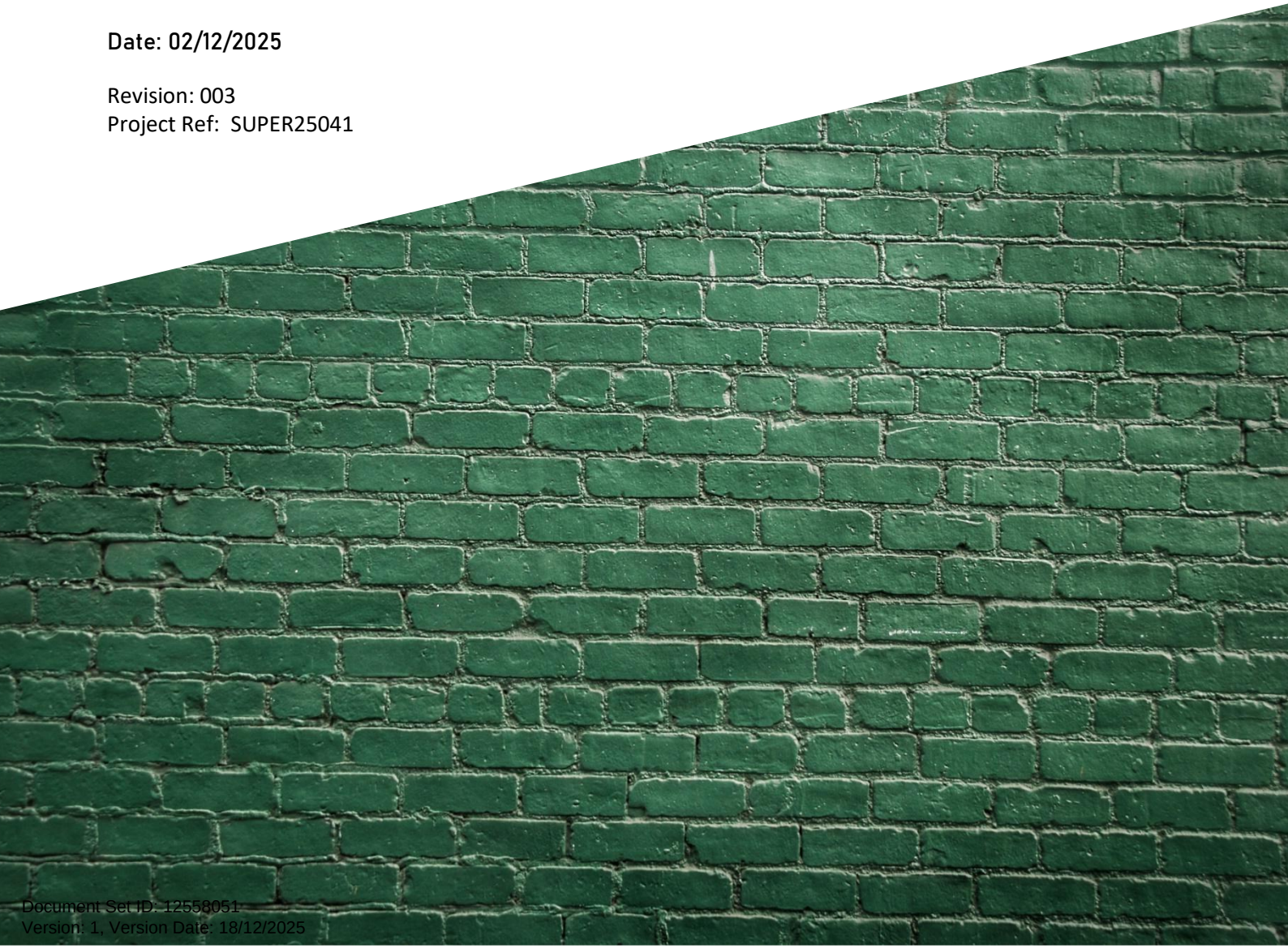
Prepared for: Pennock Architects

Prepared by: Prasanna Suraweera

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Executive Summary

This document has been prepared to outline the sustainability initiatives that are being considered for inclusion in the Henderson Business Park Project located at 81 Quill Way, Henderson, WA.

