



Alspec Industrial Business Park

221- 227 Luddenham Road, Orchard Hills 2748

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PREPARED FOR
HB+B Property Pty Ltd
55-59 Regent Street
75 O'Riordan St
Chippendale NSW 2008

Sustainability Report

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Author:	Callista Wong
Verifier:	Ray Chung

Northrop Consulting Engineers Pty Ltd

ACN 064 775 088 | ABN 81 094 433 100

Level 11, 345 George Street, Sydney NSW 2000

02 9241 4188 | sydney@northrop.com.au | www.northrop.com.au

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1. Introduction

This Ecologically Sustainable Design (ESD) report has been prepared on behalf of HBB Property (HBB) for the proposed Alspec Industrial Business Park - COPE Sensitive Freight development, located on 221-227 Luddenham Road in the suburb of Orchard Hills, NSW 2748 under the jurisdiction of Penrith City Council (LGA).

This report supports a Statement of Environmental Effects (SEE) and Development Application (DA) that seeks consent for the Alspec Industrial Business Park - COPE Sensitive Freight development and outlines how this development addresses the requirements outlined in Clause 7.4 of the Penrith Local Environmental Plan (LEP 2010), the Sustainable Buildings SEPP 2022, the Penrith Development Control Plan (DCP) and the site-specific DCP-E17 for Luddenham Road Industrial Business Park.

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
- Considerate site layout and design to enable employee comfort
- Low embodied emission materials
- High efficiency electrical systems
- High performance fabric and glazing
- Water efficient fixtures and fittings
- Large scale on-site renewable energy generation
- Bio-retention basin available on broader estate for rainwater capture and reuse
- On-site stormwater treatment through incorporation of broader estate bio-retention basin
- Waste management and minimization strategies
- Electric charging station onsite
- Solar energy capacity to reduce the load that the precinct will place on the broader energy network.
- Considered vegetation and plant selection and design to encourage biodiversity and land resilience

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 LEP and Sustainable Buildings SEPP 2022.

1.1 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 Statement of Environmental Effects (SEE) and Development Application (DA) that seeks consent for the Alspec Industrial Business Park (AIBP) - COPE Sensitive Freight. COPE will comprise of a warehouse and distribution building accommodating a warehouse facility, distribution activities, and ancillary office facility use. This development is part of the long-term plan for the Alspec Industrial Park and will provide Western Sydney with additional service infrastructure and employment opportunities, as well as creating a community that is enhanced by a connection to nature.

Specifically, this DA proposes the following work:

- Construction of a purpose-built warehouse and distribution facility, with its primary use for bulk and fragile product storage, as depicted in **Figure 1**.
- Installation of an in-ground weighbridge
- Ancillary offices and amenities
- Separate truck entry and exit to car park
- Hardstand driveway provisions and parking areas around the building
- Provision of 222 parking spaces across 35,505 square metres
 - Heavy duty: 29,636 sqm
 - Light duty: 5,869 sqm
- Access to service road for B-double trucks
- Operational house of 24-hours a day, 7 days a week
- High quality landscaping

