IGS INTEGRATED GROUP SERVICES

Value | Innovation | Trust

ESD Services
Sustainable Management Plan

Residential Development
27 – 31 Plunkett Street
Bellfield

Project No: 24033
Date: 07/05/2024

Level 4, 108 Elizabeth Street,
Melbourne VIC 3000
Web: www.igs.com.au

Document Control

Version	Date	Issue	Author	Reviewer
00	15/12/2023	Issue for Review	[redacted]	
01	23/02/2024	Issue for General Updates		
02	07/05/2024	Issue for General Updates		

TABLE OF CONTENTS

Appendix

1. Executive Summary

The proposed residential building development at 27-31 Plunkett Street, Bellfield has been designed to meet the City of Banyule Sustainable Design Assessment in the Planning Process and National Construction Code (NCC 2022) Section J energy efficiency requirements.

The ESD strategy for the proposed development has incorporated to use of both NCC 2022 Section J, and Green Star Buildings v1. The development will be designed to a 4-Star Green Star Certified Rating.

A 4-star rating equates to "Australian Best Practice" and requires a minimum 15 core points with all minimum expectations within the tool met. The 15-core points are addressed from the following categories within the Green Star Buildings rating tool. A proposed pathway for the project is attached in Appendix A. This pathway is subject to change as the project progresses through Design Development and Construction, this may result in an alternative credits and points assemblage from the targeted credits within this document. However, a minimum 15 core points will be achieved as required by the GBCA for certification.

Category	Points Available	Points Targeted
Responsible	17	3
Healthy	14	2
Resilient	8	2
Positive	30	12
Places	8	3
People	9	Minimum Expectation Met
Nature	14	Minimum Expectation Met
Leadership	-	-
Total Core Points	**100**	**22**

2. Introduction

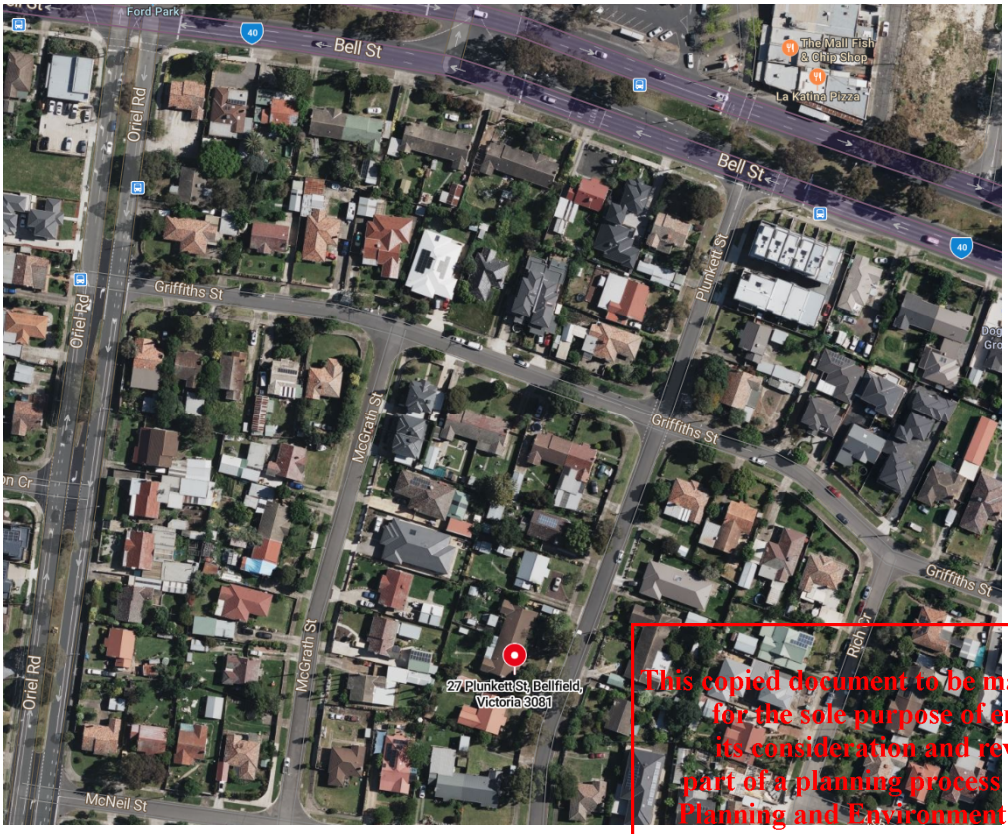
The Sustainable Management Plan has been prepared to summarise the environmental objectives and initiatives incorporated into the design of the proposed residential development and demonstrates how these components incorporate environmentally sustainable design initiatives in accordance with the City of Banyule Sustainable Design Assessment in the Planning Process objectives.

The ESD initiatives proposed for this development are based on:

- Architectural Drawing Package dated 06/05/2024 Issued for TP RFI by Ferencz Baranyay Architects;
- Discussions and correspondence with the Architects and Services Engineers.

The Site

The proposed 3-storey residential development is located at 27 - 31 Plunkett Street, Bellfield within walking distance to shops, public transport, entertainment and recreational facilities, schools and nearby parks, including Ford Park and Cyril Cummins Reserve.



Site Location

The development is located within the Banyule City Council and consists of:

- Ground Level: Residential Apartments, Car Park and Services Areas;
- Level 01 to Level 02: Residential Apartments;
- Roof Level: Solar Panels and Plant.

3. Sustainable Design Assessment in the Planning Process

The City of Banyule Sustainable Design Assessment in the Planning Process incorporates 10 key sustainable building categories in order to achieve more sustainable building outcomes for long-term benefits and City of Banyule requires to reference Green Star rating tool with minimum 4-Star Certified Green Star Rating to demonstrate integration of sustainable objectives in the design and construction.

3.1 Incorporation of Environmentally Sustainable Design Objectives

The proposed Plunkett Street Residential development has incorporated the SDAPP through the use of the Green Star Buildings V1 rating tool to assess the sustainable initiatives to a 4-Star Green Star Certified Rating to City of Banyule Sustainability Design Objectives.

4. Sustainable Design Initiatives – 4 Star Green Star

This section is focusing on implementing Green Star Buildings V1 environmental categories throughout the design and construction process to a 4-Star Green Star certified design which represents "Best Practice" sustainable design.

A summary of the targeted Green Star credits of the proposed development is tabulated below.

Green Star Category	Targeted Score
Responsible	3
Healthy	2
Resilient	2
Positive	12
Places	3
People	Minimum Expectation
Nature	Minimum Expectation
Leadership	-
Overall score	**22 (15+ for a 4-Star Green Star design)**

A minimum of 15 points will be achieved to a 4-star Green Star design. An alternative assemblage of the Green Star targeted credits is considerable on condition that the performance outcome meets the City of Banyule sustainable building design policies. A Green Star Scorecard is enclosed as Appendix A for reference.

4.1 Responsible

4.1.1 Industry Development

The development will facilitate partnership, collaboration, and data sharing to contribute to industry transformation through the following strategies:

- A principal participant in the design team is an ESD accredited professional engaged to provide sustainability advice throughout the project. IGS have been appointed to this role on the project;
- Disclose the costs related to sustainable building practices;
- Market the sustainability achievements for the building.

