Project	93-107 Cecil Avenue & 9-10 Roger Avenue, Castle Hill, 2154
Report	ESD Report
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1 Executive Summary

This ESD report outlines the local sustainable governmental legislation, policy and planning documents that governs the area of this development. By adhering to these planning controls and referring to best practice design for new builds, this development can achieve significant sustainable outcome in line with legislations and policies.

Best practice ESD initiatives can be achieved by aiming for a Green Star Buildings equivalent sustainable design standard, as demonstrated in this report.

This ESD report provides guidance on how to meet the goals and objectives set out by the State Environmental Planning Policy (SEPP) 2022, The Hills LEP & The Hills DCP. It outlines the key sustainability strategies and initiatives required to align the development with these policy & legislative requirements.

2 Introduction

2.1 Building Location & Description

The building, the subject of this report, is located at 93-107 Cecil Avenue & 9-10 Roger Avenue, Castle Hill, 2154.

The development comprises four mixed-use buildings incorporating shared basement parking, retail tenancies and commercial facilities. Residential floor space is distributed from the lower ground floor through to Level 36.

2.2 Objectives

The purpose of this report is to provide cost effective environmentally sustainable development design guidance in accordance with local legislation, policy and benchmark sustainable rating schemes.

2.3 Sustainable Design Legislation

This development is governed by:

a. Sustainable Building SEPP 2022
b. The Hills Local Environmental Plan 2019 (THLEP2019)
c. The Hills Development Control Plan 2012 (THDCP2012)

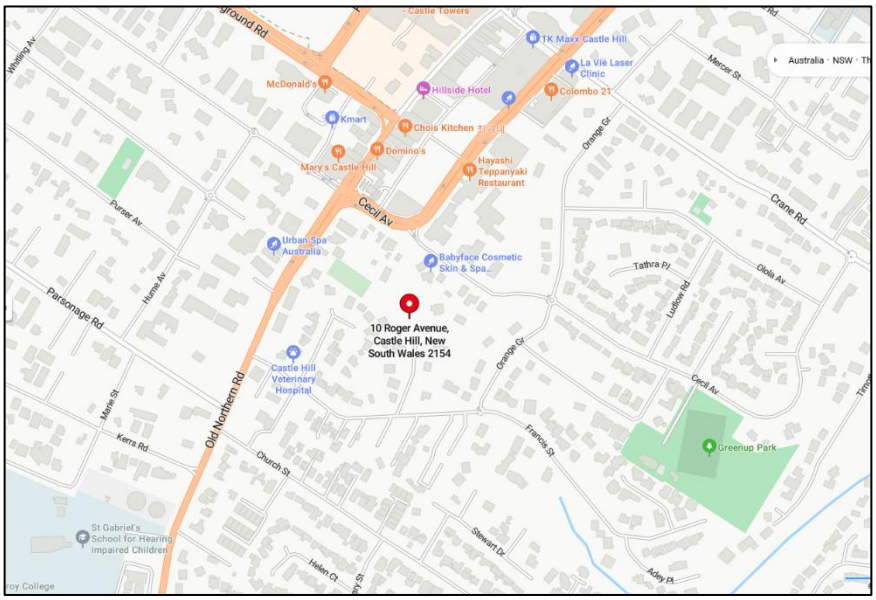
2.4 Best Practice Sustainable Design Benchmark

This development will be assessed against Green Star Buildings v1.1 Rating.

This supersedes the old Green Star Design & As Built rating v1.3 which was replaced in December 2021.

2.5 Site Location

The site location is within The Hills City Council boundary.



3 Legislation and Policies

This report looks specifically at sustainable practices within legislation and policy which will be directly applicable to this development.

3.1 State Environmental Planning Policy (Sustainable Buildings) 2022

The aims of this Policy are:

(a) To encourage the design and delivery of sustainable buildings,
(b) To ensure consistent assessment of the sustainability of buildings,
(c) To record accurate data about the sustainability of buildings, to enable improvements to be monitored,
(d) To monitor the embodied emissions of materials used in construction of buildings,
(e) To minimise the consumption of energy,
(f) To reduce greenhouse gas emissions,
(g) To minimise the consumption of mains-supplied potable water,
(h) To ensure good thermal performance of buildings.

