



CREDWELL

Project 13-17 Oxford St, 2 Verona St,
Paddington

Report ESD Report

Reference 250149-ESD Report-r5

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Client 17 Oxford Street Pty Ltd
C/- Aspire Development Management

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1 Executive Summary

This report complies with all the NSW state and local legislative requirements for ESD for this development and compiles them into one document.

The report identifies mitigation measures to be adhered to across multiple sectors such as hazardous materials, construction & demo waste, operational waste, traffic, stormwater, social impact, landscaping and cultural heritage impact etc.

The building for this development will also achieve ESD for resi and non-resi elements by specifying efficient water & energy appliances, reduction in energy consumption & peak load demand through passive design, high insulation levels, thermally efficient glazing, future Net Zero capabilities utilising electric services where appropriate offset by solar panels to the base buildings, electric vehicle future proofing and information around the impacts of material selection on embodied carbon for the development.

NatHERS modelling & BASIX Certification was completed for this development with the min 7-star average star rating achieved across the units. NCC Section J compliance will be targeted for CC with the J1V3 performance solution to be considered due to its bespoke holistic modelling approach.

2 Introduction

1.1 Introductory Statement

This ESD Report has been prepared by Credwell on behalf of 17 Oxford Pty Ltd (the Applicant) to accompany a State Significant Development Application (SSDA) for a mixed-use development with infill affordable housing. The site is located at 13–15, 17 Oxford Street, and 2 Verona Street, Paddington, within the City of Sydney local government area (LGA).

The site occupies a corner position at the intersection of Oxford Street and Verona Street and has a total area of 2,533sqm. The site comprises three allotments legally described as Lot 1 in DP 75105 (2 Verona Street), Lot 1 in DP 137013 (17 Oxford Street), and Strata Plan 22113 (13–15 Oxford Street).

Figure 1: Aerial Photograph of Site



The SSDA seeks consent for:

- The demolition of existing structures on site, with retention of the two-storey masonry façade at 17 Oxford Street.
- Construction of a seven-storey, mixed use infill affordable housing development comprising:
 - Apartments located along the Oxford and Verona Street frontages including:
 - 30 market dwellings; and
 - 14 affordable housing dwellings, to be managed by a registered Community Housing Provider for a minimum of 15 years.
 - Four Terraces on the existing 2 Verona Street lot.
 - Cultural and creative uses (including cinema/bar) at basement and ground levels.
 - Ground level retail.
 - Two levels of basement car parking.
 - Associated landscaping including a central landscaped courtyard and rooftop communal open space

3 SEARS Response

2.1 SEARS Response Table

This report has been prepared in response to the requirements contained within the Secretary's Environmental Assessment Requirements (SEARs) dated 15 July 2025 issued for the SSDA (SSD-87245208). Specifically, this report has been prepared to respond to the SEARS requirement issued below.

Item	Description of Requirement	Section Reference
15. Ecologically Sustainable Development (ESD)	Identify how ESD principles (as defined in section 193 of the EP&A Regulation) are incorporated in the design and ongoing operation of the development. Where relevant, provide an assessment of the development against the standards for non-residential development set out in Chapter 3 of State Environmental Planning Policy (Sustainable Buildings) 2022.	ESD Report

2.2 Scope of ESD Statement

Credwell have been engaged to assess the envisioned ESD initiatives at 13-17 Oxford St, 2 Verona Street, Paddington for their relevance in the current sustainability sector and beyond.

This will include a review of current design and future recommendations.

Sustainable buildings/districts cover a wide-ranging set of categories that combine the design and operation of the development together into a cohesive strategy that covers environmental, social, and economic initiatives. The ESD initiatives suggested in this statement have been aligned with the definition of ESD within the Environmental Planning and Assessment Regulation 2021 Division 5 Environmental impact statements—the Act, ss 4.12(8), 5.7(1) and 5.16(2), Section 193. Within this Act, ESD identifies four governing principles on which we must align our ESD initiatives.

4 Stakeholder Engagement Guidance

No stakeholder engagement or external consultation was undertaken in the preparation of this report. The scope of this assessment did not require direct input from external agencies, authorities, or community representatives. Instead, the report has been informed by a comprehensive review of all relevant documentation and technical studies completed to the date of writing.

These reports have been considered to ensure consistency across project documentation and alignment with the current development objectives. The integration of these materials ensures that the findings and recommendations presented within this ESD report reflect the most accurate and up-to-date understanding of the site's environmental context, performance measures, and proposed sustainability outcomes.

As such, this report represents an internally derived assessment, drawing on available project information and professional expertise to ensure that ESD principles are appropriately addressed and embedded within the overall development framework.