The following guidelines are acknowledged as applicable to the site and this strategy addresses Principal 5 – Sustainability of the Design Quality Evaluation requirements:

- WA State Planning Policy 7.0 – Design of the Built Environment

“Good design optimises the sustainability of the built environment, delivering positive environmental, social and economic outcomes.”

It is acknowledged there are no other sustainability specific requirements applicable for this site.

Summation Pty Ltd has been engaged as the sustainability consultants for the project and will be responsible for the delivery of the sustainability objectives. The sustainability team for this project will be led by Prasanna Suraweera, who is a Director with Summation and a Green Star Accredited Professional with over 21 years of experience in delivery of sustainable developments. It is confirmed that Summation has been engaged prior to concept planning stage and will be involved in and contribute until project completion.

The project has made a commitment to the following sustainability initiatives as outlined below:

- ESD Professional engaged to lead delivery – Prasanna Suraweera (GSAP) from Summation.
- Passive Design & Efficiency Features
- Future Provision for EV Charging infrastructure – to enable installation based on demand
- Native and water wise landscaping species selection
- Water efficient fittings and fixtures
- Construction Waste Recycling
- Waste Management Plan
- Energy and Water Metering and Monitoring
- Effective Stormwater Management
- Indoor Environmental Quality



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Abbreviations/Glossary

Abbreviation	Description
ESD	Environmentally Sustainable Design
GBCA	Green Building Council of Australia
GSAP	Green Star Accredited Professional
KPI	Key Performance Indicators
EOT	End of Trip
NCC	National Construction Code
BMS	Building Management System



1 Introduction

1.1 Project Background

The proposed Henderson Business Hub project is located 81 Quill Way, Henderson, WA. The site location is shown in Figure 1 below.



Figure 1 – Site Location and Context

The project consists of several uses across multiple lots. Summary of the expected project uses are as below:

- Lot 1 – Hotel
- Lot 2 – Social Hub
- Lot 3 – Office
- Lot 4 – Office
- Lot 4 – Mixed Use Medical/Office



1.2 Disclaimer

This report provides high level guidance regarding the sustainability commitments targeted for this project and the preliminary strategies and initiatives to be adopted therein.

The purpose of this report is to articulate the sustainability initiatives being committed by the project. Due care has been taken to ensure the initiatives are coordinated and achievable for the project, however, note that the specific strategies mentioned in this report are indicative and may evolve throughout the futures stages of design.

1.3 Deliverables

The specific deliverables/commitments for each milestone are confirmed below:

- **Development Application Deliverables:**
 - Sustainable Design Assessment Report – This report
- **Working Drawing (Building Permit) Phase Deliverables:**
 - Updated Sustainable Design Assessment Report.



2 Proposed Initiatives

2.1 Summary of Initiatives

A summary and discussion of the key initiatives proposed are outlined below:

- Passive Design & Efficiency Features
- Future Provision for EV Charging infrastructure – to enable installation based on demand
- Native and water wise landscaping species selection
- Water efficient fittings and fixtures
- Construction Waste Recycling
- Waste Management Plan
- Energy and Water Metering and Monitoring
- Effective Stormwater Management
- Indoor Environmental Quality

2.2 Passive Design and Energy Efficiency

Passive design features provide the ideal mechanism for improving the sustainability performance of projects. This is due to the low-cost nature of adopting these initiatives. Whilst ideal lot orientation cannot often be achieved, of primary importance is minimising the extent of glazing to minimise reliance on active heating and cooling.

Key passive design outcomes achieved for this project include:

- Window-to-wall ratios to exceed NCC Section J Requirements
- High performance envelope including high-performance double-glazing systems.
- Electric instantaneous hot water systems which eliminate storage and pipe losses
- LED lighting throughout for light quality and efficiency
- High efficiency HVAC (VRV or better) systems throughout.



