

URBAN DESIGN AND LANDSCAPE PLAN

Moorebank Precinct East Stage 2

13 OCTOBER 2022

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REVISIONS

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002	9/08/2018	Updated based on client comments for submission to Liverpool City Council	██████	██
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012	17/12/2020	Updated in response to DPIE comments regarding the Consolidated UDLP	██	██
013	13/10/2022	Updated to reflect design change to Area 3	██	██

ACRONYMS AND DEFINITIONS

Acronym / Terms	Meaning
Area 1	Warehouse 1 and immediate surrounding area (not including the freight village)
Area 2	Warehouses 3, 4 and 5 including OSD1
Area 3	Warehouse 6 and 7 including OSD2
Area 4	The freight village
Area 5	Warehouse 2 and immediate surrounding area
Area 6	Moorebank Avenue
AUDP	Australian Urban Design Protocols
CBD	Central Business District
CCTV	Controlled circuit television
CEMP	Construction Environmental Management Plan
CESCP	Construction Erosion and Sediment Control Plan
CFFMP	Construction Flora and Fauna Management Plan
CoCs	Conditions of Consent
CPAFSP	Cycling and Pedestrian Access and Facilities Sub Plan
CPTED	Crime Prevention Through Environmental Design
CSWMP	Construction Soil and Water Management Plan
DCP	Development Control Plan
DIPNR	Department of Infrastructure Planning and Natural Resources
DJLU	Defence Joint Logistics Unit
DPE	Department of Planning and Environment (formerly Department of Planning, Industry & Environment (DPIE))
EIS	Environmental Impact Statement
EOMBASP	Employee Outdoor Meal Break Area Sub Plan
EP&A Act	<i>Environment Planning and Assessment Act 1979</i>
EPA	Environment Protection Authority
EPBC Act	<i>Environmental Protection and Biodiversity Conservation Act 1999</i>
EPL	Environment Protection Licence
ESD	Ecologically sustainable development

Acronym / Terms	Meaning
FCMMs	Final Compilation of Mitigation Measures
GANSW	Government Architect New South Wales
GBCA	Green Building Council of Australia
GFA	Gross floor area
HIP	Heritage Interpretation Plan
IMEX	Import Export Terminal constructed as part of MPE Stage 1 (SSD 6766)
IMT	Intermodal freight terminal
LCC	Liverpool City Council
LGA	Local Government Area
LOGOS	LOGOS Property Group
LSP	Lighting Sub Plan
LVMSPP	Landscape Vegetation Management Sub Plan
mAHD	metres Australian Height Datum
MPE	Moorebank Precinct East
MPE Site	Including the former DSND Site and the land owned by SIMTA which is subject to the MPE Concept Plan Approval (Lot 1 DP1048263). The MPE Site does not include the rail corridor, which relates to the land on which the rail link is to be constructed.
MPW	Moorebank Precinct West
OEH	Office of Environment and Heritage
OEMP	Operational Environmental Management Plan
OSD	On-site detention
OTTIA	Operational Traffic and Transport Impact Assessment
PAC	Planning Assessment Commission
PCT	Plant community types
Project Site (the)	The construction and operational areas identified within the MPE Stage 2 RtS (previously referred to as the Amended Proposal Site within the MPE S2 RtS) and approved under SSD 7628. The MPE Project Site includes Areas 1 through 6, as described in this UDLP.
RL	Relative levels
RMS	Roads and Maritime Services
RtS	Response to Submissions
SEPP	State Environmental Planning Policy

Acronym / Terms	Meaning
SIMTA	Sydney Intermodal Terminal Alliance
SSD	State significant development
SSFL	Southern Sydney Freight Line
SSP	Signage Sub Plan
TfNSW	Transport for NSW
The Project	MPE Stage 2 Project, namely Stage 2 of the MPE Concept Approval (MP 10_0193) including construction and operation of warehousing and distribution facilities on the MPE Site within the Moorebank Precinct as approved under SSD 7628.
TLA	Total landscaping area
TSC Act	<i>Threatened Species Conservation Act 1995</i>
UDLP	Urban Design and Landscape Plan
UHI	Urban heat island
UHIMS	Urban Heat Island Mitigation Strategy
WSUD	Water sensitive urban design

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1 BACKGROUND

The Sydney Intermodal Terminal Alliance (SIMTA) received approval for the construction and operation of Stage 2 of the Moorebank Precinct East (MPE) Project (SSD 7628), which comprises the second stage of development under the MPE Concept Consent (MP10_0193).

This Urban Design and Landscape Plan (UDLP) has been developed to identify how urban design and landscape design features have been integrated into the design of the built forms and will be integrated into the remainder of the MPE Stage 2 Site.

This UDLP addresses the relevant requirements of the Project Approvals, including the Environmental Impact Statement (EIS), Response to Submissions (RtS) and Minister's Conditions of Consent (CoC), and all applicable guidelines and standards specific to the urban design and landscape design features of the Project.

1.1 Introduction

The MPE Site, including the Project Site, is located approximately 27 km south-west of the Sydney Central Business District (CBD) and approximately 26 km west of Port Botany and includes the former Defence National Storage and Distribution Centre Site. The MPE Site is situated within the Liverpool Local Government Area (LGA), in Sydney's south-west subregion, approximately 2.5 km from the Liverpool city centre.

Stage 2 of the MPE Project (the Project) involves the development of an intermodal freight facility including warehouse and distribution facilities, freight village (ancillary site and operational services), stormwater, landscaping, servicing and associated works on the eastern side of Moorebank Avenue, Moorebank.

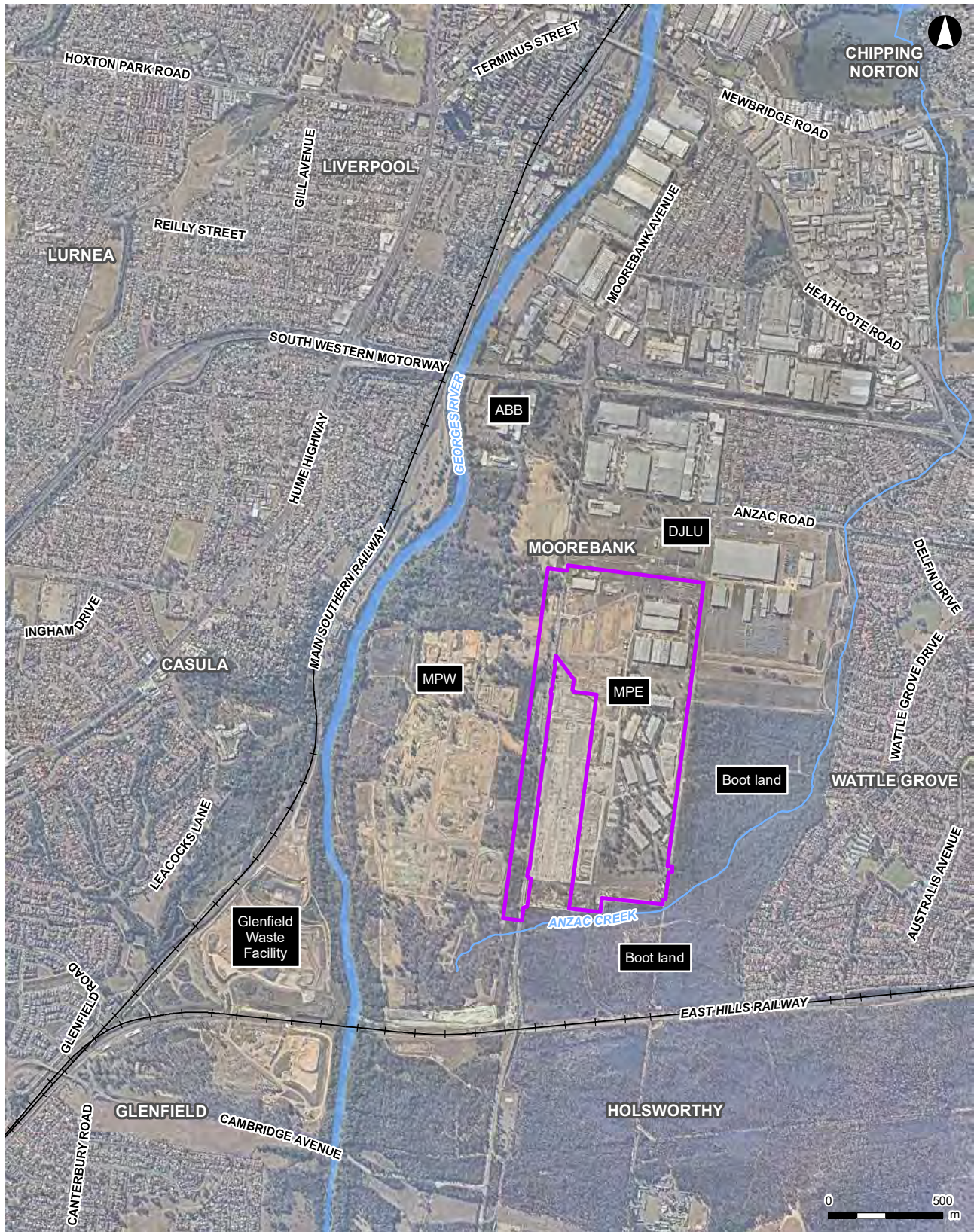
The Project involves the construction and operation of warehousing and distribution facilities on the MPE Site and upgrades to approximately 1.5 km of Moorebank Avenue from approximately 35 m south of the northern boundary of the MPE Site to approximately 185 m south of the southern MPE Site boundary.