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

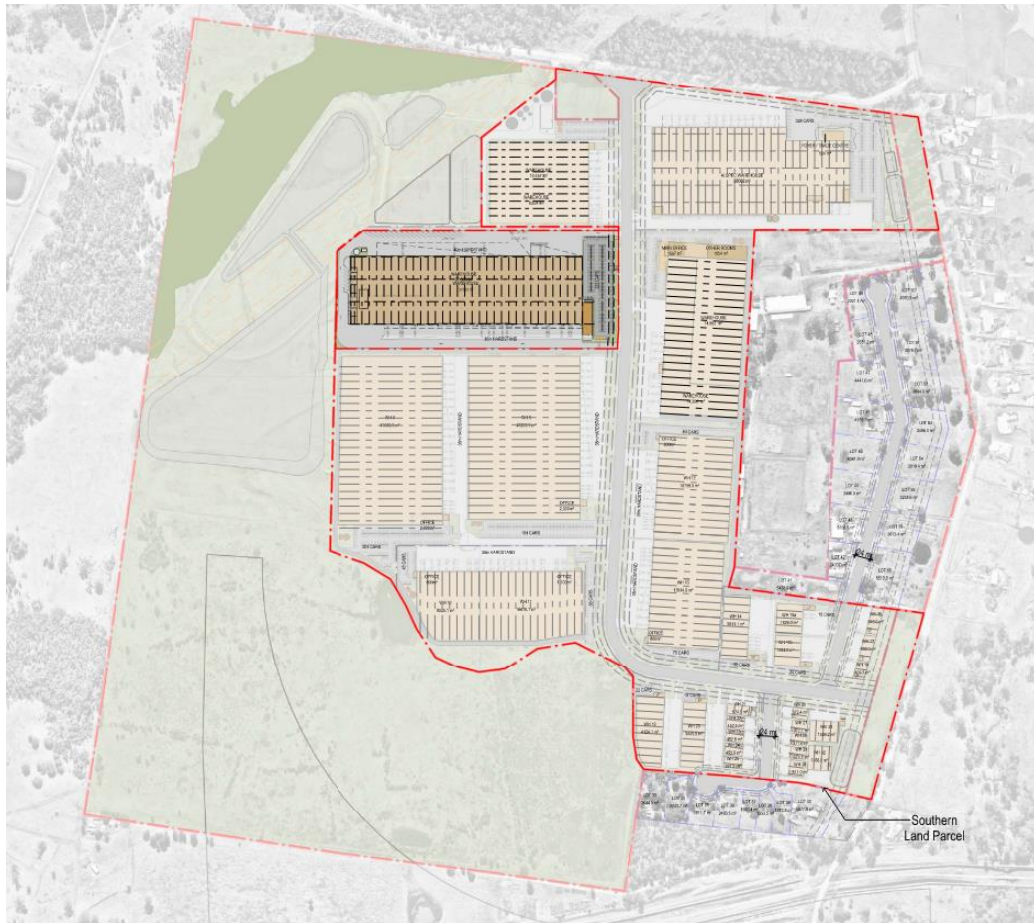


Figure 1 Site plan

Source: Nettletontribe

2.1 The Site

The COPE Sensitive Freight for Alspec Industrial Business Park (AIBP) site is located in the suburb of Orchard Hills, New South Wales and is intended to be a warehouse and distribution building on Lot 1 of 221-227 Luddenham Road, Orchard Hills. The site area is 80,170 square metres and the total gross floor area of the warehouse building is 38,500 square metres. Alspec Industrial Business Park itself is planned as a new industrial hub for Western Sydney.

COPE Sensitive Freight's development site is situated within the western sector of AIBP site. The development is accessible by Patons Lane and Luddenham Road via the north-south internal local road. To the North-west of the development site is an electrical access and service easement, with plans for two future basins along the northern and western boundaries of the site, beneficial for climate resilience and stormwater management.

Parts of COPE have been identified as belonging to the Greater Penrith to Eastern Creek Investigations Area under the Cumberland Plain Conservation Plan (CPCP) (DPE 2022). The development site has been divided accordingly, and is respectful of the areas segmented depicted in **Figure 2** and below:

- Certified – Urban Capable Land
- Certified – Major Transport Corridors
- Avoided Land

Most of the land used for the development of COPE has been identified as Urban Capable Land. An impact assessment has been undertaken regarding the areas of concern highlighted in the CPCP.

