Attachment A14

Environmentally sustainable design strategy

ARUP

Wentworth Capital | University of Sydney

Camperdown Life Sciences Hub

Environmentally Sustainable Design Strategy Report

Reference: ESD-01

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This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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Executive Summary

This report provides an Environmentally Sustainable Design (ESD) Strategy that can be used to guide future development of the site. In developing the report, the relevant statutory and advisory planning documents have been reviewed to inform ESD priorities.

Significant opportunities have been identified for the site that will contribute to excellent ESD outcomes, four examples are noted following:

1. Retention and adaptation of the existing warehouse results in reduce embodied carbon and maintains the current street character.
2. Targeting of a 5-star Green Star rating ensures the future development is Net Zero ready
3. Best practice procurement and management will be embedded via Green Star rating
4. Creation of research facility providing skilled jobs and assisting in local innovation in science.

Additional features have been identified which will also contribute to the ESD outcomes covering topics encompassing; net zero, embodied emissions, and energy and water efficiency.

The Planning Proposal has integrated the ESD requirements of the Sustainable Building SEPP and the City of Sydney DCP 2012. Significant commitments have been made by the proponent in the development of this strategy that will ensure market leading sustainability outcomes for future development on the site.

1. Project Overview

This Ecologically Sustainable Development Strategy is submitted to the City of Sydney on behalf of University of Sydney / Wentworth Capital in support of a Planning Proposal for an amendment to the *Sydney Local Environmental Plan 2012* for the introduction a new site specific Floor Space Ratio (FSR) and Height of Buildings development standard for the purpose of a built life sciences research facility and ancillary uses at 88-94 Parramatta Road, Camperdown

This Planning Proposal seeks approval for the amendment of Floor Space Ratio (FSR) and Height of Buildings in the Sydney Local Environmental Plan 2012. Specifically, approval is sought for the following:

88-94 Parramatta Road

- A new maximum building height of part 80 metres, part 30 metres.
- A new site specific provision for 88-94 Parramatta Road that enables 6.5:1 of additional uplift for non-residential uses.
- A site-specific clause limiting the maximum amount of residential floor space that can be provided on the site.
- Retention of the existing warehouse at 88-90 Parramatta Road.
- Amendments to the Sydney Development Control Plan 2012 (Sydney DCP 2012) to address site specific outcomes.

84 Parramatta Road

- A new mapped maximum height of 30 metres.
- A new mapped maximum floor space ratio for the Veriu site (84 Parramatta Road) of 4.5:1, retaining the mixed use zone on the site.
- Amendments to the Sydney Development Control Plan 2012 (Sydney DCP 2012) to address site specific outcomes.
- Full details of the proposed amendments are outlined in the Planning Proposal Report prepared by Collier Urban Planning.

1.1 Site Description

The site is located at 84-94 Parramatta Road, Camperdown within the City of Sydney Local Government Area (LGA). The site is situated on the traditional land of the Gadigal people.

The land is owned by the University of Sydney and is located on the opposite side of Parramatta Road from the main University of Sydney Camperdown/Darlington campus. The site fronts Parramatta Road along its southern boundary and is bounded by a mixture of residential and commercial uses to the north, east, and west of the site. The site is located just 4km south-west of the Sydney CBD, and 2.5km west of Central Station, and is currently largely used by the University of Sydney for university purposes.

The site's locational context is shown at Figure 1.