Key components of the Project include:

- approximately 300,000 m² gross floor area (GFA) of warehousing and ancillary offices
- freight village, 8,000 m² GFA of ancillary retail, commercial and light industrial land uses
- internal road network and hardstand across the site
- ancillary supporting infrastructure within the site, including:
 - stormwater, drainage and flooding infrastructure
 - fencing, signage, lighting, remediation and landscaping
- Moorebank Avenue upgrade including:
 - raising by about 2 m and some widening
 - embankments and tie-ins to existing Moorebank Avenue road levels
 - Signalling and intersection works

The location of the Project is shown in Figure 1-1.

Urban Design and Landscape Plan



LEGEND

- MPE Stage 2 construction area
- Existing railway
- Watercourse

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 Aerial imagery supplied by nearmap (May, 2018)



Figure 1-1: Site Location

1.2 Development Consent

The Project has been assessed by the Department of Planning and Environment (DPE) (formerly Department of Planning, Industry and Environment (DPIE)) under Part 4, Division 4.1 (now Division 4.7 as of 1 March 2018) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) as State significant development (SSD). The Planning Assessment Commission (PAC) granted approval for the MPE Stage 2 Project on 31 January 2018 subject to CoC (SSD 7628). The Project has been subject to a number of modification applications, that have been approved by DPE under Section 4.55(1) of the EP&A Act:

The Project, including its potential impacts, consultation and proposed mitigation and management, is documented in the following suite of documents:

- The consolidated MPE Stage 2 (SSD 7628) development consent
- Moorebank Precinct East – Stage 2 – Environmental Impact Statement (EIS) (Arcadis Australia Pacific Pty Limited, December 2016)
- Moorebank Precinct East – Stage 2 – Response to Submissions (RtS) (Arcadis Australia Pacific Pty Limited, July 2017)
- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Approval (No. 2011/6229) granted on March 2014
- Consolidated assessment clarification responses issued on 10 November 2017.
- Moorebank Precinct East – Stage 2 – Modification 1 (SSD7628-Mod1) – EIS (Aspect Environmental Pty Limited, January 2019)
- Moorebank Precinct East – Stage 2 – Modification 1 (SSD7628-Mod1) – RtS Report (Aspect Environmental Pty Limited, April 2019)
- Moorebank Precinct East – Stage 2 – Modification 2 (SSD7628-Mod2) – EIS (Aspect Environmental Pty Limited, July 2019)
- Moorebank Precinct East – Stage 2 – Modification 2 (SSD7628-Mod2) – RtS Report (Aspect Environmental Pty Limited, September 2019)
- Moorebank Precinct East – Stage 2 – Modification 3 (SSD7628-Mod3) – EIS (Aspect Environmental Pty Limited, June 2020)
- Moorebank Precinct East – Stage 2 – Modification 3 (SSD7628-Mod3) – RtS Report (Aspect Environmental Pty Limited, August 2020)
- Moorebank Precinct East – Stage 2 – Modification 4 (SSD7628-Mod4) – Modification application (Aspect Environmental Pty Limited, October 2020)

1.3 Purpose and Application

This UDLP has been developed to address the requirements of SSD 7628 CoC B140 and B141, and final compilation of mitigation measures (FCMMs), and is based upon the Revised Landscape Design Statement and Plans prepared by accredited landscape architects to support the Moorebank Precinct East – Stage 2 Project, in accordance with the consolidated SSD 7628 development consent. This UDLP presents an integrated and consolidated urban and landscape design for the Project.

This UDLP was developed with reference to the following documents:

- Moorebank Precinct East – Post Approval, Amended Layout Plans, prepared for LOGOS (Urbis, 2022)
- Moorebank Precinct East – Amended Site and Area Plans, prepared for LOGOS (Watson Young, 2022)
- Moorebank Precinct East – Noise and Vibration Consistency Assessment - amended layout Warehouse6/7 (Renzo Tonin, 2022)
- Moorebank Precinct East – Stormwater Management Report Warehouses 6 & 7 (Costin Roe, 2022)
- Moorebank Precinct East – Transport Statement, amended layout (Ason Group, 2022)
- Moorebank Precinct East – Site and Area Plans, prepared for SIMTA (Reid Campbell, 2020)
- Moorebank Precinct East – Landscape Masterplan, prepared for SIMTA (GroundInk, 2020)
- Moorebank Precinct East – Stage 2; Moorebank Logistics Park Area 2 Plans, prepared for Qube (nettletontribe, 2020)

- Moorebank Precinct East – Stage 2 Proposal Visual Impact Assessment, prepared for SIMTA (Reid Campbell, 2019)
- Moorebank Precinct East – Stage 2; Precinct Infrastructure Works East Plans, prepared for SIMTA (Arcadis, 2019)
- Moorebank Precinct East – Stage 2; Balance of Site Stormwater Catchment Plan, prepared for Qube (Costin Roe Consulting, 2018)
- Moorebank Precinct East – Stage 2; Interim and Ultimate OSD9 & OSD10 Stormwater Management Plan (SSD 7628), prepared for Qube (Costin Roe Consulting, 2020; Rev B)
- MPE Stage 2 Environmental Control Maps – Urban Design and Landscape Plan; prepared for SIMTA (Arcadis, 2020).

This UDLP provides the overarching design principles, visions and objectives for the Project and provides detail on how these have been incorporated into the urban design and landscaping aspects of the Project. At the time of preparation of this consolidated UDLP (for the entire MPE Site), detailed design and tenancing details for Area 4 (the freight village) and Area 5 are unknown. Plans provided for these areas are therefore 'typical' and representative only and would be confirmed during the progressive development of each respective area. The representative drawings provided for these areas, within this UDLP, have been developed based on the detailed design for Areas 1 and 2, in order to maintain a homogenous strategy to Precinct landscaping and urban design.

The consolidated UDLP has been approved by the Secretary (5 February 2021), in consultation with the Government Architect NSW (GANSW). The UDLP must be implemented prior to occupation of the warehouses and freight village, unless otherwise agreed by the Secretary. The most recent, approved version of this UDLP will be implemented for the Project.

1.4 Staging of the UDLP

Delivery of this UDLP will be staged (in accordance with CoC A14 and A15) to allow for the commencement of warehouse construction.

This UDLP must be implemented prior to occupation of Warehouse 1 once approved by the Secretary in consultation with the GANSW.

The proposed staging of this UDLP is shown on Figure 1-2 and detailed within Table 1.

Table 1: Staged submission of this UDLP

Works Area	Approximate Dates Plan Submission	Operational Area	Approximate Occupation Date
Area 1	Q2 2019	Warehouse 1 including area north of freight village	Interim OC 31/01/18
Area 2	Q2 2020	Warehouse 3, 4 and 5	Warehouse 3: Interim OC 20/03/20 Warehouse 4: Interim OC 22/05/20 Warehouse 5: Q4 2020
Area 3	Q3 2022	Warehouse 6 and 7	Q2 2023
Areas 4 – 6	Q4 2022	Warehouse 2, the freight village and Moorebank Avenue upgrade are represented in this Consolidated UDLP	TBC ¹

Note:

¹ Construction and occupational timing for Areas 4 to 6 is subject to market demand and future approvals.

Urban Design and Landscape Plan



GDA94 / MGA zone 56
1:10000 at A4

LEGEND

- | | | |
|---------------------------------------|----------------------|--------------------|
| Current MPE Stage 2 construction area | UDLP Staging: Area 1 | Area 4 |
| OSD | Area 2 | Area 5 |
| Road | Area 3 | Area 6 |
| Warehouse | | Terminal hardstand |
| Watercourse | | |

Figure 1-2: UDLP Staging

LOGOS



1.4.1 Activities for the Stages

The activities associated with the stages include, but are not limited to:

- All ground preparation activities such as earthworks, services, and on-site detention construction across the warehouses (managed through the Construction Environmental Management Plan (CEMP) and sub plans)
- Construction and operation of the warehouses and freight village including:
 - construction and operation of parking facilities
 - construction and operation of internal road network and shared paths
 - installation of temporary solar lighting towers to illuminate roads and shared paths
 - landscaping
 - construction and operation of cycling and pedestrian facilities
 - installation of signage
 - construction and operation of end of trip facilities
 - construction and operation of employee outdoor meal break areas.

The activities for the stages include construction activities such as bulk earthworks, landscaping, roads, pavements and carparks, and warehouse construction and fit-out.

The tenancy of the freight village will be consistent with CoC A13, where its tenants and occupation activities will service/support the Development and the functions of the warehouses, logistics and/or the intermodal freight terminal (IMT).