2.3 Water Sensitive Design

Water efficiency will be targeted through the selection of suitable fittings and fixtures. The following initiatives will be targeted:

- Waterwise landscaping to minimise dependence on potable water.
- High efficiency fittings and fixtures – High Water Efficiency Labelling and Standards (WELS) rated fittings:
 - Taps – 5 Star
 - Toilets – 4 Star rated dual flush
 - Urinals – 5 Star
 - Showers – 3 Star (7.5 l/min)

2.4 Large Scale Solar PV

Provision of renewables is critical to the sustainability performance of buildings. It is a key initiative for reducing carbon emissions and will also provide operating cost benefits to the tenants.

The project commitment includes for the following:

- All buildings with the exception of Lot 2 Social Hub have considered the inclusion of Solar PV on roof level, refer to the architectural plans for the maximum system sizes and roof allocations.
 - A minimum commitment for a total 99kW Solar PV system for the Commercial Office buildings has been made for the project. This represents an approximate total of 700sqm of roof area which is expected to yield ~150,000kWh/annum with an expected carbon savings of 76,500 kgCO₂e/annum.

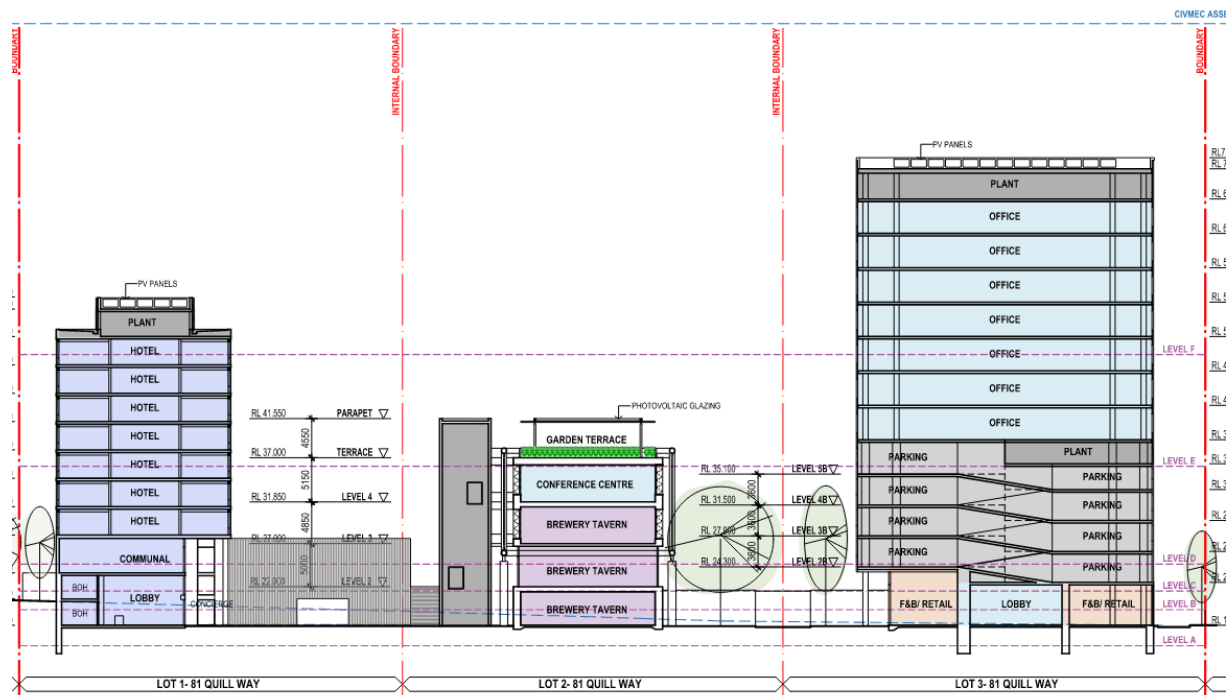


Figure 2: Solar PV Provision across multiple lots



2.5 Electrification – Hot Water, Space Heating and Cooking

Electrification is a key strategy for ongoing emissions improvement as the electricity grid continues to improve its carbon intensity. This is due to the ongoing ‘greening’ of the grid as the additional renewable’s capacity is realised. As an example, over the past 15 years, the grid emissions have improved by approximately 40% to 50% on the South-West Interconnected System (SWIS). This trend is expected to continue with further investment into renewable projects planned for the SWIS.