4.1.2 Responsible Construction

Improved environmental and social outcomes will be achieved through responsible construction practices for the development. The following sustainable initiatives will be implemented to meet the credit requirements.

- An environmental management system (ISO14001 accredited) will be implemented to manage the development's environmental impact on site;
- An environmental management plan covering the scope of the construction activities will be incorporated;
- At least 90% of the construction and demolition waste will be diverted from landfill complying with the Green Star Construction and Demolition Waste Report Criteria;
- At least three days of adequate training will be provided on the development's sustainable targets to 95% of all contractors and subcontractor on site.

4.1.3 Verification and Handover

The building will be designed to deliver high level of performance in terms of operation by incorporating the following initiatives:

- Appropriate metering and monitoring systems will ensure optimum building management;
- The building will address set environmental performance targets being commissioned, tuned, designed and tested airtightness;
- Operations and maintenance information will be provided to the building facilities maintenance team along with a Building logbook. Building User Guide will be provided to building users on how to use the building mostly efficiently.

4.1.4 Operational Waste

The building will have dedicated spaces on-site for waste management and an appropriately sized waste and resource storage area with safe and efficient access for occupants and contractors. Waste collection facilities shall be clearly labelled for building occupants, to allow for the separation of all applicable waste streams, including general waste, recycling waste and organic waste.

4.1.5 Responsible Finishes

Responsibly manufactured products with a Responsible Products Value of at least 7 will be used for 40% of the building's internal finishes (by cost).

4.2 Healthy

4.2.1 Clean Air

The mechanical ventilation system is to be designed to mitigate the entry of outdoor pollutants, for ease of maintenance and cleaning; and will be cleaned prior to occupation and use. Design will comply with AS1668.2-2012 with regard to minimum separation distances between pollution sources and outdoor air intakes. Where ventilation is by natural means, the building must meet natural ventilation requirements as per AS1668.4:2012.

Indoor pollutants from sources such as cooking processes and equipment, within regularly occupied spaces shall either be removed from the source of pollutants or will be exhausted directly to the outside.

4.2.2 Light Quality

All lights within the project are designed to be flicker free and accurately address the perception of colour in the space and all lighting levels and quality will comply with AS/NZS 1680.

The project team will ensure Glare from light sources will be limited to meet the credit requirements. The 27 -31 Plunkett Street development is to provide high levels of natural daylight to the occupied areas. This can be in the form of external windows.

For residential dwellings, all living rooms and all bedrooms are to have direct access to external view and daylight and daylight levels are to achieve Light Quality Credit Achievement.

4.2.3 Acoustic Comfort

An Acoustic Comfort Strategy describing how the building and acoustic design aims to achieve acoustic comfort to building occupants will be prepared.

4.2.4 Exposure to Toxins

The materials used in the construction of the development will be specifically selected to minimise off-gassing of Volatile Organic Compounds (VOC) and formaldehyde, which can impact on indoor air quality. At least 95% of internally applied paints, adhesives, sealants (by volume) and carpets (by area) must meet stipulated 'Total Volatile Organic Compounds (TVOC) Limits'. Material specifications will include:

- All paints, wall covering, adhesives and sealants used in the construction will be low-VOC paints;
- Carpets and flooring will be specially selected to be low-VOC; and
- It is proposed that only low formaldehyde composite wood products will be utilised.

Low Volatile Organic Compound (VOC) paints, adhesive and sealant to be used in the development.

Product Type Category	Max TVOC Content (g/l of ready-to-use product)
General purpose adhesives	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

Low-TVOC Carpets to be selected for the development.

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

Low formaldehyde wood products to be used in the development.

Test protocol	Emission limit/ Unit of Measurement
AS/NZS 2269:2004, testing procedure AS/NZS 2098.11:2005 method 10 for Plywood	≤1.0mg/L
AS/NZS 1859.1:2004 – Particle Board, with use of testing procedure AS/NZS 4266.16:2004 method 16	≤1.5mg/L
AS/NZS 1859.2:2004 – MDF, with use of testing procedure AS/NZS 4266.16:2004 method 16	≤1.0mg/L
AS/NZS 4357.4 – Laminated Veneer Lumber (LVL)	≤1.0mg/L
Japanese Agricultural Standard MAFF Notification NO.701 Appendix Clause 3 (11) - LVL	≤1.0mg/L
JIS A 5908:2003 – Particle Board and Plywood, with use of testing procedure JISA 1460	≤1.0mg/L
JIS A 5905:2003 – MDF, with use of testing procedure JIS A 1460	≤1.0mg/L
JIS A1901 (not applicable to Plywood, applicable to high pressure laminates and compact laminates)	≤0.1mg/m^{2}hr
ASTM D5116 (applicable to high pressure laminated and compact laminates)	≤0.1mg/m^{2}hr
ISO 16000 part 9, 10 and 11 (also known as EN 13419), applicable to high pressure laminates and compact laminates	≤0.1mg/m^{2}hr (at 3 days)
ASTM D6007	≤0.12mg/m^3
ASTM E1333	≤0.12mg/m^3
EN 717-1 (also known as DIN EN 717-1)	≤0.12mg/m^3
EN 717-2 (also known as DIN EN 717-2)	≤3.5mg/m^{3}hr

A comprehensive hazardous materials survey will be carried out on any existing buildings or structures on the project site, in accordance with the relevant Environmental and Work Health and Safety (WHS) legislation to ensure no banned or highly toxic materials are used in the development. Where the survey identified asbestos, lead, or PCBs in any existing buildings or structures, the materials must be stabilised or removed and disposed of in accordance with best practice guidelines.

The development intends to maintain the TVOC and Formaldehyde levels below 0.27 ppm and 0.02 ppm respectively.

4.3 Resilient

4.3.1 Climate Change Resilience

The project team will complete the climate change pre-screening checklist and advice the building owner the development's exposure to climate change risks.

A suitably qualified professional will undertake the Climate Change Risk and Adaptation Assessment and will meet the following requirements:

- Perform the assessment using the information from the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report Representative Concentration Pathway 8.5 (RCP 8.5) or most recently published version;
- Perform the assessment using two timescales that are relevant to the project's anticipated lifespan: one medium-term timescale between 2040 to 2050 one long-term timescale between 2070 to 2090;
- Identify the primary and secondary climate change variables from Table 2 in AS5334:2013 Climate change adaptation for settlements and infrastructure relevant to the project and each risk;
- Define and include the consequence and likelihood tables and risk matrix used to assess climate risks;
- Assess risks in consultation with multidisciplinary representatives from within the project team and a selection of relevant external stakeholders;
- Develop a register of risks to the building and surrounding infrastructure, and provide treatment options for risks identified as 'extreme' or 'high';
- Communicate the results of the assessment to the leads of all design disciplines.

The professional will ensure the assessment aligns with AS 5334:2013 and follows the principles of risk management outlined in AS/NZ ISO 31000:2009 Risk Management.

The project team will ensure the following risks related to the development are addressed:

- All risks rated as 'Extreme' must be addressed through specific design responses;
- All risks rated as 'High' must be addressed through design or future operational responses;
- Regardless of risk rating, at least two risks identified in the assessment must be addressed by specific design responses.

