SUMMATION

Capel Village

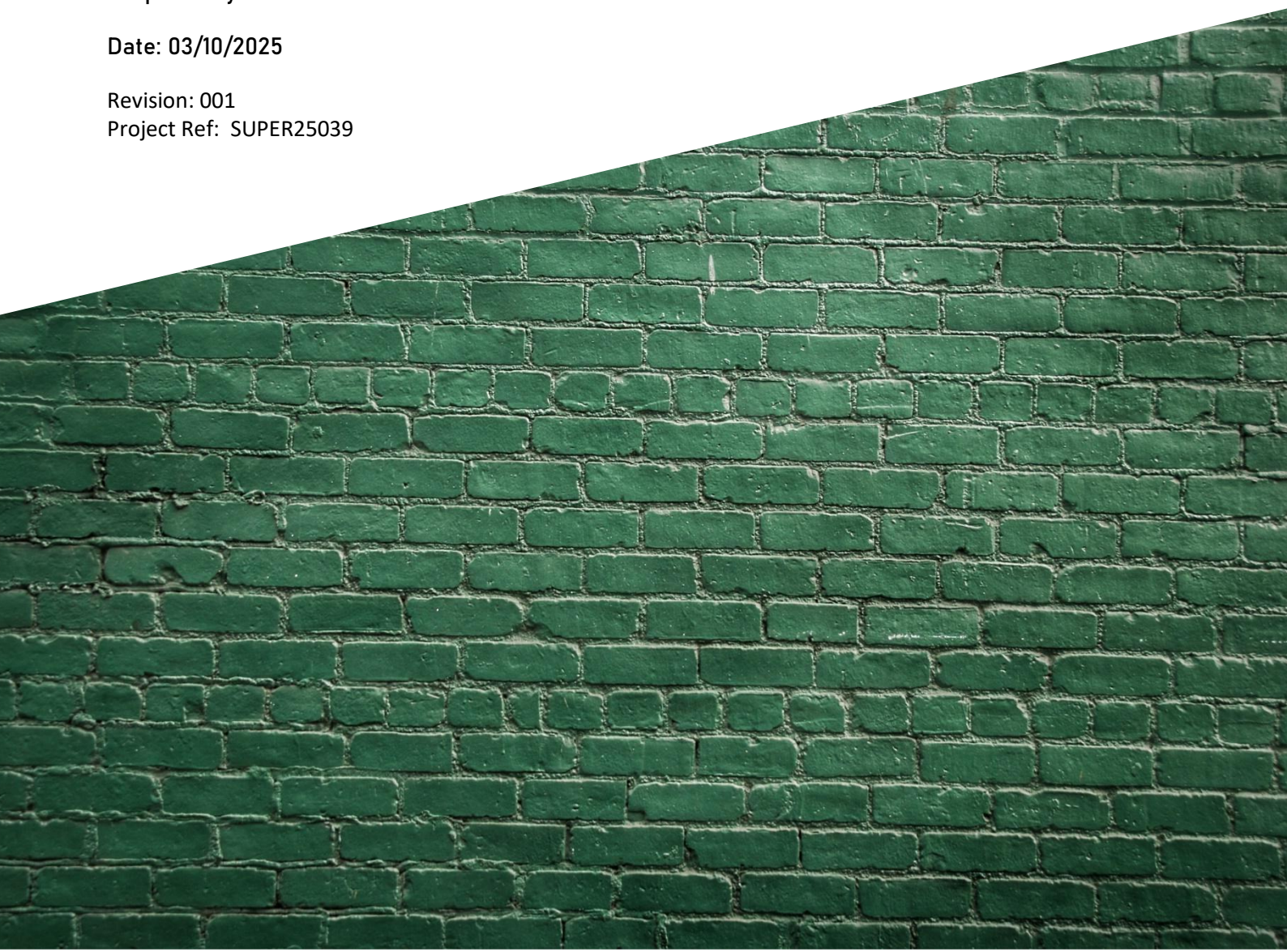
Sustainable Design Assessment Report

Prepared for: Dopel Marsh

Prepared by: Prasanna Suraweera

Date: 03/10/2025

Revision: 001
Project Ref: SUPER25039



Executive Summary

This document has been prepared to outline the sustainability initiatives that are being considered for inclusion in the Capel Village project located in Capel.

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

- WA Design Guideline SPP 7.3 - Residential Design Codes, Volume 2
- 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."

Specific references to sustainability include Section 4.15 – Energy Efficiency with the following criteria:

- Element Objectives - O4.15.1 Reduce energy consumption and greenhouse gas emissions from the development.
- Acceptable Outcomes - A4.15.1 (a) Incorporate **at least one significant energy efficiency** initiative within the development that exceeds minimum practice

It is confirmed this project has exceeded the above requirement and includes numerous Energy Efficiency as well as other broader sustainability features.