1.4.2 Relationship of Stages

The UDLP will be delivered as follows:

1. The first stage of the UDLP incorporated details of site wide objectives and Area 1 plans, including Warehouse 1 and the immediate area surrounding Warehouse 1 (excluding the freight village). The Area 1 UDLP was submitted to DPE in June 2019 and approved, prior to commencement of permanent built surface works and landscaping of Area 1. This allowed the Project to commence construction of Area 1 prior to the finalisation of the UDLP design for the remainder of the Project and did not restrict or constrain delivery of a compliant final detailed design across the remainder of the MPE Stage 2 Site.

Following the approval of MPE Stage 2 MOD2 (SSD 7628 MOD2), the UDLP for Area 1 was resubmitted to DPE (31 March 2020) to update landscaped areas as a result of amendments to the design of OSD basin 9. The updated UDLP for Area 1 was approved by the Secretary on 5 June 2020, with a referral to the Department's Compliance team regarding condition B140(e)(vi). A modification application for an exemption to CoC B140(e)(vi) for Area 1 was submitted to DPE on 8 September 2020 and is currently under assessment.

2. Area 2 is the second stage of the UDLP and includes Warehouses 3, 4 and 5 and OSD 1 to which Warehouse 3 drains. It was prepared prior to commencement of landscaping of Area 2, and submitted to DPE on 14 May 2020. The UDLP site wide objectives remain unchanged from those included within the first staged submission of the UDLP (i.e. Area 1). Similar to Area 1, the submission of Area 2 documentation to DPE was undertaken prior to the finalisation of the design for the remainder of the Project, to enable construction works within Area 2 to continue, whilst not restricting or constraining delivery of a detailed design for the remainder of the site.
3. The UDLP was revised in November 2020 to address DPE/GANSW and Liverpool City Council (LCC) comments, and provided the final, consolidated UDLP for the MPE Site. The consolidated UDLP was approved by DPE on 5 February 2021. The consolidated UDLP included approved Area 1 and Area 2, as well as indicative plans for Areas 3 to 6 (i.e. the remaining stages of the MPE Site including the freight village, Moorebank Avenue and Warehouses 2, 6, 7 and 8). Preparation of a final consolidated UDLP document was in response to DPE feedback seeking increased certainty in relation to the

UDLP’s consistency with the requirements of the MPE Stage 2 consent, particularly Conditions B140 and B141. It was provided to DPE at least than one month prior to commencement of permanent built surface works and/or landscaping for that stage of development and was approved by DPE prior to commencement of permanent built surface works and/or landscaping.

The consolidated submission presented the detailed urban design and landscape design in a form consistent with the UDLP documentation and plans approved by DPE for Areas 1 and 2, as well as the design principles and objectives outlined in Section 2.8. Specific details related to each stage were included in subsections and appendices to this UDLP. The UDLP site-wide objectives remained consistent with those included within the staged and approved submissions of the UDLP (i.e. Areas 1 and 2).

An MPE Stage 2 Landscape Masterplan was provided in Appendix 0A and demonstrated the landscaping design for the entire MPE Stage 2 Site. The MPE Stage 2 Landscape Plan was scaled as large as possible to enable all aspects of the overall drawing to be contained within one page. The drawing showed the relationship of approved Areas 1 and 2 with the balance of site, demonstrating consistency in approach across the precinct in accordance with the design objectives and principles. Where final details were not yet confirmed, the urban landscape and design details for Areas 3 to 6 would be consistent with those approved for Areas 1 and 2. Site-wide typical details were provided in Appendix 0C and UDLP requirements were discussed throughout the document and the sub plans.

4. The consolidated UDLP has been updated to reflect the amended layout for Area 3, reconfiguring Warehouses 6, 7 and 8 to two warehouses (Warehouses 6 and 7). The amended consolidated UDLP includes design plans for Area 3 which are consistent with approved landscape plans for Areas 1 and 2, although may be subject to detailed design once tenancing requirements are known. This updated UDLP has been submitted to DPE for information.

Approved features identified within Areas 1 and 2, namely landscaping within on-site detention basins (OSDs), planting of trees along externally facing sections of the site, landscaping within and around car parking areas and adjacent to office areas, and pedestrian and cycling connectivity have been replicated throughout the MPE Stage 2 Project.

1.4.3 Triggers

As the consolidated UDLP was approved by DPE in February 2021, there are no additional stages of approval. Once detailed design has been finalised for built forms within Areas 4 and 5 an updated UDLP Appendix will be provided to the Department for the relevant Area.

1.5 Compliance Matrices

The Project is being delivered under Part 4, Division 4.7 (previously Division 4.1 prior to 1 March 2018) of the EP&A Act. The SSD 7628 CoC include requirements to be addressed in this plan and delivered during the Project. These requirements and how they are addressed within this UDLP is provided within Table 2.

In Table 2, Primary Conditions are specific to the development of the management plans, while Secondary Conditions are conditions which are related to the environmental aspects associated with the plan.

Table 2: Relevant SSD 7628 Conditions of Consent (CoCs)

CoC	Requirement	Document Reference	How Addressed
Primary Condition			
B140	Prior to commencement of permanent built surface works and/or landscaping, or as otherwise agreed by the Secretary, an Urban Design and Landscape Plan (UDLP) must be prepared.	This plan	This UDLP has been prepared to satisfy this condition prior to commencement of permanent built surface works and/or landscaping.

CoC	Requirement	Document Reference	How Addressed
	<p>The UDLP must be prepared by a suitably qualified and experienced person(s), in consultation with the relevant council(s).</p>	<p>Title page Section 1.6 Appendix 0F</p>	<p>This UDLP has been contributed to by architects and landscape architects, and prepared by those with environmental science and management qualifications, as identified on the title page of this UDLP.</p> <p>Stone Will Landscaping, together with SESL Australia (2020) as qualified geotechnical soil scientists, were consulted to determine appropriate soil properties for the MPE Site. Together with experienced personnel from Ground Ink, a desktop review of soil analysis provided clarification regarding natural ground physical properties to inform ameliorants to be used, bed preparation and drainage and irrigation requirements for the MPE Site.</p> <p>LCC and DPE/GANSW were consulted during the development of the consolidated UDLP. A summary of consultation undertaken is included in Section 1.6 and evidence of LCC and DPE/GANSW consultation is provided in Appendix 0F.</p>
	<p>The UDLP must be approved by the Secretary, in consultation with the NSW Government Architect.</p>	<p>Section 1.6</p>	<p>The consolidated UDLP was approved by the Secretary on 5 February 2021, in consultation with the GANSW as identified in Section 1.6.</p> <p>Subsequent revisions to this UDLP will be submitted to DPE for information.</p>
	<p>The UDLP must present an integrated urban and landscape design for the development, and must include, but not be limited to:</p>	<p>This UDLP</p>	<p>This consolidated UDLP has been prepared to present the integrated urban and landscape design for the Project. The overarching design principles and standards for the Project are presented within this UDLP.</p>
<p>(a)</p>	<p>identification of design objectives, principles and standards based on -</p> <ul style="list-style-type: none"> (i) local environmental values, (ii) urban design context, (iii) sustainable design and maintenance, (iv) community, visitor and worker safety, amenity and privacy, including 'safer by design' principles where relevant, (v) relevant design standards and guidelines, (vi) addressing the visual amenity and values of adjoining receivers, (vii) minimising and addressing the footprint of the project (including at operational facilities), and 	<p>Section 2.1 to Section 2.9</p>	<p>Section 2.1 to 2.8 describes each of the categories of CoC B140(a)(i) to (viii), which provide the basis for the design objectives, as outlined in Section 2.9. Section 2.1 to Section 2.7 presents information to identify the design objectives, principles and standards set forth in Section 2.9.</p> <p>Section 2.8 provides other urban design principles and visions. No other urban design principles were outlined for CoC B140 (a)(viii).</p>

CoC	Requirement	Document Reference	How Addressed
	(viii) the urban design principles outlined in the documents referred to in condition A2;		
(b)	landscaping and building design opportunities to mitigate the visual impacts of buildings and infrastructure particularly when viewed from Moorebank Avenue, Wattle Grove, and Casula;	Section 3 Section 4 Appendix 1 Appendix 2 Appendix 0C Appendix 0E	Section 3 and Section 4 outline landscaping and building design opportunities to mitigate the visual impacts of buildings and infrastructure from the surrounding areas including Moorebank Avenue, Wattle Grove and Casula. Appendix 1 provides views of Moorebank Avenue with the appropriate setbacks and landscaping to mitigate the visual impacts of Warehouse 1 from Moorebank Avenue. Appendix 2 (W3W4-GNK-LN-DWG-2401) provides the landscape drawings showing the visual perspective of Area 2 as viewed from the east. Landscaping mitigates the visual impact of Warehouses 3 and 4. Warehouse 5 is internally located with views to the warehouse obscured by MPE Stage 1 and Warehouses 3 and 4. Visual perspectives provided in landscape drawings for Areas 1 and 2 are representative of views to site buildings and infrastructure, when viewed from surrounding areas, for the wider MPE Site. Typical visual perspectives of the warehouses and views are provided in Appendix 0C. Appendix 0E provides the Visual Impact Assessment from the surrounding areas from Wattle Grove and Casula.
(c)	details on the location of existing vegetation and proposed landscaping (including use of endemic and advanced tree species where practicable). Details of species to be replanted/revegetated must be provided, including their appropriateness to the area and habitat for threatened species. Where feasible and reasonable, topsoil and vegetation to be removed must be reused;	Section 2.1.4 Section 4.1 Appendix 0A	Section 2.1.4 details the location of existing vegetation at the Project. Section 4.1 provides details on proposed landscaping and the appropriateness of plant species to the area and the habitat it will provide. Where feasible and reasonable, topsoil and vegetation removed will be considered for re-use for landscaping requirements wherever possible. Appendix 0A provides typical details of the plant species and palettes that will be planted across MPE.
(d)	details of pedestrian movement through the site and to surrounding areas for employees;	Section 4.4 Cycling and Pedestrian Access and Facilities Sub Plan (CPAFSP) Appendix 0A	Section 4.4 and the Cycling and Pedestrian Access and Facilities Sub Plan (CPAFSP) provide details on pedestrian movement throughout the Project Site and to surrounding areas. Appendix 0A (Masterplan) shows the site development layout plan, which includes the designed shared pathways.
(e)	incorporate the following:		