3.2 Standards for-non-residential development

(1) This Chapter applies to development, other than development for the purposes of residential accommodation, that involves—
  (a) the erection of a new building, if the development has an estimated development cost of $5 million or more, or
  (b) alterations, enlargement or extension of an existing building, if the development has an estimated development cost of $10 million or more.

(2) This Chapter does not apply to the following development—
  (a) development that is permitted with or without consent or that is exempt or complying development under—
    (i) State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, or
    (ii) State Environmental Planning Policy (Resources and Energy) 2021, Chapter 2, or
    (iii) State Environmental Planning Policy (Transport and Infrastructure) 2021, Chapter 5,
  (b) development on land wholly in any of the following zones—
    (i) Zones RU1, RU2 or RU3,
    (ii) Zone E5,
    (iii) Zone IN3,
    (iv) Zones C1, C2 or C3,
    (v) Zones W1, W2, W3 or W4,
  (c) development for the purposes of residential care facilities.

3.3 Development consent for non-residential development

(1) In deciding whether to grant development consent to non-residential development, the consent authority must consider whether the development is designed to enable the following:

(a) The minimisation of waste from associated demolition and construction, including by the choice and reuse of building materials,

(b) a reduction in peak demand for electricity, including through the use of energy efficient technology,

(c) a reduction in the reliance on artificial lighting and mechanical heating and cooling through passive design,

(d) the generation and storage of renewable energy,

(e) the metering and monitoring of energy consumption,

(f) the minimisation of the consumption of potable water.

(2) Development consent must not be granted to non-residential development unless the consent authority is satisfied the embodied emissions attributable to the development have been quantified.

3.4 The Hills Local Environmental Plan 2019 (THLEP2019)

The subject site is identified under Zone MU1 – Mixed Use.

3.4.1 Zone MU1 Mixed Use

Objectives of zone:

(a) To encourage a diversity of business, retail, office and light industrial land uses that generate employment opportunities.

(b) To ensure that new development provides diverse and active street frontages to attract pedestrian traffic and to contribute to vibrant, diverse and functional streets and public spaces.

(c) To minimise conflict between land uses within this zone and land uses within adjoining zones.

(d) To encourage business, retail, community and other non-residential land uses on the ground floor of buildings.

(e) To encourage leisure and entertainment facilities in the major centres that generate activity throughout the day and evening.

(f) To provide for high density housing that is integrated with civic spaces.

3.5 The Hills Development Control Plan 2012 (THDCP2012)

Ecologically sustainable development is defined in The Hills Local Environmental Plan 2012. To fulfill the statutory responsibilities outlined in Schedule 2 of the EP&A Regulation and the Local Government Act 1993, developments are required to meet Council's ESD objectives.

3.5.1 Council's ESD Objectives:

(a) ESD 1: To apply the precautionary principle where development is likely to cause short or long-term irreversible or serious threats to the environment.

(b) ESD 2: To allow for broad community involvement in respect to issues of concern throughout the development process.

(c) ESD 3: To ensure during the design, construction and operation of the development, that water is utilised efficiently and that water leaving the site is of a quality and quantity comparable to that which is received.
(d) ESD 4: To ensure that biodiversity and the integrity of ecological processes are not compromised by the development.
(e) ESD 5: To promote the following during the design, construction and operation of development:
- the use of energy efficient materials and designs
- utilisation of renewable energy & materials; and
- energy efficient technology.

(f) ESD 6: To follow the principles of the 'Waste Hierarchy' (reduce, reuse, recycle) in the use of materials and the design of waste recovery and disposal systems throughout the development process.
(g) ESD 7: To protect neighbourhood amenity and safety in the design and construction and operation of the development.
(h) ESD 8: To encourage the long-term economic viability and health of the community in the development process.
(i) ESD 9: To encourage the use of public transport, bicycles and pedestrian trips in the development and design process.

