



SSDA ESD REPORT

Wallgrove Business Hub

Cecil Park, NSW

PREPARED FOR
Parramatta Park & Western Sydney Parkland Trusts
Eastern Creeks, NSW, 2766

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SSDA ESD Report

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1. Introduction

This Ecologically Sustainable Design (ESD) report has been prepared on behalf of Western Sydney Parkland Trusts (WSPT) for the proposed Wallgrove Business Hub development, located on the eponymous road in the suburb of Cecil Park, NSW 2178 in the Fairfield City local government area.

This report supports an Environmental Impact Statement and State Significant Development Application (SSDA) that seeks consent for the Wallgrove Business Hub and outlines how this development meets the Secretary's Environmental Assessment Requirements (SEARs) and adheres to the Sustainable Buildings State Environment Planning Policies (SEPP) 2022.

Specifically, the project proposes, but is not limited to, the following key ESD measures to support the overall achievement of the desired sustainability outcomes:

- Water Sensitive Urban Design principles
- High efficiency electrical systems
- Large scale on-site renewable energy generation
- Installation of a rainwater capture and reuse system for all buildings on-site
- Waste management and minimization strategies
- Electric charging station transition ready
- The ability to generate revenue, supporting the operations of the parkland and sustaining conservation efforts for the surrounding green areas.

Through the implementation of the initiatives noted in this report, the proposed development addresses, and endeavors to mitigate against negative environmental, social, and economic impacts associated with the site, demonstrating alignment with the Secretary's Environmental Assessment Requirements (SEARs).

1.1 Response to Secretaries Environmental Assessment Requirements (SEARs)

This report addresses how the proposed Wallgrove Business Hub addresses the SEARs. These requirements are outlined below alongside where the response to each can be found within this report.

Key Issue	Item for inclusion	Action to Address Requirement	Report Location
Ecologically Sustainable Development	Identify how ESD principles (as defined in clause 7(4) of Schedule 2 of the EP&A Regulation) are incorporated in the design and ongoing operation of the development	This ESD report details how the hub aims to address ESD Principles and their incorporation into the design and ongoing operation of the hub.	Section 3
	Demonstrate how the development will meet or exceed the relevant industry recognised building sustainability and environmental performance standards.	The developer has design standards for the development of Wallgrove Business Hub. This pertains to energy efficient measures, water conservation, waste management and recycling and indoor environmental quality considerations. These measures are confirmed and nominated within this ESD report. The hub will commit to an equivalent 5.5 star energy rating performance and a 3 star water rating performance for the offices located on-site.	Section 3 and 4
	Demonstrate how the development minimises greenhouse gas emissions reflecting the Government's goal of net zero emissions by 2050 and consumption of energy, water (including water-sensitive urban design), and material resources.	The proposal seeks to include substantial energy, water, and material efficiency measures to minimise the business hub's greenhouse gas and carbon emissions, water consumption, and material use.	Section 3.1, 3.2 & 3.4

1.2 Limitations

Due care and skill have been exercised in the preparation of this report.

No responsibility or liability to any third party is accepted for any loss or damage arising out of the use of this report by any third party. Any third party wishing to act upon any material contained in this report should first contact Northrop for detailed advice, which will consider that party's requirements.

2. The Proposal

This ESD report supports the Environmental Impact Statement and State Significant Development Application (SSDA) that seeks consent for the Wallgrove Business Hub. The hub will comprise two industrial, warehouse, and distribution buildings accommodating light industrial, warehouse and distribution facilities, and ancillary office facility use. This development is part of the long-term plan for the Parklands to provide spaces for recreational, environmental, and community facilities, services infrastructure, agriculture, business, and employment opportunities to accommodate for the growing population of Western Sydney.

The area of the Parkland allotted for this development has been identified in the Plan of Management 2030 (POM 2030) as an area that has low environmental and recreational value. Therefore, it is recognized as a potential stream of income for WSPT by leasing the spaces within the business hub. The revenue generated will contribute to funding Parkland's ongoing maintenance and operation costs, as well as the development of new and existing facilities. This development will also deliver further economic benefits and employment generation for the Greater Sydney region. The Wallgrove Business Hub will employ technical specialists for their input to ensure careful siting and design for the industrial subdivision, as well as future construction of the buildings. This aligns with Wallgrove's aim of avoiding unnecessary environmental impacts by looking at adopting recommended measures to avoid, minimise or manage potential impacts.