CoC	Requirement	Document Reference	How Addressed
	(i) a minimum landscaped width of 10 m within the 18 m setback from Moorebank Avenue;	Section 4.2.1 Appendix 1 Appendix 6	A minimum landscaped width of 10 m has been implemented within the 18 m setback from Moorebank Avenue, as outlined in Section 4.2 and shown in Appendix 1 (UDLA-02). Areas 2 to 5 are not adjacent to Moorebank Avenue. As shown in Appendix 6 (SSS2-RCG-AR-SKC-178), landscaping in Area 6 has been designed based on the minimum width of 10 m from Moorebank Avenue.
	(ii) the footprint of the warehouses along the eastern boundary must be reduced so that the car parking area and warehouse can be setback a minimum of 5m from the eastern internal road to provide visual screening of the building, and adequate landscape width to support canopy trees;	Section 4.2.2 Appendix 2 Appendix 3 Appendix 5	Areas 1, 4 and 6 are not adjacent to the Project's eastern boundary. Area 2, Area 3 and Area 5 lie adjacent to the eastern boundary. Appendix 2, Appendix 3 and Appendix 5 outline the setbacks to the car parking and warehouse areas from the eastern internal road, which all exceed 5 m. Setbacks are further described in Section 4.2.2.
	(iii) landscaping located around the car parking areas is to support sufficient canopy trees to provide visual screening to the warehouse buildings;	Section 4.5 Appendices 1 to 6	Section 4.5 provides details on the landscaping in car park areas. Appendix 1 outlines the canopy trees and shrubbery to be planted along Moorebank Avenue, and provides a cross section of the warehouses in relation to the vegetation screening. The purpose of the trees located in the car park is for shade and not for visual screening within Area 1. The canopy trees located along Moorebank Avenue will provide visual screening of Warehouse 1. Consistent with plans provided for Areas 1 and 2, shadow diagrams and landscaping details are provided in Appendices 1 to 6 (for each area) to demonstrate compliance with CoC visual screening requirements.
	(iv) 15% of the site landscaped at ground level, 10% of which must include soft landscaping and not include land set aside for future access ways;	Section 4.1 Appendix 0A	Appendix 0A demonstrates the landscape percentage for MPE Stage 2 as a whole exceeds this requirement. 16.9% of the total MPE Stage 2 Site is landscaped, 14.2% of which is soft landscaping (refer to sheets SSS2-RCG-AR-SKC-159 and MPE2-GNK-LN-DWG-2001).
	(v) minimum rate of 1 canopy tree per 30 m ² of landscaped area;	Section 4.1 Appendices 1 to 6 Appendix 0A Appendix 0C	As discussed in Section 4.1 there will be one canopy tree per every 30 m ² of plantable landscaped area averaged across the site, using a mix of local provenance canopy trees, refer to Appendix 0A, MPE2-GNK-LN-DWG-2000. Appendices 1 to 6 provide landscape sections demonstrating planting densities and layout.

CoC	Requirement	Document Reference	How Addressed
			Landscape typical details are provided in Appendix 0C
	(vi) a 2.5 m wide landscaped bay every 6-8 car spaces incorporating canopy trees for shade;	Section 4.5 Appendices 1 to 6	<p>Section 4.5 and Appendix 1 (UDLA-02) provide an approved alternative that includes a 2,500 m² landscaped strip to the immediate north of the car park area that incorporates low shrubs and canopy trees to provide an equivalent or greater shade benefit, without compromising required car park provisions.</p> <p>The landscaping design provided in Areas 2 to 5 (Appendices 2 to 5) adopts the required car space landscape bays requirement of a 2.5 m wide landscaped bay every 6 to 8 car spaces.</p> <p>One row of 9 car parking spaces is provided in Area 5, to meet relevant Australian standards, to accommodate warehouse capacity, and in consideration of staff and visitor parking needs. Landscaping bays are provided on average every 6 to 8 car parking spaces in Area 5. The landscaping bays on either end of the row of 9 spaces are larger than usual, and would be able to support additional canopy trees. Further, it is noted that the UDLP plans provided for Area 5 are indicative and subject to detail design.</p> <p>Area 6 comprises Moorebank Avenue and so carparking spaces are not provided.</p>
	(vii) perimeter site screening using advanced shrubs and canopy trees;	Section 3.1 Section 4.1 Appendix 0A Appendices 1 to 6	<p>Section 3.1, Section 4.1 and the associated appendices demonstrate that perimeter screening across the MPE Stage 2 Site will use shrubs and canopy trees.</p> <p>Select areas across the site boundaries will be utilised for advanced shrubs and canopy trees, similar to that which will be adopted along the north, east and west boundaries of Area 1. A combination of strategies will be used, including hydro-seed and installation of larger pot sizes to provide screening to warehouses from the surrounding areas. Typical plantings are provided in Appendix 0A.</p> <p>In Area 2, Area 3 and Area 5, the perimeter boundary of Warehouse 2, Warehouse 3, Warehouse 4, Warehouse 6 and Warehouse 7 includes a setback from the perimeter road with shrubs and canopy trees providing visual screening. Refer to Section 4.1 and Appendices 3, 4 and 5 for further details.</p> <p>Setbacks from internal roads and Moorebank Avenue shall be landscaped to screen Area 4 (Appendix 4 and Appendix 0A).</p>

CoC	Requirement	Document Reference	How Addressed
			<p>Warehouse 5 is centrally located within the site. As such, this condition is not applicable.</p> <p>Area 6 encompasses Moorebank Avenue, which shall include landscape screening on both sides (refer to Appendix 6).</p>
(f)	<p>(viii) perimeter and on-site detention and biofiltration / bio-retention basin fences higher than 1.2 m must be transparent and dark in colour but not constructed of chain wire.</p>	<p>Section 3.2.3 Section 4.7 Appendix 0C Appendices 1, 2 and 3</p>	<p>Section 3.2.3 and Section 4.7 indicates that generally perimeter and OSD fences, including for OSD 9 (Area 1) which are higher than 1.2 m will be transparent and dark in colour but will not be constructed of chain wire.</p> <p>No fencing is required for the underground tanks located at Warehouse 3 and 5. OSD 1 and OSD 2 have been designed to incorporate batters of 1V:4H, and so fences are not required for these OSDs.</p> <p>Appropriate fencing will be installed adjacent to OSD 9 and OSD 10 to ensure public safety.</p> <p>Palisade style fencing will be constructed along the perimeter boundaries of Warehouses 1, 2, 3 and 4, and the eastern boundary of Warehouses 6 and 7.</p> <p>For security and safety reasons to restrain public interaction with the container interchange (Autostrad), the 2.1m high perimeter fencing between the northern and southern boundaries of Area 3, and along the western boundary of Area 3 and the IMEX terminal area is to be constructed of chain mesh with barbed wire over, to 2.4m high.</p> <p>Typical fencing details are provided in Appendix 0C.</p>
(g)	<p>include a planting schedule including details of the soil specification and depth and irrigation systems as well as tree and shrub species, expected mature height, pot sizes and planting densities) and deep soil areas containing soil (not spoil);</p>	<p>Section 4.1 Appendices 1 to 6 Appendix 0C</p>	<p>Section 4.1 provides details of soil specification, depth and irrigation systems and deep soil areas.</p> <p>Appendix 0C details the typical planting schedule for the site including expected mature height, pot sizes and plant densities, and outlines the different soil horizons and specifications for planting.</p> <p>Relevant landscaping design details are provided in Appendices 1 to 6.</p>
			<p>Section 4.3 provides the description of retaining walls at the Project.</p> <p>Appendix 1 (UDLA-04) provides cross sectional and perspective views of the retaining wall for OSD 9.</p> <p>No landscape retaining walls are required in Areas 2 to 6.</p>