4.3.2 Heat Resilience

At least 75% of the whole site will consist of light roofing with an SRI value of minimum 64 and vegetation to reduce the heat island effect.

4.4 Positive

4.4.1 Upfront Carbon Emissions

The building's upfront carbon emissions are at least 10% less than those of the reference building.

To offset demolition works, the project team will complete the 'Existing Building' section of the Upfront Carbon Emissions calculator.

4.4.2 Energy Use

The building's energy use is at least 20% less than the reference building. Roof mounted Solar PV Panels are proposed with minimum capacity of 25kW-e with the tilt angle to be minimum 10°.

Energy efficient HVAC services are proposed within the site to lower the operational greenhouse gas emissions from the building.

For all apartments, 6.5-star minimum and 7.5-star Average NatHERS energy Rating are targeted. The development shall utilise high performance building thermal fabric and glazing to exceed Green Star and NCC2022 Section J3D3 requirements.

NatHERS Modelling Report is enclosed as Appendix B for reference.

4.4.3 Energy Source

The project team will develop a Zero Carbon Action Plan for the development which will be signed off by the building owner or developer. The Zero Carbon Action Plan will address all the requirements outlined in the credit and will be included in the operational documents for the building.

All energy use within the building will be sourced from the onsite and offsite renewables omitting the use of fossil fuel for the development. A 25kWe Solar PV system is proposed on-site to supplement the energy demand and reduce off-site energy consumption.

4.4.4 Water Use

To minimise the amenity water consumption and discharge to the municipal sewerage system, water efficient fixtures are to be selected with the minimum WELS rating stated below:

- Taps - 5 Star WELS Rating
- WCs - 4 Star WELS Rating
- Urinals - 5 Star WELS Rating (≤ 1.0 L/flush)
- Showers - 3 Star WELS Rating (≤ 7.0 L/min)
- Dishwasher - 5 Star WELS Rating
- Washing Machines – 4 Star WELS Rating if provided as base building works.

20 kL Rainwater tank will be provided for rainwater collection and reuse for toilet flushing. In addition to collection of rainwater, fire hydrant system testing water collection and re-use will be considered, and feasibility study will be undertaken at the design stage. In total, 20kL rainwater tank is proposed to collect rainwater and fire testing water and reused for toilet flushing and landscaping irrigation.

The proposed potable water conservation initiatives will ensure the building is to use at least 20% less potable water compared to a reference building as defined by Green Building Council of Australia.

4.5 Places

4.5.1 Movement and Place

Access to end-of-trip facilities will be well lit between entryway to bike parking, all amenities and lift lobbies and main access points to the building.

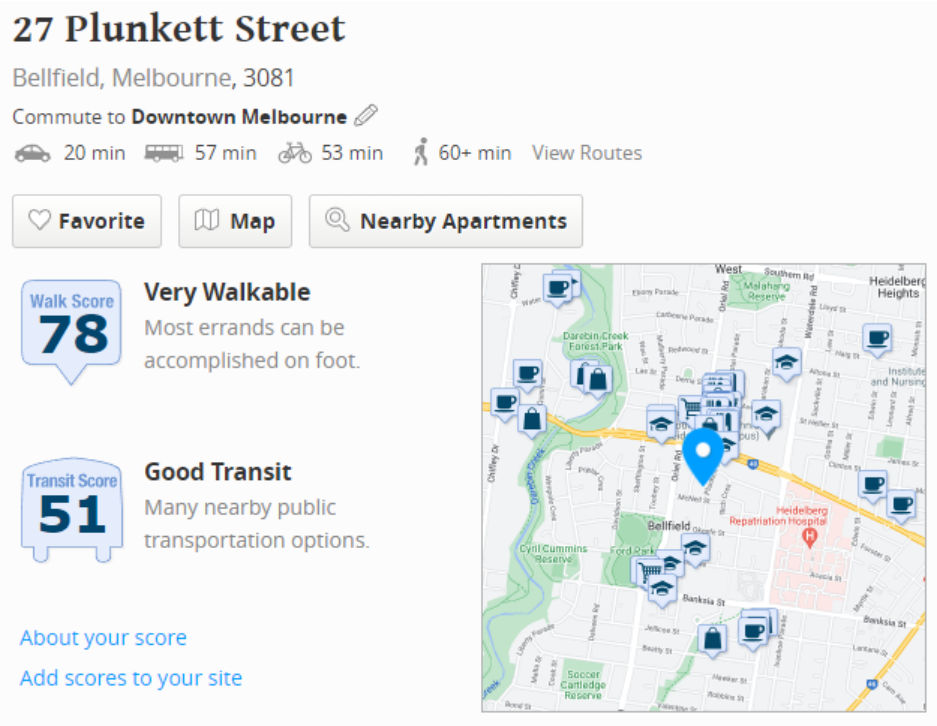
A Sustainable Transport Plan will be prepared by a qualified Transport Planner or Engineer and will reflect the design of the building's facilities and ongoing operational processes.

The building's access will prioritise walking and cycling options. The bicycle parking facilities will ensure the cycling equipment is safely secured. In total, 18 bicycle parking spaces are proposed for building residents in an effort to reduce the use of private vehicles for short commutes.

At least 2 parking is proposed with electric charging facilities with future allowances of total 100% of all car parking spaces associated with Class 2 Apartment Building to J9D4 of NCC 2022.

The building's design and location will be shown to reduce emissions from transport, encourage public transport use, and reduce vehicle kilometres travelled compared to a reference building. The Movement and Place calculator will be completed to demonstrate.

27 – 31 Plunkett Street, Bellfield has a walk score of 78 and is deemed to be 'Very Walkable'. This encourages walkability to locations, such as Bell Street Mall, allowing access to retail, food and beverages, healthcare, and other amenities at walking distances. A transit score of 51 demonstrates access to a variety of public transport options reducing the dependency of cars and other modes of private transport.



4.6 People

4.6.1 Inclusive Construction Practices

During the construction stage of the building, the head contractor will provide gender inclusive facilities and protective equipment. The head contractor will also implement policies on-site to increase awareness and reduce instances of discriminations, racism and bullying.

4.7 Nature

4.7.1 Impacts to Nature

The development will not take place at a site with a high ecological value.

All outdoor lighting within the project boundary will comply with AS/NZS 4282:2019 Control of the obtrusive effects of outdoor lighting. Light pollution to night sky is minimised via the selection of external luminaire with ULOR not exceeding 5%.

4.7.2 Stormwater

Stormwater quality is a significant issue as the high levels of impervious surfaces transport stormwater quickly into the drainage system along with sediment and pollutants.

The strategy for improving stormwater quality in the proposed development include:

- 20 kL rainwater tank to rainwater collection and used for toilet flushing and landscaping irrigation.
- Water sensible urban landscaping design proposed to increase the stormwater infiltration and improve the quality of stormwater before it enters to the drainage system.

The STORM Calculation has been undertaken as shown below to demonstrate 100% STORM Score has been met.