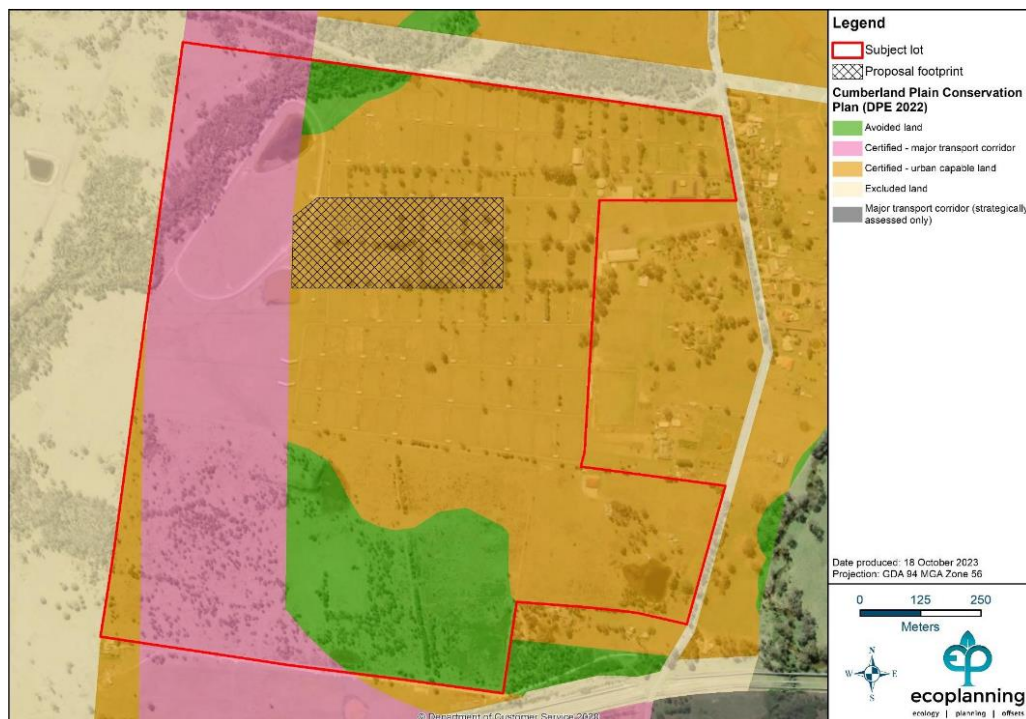


Figure 2 Site aerial (Cumberland Plain Conservation Plan areas as outlined)

Source: Ecoplanning Pty Ltd.

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 development's operational growth and adaptability, the COPE development management attempts to incorporate resilience, and future-focus into the site's design. The concept behind the precautionary principle is to create features for the warehouse and distribution building 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 drought tolerant landscaping, Water Sensitive Urban Design and Solar PV systems demonstrate AIBP's commitment to building a resilient environmental site.
- 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 requirements (such as use of low-carbon aluminium), alongside a focus on providing greater endemic native vegetation to support the development's connection with nature. Furthermore, accessibility is accounted for through the commitment to a developed Green Travel Plan.
- 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 which include filtration and Water Sensitive Urban Design principles, the development 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 COPE stays within budget and thoughtfully considers environmental factors across the design options. Furthermore, COPE will look at the maintainability and long-term operational costs associated with the overall design.

Through the inclusion of the above and the sustainability initiatives outlined within this report COPE Sensitive Freight clearly addresses the ESD Principles into the design, construction and operation of the development 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 development exemplifies energy efficiency efforts by possessing a great capacity for solar PV installation on its roof areas. Further provisions for energy efficiency include energy-efficient lighting, fixtures and electric vehicle and bicycle charging stations. 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

COPE uses 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 Alspec Industrial Business Park - COPE Sensitive Freight will require 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. Furthermore, solar panels will be installed on the warehouse, contributing to the electrical system and powering equipment such as the lighting in external and internal areas.

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 development'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 COPE is future-ready and aligned with the NSW Government's commitment to carbon neutrality by 2050.

3.1.5 Environmentally Friendly Refrigerants

All mechanical systems across the development will use Environmentally friendly refrigerants to minimise global warming potential and ozone depletion potential. 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. Greencore, a low carbon aluminium, is used as a substitution for more carbon intensive regular aluminium as the warehouse's material. During construction works, there will also be a focus on optimizing the use of available materials on-site to reduce transportation needs. In cases where the necessity arises for imported materials, preference will be given to locally sourced options where feasible.

3.2 Energy Generation

By implementing energy-efficient measures, there will be a substantial reduction in the energy demand of the development. The warehouse and office spaces, equipped with tailored solar panel systems and technologies, 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, with further potential for installation over a great area. This strategy not only enhances the development'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 priority has been placed on providing occupant comfort through considering the various scenarios of 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 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 sunlight throughout especially during Winter and particularly in areas that are regularly occupied. This is achieved using awning features and promotion of skylights, with a minimum of 10% translucent roof sheeting to be used in the warehouse area. To provide occupant relief during periods of sunlight glare, louvre blade systems have been incorporated to cover the entire office façade. 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

Ensuring sufficient indoor air quality in office spaces is crucial for the health and well-being of occupants. The design guidelines also strongly advocate for natural ventilation in the warehouse spaces. In addition to this, an initial analysis of the warehouse and building orientation was conducted to consider the local climatic conditions. This analysis aimed to optimize energy efficiency, enhance natural lighting, and minimize heat gain to ensure occupant comfort. Furthermore, measures were taken to facilitate cross ventilation, including careful placement, sizing, and location of openings to promote the natural flow of air throughout the building.