CoC	Requirement	Document Reference	How Addressed
(h)	details of the landscaped areas and solid fencing required to screen waste bin or other outside storage areas;	Section 4.7 Appendix 0C Appendices 1 to 6	Section 4.7 provides details on fencing that will be used to screen waste bin and other outside storage areas. Waste bin screening details for each warehouse are provided on the plans for each Area (Appendices 1 to 6). Typical waste screening/fencing details are provided in Appendix 0C.
(i)	graffiti management commitments and provisions;	Section 5	Section 5 provides details on provisions and commitments that will be undertaken to manage graffiti.
(j)	the sub plans identified in condition B141;	LVMSPP LSP CPAFSP EOMBASP SSP	The following documents have been completed and provided to the DPE: Landscape Vegetation Management Sub Plan (LVMSPP) Lighting Sub Plan (LSP) Cycling and Pedestrian Access and Facilities Sub Plan (CPAFSP) Employee Outdoor Meal Break Area Sub Plan (EOMBASP) Signage Sub Plan (SSP)
(k)	details of where and how recommendation from the UDLP and sub plans have been incorporated into the:	Section 2.9 (Table 9) Section 6	Table 9 in Section 2.9 lists where urban design objectives have been referenced to an appropriate figure/drawing in this UDLP. Section 6 outlines where and how the recommendations from the UDLP have been incorporated into various plans.
	(i) updated final Development Layout Plans and WSUD Plans required by conditions A22 and A23;	Section 6 Appendix 0A Appendix 0B	Details of how recommendations from this UDLP have been incorporated into the final Development Layout Plans and WSUD Plans are described in Section 6. Development Layout Plans and WSUD Plans have been included in Appendix 0A and 0B, respectively.
	(ii) updated Architectural Plans required by condition A24, including architectural elements to articulate building facades and minimise large expanses of blank walls	Section 6 Appendix 0A Appendix 0C Appendices 1 to 5	Details of how recommendations from this UDLP have been incorporated into the Architectural Plans are described in Section 6. Updated Architectural Plans have been included in Appendix 0A, and for each of the Areas 1 to 5 (Area 6 does not include any warehouses). Typical elevations, minimisation of large expanses of blank walls and building facades are provided in Appendix 0C.

CoC	Requirement	Document Reference	How Addressed
	(iii) updated OEMP required by condition C3;	Section 6	<p>The Operational Environmental Management Plan (OEMP) will be prepared prior to the commencement of operation and would consider the UDLP.</p> <p>Updates to the OEMP will be required, and will include (but may not be limited to) the following:</p> <ul style="list-style-type: none"> • Inclusion of the procedure for reporting and removal of graffiti • Management of pavement, landscaping, lighting and stormwater infrastructure • Updates to the landscaping, lighting and building design opportunities to mitigate visual impacts to sensitive receivers • Clarification of tenant and occupation activities to be undertaken within the freight village • Monitoring of light spill impacts, and updates to implementation of permanent lighting.
(l)	details of how the principles of Ecologically Sustainable Development listed at condition B143, in particular rainwater capture and reuse and energy efficiency have been incorporated into the UDLP and final Stormwater Management Plan plans required by Condition B40	Section 6	Details of how the principles of ecologically sustainable development (ESD) have been incorporated into the UDLP are described in Section 6.
(m)	details how the Heritage Interpretation Plan required by condition B101 has been incorporated into the UDLP;	Section 6	Details of the integration between the UDLP and the Heritage Interpretation Plan are described in Section 6.
(n)	details of how the UHI Mitigation Strategy required by condition B140 has been incorporated into the UDLP and final Development Layout, Stormwater Management Plan and Architectural Details;	Section 6	Details of how the <i>Urban Heat Island Mitigation Strategy</i> (UHIMS) has been incorporated into the UDLP is identified in Section 6.
(o)	details of where and how recommendations from the Flora and Fauna Management Plan for adjoining offset area (condition B108) have been incorporated into the UDLP,	Section 6	Details of the integration between the Construction Flora and Fauna Management Plan (CFFMP) and the UDLP are described in Section 6.
(p)	details of where and how recommendations from the Bushfire Management Plan (condition B144) have been incorporated into the UDLP,	Section 6	Details of the recommendations from the Bushfire Management Plan (which was included within the Operational Emergency Response Plan) and their incorporation within the UDLP are described in Section 6.
(q)	details of where and how employee facilities including but not limited to secure bicycle parking, pedestrian paths, outdoor	Section 4-4 Section 4.6	Section 4.4 describes the details of the bicycle facilities and pedestrian paths. For

CoC	Requirement	Document Reference	How Addressed
	eating areas have been incorporated into the UDLP; and	CPAFSP EOMBASP Appendix 0C	further details on the bicycle parking and pedestrian paths refer to the CPAFSP. Section 4.6 outlines the urban design and landscape aspects to be included for the outdoor meal break area. Typical employee outdoor meal break area plans and figures are provided in Appendix 0C. For further details on the outdoor eating areas refer to the EOMBASP.
(r)	evidence of consultation with the Relevant Council(s), prior to finalisation of the UDLP.	Section 1.6 Appendix 0F	A summary of consultation undertaken with LCC and GANSW is included in Section 1.6. Evidence of consultation with DPE/GANSW and LCC is included in Appendix 0F.
	The UDLP must be implemented prior to occupation of the warehouse and freight village, unless otherwise agreed by the Secretary.	Section 1.3	Unless otherwise agreed by the Secretary, this UDLP will be implemented prior to occupation of the warehouses as outlined in Section 1.3.
<i>Note:</i>	The UDLP may be submitted in parts to address the built elements of the development and landscaping aspects of the development.	Section 1.4	Section 1.4 identifies the staging of this UDLP.
Secondary Condition			
A13	Freight village tenants and occupations are restricted to those activities that provide: (a) ancillary support for the development, its tenants, worker population and visitors; (b) a nexus with activities undertaken in relation to the warehouse, logistics functions of the IMT development and/or (c) provide aligned services to the intermodal functions. Prior to the occupancy of any freight village tenancy, and every subsequent occupation of these tenancies, details of the tenant and occupation activity is to be submitted to the Secretary demonstrating that the proposed activity complies with this condition.	Section 1.4.1	Freight village tenancy will be consistent with CoC A13, where its tenants and occupation activities will service/support the Development and the functions of the warehouses, logistics and/or the IMT.
A14	With the approval of the Secretary, the Applicant may submit any strategy, plan or program required by this consent on a staged basis.	Section 1.3	The Secretary's approval for staging of this plan has been previously obtained from DPE.
A15	If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage of the development to which the strategy, plan or	Section 1.4	This UDLP will be completed in stages as described in Section 1.4. This UDLP defines the objectives and principals to be applied to the urban design and landscaping features for each Area.

CoC	Requirement	Document Reference	How Addressed
	program applies, the relationship of the stage to any future stages and the trigger for updating the strategy, plan or program		As outlined in Section 1.4.3, this UDLP will be submitted to DPE one month prior to permanent built surface works and/or landscaping of the development stage.
A22	Prior to construction, the Applicant must prepare amended Development Layout Plans and Design Plans to the satisfaction of the Secretary which achieve the improvements and revisions referred to in conditions B140 and B141, including integration of Water Sensitive Urban Design (WSUD) and landscape design.	Section 6 Appendix 0A	Details of how recommendations from this UDLP have been incorporated into the amended Development Layout Plans and Design Plans are described in Section 6. Site-wide Development Layout Plans and Design Plans are attached in Appendix 0A for approval. WSUD plans are provided in Appendix 0B.
A23	Prior to commencement of early works and fill importation, the Applicant must prepare amended WSUD plans that incorporate water sensitive urban design principles, be generally in accordance with relevant Council policies, plans and specifications, and address condition B40, to ensure that: (c) on site detention basins are visually unobtrusive, (d) that the design of the basins, and, associated setbacks and fencing, ensures public safety;	Section 3.2.3 Section 5 Section 6 Appendix 0B Stormwater Management Plan (SMP)	Section 3.2.3 provides an outline of how visual impacts of OSD basins will be managed. Section 5 provides details on the setbacks and fencing that have been incorporated into the design of OSDs to ensure public safety. Details of how the recommendations from this plan have been incorporated into the WSUD plans are described in Section 6. The most recent version of the relevant WSUD plans will be implemented; these were provided as part of the SMP – W1P, Updated SMP, the SMP – Balance of site submission, and the Stormwater Management Report for Warehouses 6 and 7, and are included in Appendix 0B.
A24	Prior to commencement of permanent built surface works and/or landscaping, the Applicant must prepare amended architectural plans that reflect updated plans required under the conditions.	Section 6 Appendix 0A	Details of how recommendations from this UDLP have been incorporated into the amended Architectural Plans are described in Section 6. The site-wide Architectural Plans are attached in Appendix 0A for approval.
B1	The Applicant must:		
	(a) prepare each plan, program and other documents in consultation with the specified stakeholders;	Section 1.6	The approved consolidated UDLP was prepared in consultation with LCC and GANSW as identified in Section 1.6.
	(b) not commence each phase of the project until the plans, programs and other documents required under this consent are approved by or, where not required to be approved, submitted to the Secretary specified within the timeframes; and	Section 1.4	Section 1.4 identifies that the UDLP will be staged.
(c) implement the most recent version of the required plans and programs	Section 1.4	Section 1.4 also confirms that this UDLP will be implemented prior to occupation of warehouses and the freight village unless otherwise agreed by the Secretary, and that	

CoC	Requirement	Document Reference	How Addressed
	approved by the Secretary for the duration of the development		the most recent version of the UDLP will be implemented.
B40	(b)(iii) ensure on site detention basins are visually unobtrusive and ensure public safety	Section 2.8 Section 3.2.3 Section 5	The design principles are outlined in Section 2.8 and includes principles for the Project to consider, including visual amenity to ensure continuity between the Project and surrounding areas. Section 3.2.3 provides details applicable to OSD basins. Section 5 provides details of signage to ensure public safety around OSD basins.
B141	The Urban Design and Landscape Plan must include the following Sub Plans:	See below	
	(a) a Landscape Vegetation Management Sub Plan	LVMSPP	The LVMSPP addresses the requirements of this condition.
	(b) a Lighting Sub Plan	LSP	The LSP addresses the requirements of this condition.
	(c) The Lighting Sub Plan		
	(d) Cycling and Pedestrian Access and Facilities Sub Plan	CPAFSP	The CPAFSP addresses the requirements of this condition
	(e) Employee Outdoor Meal Break Area Sub Plan ...	EOMBASP	The EOMBASP addresses the requirements of this condition
	(f) Signage Sub Plan	SSP	The SSP addresses the requirements of this condition.