5 Assessment and Mitigation of Impacts Guidance

5.1 Existing Environment

The site is located within a highly urbanised area that has been subject to extensive modification through historical land clearing, agricultural use, and subsequent urban development. As a result, the existing environment no longer reflects its original natural state, with vegetation now comprised predominantly of introduced and disturbed species rather than native plant communities.

The site forms part of an established mixed-use precinct where previous development activities have created a built form and landscape characteristic of inner-city conditions. The consolidation of surrounding parcels into a single, coordinated redevelopment presents an opportunity to improve environmental performance, enhance land use efficiency, and support more sustainable patterns of urban growth.

In alignment with ESD principles, the redevelopment of this already disturbed site prioritises the responsible use of land and resources, minimises the need for additional greenfield development, and promotes a balanced integration of environmental, social, and economic outcomes. The proposal's approach to site planning, material use, and energy efficiency aims to deliver a long-term, sustainable outcome consistent with contemporary urban renewal objectives.

5.2 Statutory Requirements

Environmental Planning and Assessment Regulation 2021, division 5

Environmental impacts statements – the Acts, ss 4.12(8), 5.7(1) and 5.16(2)

Section 193 defines Principles of ecologically sustainable development as follows:

Ecologically sustainable development requires the effective integration of social, economic and environmental considerations in decision-making processes.

Ecologically sustainable development can be achieved through the implementation of the following principles and programs -

(a) the precautionary principle—namely, 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.

- In the application of the precautionary principle, public and private decisions should be guided by—
- careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and
- an assessment of the risk-weighted consequences of various options.

(b) inter-generational equity—namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.

(c) conservation of biological diversity and ecological integrity—namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration.

(d) improved valuation, pricing and incentive mechanisms—namely, that environmental factors should be included in the valuation of assets and services, such as—

- polluter pays, that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement, and
- the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste, and
- environmental goals having been established, 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 proposed development is subject to the City of Sydney Local Environmental Plan (LEP) 2012, with the criteria outlined in the table below.

Aims of Plan	
aa.	to protect and promote the use and development of land for arts and cultural activity, including music and other performance arts
a.	Not applicable.
b.	to support the City of Sydney as an important location for business, educational and cultural activities and tourism
c.	to promote ecologically sustainable development
d.	Not applicable.
e.	to encourage the growth and diversity of the residential population of the City of Sydney by providing for a range of appropriately located housing, including affordable housing
f.	to enable a range of services and infrastructure that meets the needs of residents, workers and visitors
g.	to ensure that the pattern of land use and density in the City of Sydney reflects the existing and future capacity of the transport network and facilitates walking, cycling and the use of public transport
h.	to enhance the amenity and quality of life of local communities
i.	Not applicable.
j.	Not applicable.
k.	to conserve the environmental heritage of the City of Sydney
l.	to protect, and to enhance the enjoyment of, the natural environment of the City of Sydney, its harbour setting and its recreation areas

The State Environmental Planning Policy (Sustainable Buildings) 2022 is also applicable to the proposed development.

Aims of Policy	
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.

5.3 Scale and nature of impacts (including cumulative impacts)

This report considers the potential impact of the proposal on both the existing and proposed developments in the surrounding area and the cumulative impact these measures have from an ESD standpoint. Potential impacts such as traffic, waste, stormwater, aboriginal due diligence & hazardous material survey have been identified by council as a requirement for this SSDA and reports have been prepared accordingly.

5.4 Cumulative Impacts

The development can help reduce or mitigate the scale and nature of any detrimental cumulative impact on ESD for the development by following the mitigation measures as recommended in the report.

5.5 Mitigation Measures

The following sustainability initiatives planned for 13-17 Oxford St, 2 Verona Street, Paddington have been considered at the site upon completion.

These have been aligned with Chapter 3.2 of the SEPP (Sustainable Buildings) 2022 relating to non-residential development among other relevant ESD related items such as:

- Minimisation of construction & demo waste;
- Reduction in peak demand electricity;
- Passive Design;
- Generation & storage of renewable energy;
- Metering & monitoring of energy consumption;
- Minimisation of potable water consumption.