Specifically, this SSDA proposes the following for the first stage of work (Stage 1 DA):

- Preparation of site and bulk earthworks, inclusive of site clearing to establish future development sites
- Dedicated council access road which will connect to Wallgrove
- Installation of site services and stormwater management infrastructure to accommodate the future development of the site
- Torrens title subdivision to create separate development lots

Detailed development of:

- Conceptual architectural and landscape design for the future provisions of the built forms
- An accessible road to the proposed business hub from Wallgrove Road
- Implementation of stormwater management measures to regulate the quality and quantity of water flows throughout the site, mitigating any potential adverse impacts on neighbouring properties.
- Provision of utility services essential for supporting the proposed development, encompassing requisite upgrades and strategic planning for the layout and design of the proposed industrial subdivision.

The future industrial buildings and associated facilities are not a part of the scope of this application.

2.1 The Site

The Wallgrove Business Hub site is located within the Western Sydney Parklands, which stretches over 27 kilometres from Quakers Hill to Leppington, and features more than 60 kilometers of tracks and trails in the suburb of Abbotsbury. The site is located within Precinct 11 of the Cecil Park North precinct, and to the west of the site there is a tributary of Ropes Creek. The proposed development site can be accessible via Wallgrove road, a major arterial that is situated near the M12 East/ Elizabeth Drive Connection Project. An aerial photo of the site is provided at Error! Reference source not found..

There is approximately 33,850 square metres of combined floor space across the different buildings/tenancies. The site itself is not listed as a heritage site, nor are there any heritage sites in the surrounding area.

A summary of the site's location and area is as follows:

- 2.8-hectare site area, address 97-123 Wallgrove Road, Cecil Park
- 4.4-hectare site area, address 125-151 Wallgrove Road, Cecil Park



Figure 1 – Site Aerial view I

Source: Western Sydney Parklands Plan of Management 2030



Figure 2 Concept master plan

3. Ecologically Sustainable Development

The following section describes how ESD principles (as defined within clause 193 of the Environmental Planning and Assessment Regulation 2021) are being incorporated in the design, construction, and operation phases of the project. These initiatives illustrate how the project addresses the following;

- The precautionary principle – through the implementation of environmental management and an assessment of the business hub's operational growth and adaptability, the hub management attempts to incorporate resilience, and future-focus into the business hub design. The concept behind the precautionary principle is to create features in the center that can both; adapt to changes, which may eventuate in the future, and avoid the risk of serious or irreversible damage to the environment. The inclusion of clear riparian protection zones and significant conservation zones demonstrates the hub's commitment to preserving the site's environmental integrity.
- Inter-generational equity to ensure that the health, diversity, and productivity of the environment are maintained or enhanced for the benefit of future generations – through the inclusion of zero ozone-depleting refrigerants during the design of services, best practice PVC for pipes and low-impact housing materials within the project design standards, alongside a focus on providing greater endemic native vegetation to support the hub's connection with nature. The business center demonstrates a strong commitment to the preservation of environmental health, diversity, and productivity as well as the health and well-being of the local area. Furthermore, accessibility is accounted for in the Huntlee community with the provision of a shared path connection that will provide access to open space areas.
- Conservation of biological diversity and ecological integrity – through the planting of endemic natives throughout open space and road reserve areas, vegetation, design of water cycle pathways through the development to include filtration and Water Sensitive Urban Design measures, the hub will act to improve, conserve, and support the local biological diversity and integrity.
- Improved valuation, pricing, and incentive mechanisms - the design process should incorporate these to ensure that the hub stays within budget and thoughtfully considers environmental factors across the design options. Furthermore, the hub will look at the maintainability and long-term operational costs associated with the overall design.