3.3.3 Material selection

The selection of materials is focused on enhancing the indoor environment of development buildings. Preference is given to materials with low levels of volatile organic compounds and formaldehyde content to reduce respiratory issues for workers.

3.4 Water Efficiency

Efforts to improve water efficiency have been implemented through a comprehensive management plan within the development. This includes initiatives aimed at lowering potable water demand and associated energy consumption. On-site wastewater treatment will alleviate pressure on local water facilities, easing the burden on traditional water sources and averting harm from wastewater discharge. These efforts are guided by a dedication to safeguard water quality, protect the native flora and fauna, build climate resilience, and mitigate the risk of flooding in the area.

Furthermore, a recycled water system will ensure that the site can draw at least 80% of non-potable water demand from rainwater tanks for activities like irrigation and truck washing purposes.

3.4.1 Water Sensitive Urban Design

COPE 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 facilities outlined in its Water Management Strategy. The development will provide systems for stormwater treatment on the broader development, and immediate stormwater detention and reductions systems on-site designed as a protective measure for the environment. This system is advantageous by encouraging local ecosystems and biodiversity, offering protection from the adverse effects of peak flow incidents, 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.

The entire car park on site uses permeable paving, which provides opportunity for stormwater runoff management and collection. Additionally, permeable paving encourages safer driving practices based on its properties and durability suitable for industrial purposes.

3.4.2 Rainwater and Stormwater Capture and Reuse

The development uses a system to recycle rainwater by collecting, storing, filtering, and distributing rainwater to offset most of the sites potable water usage throughout the site. This rainwater will then be repurposed for irrigation systems, and for the washdown of trucks and equipment. Additionally, toilets will use recycled water throughout the whole estate. Such initiatives will consequently reduce the demand for water-supply systems. These initiatives are designed to align with the overarching goal to protect, maintain and restore the local ecology of the development and offering enhancements to the quality of life. A sediment basin has been incorporated in the design as a means of providing additional sediment control assistance, preventing erosion from run-off activity.

Stormwater management practices have been demonstrated through the inclusion of on-site detention tanks, designed to prevent the damage of the site and local biodiversity by retaining stormwater temporarily whilst controlling peak flow rates, preventing flooding and erosion of the local area in the event of heavy rainfall. The stormwater will then be treated before being discharged from the site via the bio-retention basin located on the estate. Minimum reduction targets have been set per annum for the resultant stormwater quality, where the level of Phosphorus must have an 80% reduction, Nitrogen 65% and gross pollutants and total suspended solids are required to have a minimum 90% reduction. Furthermore, gross pollutant traps for the overall subdivision design have been incorporated to provide filtration of runoff before reaching natural water bodies and systems, adding to better management of peak flow and prevention of environmental harm.

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 incorporates drought tolerant plants and design, 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 development.

3.4.4 Conservation of Local Nature

The project site resides on land that has been identified as part of the CPCP. As such, measures have been enforced to ensure the maintenance of the existing biodiversity. These provisions include careful planning of demolition and construction to minimise the number of trees that must be removed, protection of the riparian corridor vegetation found on site, and consultation with qualified professionals before site works begin. Additionally, the Grey-headed Flying fox has been identified as likely to inhabit the subject development site. However, the development has commissioned an EPBC Act Assessment of Significant Impact Criteria, concluding the project development to unlikely significant impact the species and noting that no flying fox camps exist within 100metres of the land in question.

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 development during construction works will target an 80% rate for recycling and reuse of waste, with monitoring in place to ensure adherence. 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 development
2. To minimise the impact of the management of waste within the warehouse and distribution building
3. To ensure waste is managed to reduce the amount landfilled, diverting at least 80% from landfill and to minimise the overall quantity generated.
4. Given the purpose of the warehouse, liquids and hazardous wastes identified as 'special wastes' shall not be disposed of in the same manner as general. Instead, they will be managed separately in adherence to legislative requirements and waste type.

The development will also look at ways in which to encourage local recycling and reuse initiatives for the employees on site.