Principle	Mitigation Measures	Document reference
The precautionary principle	- Recommends assuming materials are hazardous unless proven otherwise, applying the precautionary principle explicitly when uncertain about asbestos or lead content. - Mandates air monitoring during asbestos removal and clearance certification before site reoccupation to avoid health/environmental risks. - Requires licensed contractors and comprehensive waste tracking under EPA and WHS standards to prevent contamination.	Hazardous Materials Survey (EI Australia, 2025)
	- Incorporates traffic and pedestrian safety assessments during construction and operation to mitigate unforeseen impacts. - Preliminary Construction Traffic Management Plan includes mitigation of risks to pedestrians and emergency vehicle access - Reduces potential for transport-related emissions and congestion through public transport access and bicycle infrastructure planning.	Transport Impact Assessment (JMT Consulting, 2025)

	- Identifies asbestos and metal contamination early and remediates before construction. - Applies strict QA/QC, duplicate sampling and validation to manage uncertainty. - Prevents soil and groundwater degradation through staged, verified works. - Establishes clear waste-separation and FOGO systems to prevent pollution. - Education and signage reduce contamination risks between waste streams. - Proactive, risk-based management aligns with precautionary practice. - A 89% target of demolition waste is expected to be diverted from landfill exceeding the NSW WARR Strategy of 80%. - Assesses social-environmental risks (noise, traffic, emissions) prior to approval. - Proposes early mitigation to prevent community and amenity harm. - Reflects anticipatory planning consistent with precautionary principles. - The assessment applies a precautionary framework by undertaking early-stage due diligence to identify and mitigate potential Aboriginal heritage impacts before construction begins. By determining that the site holds low to nil potential for intact Aboriginal archaeological material, the study ensures that redevelopment proceeds with an informed understanding of heritage risk and environmental context. - Clear management protocols, including a “proceed with caution” approach and a formal Unexpected Finds Procedure, are established to prevent harm should archaeological material or cultural objects be encountered.	Remediation Action Plan (EI Australia, 2024) OWMP (Elephant’s Foot, 2025) C&D WMP (Elephants Foot, 2025) Social Impact Scoping Report (Urbis 2025) AMAC Aboriginal Due Diligence Assessment (2025)
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	This ensures that all potential uncertainties are managed proactively rather than reactively, reducing the likelihood of inadvertent cultural disturbance. - The stormwater system incorporates a proactive, risk-based design to prevent environmental degradation before it occurs. Pollution control measures achieve substantial load reductions—87.5% in Total Suspended Solids, 68.4% in Total Phosphorus, 49% in Total Nitrogen, and 96% in Gross Pollutants—thereby minimising the likelihood of contamination reaching local waterways. This anticipatory approach ensures that runoff quality is managed at source, maintaining environmental health and public safety. BASIX min compliance is achieved for the residential areas of the development. This achieves a minimum 7 stars for thermal comfort and passive design and reduces the peak load electrical demand of the building on the grid which tries to prevent future wastage of energy due to bad design and reduce the building electrical demand on the grid.	Stormwater Management Plan (2025) BASIX Cert – Credwell (2025)
Inter-generational equity	- Commits to 15 years of affordable housing management, ensuring long-term social sustainability through access to affordable living in the area - Operated by a Tier 1 community housing provider, promoting continued equitable housing for future residents. - Promotes active transport modes (walking, cycling, public transport), reducing dependence on private vehicles and associated emissions. - Consolidation of multiple site driveways into a single access point improves pedestrian amenity and reduces long-term traffic impacts. The proposal also introduces a through site link between South Dowling St & Verona St to better encourage active transport & ensure improved pedestrian permeability outcomes.	Letter of Intent (Bridge Housing, 2025) Transport Impact Assessment (JMT Consulting, 2025)

	- Ensures safe removal and disposal of hazardous materials, maintaining environmental quality for future use of the site. - Prevents soil, air, and water contamination through detailed environmental management protocols.	Materials Survey (El Australia, 2025)
	- Provides 12.5% affordable housing ensuring long-term access. - Supports cultural continuity and community cohesion on Oxford Street.	Social Impact Scoping Report (Urbis, 2025)
	- Ongoing education embeds responsible waste habits across occupants. - Sustains environmental quality and efficient resource use over time.	OWMP (Elephant's Foot, 2025)
	• The assessment promotes inter-generational stewardship by ensuring that Aboriginal cultural values are recognised, recorded, and protected within the development process. Although the site holds low archaeological potential, the report embeds measures that uphold respect for ongoing cultural connection to Country, ensuring that redevelopment activities remain consistent with the long-term preservation of Aboriginal heritage knowledge and values.	AMAC Aboriginal Due Diligence Assessment (2025)
	• The inclusion of consultation and review by the La Perouse Local Aboriginal Land Council reinforces continuity between past and future cultural relationships to the land, aligning with broader objectives of sustaining cultural identity and awareness through responsible development practice.	
	• The proposed landscape strategy seeks to create long-term environmental and social value through durable, low-maintenance planting that reduces water demand and promotes local ecological resilience. By specifying an indicative 60% of native and low-water-use species the design	Landscape Concept Design (Wyer & Co, 2025)