3.6 ESD initiatives applicable to NSW legislation and policy

This section demonstrates how the project's ESD initiatives can be achieved through alignment with Green Star credits.

The below tables provide the link between the initiatives proposed and legislation/policy.

Legislation/Policy name	Clause	Green Star Code
SEPP (Sustainable Buildings) 2022	3.1 (a)	All nominated credits
	3.1 (b)	All nominated credits
	3.1 (c)	2, 3
	3.1 (d)	24
	3.1 (e)	3, 23, 12
	3.1 (f)	22,23,24
	3.1 (g)	29
	3.1 (h)	23
	3.3 (1a)	2
	3.3 (1b)	22,23
	3.3 (1c)	23
	3.3 (1d)	21,22,23
	3.3 (1e)	3
	3.3 (1f)	3, 29
	3.3 (2)	24

Legislation/Policy name	Clause	Green Star Code
THLEP2019	3.4.1 (a)	32, 36
	3.4.1 (b)	30, 31, 32
	3.4.1 (c)	NA
	3.4.1 (d)	31, 32
	3.4.1 (e)	31, 32
	3.4.1 (f)	NA

Legislation/Policy name	Clause	Green Star Code
THDCP2012	3.5.1 (a)	2, 17, 38, 42
	3.5.1 (b)	33
	3.5.1 (c)	29, 42
	3.5.1 (d)	38, 39
	3.5.1 (e)	9, 22, 23
	3.5.1 (f)	2, 4
	3.5.1 (g)	2, 31
	3.5.1 (h)	32
	3.5.1 (i)	30

4 Benchmark Sustainable Design

All ESD rating schemes approach sustainable design by considering all the stakeholders in the development. The design approach proposed for the development is demonstrated below.

4.1 ESD Categories

Best practice ESD initiatives can be achieved through the Green Star Buildings v1.1 assessment and application of the following categories:

- Responsible
- Healthy
- Resilient
- Positive
- Places
- People
- Nature
- Leadership

Within these categories there are subcategories with their relevant initiatives.

The following table shows what categories are targeted.

Category	Targeted
Responsible	Yes
Healthy	Yes
Resilient	Yes
Positive	Yes
Places	Yes
People	Yes
Nature	Yes

The targeting above categories shows a comprehensive commitment to sustainable design.

5 Green Star Categories

The following is a summary of potential categories and initiatives that can be pursued to achieve a Green Star Buildings v1 rating.

5.1 Responsible

Category	GS Code	Credit Criteria	Targeted
Responsible Construction	2	**Environmental Management System** Based on the contract value, the builder/head contractor shall have either ISO 14001 certificate or an EMS that complies with NSW EMS Guidelines. **Environmental Management Plan** The builder/head contractor shall develop a site specific EMP that covers the scope of construction activities and to be implemented from the start of construction and includes all works within the project scope. **Construction & Demolition Waste** A portion of construction and demolition waste shall be diverted from landfill.	✓
Verification & Handover	3	**Metering & Monitoring** The building shall have accessible energy and water metering for all common uses, major uses and major sources, and must be connected to a monitoring system capable of capturing and processing the data. **Building information** Operations and maintenance information shall be provided for all nominated building systems to the building owner/facilities management team. A building logbook and user information shall be developed and presented to the building owner/facilities management team at the time of practical completion.	✓
Responsible Resource Management	**4**	**Dedicated Wast Storage Area** The building shall provide bins for separation of waste streams within dedicated waste storage areas. The design of the areas shall be signed off by a waste specialist/contractor. **Safe and Efficient Access to Waste Storage** The building ensures safe and efficient access to waste and resource storage areas for both occupants and waste and resource collection contractors.	✓
Responsible Finishes	9	**Good practice products:** A portion of internal building finishes such as flooring, plasterboard, paints, ceilings, partitions, doors, internal windows, associated joinery, wall panelling, fixed shelving/cupboards thar make up a partition, sealants and adhesives used for the finishes etc. (by cost) shall meet a Responsible Products Value of at least 7, using the Responsible Products calculator.	✓