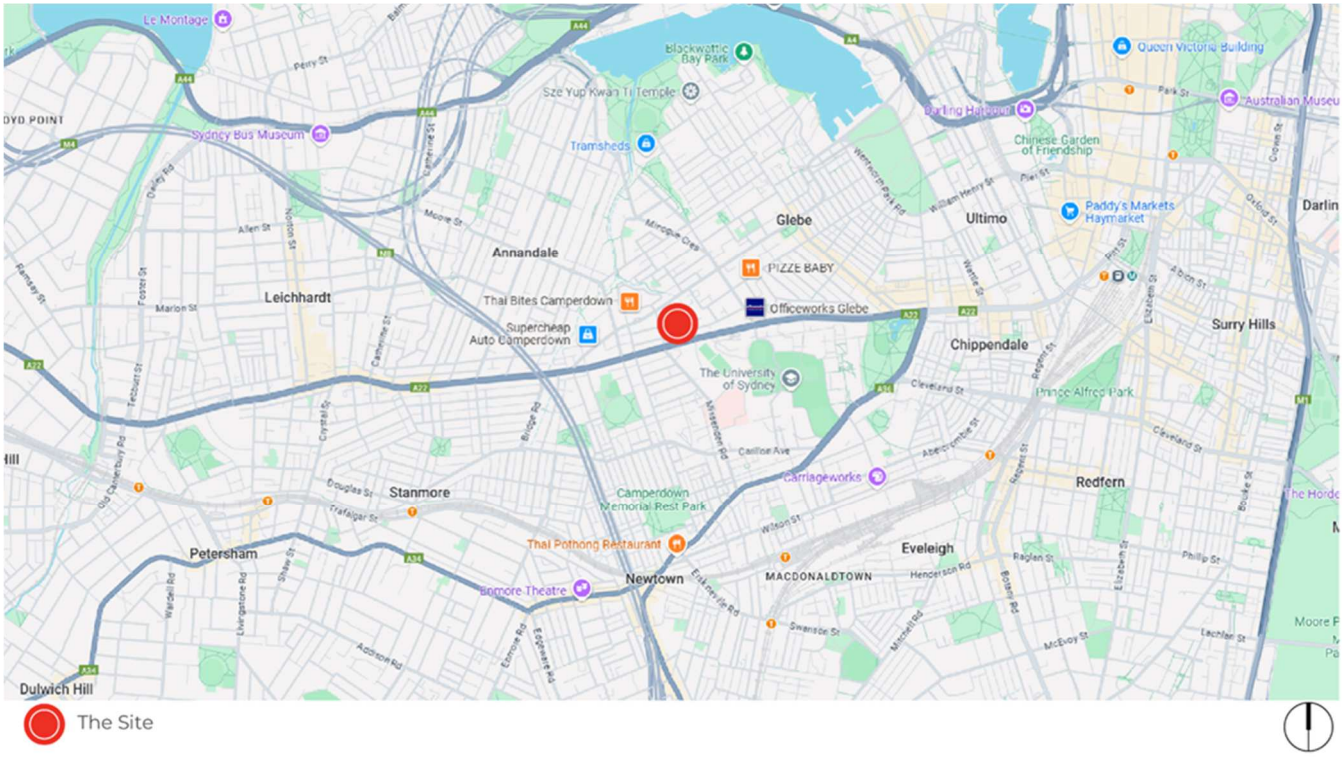


Figure 1 Locational Context (source Google Maps, edits by Collier Urban Planning)

2. Introduction

This report has been developed to provide an Environmentally Sustainable Design (ESD) Strategy for future development at 84-94 Parramatta Road. It is a framework document that will ensure the principles of sustainability are integrated into the buildings.

It also documents the aspirations and commitments proposed by the proponent. As the future developments progress in design, the framework will provide certainty in the delivery of these aspirations.

3. Ecologically Sustainable Development

In developing the Environmentally Sustainable Development Strategy, guidance has been taken from the EPA directive on Ecologically Sustainable Development (ESD). The following section provides a high level of summary of considerations that will be made in developing the planning proposal for the site.

3.1 Definition

Ecologically sustainable development (ESD) requirements to be addressed by this SSD report are derived from the definition documented in Section 193 of the Environmental Planning and Assessment Regulation 2021, under the Environmental Planning and Assessment Act 1979.

Namely, these are the principles of ecologically sustainable development:

1. The precautionary principle,
2. Inter-generational equality,
3. Conservation of biological diversity and ecological integrity, and
4. Improved valuation, pricing and incentive mechanisms.