Through the inclusion of the above and the sustainability initiative outlined within this report the hub clearly addresses the ESD Principles into the design, construction and operation of the business hub as defined within clause 193 of the Environmental Planning and Assessment Regulation 2021. Further details of the general sustainability initiatives are outlined below.

3.1 Energy Efficiency

Energy efficiency is considered throughout the development with the following improvements. The business hub will investigate provisions for energy efficiency by prioritizing solar accessibility and energy-efficient lighting and fixtures. Further provisions will be made to accommodate future considerations. The measures outlined in the following section demonstrate how the nominated design elements will reduce the development's grid electricity demands.

3.1.1 Improved Building Fabric and Glazing Performance

The project will investigate high performance insulation, fabric, and glazing, prioritizing the comfort of occupants in the office spaces. The design will incorporate provisions for both natural and mechanical ventilation in warehouse areas and insulation for all spaces, ensuring compliance with NCC 2022 requirements. Moreover, the external building materials are required to have a reflectivity index under 20%, and the office areas will feature high-performance glazing for all glass areas. This not only allows for natural light whilst mitigating intense glare during daylight hours, but also aids in controlling heat transfer to maintain optimal indoor temperatures for heating and cooling purposes.

3.1.2 Integration of Cool Roofs

To mitigate the potential rise in urban heat island effects within the site and its broader vicinity, the design of the Wallgrove Business Hub will explore the integration of cool roofing systems with roof colours exhibiting a Solar Absorptance (SA) less than 0.45, equivalent to a Building Code of Australia (BCA) classification of light or medium. This initiative aims to minimize heat accumulation in building materials, subsequently lowering energy demands on HVAC systems.

3.1.3 Energy Efficient Equipment

The project will place a preference on energy and water-efficient equipment and services. The use of heat pumps for hot water, higher star-rated refrigerators, dishwashers, and other major equipment will directly reduce the site's energy demand. The use of higher WELS-rated fixtures and fittings will indirectly reduce energy demand by reducing hot water demand and use throughout the site. Lighting systems are required to use LED lights, with motion sensors and timers for the warehouse portion of the development site.

The following resource-efficient fixtures and appliances are required to be used:

- Taps: Min. 6 Star WELS rating
- Toilets: Min 4 Star WELS rating
- (End-of-trip) Showers: Min 3 Star WELS rating with flowrate not exceeding 7.5 L/s
- Dishwashers: Min 5 Star WELS rating

This initiative is cost-effective and concurrently aligns with the hub's objectives for energy efficiency.

3.1.4 Electric-Only Site

All systems and appliances in the development will be electric, this commitment ensures that the hub is future-ready and aligned with the NSW Government's commitment to carbon neutrality by 2050. Moreover, energy storage units across the site will alleviate strain on centralized power systems, contributing to grid stability and overall enhancing the resilience of the hub.

3.1.5 Environmentally Friendly Refrigerants

All mechanical systems across the hub will use environmentally friendly refrigerants to minimise global warming and ozone depletion. The use of refrigerants, such as hydrocarbons (HCs), are used in refrigeration and air conditioning systems, absorbing, and releasing heat to allow for spaces or substances to cool.

3.1.6 Low Impact

The project aims to minimise embodied energy by avoiding unnecessary use of materials and procuring materials with a low carbon footprint where appropriate. During construction works, there will also be a focus on optimizing the use of on-site available materials to reduce transportation needs. In cases where the necessity arises for imported materials, preference will be given to locally sourced options where feasible. Moreover, there will be a preference for steel and concrete suppliers equipped with environmental product disclosures (EPDs) to bolster the improvement of industry standards and transparency of information on material impacts.

3.2 Energy Generation

By implementing energy-efficient measures, there will be a substantial reduction in the energy demand of the business hub development. The warehouses and office spaces, equipped with solar panels, hold the potential to generate renewable energy through a solar PV array. These panels are designed as an addition to the extensive roof spaces of the warehouses, which possess a provision for potential future expansions. This strategy not only enhances the business hub's autonomy from the electrical grid but also bolsters its resilience in terms of energy provisions, positioning it well for future growth.