The Final Compilation of Mitigation Measures (FCMMs) were prepared as part of the consolidated assessment clarification responses issued on 10 November 2017. A list of the FCMMs as relevant to the Project and how they have been compiled within this plan are provided in Table 3.

Table 3: Final Compilation of Mitigation Measures (FCMMs)

FCMM	Requirement	Document Reference
1E	Bicycle and end of trip facilities would be provided in accordance with the City of Sydney Section 3 – General Provisions	CPAFSP
8B	The following mitigation measures would be implemented, where reasonable and feasible, for the landscaping of the Amended Proposal:	Section 4.1 Appendix 0C (typical planting schedule)
	<ul style="list-style-type: none"> Use of native shrubs and ground covers to form a screening barrier when mature 	Appendices 1 to 6 (detailed landscape details for each Area)
	<ul style="list-style-type: none"> A landscaping corridor of screening vegetation to provide informal street character along Moorebank Avenue 	Section 3.1 Appendices 1 and 6 (Areas 1 and 6)

FCMM	Requirement	Document Reference
	<ul style="list-style-type: none"> Use of local species as understory planting to support and enhance local habitat values 	Section 4.1 Appendix 0C
	<ul style="list-style-type: none"> Use of seeds collected within the local area for planting to reinforce the genetic integrity of the region, where possible 	Section 4.1 Appendix 0C
8C	Light spill for the Amended Proposal would be designed to minimise any direct light spill and would comply with the requirements of <i>Australian Standard AS4282-1997 – Control of the Obtrusive Effects of Outdoor Lighting</i> .	LSP

The Commonwealth Mitigation Measures which are relevant to this plan are detailed in Table 4.

Table 4: Commonwealth Mitigation Measures

CMM	Requirement	Document Reference
Visual Amenity	<p>The visual amenity impact of the Principal Proposal to the nearby residential receptors is anticipated to be low, however, the visual amenity impacts would be improved through implementing the following mitigation measures:</p> <ul style="list-style-type: none"> Optimising visual buffers within the land use layout of the Principal site 	Section 3 Section 4.2 The Visual Impact Assessment is provided in Appendix 0E.
	<ul style="list-style-type: none"> Establishing high quality landscaping to reinforce the surrounding natural context and ecological qualities 	Section 4.1 Appendices 0A and 0C
	<ul style="list-style-type: none"> Installation of an 18 metre-wide screening vegetation corridor and bio-retention swale along Moorebank Avenue, which will combine a selection of native tree species with dense tree canopy and low screen planting 	Section 4.2 Appendices 0A and 0C Appendix 6
	<ul style="list-style-type: none"> Punctuation of nodal points along Moorebank Avenue with appropriate landscaping 	Section 3.1 Appendix 1 Appendix 6
	<ul style="list-style-type: none"> Installation of a 'boundary treatment' or 'buffer zone' along the other site boundaries (from Moorebank Avenue), comprising of existing local species endemic to the area and providing an essential scale of planting to complement the built form, including: 	Section 3.1 Appendix 0A Appendix 0C Appendices 1 to 6
	a) a southern boundary landscape corridor (between 10 and 20 metres wide) and bio-retention basin	This is applicable to Area 3. See Section 3.1 and Appendix 3
	b) an eastern boundary buffer zone of 13.5 metres comprising a 2.5 metre landscape corridor, six metre internal light vehicle access road and five metre wide bio-retention swale	Not applicable to Areas 1, 4 or 6. Area 2 includes a 5 m landscape buffer and internal light and heavy vehicle access road. Area 3 includes a 6 m landscape setback area

CMM	Requirement	Document Reference
		<p>from the internal road and a 19 m wide car parking area buffer to the warehouse buildings.</p> <p>Stormwater detention in Area 2 comprises two underground tanks and OSD 1, which negates the need for a drainage swale (Appendix 2).</p> <p>Area 3 includes OSD 2, which negates the need for a drainage swale (Appendix 3).</p> <p>Area 5 is buffered from the east by an internal road and OSD 1.</p> <p>Refer to Appendices 2, 3 and 5.</p>
	(c) tall (20 metres at maturity) trees planted along the cleared railway alignment, interspersed with medium trees.	Not applicable to Areas 1 to 6.
Hydrology	Rainwater tanks will be installed to collect roof water from the warehouses on the SIMTA site, and will be used for non-potable water demands such as toilet flushing and outdoor use	<p>Section 4.1</p> <p>Appendix 0B</p> <p>Site plans for Areas 1 to 5 (Appendices 1 to 5)</p> <p>Not applicable to Area 6</p>

The Revised Statement of Commitments (RSoC) includes the most recent compilation of SIMTA commitments to mitigate the environmental impacts, monitor the environmental performance and/or achieve a positive environmentally sustainable outcome. These RSoCs (June 2017) were presented in the Moorebank Precinct East – Concept Plan Modification 2 Response to Submissions. The Visual Amenity Impact Assessment undertaken as part of the MPE Stage 2 EIS and RtS addressed the assessment requirements of the RSoC. This UDLP demonstrates how the RSoCs will be implemented for the Project and are identified in Table 5.

Table 5: Revised Statement of Commitments (RSoC)

RSoC	Requirement	Document Reference
Visual and Urban Design	<p>The Proponent commits to the preparation and submission of a Landscape Management Plan with the detailed applications for the three major stages of the development that address each objective and design principles contained within the Urban Design and Landscape report and the following mitigation measures:</p> <ul style="list-style-type: none"> high quality landscaping throughout the site, which will reinforce and extend the surrounding natural context and ecological qualities into the site 	<p>Section 4.1</p> <p>Appendices 0A and 0C</p> <p>Appendices 1 to 6 for detailed landscaping of each area.</p>
	<ul style="list-style-type: none"> inclusion of an 18 metre wide corridor of screening vegetation and a bio-retention swale along the Moorebank Avenue frontage, which will utilise a selection of native tree species with dense tree canopy and low screen planting 	<p>Section 4.2</p> <p>Appendix 0A</p> <p>Appendix 0B</p>

RSoC	Requirement	Document Reference
		Appendix 6
	<ul style="list-style-type: none"> landscape punctuation of nodal points along Moorebank Avenue 	Section 3.1 Appendix 1 Appendix 6
	<ul style="list-style-type: none"> a 'boundary treatment' or 'buffer zone' along the other site boundaries, utilising existing local species in the area and providing an essential scale of planting to complement the built form, including: <ul style="list-style-type: none"> southern boundary: combination of 10 metre and 20 metre wide landscape corridors and a bio-retention swale adjacent to the warehouse and distribution facilities and Intermodal Terminal 	Section 3.1 Appendix 0A Appendices 1 to 6 This is applicable to Area 3. See Section 3.1 and Appendix 3
	<ul style="list-style-type: none"> eastern boundary: total buffer zone of 13.5 metres consisting of 2.5 metre landscape corridor, a 6 metre internal light vehicle access road and a five metre wide bio-retention swale 	Not applicable to Areas 1, 4 and 6 Area 2 and Area 3 includes a landscape and car parking buffer between the internal light and heavy vehicle access road and warehousing. Stormwater detention in Area 2 comprises two underground tanks and OSD 1, which negates the need for a drainage swale (Appendix 2). Area 3 includes OSD 2, which negates the need for a drainage swale (Appendix 3). A minimal eastern boundary applies to Area 5, which is buffered by landscaping and an internal road.
	The Proponent will use lighting which is in accordance with <i>Australian Standard AS4282-1997 "Control of Obtrusive Effect of Outdoor Lighting"</i> . The height of permanent light poles will be a maximum of 40 metres and would be reduced in height, where possible, to minimise potential light spill while maintaining appropriate safety standards.	LSP

1.6 Consultation

This UDLP and sub plans have been prepared in consultation with LCC and DPE/GANSW. Table 6, Table 7 and Table 8 outline the consultation that has been undertaken. Supplementary information to support the consultation undertaken is included in Appendix 0F, and within the appendices of each sub plan.