	ensures that future residents inherit a landscape that supports reduced resource consumption and improved microclimatic comfort. •The integration of enduring native species contributes to urban cooling, improved air quality, and a healthier outdoor environment, delivering benefits that extend beyond the immediate project lifecycle. • The long-term stormwater design supports environmental durability by maintaining water quality and reducing downstream impacts over the life of the development. Through ongoing pollutant reduction and reduced reliance on external water treatment infrastructure, the system safeguards ecological function for future residents and communities, promoting sustainable urban water management into the future. The BASIX Cert incorporates renewable electricity generation via solar panels so that the building has the potential to use greener electricity from the grid ensuring its potential to reducing future climate impacts. Min Section J compliance for the building will also mandate that all electricity and gas are metered and monitored sufficiently to evaluate energy consumption.	Stormwater Management Plan (2025) BASIX Cert Credwell (2025)
Conservation of biological diversity and ecological integrity	- Prevents release of asbestos fibres, lead dust, and PCBs, protecting local ecological systems and air quality. - Requires containment, packaging, and licensed disposal of all hazardous waste to prevent ecosystem contamination - Promotes non-car-based transport and active mobility infrastructure, supporting reduced air and noise pollution in the local environment. - Construction management plan minimises dust, waste, and vehicle emissions to protect urban ecological systems.	Hazardous Materials Survey (EI Australia, 2025) Transport Impact Assessment (JMT Consulting, 2025)

	- Incorporates Greening Sydney Strategy goals—urban canopy, water and energy efficiency. - Reduces emissions and supports local urban ecology. - Implements organics recovery and recycling to minimise landfill impacts. - Encourages landscape recycling and closed-loop material use. - Removes and contains contaminated soils to prevent pollutant migration. - Restores site integrity and protects surrounding ecosystems. • The landscape concept directly supports ecological integrity by replacing existing exotic ornamental vegetation with a predominantly native and low-water-use palette. While current courtyard vegetation consists of planted exotics and non-native ornamentals, the proposed replanting introduces species that align more closely with local biodiversity and climate-responsive design principles. • The landscape approach limits irrigation requirements and promotes habitat value within an urban context, contributing to local biodiversity enhancement and the broader sustainability objectives of the development. • The plan contributes directly to preventing nutrient and sediment discharge into the surrounding environment. Substantial reductions in nutrient and pollutant loads preserve aquatic habitat health and mitigate urban waterway degradation. In doing so, the design reinforces ecological resilience and supports the restoration of local hydrological and biological systems.	Social Impact Scoping Report (Urbis, 2025) OWMP (Elephant's Foot, 2025) Remediation Action Plan (EI Australia, 2024) Landscape Concept Design (Wyer & Co, 2025) BDAR Waiver Request (2025) Stormwater Management Plan (2025)
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	The BASIX Cert reduces the potable water demand by the building by specifying highly efficient WELS rated showerheads, toilets, taps etc. The landscaping using low water species and along with the fittings and fixtures has been considered holistically in the BASIX water score compliance promoting a synergy between usage and biodiversity.	BASIX Cert Credwell (2025)
Improved valuation, pricing and incentive mechanisms	- Designs cost-effective transport mitigation (public transport integration, reduced private parking) aligning with lifecycle emission reduction goals. - Supports incentive structures for sustainable mobility (bicycle and motorcycle parking provisions). - The affordable housing model supports social sustainability and economic inclusion, aligning with ESD's "integrated social, economic, environmental" valuation approach. - Applies <i>Housing SEPP 2021</i> incentives for affordable housing delivery. - Mixed-use model cross-subsidises cultural and social benefits. - Values social and environmental outcomes within redevelopment economics. - Embeds "polluter pays" principle—tenants fund proper waste management. - Internalises environmental costs within ongoing operations. - Developer funds cleanup and validation before reuse. - Environmental costs fully accounted for in project delivery.	Transport Impact Assessment (JMT Consulting, 2025) Letter of Intent (Bridge Housing, 2025) Social Impact Scoping Report (Urbis, 2025) OWMP (Elephant's Foot, 2025) Remediation Action Plan (EI Australia, 2024)

6 Min ESD Compliance

6.1 BASIX Commitments – residential only

The development at 13-17 Oxford Street, 2 Verona Street, Paddington is designed based on the following Energy and Water commitments:

