SUMMATION

St Louis Estate

Sustainable Design Assessment Report

Prepared for: Total PM

Prepared by: Megan Ang

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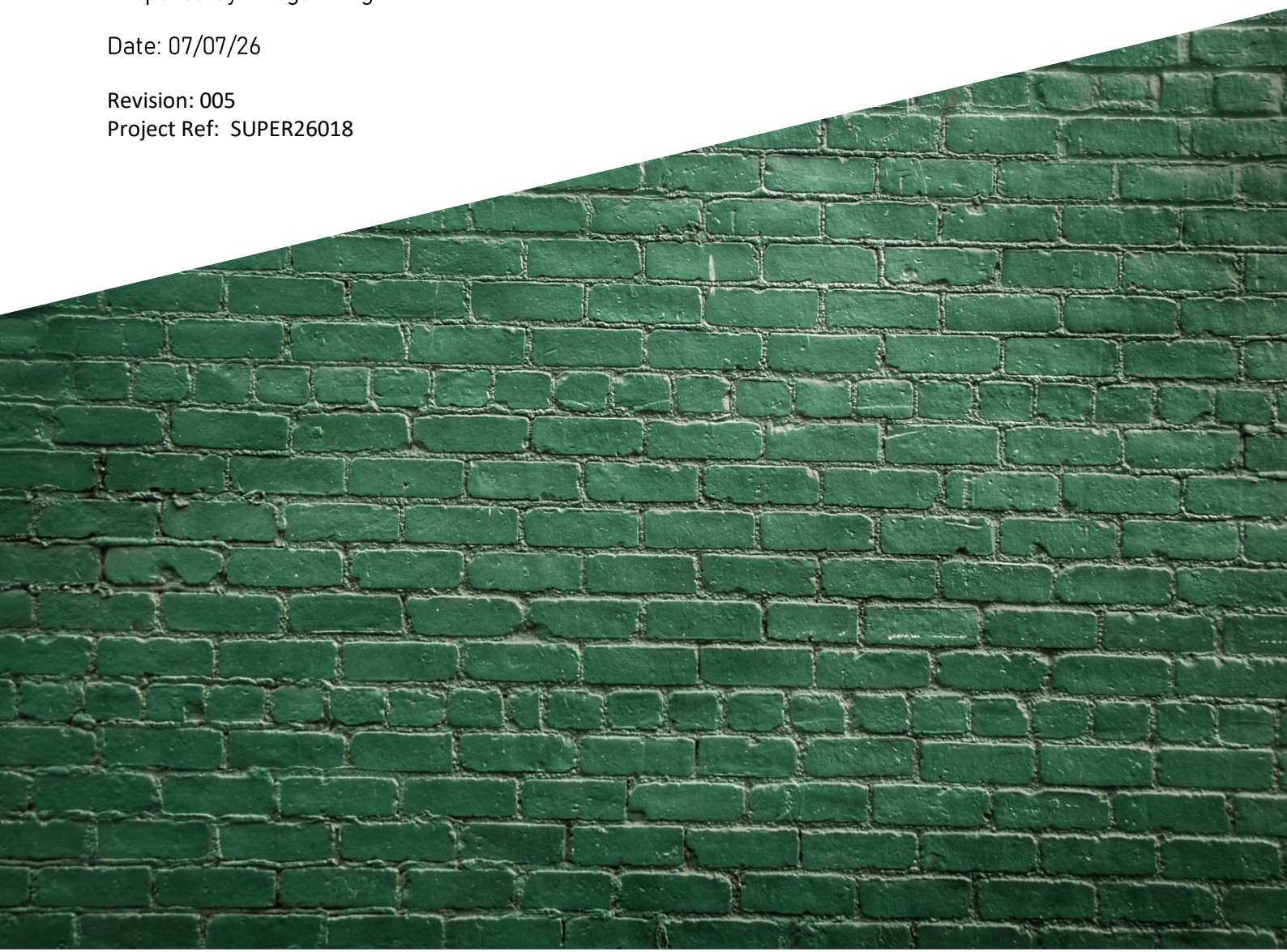

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Executive Summary

This document has been prepared to outline the sustainability initiatives that are being considered for inclusion in the St Louis Estate (SLE) high-quality Independent Living Unit (ILU) development project located on Albert Street, Claremont, Perth, WA.

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 to provide a wholistic review of the sustainability opportunities with the aim of adopting robust and appropriate initiatives accordingly.

The following guidelines are acknowledged as applicable to the site:

- WA State Planning Policy 7.0 – Design of the Built Environment
- WA State Planning Policy 7.3 - Residential Design Codes Volume 2 – Apartments
- Town of Claremont Local Planning Scheme and associated Local Planning Policies

"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.

Summary of the key sustainability initiatives targeted for the project are outlined below:

- Energy Efficiency and Passive Design Features
- Electrification of Services
- Energy and Water Metering and Monitoring
- Solar PV & Battery Energy Storage System
- Water Sensitive Design
- Waste Minimisation

Refer to Section 2 for further discussion of the proposed initiatives.