Melbourne Water STORM Rating Report

TransactionID:	0
Municipality:	BANYULE
Rainfall Station:	BANYULE
Address:	27-31 Plunkett Street
	Bellfield
	VIC 3081
Assessor:	IGS ESD Team
Development Type:	Residential - Multiunit
Allotment Site (m2):	1,806.60
STORM Rating %:	108

Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
Roof	1,139.00	Rainwater Tank	20,000.00	40	128.00	82.30
Untreated Area	216.10	None	0.00	0	0.00	0.00

4.8 Leadership

N/A

5. Targeted Green Star Buildings Rating

With inclusion of all ESD initiatives summarised above, the proposed design will achieve and overall 15+ point to a 4-Star Green Star certified design and demonstrates "Best Practice" sustainable design. This pathway is subject to change as the project progresses through Design Development and Construction, this may result in an alternative credits and points assemblage from the targeted credits within this document. However, a minimum 15 core points will be achieved as required by the GBCA for certification.

Category	Points Available	Points Targeted
Responsible	17	3
Healthy	14	2
Resilient	8	2
Positive	30	12
Places	8	3
People	9	Minimum Expectation
Nature	14	Minimum Expectation
Leadership	-	-
Total Core Points	**100**	**22**

6. Conclusion

This report provides a summary of sustainable design features, which are integrated into the design of the proposed development, in order to meet the objectives of the City of Banyule Sustainable Design Assessment in the Planning Process (SDAPP).

In terms of the building performance, the proposed development will be designed to achieve:

- 4-Star Green Star certified design under the current Green Star Buildings rating tool Version 1.

Therefore, the proposed development has been designed to meet the objectives of City of Banyule SDAPP as addressed and the project team will ensure the performance outcomes proposed in this Sustainable Management Plan be implemented prior to occupancy at no cost to the City of Banyule and be to the satisfaction of the Responsible Authority.

Appendix A – Green Star Scorecard

greenstar Buildings

Submission planner

Summary

Climate Positive Pathway

Registering from / certified	2023 onwards	Desired Green Star rating	4 Star

The Climate Positive Pathway is optional for

Green Star rating

Core points targeted	22	Minimum expectations met	Yes
Leadership points targeted	0	Green Star rating targeted	4 Star
Total points targeted	22	Climate Positive Pathway met	No

	Credit	Minimum Expectation	Credit Achievement	Exceptional Performance	Total points available	Targeted performance level	Total points targeted
	Responsible				**17**		
1	Industry Development		1		**1**	Credit Achievement	**1**
2	Responsible Construction	•	1		**1**	Credit Achievement	**1**
3	Verification and Handover	•	1		**1**	Minimum Expectation	•
4	Operational Waste	•			**0**	Minimum Expectation	•
5	Responsible Procurement		1		**1**		**0**
6	Responsible Structure		3	2	**5**		**0**
7	Responsible Envelope		2	2	**4**		**0**
8	Responsible Systems		1	1	**2**		**0**
9	Responsible Finishes		1	1	**2**	Credit Achievement	**1**
						Total	**3**
	Healthy				**14**		
10	Clean Air	•	2		**2**	Minimum Expectation	•
11	Light Quality	•	2	2	**4**	Credit Achievement	**2**
12	Acoustic Comfort	•	2		**2**	Minimum Expectation	•
13	Exposure to Toxins	•	2		**2**	Minimum Expectation	•
14	Amenity and Comfort		2		**2**		**0**
15	Connection to Nature		1	1	**2**		**0**
						Total	**2**
	Resilient				**8**		
16	Climate Change Resilience	•	1		**1**	Credit Achievement	**1**
17	Operations Resilience		2		**2**		**0**
18	Community Resilience		1		**1**		**0**
19	Heat Resilience		1		**1**	Credit Achievement	**1**
20	Grid Resilience		3		**3**		**0**
						Total	**2**
	Positive				**30**		
21	Upfront Carbon Emissions	•	3	3	**6**	Credit Achievement	**3**
22	Energy Use	•	3	3	**6**	Credit Achievement	**3**
23	Energy Source	•	3	3	**6**	Exceptional Performance	**6**
24	Other Carbon Emissions		2	2	**4**		**0**
25	Water Use	•	3	3	**6**	Minimum Expectation	•
26	Life Cycle Impacts		2		**2**		**0**
						Total	**12**
	Places				**8**		
27	Movement and Place	•	3		**3**	Credit Achievement	**3**
28	Enjoyable Places		2		**2**		**0**
29	Contribution to Place		2		**2**		**0**
30	Culture, Heritage and Identity		1		**1**		**0**
						Total	**3**

	People				**9**		
31	Inclusive Construction Practices	•	1		**1**	Minimum Expectation	•
32	Indigenous Inclusion		2		**2**		**0**
33	Procurement and Workforce Inclusion		2	1	**3**		**0**
34	Design for Inclusion		2	1	**3**		**0**
						Total	**0**
	Nature				**14**		
35	Impacts to Nature	•	2		**2**	Minimum Expectation	•
36	Biodiversity Enhancement		2	2	**4**		**0**
37	Nature Connectivity		2		**2**		**0**
38	Nature Stewardship		2		**2**		**0**
39	Waterway Protection		2	2	**4**		**0**
						Total	**0**
	Leadership				**0**		
40	Market Transformation				**0**		**0**
41	Leadership Challenges				**0**		**0**
						Total	**0**

Appendix B – NatHERS Modelling Report

IGS INTEGRATED GROUP SERVICES

Value | Innovation | Trust

ESD Services
NCC 2022 NatHERS Assessment Report

27-31 Plunkett St,
Bellfield VIC 3081

Project No: 24033
Date: 06/05/2024

Level 4, 108 Elizabeth Street
Melbourne VIC 3000
Web: www.igs.com.au

Document Control

Version	Date	Issue	Author		Reviewer	
00	07/12/2023	Issue for Review	Earnest Joseph	EJ	Li Huan	LH
01	23/02/2024	Issue for Review	Earnest Joseph	EJ	Li Huan	LH
02	06/05/2024	Issue for Review	Earnest Joseph	EJ	Li Huan	LH

Table of Contents

1. Summary

Thermal performance assessment of the Class 2 apartments using accredited FirstRate5 Version 5.3.1b (3.21) software has been conducted on all sample residential apartments to NCC 2022 Section J3D3 and City of Banyule Planning Conditions.

NCC 2022 Volume 1 Section J3D3 requires all Class 2 apartment units to achieve a minimum rating of 6.0 stars individually and an average (all apartments) rating of 7.0 stars.

As part of City of Banyule planning permit condition, it is mandatory to achieve a minimum NatHERS rating of 6.5 Stars and average rating of 7.5 Stars.

From the assessment, all apartments have achieved a minimum NatHERS rating of above 6.5 stars, an average rating of above 7.5 stars and no dwellings exceed the maximum NatHERS annual cooling load of 21 MJ/m^2.

Based on the NatHERS modelling results, all apartments will meet the Banyule City Council planning permit condition.

The following residential thermal performance assessor details are provided for building permit purposes.

Assessor's Name:	Earnest Joseph
Accreditation Number:	DMN/22/2106
AAO:	FirstRate5 House Energy Rating Organization

Refer to Appendix 1 for NatHERS star rating results. The official star rating certificate can be provided by FirstRate5 House Energy Rating Organization on request and at the client's cost of $100 (+GST) per certificate which includes $30(+GST) per certificate application required by FirstRate5 House Energy Rating Organization and $70(+GST) for processing, uploading per energy model and downloading per certificate. The certificate can be generated no later than three (3) months after the report is issued.