3.3 Indoor Environment Quality

Indoor environment quality is an important consideration for the workers in the warehouse and office areas, therefore an investigation to create scenarios where solar access, prevailing wind directions and precooling of air can help to foster the creation of comfortable spaces. The following considerations have been included as part of the dwelling design:

3.3.1 Daylight Access

Daylighting systems are integrated throughout the internal and external areas, to support the admission of natural light and direct and indirect sunlight throughout, particularly in areas that are regularly occupied. This is achieved using awning features and promotion of shaped ceilings and skylights. An integrated daylight approach improves the well-being of occupants and workers by creating a visually stimulating and productive environment.

3.3.2 Indoor Air Quality

Maintaining adequate indoor air quality within the occupied spaces is vital to the health and well-being of all occupants. Natural ventilation is highly encouraged and promoted in the design guidelines.

3.3.3 Material selection

Material selection aims to improve the internal environment of the business hub operation facilities with materials with low volatile organic compounds and formaldehyde content preferred to help minimise respiratory issues for workers.

3.4 Water Efficiency

Water efficiency has been addressed through an effective management plan within the development, which includes initiatives aimed at lowering potable water demand and associated energy consumption. Through the integration of on-site systems, biodiversity will be further enhanced as an additional advantage. The implementation of an on-site wastewater management system is aimed at reducing the flow and impact of water on the property and adjacent sites. This endeavor is driven by the commitment to preserve water quality, protect the native flora and fauna, build climate resilience, and mitigate the risk of flooding in the area.

Furthermore, the provision of a recycled water system will ensure that the site can use non-potable water supplies for things like irrigation and toilet flushing preserving water supplies in case of emergencies.

3.4.1 Water Sensitive Urban Design

This business hub has incorporated Water Sensitive Urban Design to reduce the demand for potable water, treat urban stormwater, and redirect stormwater into the urban landscape to improve amenities. The development will investigate the use of vegetated swales and stormwater harvesting to provide on-site systems for stormwater treatment as designed as a protective measure for the environment. This system is advantageous by encouraging local ecosystems and biodiversity along with the potential to enhance water quality by filtering pollutants. Additionally, Water Sensitive Urban Design can help maintain a sustainable groundwater supply for the community and its needs.

3.4.2 Rainwater and stormwater capture and reuse

The project team will investigate a system to recycle rainwater through finding ways to collect, store, filter and distribute rainwater to offset most of the sites potable water usage throughout the hub. This rainwater will then be repurposed for irrigation and sprinkling systems, use in toilets and for the washdown of vehicles and equipment, consequently reducing the demand on potable water supply systems.

3.4.3 Improved Ecology

A well-designed landscape featuring a selection of native grasses, shrubs and trees will promote the biodiversity of insects and native birds. A vegetation plan will incorporate drought tolerant plants, beneficial in minimizing water usage. Consequently, the design will actively contribute to conservational efforts within the urban environment, minimizing the ongoing environmental impact of the hub.

3.4.4 Conservation of land

The project site does not contain any items of environmental heritage identified in an environmental planning instrument or any Aboriginal sites that are identified on the Aboriginal Heritage Information Management System (AHIMS) register. The critical environmental areas identified in the Parklands are beyond the boundaries of the development site, where the most significant vegetation for the proposed Bushland corridor and riparian corridor are to be protected and enhanced, as outlined by the POM 2030.

3.4.5 Waste Management

Effective waste management throughout the construction and operation of the site will help to promote resource efficiency and minimise the adverse environmental impacts of the site development. The hub will investigate achieving a high diversion rate and ensure that there are guidelines that specify a consistent rate during operations. The following are being considered as part of the design process.

3.4.6 Waste Management Plan

A Waste Management Plan will be prepared with the following key objectives:

1. To minimise the environmental impacts of the operations in the business hub, particularly within the light industrial and commercial areas
2. To minimise the impact of the management of waste within the hub
3. To ensure waste is managed to reduce the amount landfilled, with a high diversion rate from landfill and to minimise the overall quantity generated.

The development will also look at ways in which to encourage local recycling and reuse initiatives within the community.