3.2 Methodology

The principles of ecologically sustainable development have been used as an overarching guide to develop the ESD strategy for the project. The key elements of this development proposal in respect to Section 193 are resource consumption and carbon emissions. Specifically, the ESD strategy for the development addresses the following key area noted below. In preparing this strategy, guidance has been taken from the Sustainable Buildings SEPP, specifically the high level topics related to non-residential development listed below.

- Sustainability rating
- Embodied emissions
- Net zero plan
- Energy performance and offsets
- Water performance

For each of these areas, this report identifies initiatives and/or controls that are proposed to be incorporated or are under consideration. The initiatives are proposed to reduce the environmental impact of the future development.

3.3 Principles of ESD

3.3.1 The Precautionary Principle

The precautionary principle is defined as follows:

The precautionary principle is that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

(3) In applying the precautionary principle, public and private decisions should be guided by -

(a) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and

(b) an assessment of the risk-weighted consequences of various options.

- The proposed site will be reviewed to confirm that no ecologically sensitive features are impacted.
- Assessment will be made to ensure the future development does not create downstream impacts on any natural sites adjacent, for water flows to natural water courses of water bodies.
- Future development will also seek to improve the quality of stormwater flow from the site compared to the current state.

3.3.2 Intergenerational Equity

The principle of intergenerational equity is defined as follows:

The principle of inter-generational equity is that the present generation should ensure the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.

- Future development will be committed to providing Australian Excellence in building systems ratings through the Green Star Buildings tool.
- This includes enhanced performance targets for water, energy and carbon efficiency in the design and construction on the site.

3.3.3 Conservation of biological diversity and ecological integrity

The principle of the conservation of biological diversity is defined as follows:

The principle of the conservation of biological diversity and ecological integrity is that the conservation of biological diversity and ecological integrity should be a fundamental consideration.

- The resultant direct, indirect, and cumulative ecological impacts of the proposal are being carefully considered. Through the development of an Environment Impact Statement, recommendations and mitigation measures will be developed in order to address the principle of biological diversity and ecological integrity.

3.3.4 Improved valuation, pricing and incentive mechanisms

The principle of improved valuation, pricing and incentive mechanisms is defined as follows:

The principle of improved valuation, pricing and incentive mechanisms is that environmental factors should be included in the valuation of assets and services, such as -

(a) polluter pays, that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement, and

(b) the users of goods and services should pay prices based on the full life cycle of the costs of providing the goods and services, including the use of natural resources and assets and the ultimate disposal of waste, and

c) established environmental goals should be pursued in the most cost effective way by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.

- The upfront carbon targets detailed in this strategy will assist in creating a market for products with reduced embodied carbon emissions.

- Similarly, the proposed water and energy performance targets will help incentivise the market for more efficient building services.

4. ESD Strategy

The following sections describe the proposed minimum standards that will be integrated into future development enable by this planning proposal. The structure of the strategy reflects the NSW Government's Sustainable Buildings SEPP 2022 and provides initiatives that the proponent is committed to for the Camperdown Life Sciences Hub.

4.1 Sustainability Rating

Wentworth Capital is committed to sustainability rating of the future developments on the site subject to this planning proposal submission. In line with their ESG policies, and the development guidelines of their partner, the University of Sydney, a Green Star rating will be targeted and certified.

Green Star is a holistic sustainability rating tool, which addresses multiple aspects of building design and construction. Figure 2 below is an excerpt from the Green Star Buildings rating tool submission guidelines which highlights the broad categories of credits which are part of the Green Star rating. A 5 star rating is proposed which will require an enhanced level of achievement relative to the minimum expectations of a Green Star rating. This level of achievement is considered "Australian Excellence" and will result in high environmental performance that addresses social issues relevant to the building owner[1].