Table 6: Area 1 Consultation Summary

Agency	Date	Person Contacted	Comment	Status
LCC	14/08/2018	LCC Representative	Draft UDLP and UDLP sub plans emailed for review and comment	Closed
	14/08/2018	LCC Representative	Email requesting a meeting	Closed
	17/09/2018	LCC Representative	Email requesting a phone call	Closed
	21/09/2018	SIMTA	Email requesting a phone call regarding clarification on CoC A22, A23 and A24, as they relate to the above management plans	Closed
	21/09/2018	SIMTA	Email confirming A22, A23 and A24, and cancelling requested meeting	Closed
	02/10/2018	LCC Representative	Email requesting an update on progress of review	Closed
	03/10/2018	SIMTA	Email with reviewed plan, requesting feedback before finalisation	Closed
	26/11/2018	LCC Representative	Email with updated UDLP and response to comments	Closed
	30/11/2018	SIMTA	Email confirming UDLP has been received for review	Closed
	23/01/2019	LCC Representative	Email requesting an update on progress of review	Closed
	23/01/2019	SIMTA	Email confirming review to occur within next week	Closed
	19/02/2019	SIMTA	Meeting request for 05/03/2019	Closed
	04/03/2019	LCC Representative	Meeting minutes sent via email	Closed
	06/03/2019	LCC Representative	Email with meeting minutes from 05/03/2019 meeting	Closed
GANSW	28/08/2018	DPE (on behalf of GANSW)	Presentation on UHIMS and UDLP at DPE office	Closed
	05/09/2018	DPE (on behalf of GANSW)	Draft plan emailed for review and comment	Closed
	18/10/2018	SIMTA	Email with table of review comments	Closed
	Various	Various	DPE fortnightly meetings and emails discussing comments	Closed
	6/12/2018	DPE (on behalf of GANSW)	Email with updated drawings and figures	Closed
	22/01/2019	DPE (on behalf of GANSW)	Presentation on UDLP	Closed
	18/04/2019	DPE (on behalf of GANSW)	Email with updated UDLP and UDLP sub plans	Closed

Agency	Date	Person Contacted	Comment	Status
	31/03/2020	DPE (on behalf of GANSW)	Updated UDLP provided to DPE as a result of amendments to the design of OSD 9 and resulting revisions to landscape design	Closed
	5/06/2020	DPE (on behalf of GANSW)	DPE – approval of updated Area 1 UDLP, excluding SSD 7628 CoC B140(e)(vi)	Closed
	20/08/2020	DPE (on behalf of GANSW)	Show Cause letter received by Qube regarding compliance with SSD 7628 CoC B140(e)(vi) for Area 1	Closed
	8/09/2020	DPE (on behalf of GANSW)	Aspect lodged SSD 7628 MOD 4 application with DPE regarding Area 1 exception to CoC B140(e)(vi) – car parking landscaping	Waiting response from DPE/GANSW
	28/10/2020	DPE (on behalf of GANSW)	Teams meeting with DPE to discuss SSD 7628 MOD 4 application	Closed

Table 7: Area 2 Consultation Summary

Agency	Date	Person Contacted	Comment	Status
LCC	7/02/2020	LCC Representative	Email from Aspect Environmental (Aspect) requesting meeting	Closed
	13/02/2020	LCC Representative	LCC phone call requesting a meeting	Closed
	13/02/2020	LCC Representative	LCC provided UDLP documentation, advised that a meeting may not be required	Closed
	3/03/2020	LCC Representative	Aspect hand-delivered USB containing Area 2 UDLP documents to LCC. Phone call from LCC to confirm receipt of the USB, and to clarify request for comments in relation to Area 2	Closed
	4/03/2020	LCC Representative	Phone call and follow up email requesting an update on progress of review	Closed
	10/03/2020	LCC Representative	Phone call requesting an update on progress of review, meeting suggested	Closed
	18/03/2020	LCC Representative	Phone call requesting an update on progress of review	Closed
	25/03/2020	LCC Representative	Phone call requesting an update on progress of review	Closed
	1/04/2020	LCC Representative	Phone call requesting an update on progress of review	Closed
	2/04/2020	LCC Representative	Council contacted Aspect to advise progress of review	Closed

Agency	Date	Person Contacted	Comment	Status
	16/04/2020	LCC Representative	LCC provided compliance matrix table to Aspect regarding concerns and comments	Closed
	1/05/2020	LCC Representative	Aspect provided response to LCC comments and concerns	Closed
	13/05/2020	LCC Representative	LCC provided email confirmation that Council has assessed all conditions in relation to Area 2 and deem the UDLP to be satisfactory	Closed
GANSW	6/08/2018	DPE (on behalf of GANSW)	Meeting with DPE, Aspect, Arcadis and Tactical Group to discuss issues to progress MPE UDLP	Closed
	27/02/2020	DPE (on behalf of GANSW)	Meeting between DPE and Aspect to update UDLP progress	Closed
	14/05/2020	DPE (on behalf of GANSW)	UDLP documentation for Area 2 provided to DPE (on behalf of GANSW)	Closed
	19/06/2020	DPE (on behalf of GANSW)	DPE sent RFI providing GANSW/DPE comments for LVMSPP and LSP for Area 2.	Closed
	25/06/2020	DPE (on behalf of GANSW)	DPE sent RFI providing GANSW/DPE comments for SSP for Area 2.	Closed
	7/07/2020	DPE (on behalf of GANSW)	Email requesting an update on provision of remainder of comments; advised by DPE that comments forthcoming	Closed
	9/07/2020	DPE (on behalf of GANSW)	DPE sent RFI providing GANSW/DPE comments for UDLP, CPAFSP and EOMBASP for Area 2.	Closed
	31/07/2020	DPE (on behalf of GANSW)	Updated LVMSPP, SSP and LSP and responses to DPE/GANSW comments re Area 2 UDLP provided to DPE	Closed
	3/08/2020	DPE (on behalf of GANSW)	Follow up phone call to confirm receipt of updated UDLP documentation	Closed
	3/08/2020	DPE (on behalf of GANSW)	Additional access to UDLP documentation requested by DPE and provided by Aspect, for DPE staff	Closed
	12/08/2020	DPE (on behalf of GANSW)	UDLP, EOMBA and CPAFSP documentation for Area 2 updated and response provided to address DPE/GANSW comments	Closed
	4/09/2020	DPE (on behalf of GANSW)	DPE – approval of updated Area 1 and Area 2 UDLP, excluding SSD 7628 CoC B140(e)(vi) for Area 1	Closed

Table 8: Consolidated UDLP/Area 3 – Area 6 Consultation Summary

Agency	Date	Person Contacted	Comment	Status
LCC	26/06/2020	LCC Representative	Consolidated UDLP documentation for MPE Site provided to LCC for review and comment in relation to Areas 3 to 6	Closed
	6/07/2020	LCC Representative	LCC email confirming that Consolidated UDLP documentation received for comment	Closed
	7/07/2020	LCC Representative	Follow up email and phone call, to brief on Consolidated UDLP documentation	Closed
	6/08/2020	LCC Representative	Email requesting an update on progress of review	Closed
	7/08/2020	LCC Representative	Email confirmation from LCC that review is in progress	Closed
	27/08/2020	LCC Representative	Phone call and email requesting an update on progress of review	Closed
	9/09/2020	LCC Representative	Phone call and email requesting an update on progress of review	Closed
	11/09/2020	LCC Representative	Email confirmation from LCC that review is in progress	Closed
	28/09/2020	LCC Representative	LCC provided comments regarding the Consolidated UDLP	Closed
	16/10/2020	LCC Representative	Aspect provided response to Council comments	Closed
GANSW	26/06/2020	DPE (on behalf of GANSW)	Consolidated UDLP documentation for MPE Site provided to DPE (on behalf of GANSW)	Closed
	30/06/2020	DPE (on behalf of GANSW)	DPE confirmed by email that Consolidated UDLP documentation received for consultation and comment	Closed
	7/07/2020	DPE (on behalf of GANSW)	As requested by DPE, link to documentation sent to GANSW independent reviewer	Closed
	8/07/2020	DPE (on behalf of GANSW)	Follow up phone call and briefing with GANSW independent reviewer	Closed
	8/10/2020	DPE (on behalf of GANSW)	Phone call and email requesting an update on progress of review; DPE advised review process underway	Closed
	21/10/2020	DPE (on behalf of GANSW)	Phone call and email requesting an update on progress of review	Closed
	21/10/2020	DPE (on behalf of GANSW)	Comments regarding Consolidated UDLP documentation provided by DPE/GANSW	Closed



Agency	Date	Person Contacted	Comment	Status
	4/11/2020	DPE (on behalf of GANSW)	Updated Consolidated UDLP documentation provided to DPE/GANSW for assessment	Closed
	5/02/2021	DPE (on behalf of GANSW)	Consolidated UDLP approved	Closed
	13/10/2022 (TBC)	DPE (on behalf of GANSW)	Consolidated UDLP, amended for the revised layout of Area 3, provided to DPE (on behalf of GANSW) for information	TBD