2. Overview

Project: 27-31 Plunkett Street, Bellfield

Applicable NCC: 2022

Climate Zone: 6

NCC Classification and Verification method:

- Class 2 – Apartments with shared underground carpark spaces
- Class 2 building fabric and services – NCC 2022 Section J3D3

Reference Documents: This report has been based upon review of a set of Architectural Drawings dated 06.05.2024 for TP RFI.

3. Modelling Inputs Assumptions

Building Fabric Thermal Performance

Element	Type	Description	Minimum Added Insulation	Total System R-value
Wall	All	Refer architectural drawings	-	-
	Internal	Party Walls adjoining neighbouring units (each side of shaft liner)	2xR1.5	≥ R3.3
	Internal	Internal Walls Adjoining a Communal Space	R1.5	≥ R1.8
	Internal	All other internal walls	-	-
	External	Brick Veneer Walls	R2.5	≥ R2.8
	External	Metal Clad Walls	R2.5	≥ R2.8
	External	FC Sheet	R2.5	≥ R2.3
Floor	Typical Floor	Concrete Slab on Ground (Apartments Only)	R1.1	≥ R1.4
		Suspended Concrete Floors (Exposed)	R2.0	≥ R2.3
		Suspended Concrete Slab to neighbor apartment – All other units	-	-
Ceiling		Suspended Concrete Slab adjoining neighbor/conditioned area – All other apartments	-	-
		Suspended Concrete ceilings to adjoining balconies	R2.0	≥ R2.3
		Metal Deck Roof	R4.0 + Sarking	≥ R4.3
Seals		All windows and externally facing doors are weather stripped.	Nil	
Exhaust Fans		Each kitchen area has 1 sealed exhaust fan. 1 sealed exhaust fan is provided for all bathrooms.	Nil	
LED Downlights		All recessed downlights to be IC-4 rated or equivalent	Nil	
Shading	Windows	Balconies protruding on the level above and adjacent building.	Nil	

Windows Thermal Performance

Element	Type	Description
Windows (Typical)	Frame	AS (Improved) Aluminium Frames or equivalent
	External Glazing	Double Glazed
	Fixed & Sliding Windows	$U_w \leq 2.9$, $SHGC_w = 0.51 \pm 5\%$
	Awning Windows	$U_w \leq 2.91$, $SHGC_w = 0.44 \pm 5\%$

4. NatHERS Assessment Results

Location	Building Apartment Number	Number of Apartments	NatHERS Rating	Energy (MJ/m²)			Net Conditioned Floor Area (m²)
				Total	Heating	Cooling	
Ground Floor	G01	1	8.4	44.4	35.2	9.2	40.9
Ground Floor	G02	1	8.5	42	38.4	3.6	95.1
Ground Floor	G03	1	8.7	36.2	30	6.2	40.9
Ground Floor	G04	1	8.4	43.5	33.8	9.7	92
Ground Floor	G05	1	8.9	31.3	10.9	20.4	40.9
Level 2	201	1	7.6	72.4	62.6	9.8	40.9
Level 2	202	1	7.2	84.2	73.6	10.6	64.6
Level 2	203	1	7.2	84.9	73.7	11.2	64.6
Level 2	204	1	7.5	73.4	60.8	12.6	40.9
Level 2	205	1	7.6	72.6	59.3	13.3	40.9
Level 2	206	1	7.5	73.8	60.9	12.9	40.9
Level 2	207	1	7.7	69.1	56	13.1	68.9
Level 2	208	1	7.8	63.7	51.5	12.2	68.9
Level 2	209	1	7.6	70.8	60.8	10	40.9
TOTALS		**14**		**60.8**	**50.2**	**10.6**	
WEIGHTED AVERAGE					**7.9**		
CALCULATED MINIMUM					**7.2**		

Appendix C – Green Star Implementation Schedule

Green Star Rating Implementation Schedule- Green Star Buildings (Version 01 Revision B)

Project Name: 27-31 Plunkett Street Bellfield Residential Development

All minimum expectation met	Yes
Total Available Core Points	100
Total Available Innovation Points	Unlimited
Net Zero in Operation Option	Available

Project Green Star Rating	**4-Star**	**Points for Review**
Required Points	≥ 15	-
Target Total Points	22	0
Climate Positive Pathway	No	-

Note:

Base and /or Further Points for Project Team to Review for Green Star 4-Star Rating