Figure 2 Green Star Buildings - credit categories (source GBCA)

4.1.1 Minimum expectations

To achieve a rating under the Green Star Buildings tool, there are a "minimum expectations" that the Green Building Council of Australia (GBCA) nominate to ensure that the building is no less than "Best Practice". This includes requirements as noted below.

1. Responsible Construction – ISO certified builder, EMS requirements, and min. 80% diversion of construction and demolition waste from landfill.
2. Verification and Handover – building is commissioned, tuned and metered to an enhanced standard.
3. Responsible Resource Management – appropriate design to enable best practice waste management in operation.
4. Clean Air – enhance ventilation requirements relative to code.
5. Light Quality – glare management, quality lighting fittings and levels, and consideration of daylighting.
6. Acoustic Comfort – design to manage noise levels both internally and external to the building.

[1] Green Star Buildings Submission Guidelines, v1, Rev C.

7. Exposure to Toxins – exclusions for products that have excessive VOCs, no lead, asbestos and PCBs.
8. Climate Change Resilience – requirements for assessing impacts of climate change early in design development.
9. The Climate Positive Pathway, as described in Section 4.1.2.
10. Inclusive Construction Practice – provides for gender appropriate facilities and PPE.
11. Impact to Nature – exclusion for sites that are ecologically sensitive.

The minimum expectations noted above are a significant enhancement compared to code mandated minimum performance and will result in a development that has increased amenity, improved operational performance and better outcomes for workers during construction.

4.1.2 Climate Positive Pathway

By virtue of targeting a 5-star rating, the future developments on the site will be required to provide a climate positive pathway in their design. To achieve this, the following criteria will be integrated into the building design.

1. Commitment to 100% renewable electricity purchase for base building requirements
2. Commitment to 100% renewable energy for all non-electric energy, base building and tenant requirements
3. 20% reduction in annual energy use relative to benchmark building performance
4. 20% reduction in upfront carbon emissions relative to benchmark building design
5. Offset of all scope 1 emissions

The stringency of the Climate Positive pathway determined by the GBCA increases over time, Figure 3 taken from the Green Star Buildings submission guidelines shows the increased requirements by year of registration. The annotated blue line showing the minimum requirements for a 5-star rating. Note that the 2030 targets are based on year of completion – not registration.