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Revision History

Revision	Date	Notes	Prepared By	Approved By
001	26/05/26	Issued for 50% SD	KCV	PDS
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Prasanna Suraweera

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 St Louis Estate project is located on Albert Street, Claremont, Perth. The site location is shown in Figure 1 below.

Figure 1 – Site Location and Context

The project comprises 24 three-bedroom units for aged and dependent persons across x2 four floor buildings and x1 five floor building, with basement parking.

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.

2 Proposed Initiatives

2.1 WA State Planning Policy 7.3 - Residential Design Codes (R-Codes) Volume 1 Part C

Part C of the R-Codes provides the framework for the design and assessment of dwellings, balancing community outcomes, sustainability objectives and residential amenity. The provisions are structured around three key themes: Garden, Building and Neighbourliness.

Figure 2: Residential Design Codes Volume 1 Part C

1. The Garden – promotes green space, tree canopy, access to natural light, effective stormwater management, and functional outdoor areas.

2. The Building – focuses on built form, ensuring housing responds to its context, provides suitable living spaces, and integrates ancillary structures and services appropriately.

3. Neighbourliness – seeks to minimise impacts on adjoining properties and the public realm through controls on building height, overshadowing, visual privacy, and parking layout.

In addition to the Garden, Building and Neighbourliness elements addressed by Part C, a range of broader sustainability measures and design strategies have also been considered as discussed below.

2.2 Energy Efficiency and Passive Design Features

Energy efficiency and passive design features provide the ideal mechanism for improving the sustainability performance of housing 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.

The following fundamental concepts will be considered in the design of St Louis Estate Project:

- Low 'e' Neutral single glazing (as a minimum)
- LED lighting throughout for light quality and efficiency
- High efficiency HVAC (VRV or better) systems throughout
- Electrical Instantaneous hot water system

2.3 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 commits to all services (i.e. hot water, cooking and space heating) being 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.

2.4 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:
    - 5 Star - Taps and Dishwashers (if applicable)
    - 4 Star - Dual flush rated toilets
    - 3 Star - Showers (7.5 l/min)

2.5 Solar PV & Battery Energy Storage System

Provision of renewables is critical to the overall sustainability performance of the building. It represents a key initiative in reducing operational carbon emissions while delivering ongoing operating cost benefits for occupants/ building management. On-site renewable generation will also assist in offsetting the building's energy demand and reducing reliance on grid electricity.

The final extent of solar is yet to be fully coordinated, however the objective will be to maximise the available roof coverage excluding services zone.

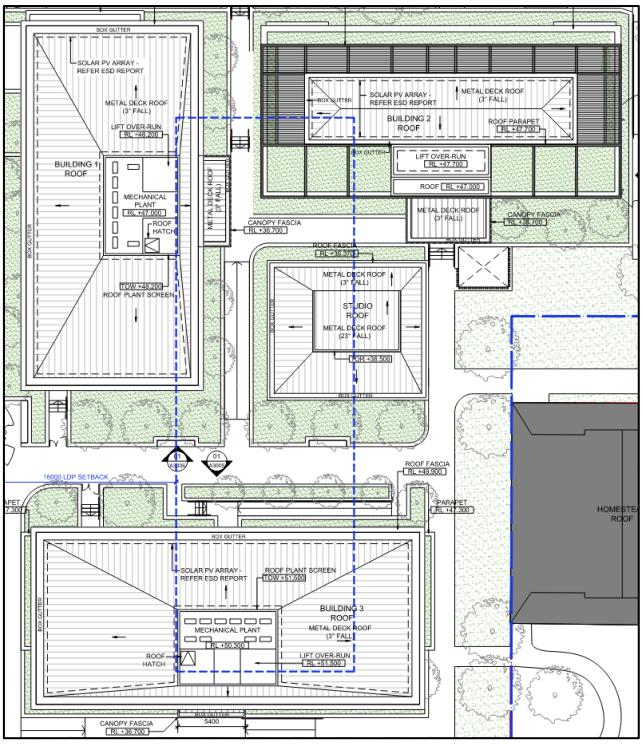

Figure 3: Preliminary roof space for Solar PV

Given the scale of the proposed site-wide solar PV installation, the incorporation of battery storage would provide additional benefit by storing excess daytime energy generation for use during peak night-time demand periods. The design has accounted for future ion battery storage connection, supporting the long-term future proofing of the development while also providing backup power capability during outages.

2.6 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 building management/ occupants. 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.

2.7 Waste Minimisation

The waste storage areas have sufficient allowance to enable effective waste separation and recycling to occur. Appropriate waste sorting area has been determined based on the expected throughout of each waste streams. These have been located with safe efficient access by occupants and waste vehicles. Specific waste streams targeted include the following:

- General
- Comingled Recycling
- One additional stream such as Food Organics and Garden Organics (FOGO) etc.