Credits Not Targetted

Item No.	Category / Credit	Minimum Expectation	Credit Achievement	Exceptional Performance	Total Points Available	Target Level	Target Points 4-Star with Buffer	Further Points for Review	Key Responsible Team Member(s)	Stage Implementation	Credit Description
1	**Responsible**		11	6	17		3	0			
1.1	**Industry Development**	-	1	-	1	Credit Achievement	1		ESD Engineer Building Owner Building Contractor	Design Tender Construction	**Credit Achievement** - The building owner or developer is to appoint a Green Star Accredited Professional. - The building owner or developer is to disclose the cost of sustainable building practices to the GBCA. - The building owner or developer is to market the building's sustainability achievements after awarded. **Note: Credit Achievement is targeted for this development**
1.2	**Responsible Construction**	Yes	1	-	1	Credit Achievement	1		ESD Engineer Building Contractor	Tender Construction	**Minimum Expectation** - The builder or head contractor has an environmental management system in place to manage its environmental impacts on site. - The builder or head contractor has an environmental management plan to cover the scope of construction activities. - The builder diverts at least 80% of construction and demolition waste from landfill. - The head contractor provides training on the sustainability targets of the building. **Credit Achievement (with Minimum Expectations)** - 90% of construction and demolition waste is diverted from landfill, and waste contractors and facilities comply with the Green Star Construction and Demolition Waste Reporting Criteria. **Note: Credit Achievement is targeted for this development**
1.3	**Verification and Handover**	Yes	1	-	1	Minimum Expectation	-		Mechanical Engineer Electrical Engineer Hydraulics Engineer Building Contractor Facility Manager	Design Tender Construction Operation	**Minimum Expectation** - Establish appropriate metering and monitoring systems for ongoing management. - Set environmental performance targets, design and test airtightness, be commissioned and tune for building operations. - Project team is to create and deliver operations and maintenance information to the facilities management team at the time of handover. **Credit Achievement (with Minimum Expectations)** - An independent level of verification is provided by an independent commissioning agent on the design, planning, commissioning and tuning activities. or - A soft landing approach involving the future facilities management team is used in the project. **Note: Minimum Expectation is targeted for this development**
1.4	**Responsible Resource Management**	Yes	-	-	-	Minimum Expectation	-		Architect Waste Auditor Building Contractor Facility Manager	Design Tender Construction Operation	**Minimum Expectation** - Building is designed to collect separate waste and resource streams. - Building provides a dedicated and adequately sized waste and resource storage area. - Safe and efficient access is provided to waste and resource storage area for occupants and contractors. **Note: Minimum Expectation must be achieved for this development**
1.5	**Responsible Procurement**	-	1	-	1	-	-		Building Owner Building Contractor Architect ESD Engineer Mechanical Engineer Electrical Engineer Façade Engineer Hydraulics Engineer	Design Tender Construction	**Credit Achievement** - Building design and construction procurement process follows ISO 20400 Sustainable Procurement - Guidance. - A Responsible Procurement Plan is developed and implemented by design team and / or building contractor **Note: Credit Achievement is targeted for this development**
1.6	**Responsible Structure**	-	3	2	5	-	-		Architect Structural Engineer	Design Tender Construction	**Credit Achievement** - 50% of building structural components meet a RPV of at least 10 **Exceptional Performance (together with Credit Achievement)** - 10% of building structural components meet a RPV of at least 15; or - 80% of building structural components meet a RPV of at least 10 **Note: Refer to the link below for materials Responsible Products Value** https://new.gbca.org.au/green-star/rating-system/responsible-products-framework/
1.7	**Responsible Envelope**	-	2	2	4	-			Architect Façade Engineer	Design Tender Construction	**Credit Achievement** - 30% of building envelope components meet a RPV of at least 10 **Exceptional Performance (together with Credit Achievement)** - 10% of building envelope components meet a RPV of at least 15; or - 60% of building envelope components meet a RPV of at least 10 **Note: Refer to the link below for materials Responsible Products Value** https://new.gbca.org.au/green-star/rating-system/responsible-products-framework/
1.8	**Responsible Systems**	-	1	1	2	-	-		Mechanical Engineer Electrical Engineer Hydraulics Engineer	Design Tender Construction	**Credit Achievement** - 20% of all active building systems (by cost) meet a RPV of at least 6. **Exceptional Performance (together with Credit Achievement)** - 5% of all active building systems (by cost) meet a RPV of at least 11, or - 35% of all active building systems (by cost) meet a RPV of at least 6. **Note: Refer to the link below for materials Responsible Products Value** https://new.gbca.org.au/green-star/rating-system/responsible-products-framework/
1.9	**Responsible Finishes**	-	1	1	2	Credit Achievement	1		Architect	Design Tender Construction	**Credit Achievement** - 20% of all internal building finishes (by cost) meet a RPV of at least 12 **Exceptional Performance (together with Credit Achievement)** - 10% of all internal building finishes (by cost) meet a RPV of at least 12 or - 60% of all internal building finishes (by cost) meet a RPV of at least 7. **Note: Refer to the link below for materials Responsible Products Value** https://new.gbca.org.au/green-star/rating-system/responsible-products-framework/ **Note: Credit Achievement is targeted for this development**
2	**Healthy**		11	3	14		2	0			
2.10	**Clean Air**	Yes	2	-	2	Minimum Expectation	-		Mechanical Engineer Building Contractor Facility Manager	Design Tender Construction Operation	**Minimum Expectation** - Levels of indoor pollutants are maintained at acceptable levels. - A high level of outdoor air is provided. - Pollutants entering the building are minimised. - Volatile organic compound (VOC) emissions are minimised. - The building's ventilation systems allow for easy maintenance. - A high level of cross ventilation is provided. **Note: Minimum Expectation must be achieved for this development.** **For minimum expectation, minimum 50% improvement of outside air is required by AS 1668.2:2012 to each mechanically ventilated airconditioning space.**
2.11	**Light Quality**	Yes	2	2	4	Credit Achievement	2		Architect Electrical Engineer ESD Engineer Building Contractor	Design Tender Construction	**Minimum Expectation** - Lighting within the building meets minimum comfort requirements. - Good lighting levels suitable for the typical tasks in each space are available. - The building provides adequate levels of daylight. **Credit Achievement (together with Minimum Expectations)** - The building provides best practice artificial lighting. or - The building provides best practice access to daylight. **Exceptional Performance (together with Credit Achievement)** - The building provides best practice artificial lighting. - The building provides best practice artificial lighting to daylight **Note: Credit Achievement is targeted for this development**

Green Star Rating Implementation Schedule- Green Star Buildings (Version 01 Revision B)

Project Name: 27-31 Plunkett Street Bellfield Residential Development

All minimum expectation met	Yes
Total Available Core Points	100
Total Available Innovation Points	Unlimited
Net Zero in Operation Option	Available

Project Green Star Rating	**4-Star**	**Points for Review**
Required Points	≥ 15	-
Target Total Points	22	0
Climate Positive Pathway	No	-

Note:

Base and /or Further Points for Project Team to Review for Green Star 4-Star Rating