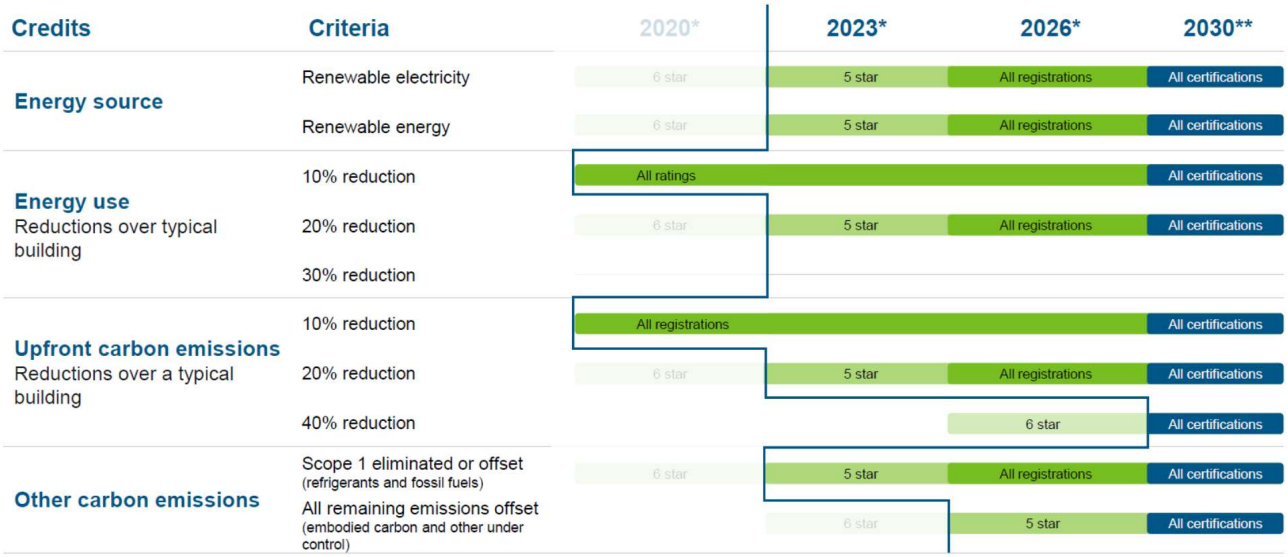


Figure 3 Annotated Climate Positive Pathway (source GBCA)

4.2 Embodied Emissions

Embodied emissions associated with future development will be addressed via two key pathways, these are detailed in the following sections.

4.2.1 Adaptive Reuse

A key design feature of the future development is the adaptive reuse of the existing warehouse development at 88-90 Parramatta Road. This will become a feature of the site, displaying the site's history and utilising the embodied carbon already invested in the site to provide new functionality.

Similarly, the extension of the existing Veriu development will take advantage of the current structure and provide additional accommodation capacity.

4.2.2 Green Star Upfront Carbon

Aligned with the NABERS Embodied Carbon protocol, the building's rating under Green Star will assess the upfront carbon of all future development. This will include a target to reduce upfront carbon emissions by a minimum of 20% compared to a reference building design defined by the GBCA. This target represents a significant improvement on embodied carbon intensity and will be achieved through a combination of dematerialisation and material selection/specification.

4.3 Net Zero Plan

Aligned with the Climate Positive Pathway in the proposed Green Star rating, the future developments will provide a Net Zero Plan. This includes details of what energy sources are used on site, what efforts have been made to provide efficiency in their use and how any residual fossil fuels may be removed from the site in the future.

As a minimum, it is proposed that all future developments will:

- Have all electric building services for HVAC and domestic hot water production,
- Will maximise onsite renewables,
- All base building energy uses will be powered by renewable energy, and
- All tenant energy use will be encouraged to utilised renewable energy.

This approach is also aligned with the "Planning for Net Zero Buildings" report co-authored by the City of Sydney, which also informs the DCP applicable to future developments on this site.

4.4 Energy Performance and Offsets

Future development on the site is primarily focused on typologies that are not envisaged in either the Sustainable Buildings SEPP or City of Sydney DCP energy performance requirements.

To demonstrate energy efficient performance for the future developments, the proposal to use Green Star will enable rating via the Energy Use credit. In line with the 5-star rating, a minimum improvement in energy efficiency 10% without any onsite renewable energy and greater than 20% improvement in total.

The Green Star Climate Positive Pathway targeted for future developments will also require purchase of renewable energy and offsets for scope 1 emissions – minimising the operational emissions associated with the development.

If a future development application created a typology that does trigger the Sustainable Building SEPP, the submissions would be capable of addressing those requirements.

4.5 Water Performance

Similar to energy performance, the building types proposed for the subject site are not envisaged in the Sustainable Buildings SEPP or City of Sydney DCP for water efficiency standards.

To demonstrate water efficiency, future developments will utilise the Water Use credit of the Green Star Buildings tool. This will require a modelled minimum reduction in potable water use of 15% compared to a reference building.

5. Conclusion

This report provides an Environmentally Sustainable Design Strategy that can be used to guide future development of the site. Significant opportunities have been identified for the site that will contribute to excellent ESD outcomes:

1. Retention and adaptation of the existing warehouse results in reduce embodied carbon and maintains the current street character.
2. Targeting of a 5-star Green Star rating ensures the future development is Net Zero ready
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4. Creation of research facility providing skilled jobs and assisting in local innovation in science

The Planning Proposal has integrated the ESD requirements of the Sustainable Building SEPP and the City of Sydney DCP 2012. Significant commitments have been made by the proponent in the development of this strategy that will ensure market leading sustainability outcomes for future development on the site.