3.4.7 Separated Waste and Recycling Streams

The provision of separated waste and recycling streams in all areas will allow for more effective recycling of the operational waste, particularly given the higher culpability of areas such as the ancillary offices. Providing separate bins for cardboard/paper waste, glass, food waste, comingled recycling, and general waste improves the hub's operational efficiency and results in significant environmental benefits.

3.5 Transportation Plan

The project team will explore possibilities to promote public transportation, taking into consideration the accessibility of the Parklands via major arterial roads. This exploration may involve the development of a Green Travel Plan and the provision of broader resources accessible to both the public and workers, offering comprehensive alternatives to private car travel for commuting.

Furthermore, the hub has provisions for electric power capability onsite, which will ensure the center is ready, and easily able, to adapt to Electric Vehicle charging stations in the future as it evolves, and its population grows. By doing so, the development will be actively working to minimise its contribution to fossil fuels, promoting a cleaner living environment.

3.6 Green Infrastructure

Green infrastructure is integrated into the business hub to provide urban cooling, slowing, and filtering of rainwater and climate resilience.

In addition to planting street trees throughout the site, which help to combat the urban heat island effect and provide cleaner air, the development will consider plant selection for inclusion in its vegetation plan. This will prioritize native plants that are endemic and drought-tolerant, allowing for less water usage and a readily adaptable environment.

4. State Environment Planning Policies (SEPP) 2022

4.1 SEPP 2022 Requirements

The SEPP 2022 outlines new requirements to allow projects to reduce greenhouse gas emissions. This section specifically addresses the following sustainability objectives for non-residential buildings.

Reference	Objective	Design Response
General Sustainability	Reporting on general performance, including water conservation, waste minimization and use of renewable energy.	- Energy metering and monitoring strategy will be implemented to effectively monitor the main energy uses within the building, alongside the lighting and small power use. - The project is also aiming to divert construction and demolition waste from landfill. - Installation of PV array and future capacity will ensure renewable energy is able to be generated, reducing energy usage from the grid.
Embodied Emissions Reporting	Implement processes of measuring and reporting on embodied emissions.	Disclose embodied emissions via the NABERS embodied emission material form.
Net Zero Provisions	Demonstrate at development application that the development is designed with sufficient space and infrastructure so all energy needs can be sourced from renewables by 2035.	- The project aligns with Net Zero Provisions as specified in its Net Zero Statement. - The development will investigate electric-only provisions and solar PV applications ready to transition to 2035.
Energy Performance and Offsets	Independently verify that the development has met the energy performance required by the NCC, through NABERS post occupancy assurance. Purchase offsets for onsite fossil fuel use and to rectify any performance gap for energy efficiency	- The development will procure offsets for any onsite fossil fuel use, calculated for a minimum 10-year period. The offset type will be Australian Carbon Credit Units (ACCUs) or a Climate Active Carbon Neutral Certification. - The project is targeting NABERS energy rating performance of at least 3-star
Water Performance	Independently verify that the development has met a minimum 3-star NABERS water rating.	The project is targeting NABERS water rating performance of at least 3-stars.

5. Conclusion

This report has addressed the ESD to support the SSDA for the Wallgrove Business Hub located in Cecil Park.

Specific sustainability initiatives proposed for the development include, but are not limited to:

- Employment of technical specialists for considered building design and high-performance fabric selection;
- Future capacity and anticipation of renewable energy sources through considerate warehouse roof area design with Solar PVC system capabilities;
- Future provisions for installation of EV charging;
- Water usage meters and efficient plumbing fittings and fixtures within the buildings on-site;
- Promotion of native landscaping and site biodiversity;
- Use of low to zero VOC content materials;
- Water efficiency targeted through WSUD which will additionally improve and maintain local ecology;
- Transport planning to connect the business hub with the broader region;
- Waste management and minimization strategies.

Overall, the implementation of the initiatives noted within this report clearly demonstrates Wallgrove Business Hub's commitment to ESD principles throughout its design, construction, and operation. Additionally, the development has worked to address key climate related risks posed to the site, aligning it to the NSW Government's commitment to carbon neutrality by 2050.