Credits Not Targetted

Item No.	Category / Credit	Minimum Expectation	Credit Achievement	Exceptional Performance	Total Points Available	Target Level	Target Points 4-Star with Buffer	Further Points for Review	Key Responsible Team Member(s)	Stage Implementation	Credit Description
2.12	**Acoustic Comfort**	Yes	2	-	2	Minimum Expectation	-		Architect Acoustic Engineer Building Contractor	Design Tender Construction	**Minimum Expectation** - An Acoustic Comfort Strategy is prepared to describe how the building and acoustic design aims to deliver acoustic comfort to the building occupants. **Credit Achievement (together with Minimum Expectations)** - The building achieves maximum internal noise levels. and/or - The building provides acoustic separation. and/or - The building minimises impact noise transfer. **Note: Minimum Expectation is targeted for this development**
2.13	**Exposure to Toxins**	Yes	2	-	2	Minimum Expectation	-		Architect Building Contractor	Design Tender Construction	**Minimum Expectation** - Building paints adhesives, sealants, and carpets are low in TVOC or non-toxic. - The building's engineered wood products are low in TVOC or non-toxic. - Occupants are not exposed to banned or highly toxic materials in the building. **Credit Achievement (together with Minimum Expectations)** - On-site tests to verify the building's low Volatile Organic Compounds (VOC) and formaldehyde levels. **Note: Minimum Expectation is targeted for this development**
2.14	**Amenity and Comfort**	-	2	-	2	-	-		Architect Facility Manager	Design Tender Construction Operation	**Credit Achievement** - The building has dedicated amenity rooms to act as a parent room, relaxation room, or an exercise room. -The size of the room is calculated a ratio of 1m2 per every 10 staff or occupants. - These rooms meet lighting , acoustic and equal access requirements.
2.15	**Connection to Nature**	-	1	1	2	-	-		Architect Landscape Designer Building Contractor Facility Manager	Design Tender Construction Operation	**Credit Achievement** - The building provides views. - The building includes indoor plants and incorporates nature inspired design. or - 5% of the building's floor area or site area (whichever is greater) is allocated to nature in which occupants can directly engage with and five nature-inspired design interventions are provided with Green Star Design principles (Page 111) **Exceptional Performance (together with Credit Achievement)** - The building provides views. - The building includes indoor plants and incorporates nature-inspired design. - 5% of the building's floor area or site area (whichever is greater) is allocated to nature in which occupants can directly engage with.
3	**Resilient**		**8**	**0**	**8**		**2**	**0**			
3.16	**Climate Change Resilience**	Yes	1	-	1	Credit Achievement	1		Electrical Engineer Building Contractor	Design Tender Construction	**Minimum Expectation** - The project team completes the climate change pre-screening checklist and communicates the building's exposure to climate change risks to the applicant. **Credit Achievement (together with Minimum Expectations)** - Develop a project-specific climate change risk and adaptation assessment for the building. - Extreme and high risks are addressed. **Note: Credit Achievement is targeted for this development and a project specific Climate Adaptation Plan is required.**
3.17	**Operations Resilience**	-	2	-	2	-	-		Mechanical Engineer Hydraulics Engineer Electrical Engineer Building Contractor Facility Manager	Design Tender Construction Operation	**Credit Achievement** - The project team undertakes a comprehensive review of the acute shocks and chronic stresses likely to influence future building operations. - The building's design and future operational plan addresses any high or extreme system-level interdependency risks. - The building's design maintains a level of survivability and design purpose in a blackout.
3.18	**Community Resilience**	-	1	-	1	-	-		Architect Building Owner	Design	**Credit Achievement** - The project team undertakes a needs analysis of the community, identifies shocks and stresses that impact the building's ability to service the community, and develops responses to manage these.
3.19	**Heat Resilience**	-	1	-	1	Credit Achievement	1		Architect ESD Engineer Landscape Designer Building Contractor	Design Tender Construction	**Credit Achievement** - At least 75% of the whole site area comprises of one or a combination of strategies that reduce the heat island effect. **Note: Credit Achievement is targeted for this development and 75% of site area compliant via soft landscaping, roofing with an initial SRI of minimum 82, hardscaping with an initial SRI of minimum 39**
3.20	**Grid Resilience**	-	3	-	3	-	-		Electrical Engineer Building Contractor	Design Tender Construction	**Credit Achievement** - The building provides active generation and storage systems to reduce its electricity demand by 10% of the building's annual peak electricity demand for at least a one-hour period ; and/or - The building has the infrastructure to deliver an appropriate demand response strategy to shed at least 10% of the building's electricity demand. and/or - The building has reduced its electricity consumption by 10% through passive design.
4	**Positive**		**16**	**14**	**30**		**12**	**0**			
4.21	**Upfront Carbon Emissions**	Yes	3	3	6	Credit Achievement	3		ESD Engineer Structural Engineer	Design Tender	**Minimum Expectation** - The building's upfront carbon emissions are at least 10% less than those of a reference building. **Credit Achievement (together with Minimum Expectations)** - The building's upfront carbon emissions are at least 20% less than those of a reference building. - Benefit/loss works are offset. **Exceptional Performance (together with Credit Achievement)** - The building's upfront carbon emissions are at least 40% less than those of a reference building. **Note: Credit Achievement is targeted for this development**
4.22	**Energy Use**	Yes	3	3	6	Credit Achievement	3		ESD Engineer Architect Electrical Engineer Mechanical Engineer Hydraulics Engineer	Design Tender	**Reference Building Pathway** **Minimum Expectation** - The building's energy use is at least 10% less than a reference building. **Credit Achievement (Climate Positive Pathway together with Minimum Expectations)** - The building's energy use is at least 20% less than a reference building. **Exceptional Performance (together with Credit Achievement)** - The building's energy use is at least 30% less than a reference building. **Note: for 4-Star Green Star projects from 2023 onwards, Minimum Expectation must be achieved. For this development credit achievement is targeted.**
4.23	**Energy Source**	Yes	3	3	6	Exceptional Performance	6		ESD Engineer Building Owner	Design Tender	**Minimum Expectation** - The building is to provide a Zero Carbon Action Plan. **Credit Achievement (together with Minimum Expectations)** - 100% of the building's electricity comes from renewable electricity. **Exceptional Performance (together with Credit Achievement)** - 100% of the building's energy comes from renewables. **Note: Exceptional Performance is targeted for this development.**

Green Star Rating Implementation Schedule- Green Star Buildings (Version 01 Revision B)

Project Name: 27-31 Plunkett Street Bellfield Residential Development

All minimum expectation met	Yes
Total Available Core Points	100
Total Available Innovation Points	Unlimited
Net Zero in Operation Option	Available

Project Green Star Rating	**4-Star**	**Points for Review**
Required Points	≥ 15	-
Target Total Points	22	0
Climate Positive Pathway	No	-

Note:

Base and /or Further Points for Project Team to Review for Green Star 4-Star Rating