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

- Energy Efficiency
- Occupant Amenity, Health and Wellbeing
- Water Sensitive Design
- Embedded Network and Solar PV
- Electrification – Hot Water, Space Heating and Cooking
- Effective Stormwater Management
- Heat Island Mitigation
- Construction Waste Management
- Waste Minimisation
- Sustainable Landscaping
- Promoting EV Transition – Future EV Charging Infrastructure
- Low Embodied Emission Materials
- Energy and Water Metering and Monitoring

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

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 20 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.

Contents

List of figures

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 Capel Village project is located in Capel, WA. The site location is shown in Figure 1 below.

Figure 1 – Site Location and Context

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:

- Energy Efficiency
- Occupant Amenity, Health and Wellbeing
- Water Sensitive Design
- Embedded Network and Solar PV
- Electrification – Hot Water, Space Heating and Cooking
- Effective Stormwater Management
- Heat Island Mitigation
- Construction Waste Management
- Waste Minimisation
- Sustainable Landscaping
- Promoting EV Transition – Future EV Charging Infrastructure
- Low Embodied Emission Materials
- Energy and Water Metering and Monitoring

2.2 Energy Efficiency

Energy efficiency requires combination of high-performance building envelope together with efficient servicing strategy. The following fundamental concepts will be considered in the design of Capel Village Project:

- High performance envelope including high-performance double-glazing systems.
- Electric heat pump hot water systems (COP>4) for highest efficiency possible
- LED lighting throughout for light quality and efficiency
- Embedded Network to maximise utilisation of Solar PV and access to consumption data.

2.3 Occupant Amenity, Health and Wellbeing

- Low VOC and Formaldehyde internal finishes
- Target high daylight penetration and access to view for all dwellings
- Natural ventilation solution for all dwelling
- Access to extensive nature areas through high quality landscaping
- Bushfire Management (landscape) – Asset protection zones, fuel load reduction, and vegetation management to be considered.

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:
    - Taps – 5 Star
    - Toilets – 4 Star rated dual flush
    - Showers – 3 Star (7.5 l/min)
- Effective Stormwater Management

2.5 Embedded Network and 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 residents.

Whole-of-site embedded electricity network will be provided to manage supply, renewables, and billing centrally. This allows maximum utilisation of the solar energy generated.

Whilst the final scale of the Solar PV system is not yet finalised, it is anticipated it will be at least 30kW array for communal area roofs (Short-Stay + Clubhouse). Theis represents an approximate total area of ~210sqm which has been allocated for Solar PV. The expected yield of such a system is ~45,000kWhrs/annum. The expected carbon savings are 23,000 kgCO2e/annum.

2.6 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.

2.7 Effective Stormwater Management

Storm water management plan will be completed, with due consideration for reducing pollution runoff from the development.

Storm water management has been consideration for reducing water and pollution runoff from the development. Key features will include:

- WSUD treatment of stormwater (vegetated swales – prior to hitting drainage pits)

- Flood & Stormwater – Raise dwellings on stilts and set floor levels above flood lines.

2.8 Heat Island Mitigation

The external colour of roof and landscape elements can have significant impact on the local microclimate, specifically temperature. Dark surfaces will absorb heat and can increase ambient temperatures by 5+ degrees. Light coloured roofs and surfaces will assist in minimising this impact, along with landscaped areas.

The 9Capel Village Project will adopt this strategy to minimise its impact on the local microclimate.

2.9 Construction Waste Management

- 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.
- Adopt modular construction techniques to ensure high build quality and minimise material wastage.

2.10 Waste Minimisation

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
- Food Organics and Garden Organics (FOGO)

2.11 Sustainable Landscaping

This project has a strong focus of landscape amenity which provides significant sustainability, social and phycological benefits. Access to nature and biophilia is a proven strategy for health and well-being of people and when combined with native and water wise species selection, this provides an strong sustainability benefit. Key features provided in this project include:

    - Native and water wise landscaping species selection
    - Extensive landscape areas for biophilic connection and social connection
    - Vegetation & Ecology – Relocate possum nests, retain significant trees, and include supplementary planting.

2.12 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 Smith Street project involve provision of nominated charging bays to ensure residents have easy access to charging infrastructure should they wish to adopt EV.

The project commitment includes for the following:

- Future provision for EV charging bays (i.e. switchboard spatial allowance and wiring routes), Chargers to be installed based on demand from residents.

2.13 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.

2.14 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.

SUMMATION