- Water and Energy rating appliances.
 - 5-star WELS dishwasher (exception units A-D)
 - 4-star Energy dishwasher and 8-star condensing/heat pump dryer.
 - 5-star WELS kitchen and bathroom taps.
 - 4-star (> 4.4 but <= 6L/min) showerheads.
 - 4-star WELS toilet flushing systems.
- Electric cooktop and electric oven.
- Two gas central instantaneous hot water systems.
- Electric heat pump with timer for one pool; other two pools no heating
- Three sauna's to be electric infrared and stand by switching
- Steam room to be electric resistance with manual on/off switch
- EER/COP of 4.5-4.0 for 1-phase AC heating and cooling.
- LED lighting throughout
- Fire sprinkler test water to be contained in a closed system
- Solar panel size connected to base building of 25 kWp
- Lifts to be gearless traction with VVVF motor
- Provision of EV infrastructure to align with BCA J9.

Materials:

As part of the BASIX 2022 amendments, specifications about materials have now been mandated. As such, the following refers to the long-term effects and embodied loads used in the sourcing and construction of materials present on site.

The below is a summarisation of the energy intensity of each materials production and equivalent CO2 production. In the current BASIX requirements, there is no minimum level of carbon emissions for materials however Credwell would suggest looking at reducing the embodied carbon of the below materials where possible. This can be applied through the use of green materials which are certified on websites such as GlobalGreenTag, EPD Australasia & Declare etc.

Floor:

- **Concrete**
 - Embodied Carbon Impacts: Energy-intensive process involved in concrete production, material extraction, and transportation. The energy used in manufacturing, installing, and maintaining concrete floors further increases its embodied carbon.

Walls:

- **Brick Veneer**
 - Embodied Carbon Impacts: Energy-intensive production of bricks, which involves the extraction of clay, firing in kilns, and transportation. The firing process releases significant CO₂ emissions, along with installation, and potential maintenance of brick veneer walls.
- **Internal walls**
 - Embodied Carbon Impacts: Plasterboard, used for internal walls, has a moderate embodied carbon footprint. The production involves the extraction and processing of gypsum, which requires significant energy. Additionally, the manufacturing, transportation, and installation of plasterboard contribute to its overall carbon impact.

Ceiling and Roof:

- **Metal Roof Sheetting**

Embodied Carbon Impacts: The harvesting, processing and transportation of virgin minerals to produce metal sheetting results in high carbon emissions. The use of products from recycled materials which can be indefinitely recycled without loss of quality can significantly reduce these emissions.

- **Plasterboard and Timber Frame**

- Embodied Carbon Impacts: The plasterboard itself contributes moderate carbon emissions due to gypsum processing, while the timber frame, though renewable, involves emissions from harvesting, processing, and transportation.

Glazing:

- **Single Glazed Low-E**

- Embodied Carbon Impacts: It has a relatively lower embodied carbon impact compared to more complex glazing systems due to its simpler manufacturing process. However, its thermal performance is less effective compared to double glazing, which can lead to increased energy consumption for heating and cooling.

- **Double Glazed Low-E**

- Embodied Carbon Impacts: It has a higher embodied carbon footprint due to the more complex manufacturing process and additional materials used, including the air gap between panes. Despite this, its superior thermal insulation significantly reduces the building's energy consumption for heating and cooling over its lifespan.

Summary:

The BASIX commitments for the development at 13-17 Oxford St, 2 Verona Street, Paddington align with ESD initiatives by focusing on energy and water efficiency, as well as material sustainability. The installation of rainwater tanks and energy-efficient appliances minimises resource consumption, reducing the environmental impact of daily operations. However, the embodied carbon of construction materials, such as concrete and brick veneer, presents a challenge to sustainability goals. By incorporating green-certified materials and exploring alternatives with lower carbon footprints, the development can further align with ESD principles and NSW Net Zero Plan, ensuring that both operational and embodied impacts are minimised for long-term sustainability.

To note:

The development has Class 2 as part of its classifications including others, which necessitates a BASIX assessment. The BASIX now includes a new section on materials, introduced in October 2023, that evaluates the embodied emissions of the development. Currently, this materials section does not have a specific target and is marked as N/A, but it still indicates a green tick, meaning it has passed. Which addresses clause 2.1(5) of the sustainable building SEPP.

6.2 Section J – Class 6, 9b, 7a and 7b – non residential

Min compliance for these portions of the development must align with Section J at CC Stage. Section J reports are usually prepared and required by PCA's at this stage when the wall type specifications have become more refined such as detailing around stud thicknesses, types, thermal breaks etc. This development is considering completing a J1V3 performance solution for this.