Credits Not Targetted

Item No.	Category / Credit	Minimum Expectation	Credit Achievement	Exceptional Performance	Total Points Available	Target Level	Target Points 4-Star with Buffer	Further Points for Review	Key Responsible Team Member(s)	Stage Implementation	Credit Description
4.24	**Other Carbon Emissions**	-	2	2	4	-	-		ESD Engineer Building Owner	Design Tender Construction	**Credit Achievement (Climate Positive Pathway)** - The building owner eliminates emissions from refrigerants via selection with GWP of 10 or less. Or - The building owner offsets emissions from refrigerants. **Exceptional Performance (together with Credit Achievement)** - All other emissions not captured in the Positive category are eliminated or offset.
4.25	**Water Use**	Yes	3	3	6	Minimum Expectation	-		ESD Engineer Architect Hydraulics Engineer Landscape Designer Building Contractor Facility Manager	Design Tender Construction Operation	**Minimum Expectation** The building installs efficient water fixtures with minimum WELs rating as: -Kitchen a nd Bathroom Taps - 5 Star WELS Rating; Dishwasher - 5 Star WELS Rating; WCs - 4 Star WELS Rating; Urinals - 5 Star WELS Rating; Showers - 3 Star WELS Rating (≤ 7.5 L/min) Overall, the building uses 15% (10% for Class 2 and Class 3 buildings) less potable water compared to a reference building. **Credit Achievement (together with Minimum Expectations)** - The building uses 45% (40% for Class 2 and Class 3 buildings) less potable water compared to a reference building. - The building has infrastructure for recycled water connection. **Exceptional Performance (together with Credit Achievement)** - The building uses 75% (60% for Class 2 and Class 3 buildings) less potable water compared to a reference building. **Note: Minimum expectation must be achieved for this development.**
4.26	**Life Cycle Impacts**	-	2	-	2	-	-		LCA Professional Building Contractor	Design Tender Construction	**Credit Achievement** - The project demonstrates a 30% reduction in life cycle impacts when compared to standard practice.
5	**Places**		**8**	**0**	**8**		**3**	**0**			
5.27	**Movement and Place**	Yes	3	-	3	Credit Achievement	3		ESD Engineer Transport Engineer Building Contractor Electrical Subcontractor	Design Tender Construction	**Minimum Expectation** - The building includes showers and changing facilities for building occupants. - The facilities are accessible, inclusive, and located in a safe and protected space. **Credit Achievement (together with Minimum Expectations)** - The building's access prioritises cycling and includes bicycle parking facilities. - A Sustainable Transport Plan has been prepared and implemented. - The building has EV charging capabilities. - Transport options that reduce the need for private fossil fuel powered vehicles are prioritised. - The building's design and location encourage walking. **Note: For Credit Achievement:** 1. Sustainable Transport Plan is produced. 2. Minimum 5% of parking has been proposed with electric charging facilities with future allowances of total 25% of all car parking spaces (including 5% already installed) 3.For 25 Apartments, minimum 25 Bicycle parking spaces shall be provided for the building users within the development with 2 Bicycle parking spaces for Visitors. In total, minimum 27 Bike Parking Spaces are recommended. Currently 18 Spaces are provided. **Note: Credit Achievement is targeted for this development.**
5.28	**Enjoyable Places**	-	2	-	2	-	-		Architect Building Owner Building Contractor Facility Manager	Design Tender Construction Operation	**Credit Achievement** - The building delivers memorable, beautiful, vibrant communal or public places where people want to gather and participate in the community. - The spaces are inclusive, safe, flexible, and enjoyable. **Note: This credit applies to all regularly occupied spaces and requires publicly accessible.**
5.29	**Contribution to Place**	-	2	-	2	-	-		Architect Building Owner Building Contractor	Design Tender Construction	**Credit Achievement** - The building's design contributes to the liveability of the wider urban context and enhances the public realm. or - Independent reviews are held during the development of the design
5.30	**Culture, Heritage and Identity**	-	1	-	1	-	-		Architect Building Owner Building Contractor Facility Manager	Design Tender Construction Operation	**Credit Achievement** - The building's design reflects and celebrates local demographics and identities, the history of the place, and any hidden or minority entities. or - This outcome is to be arrived through meaningful engagement with community groups early in the design process.
6	**People**		**7**	**2**	**9**		**0**	**0**			
6.31	**Inclusive Construction Practices**	Yes	1	-	1	Minimum Expectation	-		Building Contractor	Design Tender Construction	**Minimum Expectation** - During the building's construction, the head contractor provides gender inclusive facilities and protective equipment. The head contractor also installs policies on-site to increase awareness and reduces instances of discrimination, racism, and bullying. **Credit Achievement (together with Minimum Expectations)** - Policies and programs implemented are relevant to construction workers on site. - The head contractor provides gender inclusive facilities for construction workers that addresses five key physical and mental health impacts. - The effectiveness of the interventions is measured. **Note: Minimum Expectation must be achieved for this development.**
6.32	**Indigenous Inclusion**	-	2	-	2	-	-		Building Owner Building Contractor	Design Tender Construction	**Credit Achievement** - The project team plays an active role in the organisational Reconciliation Action Plan. - The building's design and construction incorporates design elements using the Indigenous Design Principles or Indigenous Design Principles and Protocols.
6.33	**Procurement and Workforce Inclusion**	-	2	1	3	-	-		Architect Building Owner Building Contractor	Tender Construction	**Credit Achievement** - The project implements a social procurement plan. - At least 2% of the building's total contract value has been directed to generate employment opportunities for disadvantaged and under-represented groups. **Exceptional Performance (together with Credit Achievement)** - The project implements a social procurement plan. - At least 4% of the building's total contract value has been directed to generate employment opportunities for disadvantaged and under-represented groups.
6.34	**Design for Inclusion**	-	2	1	3	-	-		Architect Building Owner Building Contractor	Design Tender Construction	**Credit Achievement** - The building is designed and constructed to be inclusive to a diverse range of people with different needs. **Exceptional Performance (together with Credit Achievement)** - Engagement with target groups to inform the inclusive design.
7	**Nature**		**10**	**4**	**14**		**0**	**0**			
7.35	**Impacts to Nature**	Yes	2	-	2	Minimum Expectation	-		ESD Engineer Building Owner Electrical Engineer Building Contractor	Design Tender Construction	**Minimum Expectation** - The building was not built on, or significantly impacted, a site with a high ecological value. - The building's light pollution has been minimised. - There is ongoing monitoring, reporting, and management of the site's wetland ecosystem. **Credit Achievement (together with Minimum Expectations)** - The building's design and construction conserves existing natural soil, hydrological flows, and vegetation elements. - If deemed necessary by an Ecologist, at least 50% of existing site with high biodiversity value is retained. **Note: Minimum Expectation must be achieved for this development.**

Green Star Rating Implementation Schedule- Green Star Buildings (Version 01 Revision B)

Project Name: 27-31 Plunkett Street Bellfield Residential Development

All minimum expectation met	Yes
Total Available Core Points	100
Total Available Innovation Points	Unlimited
Net Zero in Operation Option	Available

Project Green Star Rating	**4-Star**	**Points for Review**
Required Points	≥ 15	-
Target Total Points	22	0
Climate Positive Pathway	No	-

Note:

Base and /or Further Points for Project Team to Review for Green Star 4-Star Rating

Credits Not Targetted

Item No.	Category / Credit	Minimum Expectation	Credit Achievement	Exceptional Performance	Total Points Available	Target Level	Target Points 4-Star with Buffer	Further Points for Review	Key Responsible Team Member(s)	Stage Implementation	Credit Description
7.36	**Biodiversity Enhancement**	-	2	2	4	-	-		Architect Landscape Designer Building Contractor Facility Manager	Design Tender Construction Operation	**Credit Achievement** - The building's site includes an appropriate landscape area as minimum 15% of the site area - The landscaping includes a diversity of species and prioritises the use of climate-resilient and indigenous plants. - The project team develops a site-specific Biodiversity Management Plan and provides it to the building owner or building owner representative. **Exceptional Performance (together with Credit Achievement)** - A greater area of landscaping is provided. - The landscaping includes critically endangered and/or endangered plant species native to the bioregion.
7.37	**Nature Connectivity**	-	2	-	2	-	-		Architect Landscape Designer	Design	**Credit Achievement** - The site must be built to encourage species connectivity through the site, and to adjacent sites. If the project sits within a blue or green grid strategy it must contribute to the goals of the strategy.
7.38	**Nature Stewardship**	-	2	-	2	-	-		Architect ESD Engineer Building Owner	Design	**Credit Achievement** - Areas of restoration or protection are provided. - Restoration or protection activities are beyond the development's boundary. - The building owner, as part of the project's development, undertakes activities that protects or restores biodiversity at scale. These actions occur beyond legislated requirements.
7.39	**Waterway Protection**	-	2	2	4	-	-		ESD Engineer Civil Engineer Hydraulics Engineer	Design Tender Construction Operation	**Credit Achievement** - The project demonstrates a reduction in average annual stormwater discharge (ML/yr) of 40% across the whole site. - Specified pollution reduction targets are met. **Exceptional Performance (together with Credit Achievement)** - The project demonstrates a reduction in average annual stormwater discharge (ML/yr) of 80% across the whole site. - Specified pollution reduction targets are met.
8	**Leadership**				**Unlimited**		0	0			
8.40	**Market Transformation**	-	Up to 5 Points	-	Up to 5 Points	-	-			-	**Credit Achievement** - The project implements a building solution or process that is considered leading in their targeted sector, nationally or globally.
8.41	**Leadership Challenge - Circular Economy**	-	2	1	3	-	-		ESD Engineer Architect Structural Engineer Civil Engineer Services Engineers	Design Tender Construction	**Credit Achievement** - The project team identifies and implements circular economy principles and initiatives - The project team demonstrates an increased circularity of 10% (weighted by cost) **Exceptional Performance (together with Credit Achievement)** - The project team demonstrates an increased circularity of 20% (weighted by cost)
8.41	**Leadership Challenge - Energy Positive**	-	1		1	-	-		Architect ESD Engineer Building Owner Services Engineer		**Credit Achievement** If 100% of the building's energy comes from renewables, this innovation can be considered.
8.41	**Leadership Challenge - Others**	-	Unlimited	-	Unlimited	-	-			-	**Credit Achievement** - The project meets the requirements of a Leadership Challenge developed by the GBCA,e.g. zero potable water or zero operational waste.