5.2 Healthy

Category	GS Code	Credit Criteria	Targeted
Acoustic Comfort	13	**Acoustic comfort strategy** An acoustic comfort strategy shall be developed demonstrating how the design aims to deliver acoustic comfort to the occupants.	✓

5.3 Resilient

Category	GS Code	Credit Criteria	Targeted
Climate Change Resilience	17	**Climate change pre-screening checklist** Assessment of potential impacts from climate change shall be considered in the pre-screening checklist.	✓

5.4 Positive

Category	GS Code	Credit Criteria	Targeted
Energy Source	22	**Zero carbon action plan** The building shall provide a Zero Carbon Action Plan	✓
		Renewable electricity Most of the building's electricity shall be sourced from renewables.	✓
Energy Use	23	**Reducing energy use** The building shall use less energy than a reference building.	✓
Upfront Carbon Emissions	24	**Reducing upfront carbon emissions** Building's upfront carbon emissions shall be less than a reference building.	
Water Use	29	**Sanitary fixtures and appliance efficiency** Efficient water fixtures shall be installed. OR **Reducing water use** The building shall use less potable water compared to a reference building.	✓

5.5 Places

Category	GS Code	Credit Criteria	Targeted
Movement & Place	30	**Accessible, inclusive and located in a safe and protected place** The facilities shall be accessible, protected from elements and other vehicles, safe and well lit. Clear signage shall be provided throughout the building.	✓
		Bicycle parking facilities The buildings access shall prioritise cycling and includes bicycle parking facilities. **Sustainable transport** A sustainable transport plan shall be prepared and implemented with requirements/recommendations to be reflected in the design and operational processes. The building shall have EV charging capabilities. **Reducing private vehicle use** Building's design and location shall reduce emissions from private fossil fuel powered vehicles and encourage use of public transport. **Encourage walkability** Designing roads within the site boundary for pedestrians and being within proximity to amenities.	✓
Enjoyable Places	31	**Publicly accessible places** The building shall deliver new publicly accessible spaces where people can gather and participate in the community activity. AND **Activation strategy** An activation strategy shall be provided to secure placemaking after practical completion.	✓
Contribution to Place	32	**Urban context report** The building design shall contribute to the livability of the wider urban context and enhances the public realm. OR **Independent design review** Independent reviews shall be held during the project's design and design development phase.	✓
Culture, Heritage and Identity	33	**Community led design responses** Through local analysis, the building's design shall reflect and celebrate local demographics and identities, the history of the place, and any hidden or minority entities. OR **Independent design review** Independent reviews shall be held during the project's design and design development phase.	✓

5.6 People

Category	GS Code	Credit Criteria	Targeted
Procurement & Workforce Inclusion	36	**Employment opportunities** Employment opportunities shall be either directly (through workforce targets) or indirectly (through social procurement).	✓

5.1 Nature

Category	GS Code	Credit Criteria	Targeted
Impacts to Nature	38	**Site ecological value** The building shall not be built on, or significantly impact a site with a high ecological value. **Managing light pollution impacts** All outdoor lighting shall comply with AS/NZS 4282:2019 Control of the obstructive effects of outdoor lighting. The upward light output of external luminaires should be controlled to minimize light spill, ensuring that direct illumination does not exceed minimal levels at the site boundary and beyond, thus reducing light pollution into the night sky.	✓
		Protecting ecological values The building's design and construction shall conserve existing natural soil, hydrological flows and vegetation elements.	✓
Biodiversity Enhancement	39	**Landscape area** The building's site shall include appropriate landscape area whether horizontal or vertical. **Diversity of Species** The majority of plants used in landscaping should be indigenous species, and habitat provisions, such as nesting trees or equivalent structures, should be included throughout the landscaped area to support local biodiversity.	✓
Waterway Protection	42	**Stormwater volume** The average annual stormwater discharge across the entire site should be reduced to achieve a significant decrease in runoff volume. **Pollution reduction targets** Specific pollution reduction targets shall be met.	✓