The project will ensure all services such as hot water, cooking and space heating is provided by electricity-based systems.

By having all services and energy demands electrified, this project is well placed to achieve ongoing savings in carbon emissions alongside the grid.

2.6 Effective Stormwater Management

Storm water management has been consideration for reducing water and pollution runoff from the development. All major stormwater events will be collected and infiltrated on site to minimise pollution runoff.

2.7 Construction Waste Recycling

A minimum 80% of all construction waste will be diverted from landfill including ongoing monthly reporting. This will be specified in the Head Contractor obligations and in line with current industry best practice.

2.8 Waste Minimisation

A Waste Management Plan will be developed with intention to maximise operational waste recycling. Appropriate waste sorting area has been determined based on the expected throughput of each waste streams, these have been located on the ground floor with safe efficient access by occupants and waste vehicles. Specific waste streams targeted include the following:

- General
- Comingled Recycling

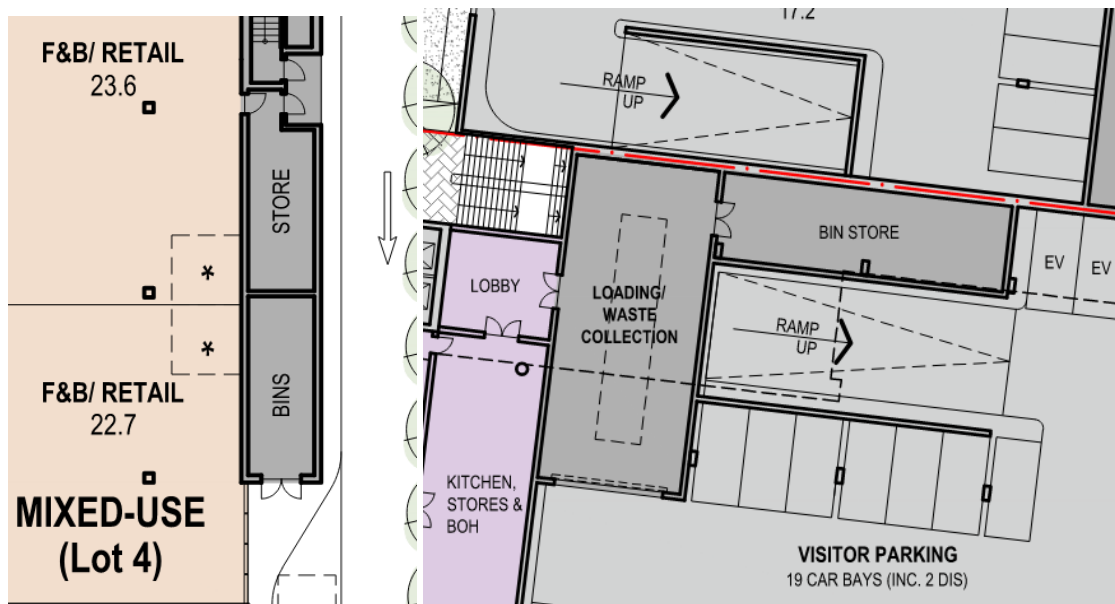


Figure 3: Examples of Bin Store allocation within the multiple lots

2.9 Sustainable Landscaping

The site has minimal external landscaping in keeping with the surrounding topology. Nevertheless, all landscaping provided will be sustainable through the use of native and waterwise species selection.

The project is also in close proximity to local conversation area, which provides reasonable access to some nature scape for users.