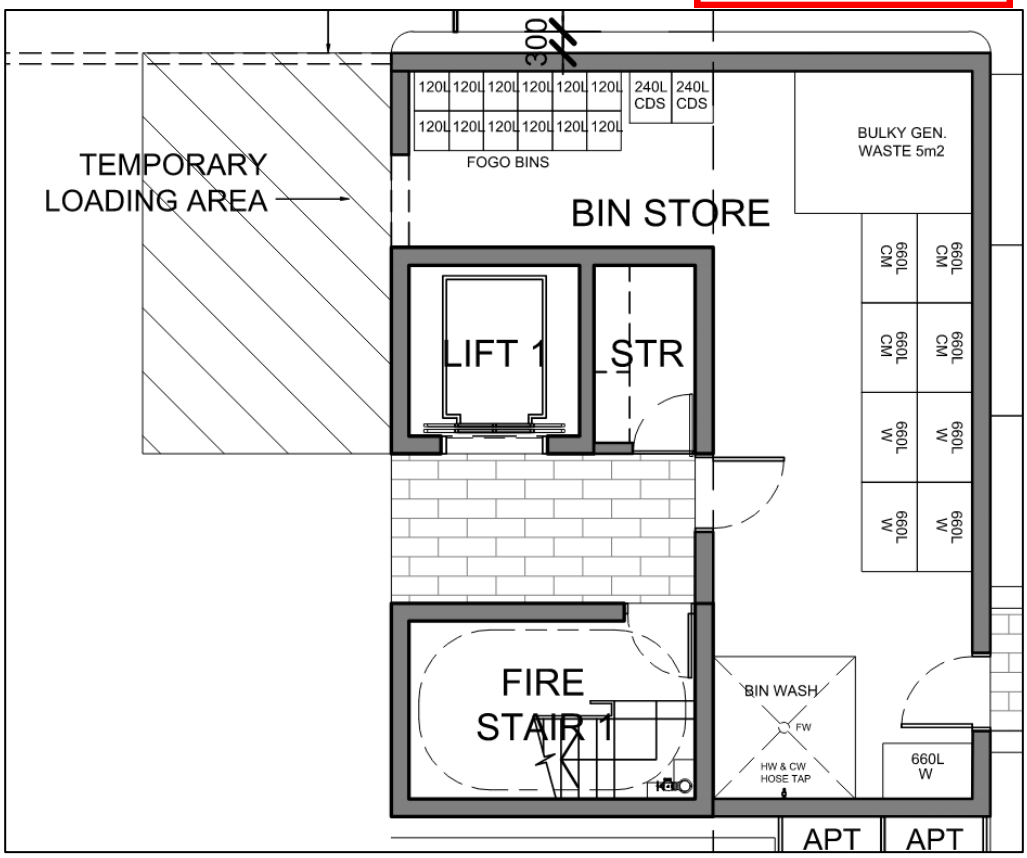

Figure 4 – Waste Storage Area on Basement Level

2.8 Section J Modelling

2.8.1 Thermal Performance

The minimum thermal performance requirements for building fabric elements forming the building envelope are summarised in the tables below. These requirements are indicative only and subject to confirmation following detailed coordination with the Architect and are subject to change pending final energy modelling results.

Table 1: Building Fabric Thermal Performance Requirement

Location	Description	Minimum Total System R-value [m^2.K/W]	Minimum Typical Insulation [m^2.K/W]	Example Typical Insulation
Roofs[1]	Metal Deck with Ceiling	R3.7	R3.65	80mm R3.65 refl. rigid board
	Concrete Suspended Slab		R1.8 + R2.5	80mm R1.8 refl. glasswool blanket + 140mm R2.5 glasswool ceiling batts
External Walls[2]	Opt. 1: Brick Cavity Wall	R1.4	R0.83	30mm R0.83 rigid rockwool batts
	Opt. 2: Reverse Brick Veneer		R2.5	90mm R2.5 glasswool batts + unventilated cavity or R0.2 thermal break
Internal Walls	Concrete w. Internal Lining	R1.0	R0.7	25mm R0.7 over wall clips
Floor	Exposed Suspended Slab	R2.0	R1.75	40mm R1.75 soffit board (suspended slab only)

[1] Solar absorptance of the upper surface of the roofs must be less or equal to 0.35 (where air intakes, or rooftop plant is installed).
[2] Solar absorptance of the outer surface of the external walls must be less or equal to 0.60.

Table 2: Glazing Thermal Performance Requirement

Type	Total System U-value [W/m².K]	Solar Heat Gain Coefficient (SHGC)	Example Typical Glazing
Glazing[3] • 58% WWR to North • 26% WWR to East • 29% WWR to South • 40% WWR to West	2.9	0.27	High performance low-E double glazing in aluminium frame.

Note: the above glazing performance values apply to all vision glazing and are stated as whole-of-system requirements, inclusive of framing and glass, and in accordance with Australian Fenestration Rating Council (AFRC) requirement.

[3] Window-to-wall ratio (WWR) calculation is based on the comparison between vision glazing to opaque façade areas. All non-vision areas are to be treated as external wall construction

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