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 operational efficiency and results in significant environmental benefits.

3.5 Storage of Dangerous Goods

Measures have been taken to ensure the storage and transportation of materials classified as Dangerous Goods to and from the development will not have an adverse effect on the surrounding environment. Riskcon Engineering was engaged to conduct a Dangerous Goods Storing Report in line with the threshold quantities outlined in Chapter 3 of the SEPP, concluding that this threshold is not met by the COPE warehouse project, and was therefore not applicable. Furthermore, the facility and the intent of its storage, transportation and associated activities has not been classified as potentially hazardous.

3.6 Transportation Plan

In line with its commitment to reducing its carbon emissions, Alspec Industrial Business Park has sought to promote public transportation by developing a Green Travel Plan, taking into consideration the accessibility of the site via connecting roads. This also includes a Transport Access Guide, designed to provide users of the facilities comprehensive alternatives to private car travel for commuting, with onsite car and bicycle parking provided in a visible, secure and weather protected area to encourage the use of public transport.

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

3.7 Bushfire Resilience

HBB Property has commissioned a Bushfire Assessment Report from Peterson Bushfire, with an accreditation by the Fire Protection Association of Australia's BPAD Scheme, in response to the identification of the site as a bushfire prone area. AIBP site has been identified as a bushfire prone area and will require protection measures for the site, nature, and employees. HBB Property will require the development to allow for provisions, including but not limited to, the following: defensible space for fire-fighters, largely available access to public roads, and sufficient water supply for firefighting methods.

3.8 Green Infrastructure

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

It is a requirement for trees to be planted at a minimum ratio of 1 per 6 car spaces, and at a minimum width of 1.5 metres. This will help to combat the urban heat island effect and provide cleaner air. Additionally, the development includes considerate plant selection for inclusion in its vegetation plan which will have additional benefits such as visual screening and serving as a natural barrier. For example, locally Indigenous shrubs will be planted along the retaining wall area. Alspec will further endeavor to consider local Indigenous groundcovers as an alternative to regular turf material for non-pedestrian use areas. These measures will prioritize native plants that are endemic and drought-tolerant, allowing for less water usage and a readily adaptable environment.

4. Conclusion

This report has addressed the ESD to support the SEE and DA for the Alspec Industrial Business Park - COPE Sensitive Freight located in Orchard Hills, New South Wales.

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

- High performance glazing and cool roof provisions;
- Considerate selection of low intensity building materials such as Greencore aluminium
- Optimal building orientation and natural air flow for occupant comfort
- Capacity and anticipation of renewable energy sources through considerate warehouse roof area design with Solar PVC system capabilities;
- Future and current provisions for installation of EV charging for both cars and bicycles;
- 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 development with the broader region;
- Waste management and minimization strategies;
- Stormwater management to protect biodiversity and environmental habitat of water bodies

Overall, the implementation of the initiatives noted within this report clearly demonstrates Alspec Industrial Business Park - COPE Sensitive Freight'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.

Contact Us

BRISBANE

07 3365 0400
brisbane@northrop.com.au
Level 25, 12 Creek Street
Brisbane QLD 4000

CANBERRA

02 6285 1822
canberra@northrop.com.au
Level 6, 224 Bunda Street
Canberra ACT 2608

CENTRAL COAST

02 4365 1668
centralcoast@northrop.com.au
Level 1, Suite 4 257-259 Central Coast
Highway
Erina NSW 2250

COFFS HARBOUR

02 5603 3053
coffsharbour@northrop.com.au
Suite 6, 27 Orlando Street
Coffs Harbour NSW 2450

MELBOURNE

03 9600 2645
melbourne@northrop.com.au
Level 3, 520 Collins Street
Melbourne VIC 3000

NEWCASTLE

02 4943 1777
newcastle@northrop.com.au
Level 1, 215 Pacific Highway
Charlestown NSW 2290

PARRAMATTA

02 9241 4188
sydney@northrop.com.au
Lvl 15, 6 Hassall Street
Parramatta NSW 2150

SYDNEY

02 9241 4188
sydney@northrop.com.au
Level 11, 345 George Street
Sydney NSW 2000

WOLLONGONG

02 4226 3333
southcoast@northrop.com.au
Level 1, 57 Kembla Street
Wollongong NSW 2500