2.10 Promoting EV Transition – Future EV Charging Infrastructure

The Electric Vehicle transition is a key strategy for reducing global emissions. Facilitating the EV transition for projects such as the Henderson Business Hub project involve provision of nominated charging bays to ensure occupants have easy access to charging infrastructure should they wish to adopt EV.

The project commitment includes for the following:

- Future provision for 100% all bays to be converted in future (i.e. switchboard spatial allowance and wiring routes).
- Chargers to be installed based on occupant demand, including loan management software.
- The following EV bays have been allocated (as shown in Rev 2 of architectural drawings):
 - Lot 1 – 3 bays as shown on Level B
 - Lot 2 – 3 bays as shown on Level B
 - Lot 3 – 6 bays as shown on Level E
 - Lot 4 – 6 bays as shown on Level E



Figure 4: EV charging bays on Level B

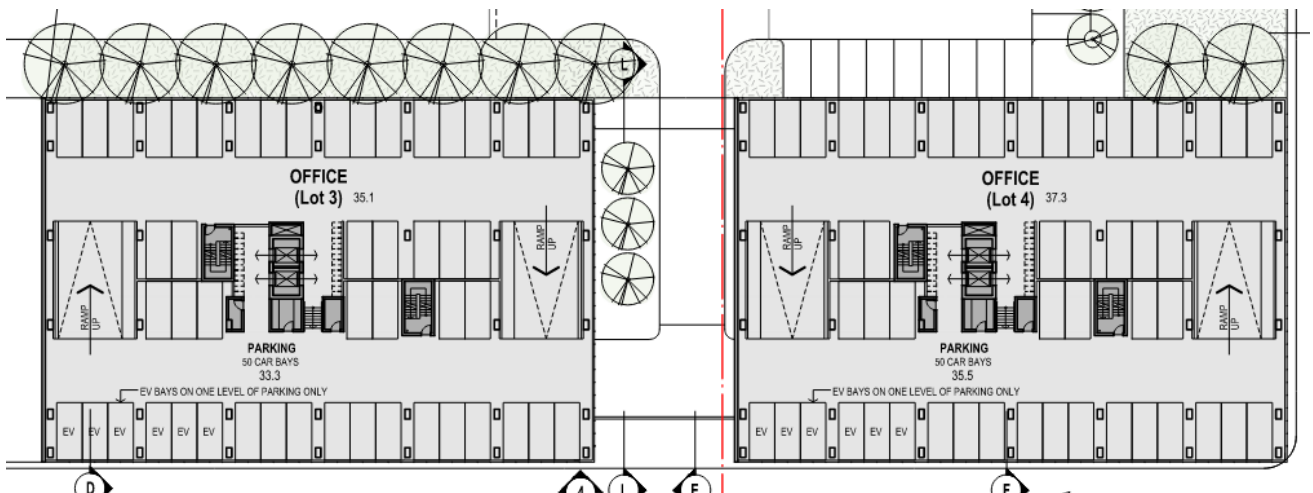


Figure 5: EV charging bays on Level E

2.11 Low Embodied Emission Materials

Upfront carbon impacts from construction materials will be minimised through consideration of low embodied emissions materials. Key aspirations include:

- Cement substitutions for footings, foundations, and ground slabs.
- Exploration of recycled road base for any cut and fill.



2.12 Energy and Water Metering and Monitoring

Effective metering and monitoring are essential criteria to ensure the facility performance is optimised during the operations phase. To enable this, extensive metering and monitoring systems will be provided for all major end uses of energy and water consumption. This data collected from the metering system will be made available for the residents. This will facilitate tracking of performance, identification of anomalies as well as assist in fault finding and tuning.

This is in keeping with the requirements of the NCC Section J requirements.

2.13 Indoor Environmental Quality

The following initiatives will be targeted to improve the indoor environment quality for the occupants:

- Lighting selections with consideration for visual comfort
- Maximise access to daylight through glazing with visual light transmittance (VLT) > 0.5
- Material selections with credible sustainability certifications and limits on toxins (volatile organic compounds and formaldehyde)



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