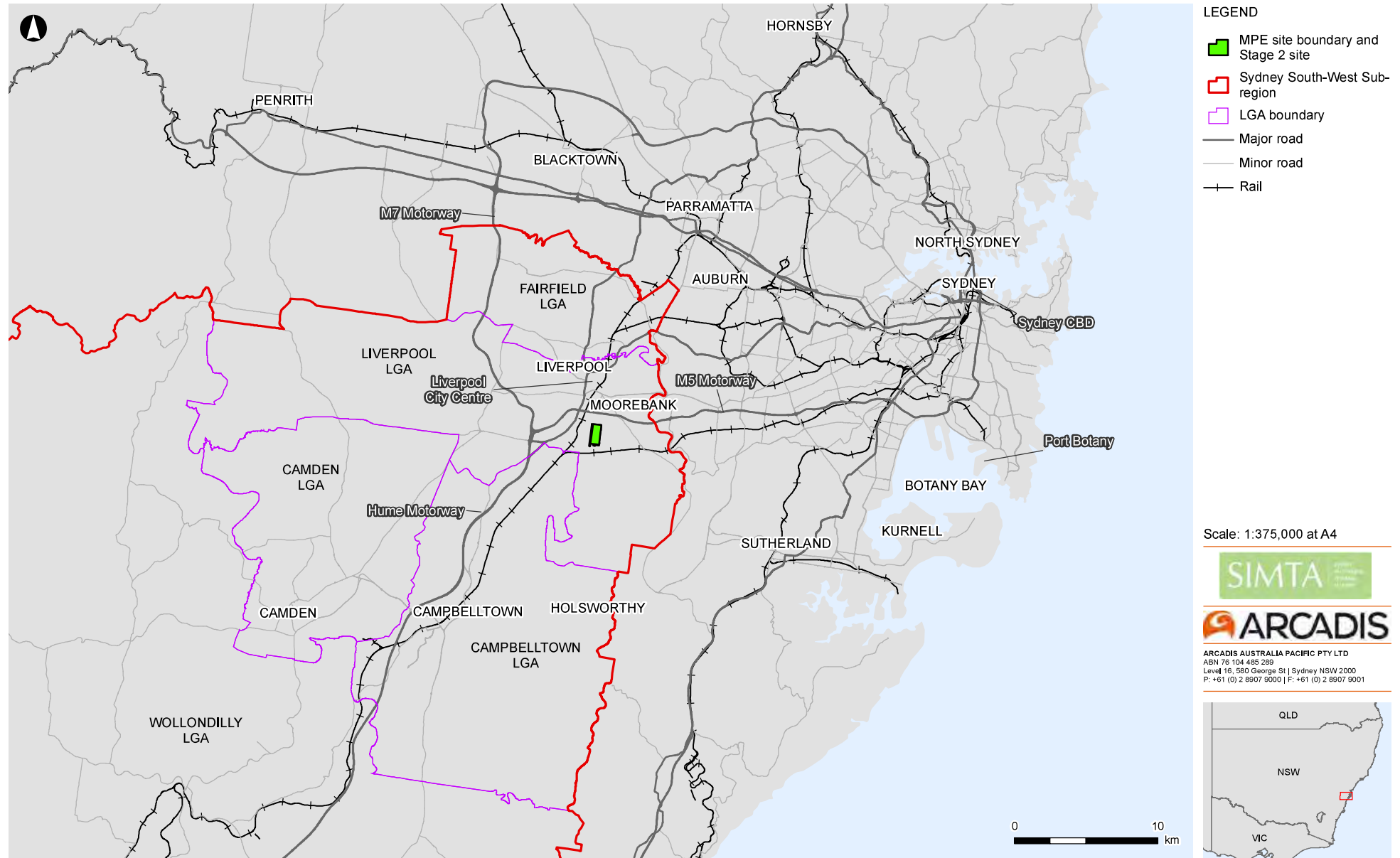
2 DESIGN, OBJECTIVES, PRINCIPLES AND STANDARDS

2.1 Regional and Local Environmental Values

The MPE Site, including the Project Site, is located approximately 27 km south-west of the Sydney central business district (CBD) and approximately 26 km west of Port Botany. The MPE Site is situated within the Liverpool local government area (LGA), in Sydney's south-west sub-region, approximately 2.5 km from the Liverpool city centre. The MPE Site is located approximately 800 m south of the intersection of Moorebank Avenue and the M5 Motorway. The regional context of the Project is shown in Figure 2-1.

The Project Site is located approximately 800 m south of the Moorebank Avenue/M5 Motorway interchange and one kilometre to the east of the Southern Sydney Freight Line (SSFL) providing convenient access to and from the site for rail freight (via a dedicated freight rail line) and for trucks via the Sydney Motorway network. The local context of the Project is shown Figure 2-2.

Urban Design and Landscape Plan



- LEGEND**
- MPE site boundary and Stage 2 site
 - Sydney South-West Sub-region
 - LGA boundary
 - Major road
 - Minor road
 - +— Rail

Scale: 1:375,000 at A4

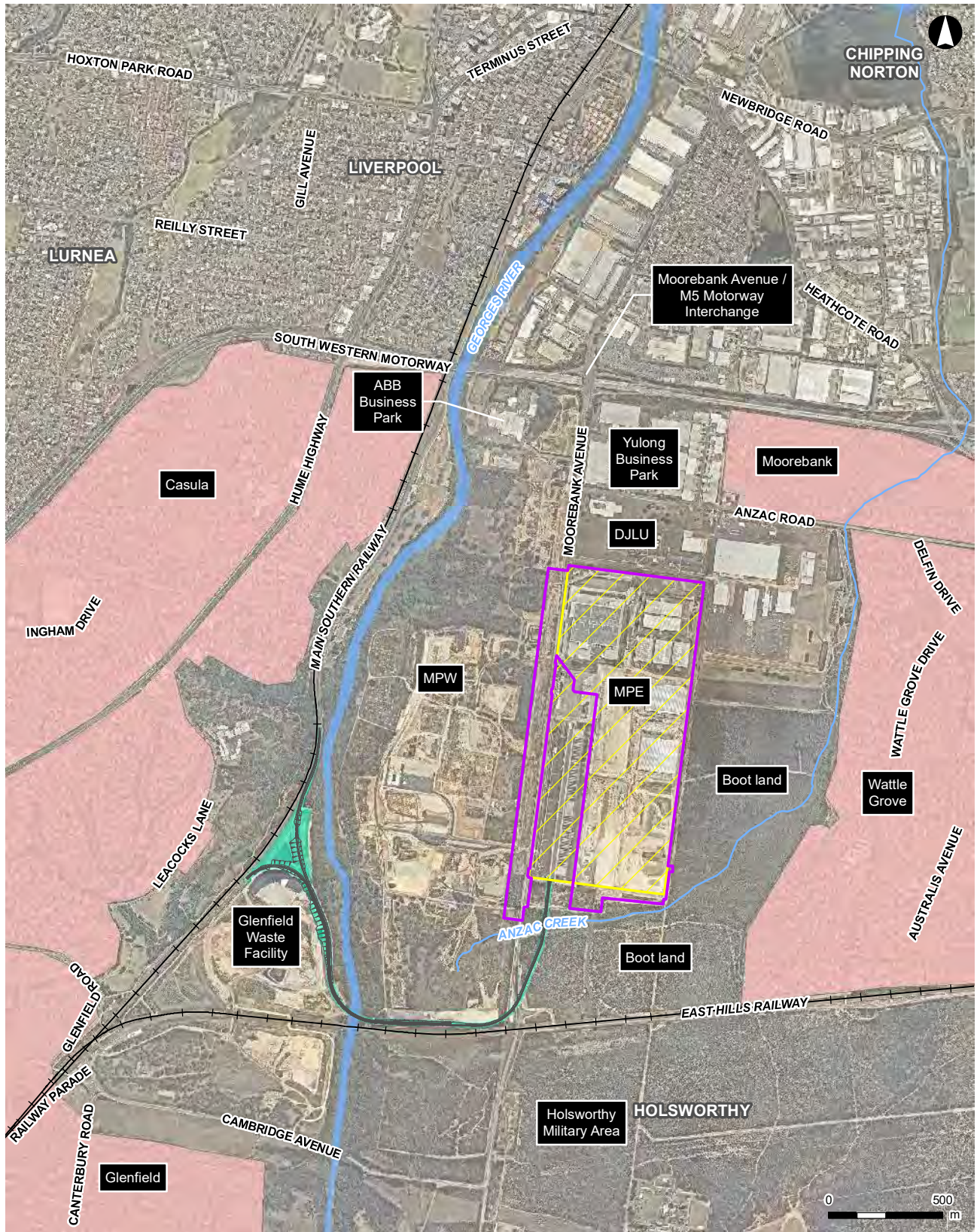
SIMTA

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Figure 2-1: Regional Context of the Project

Urban Design and Landscape Plan



LEGEND

- MPE Stage 2 construction area
- MPE site
- Residential Areas
- Rail Link (including 20m width and variable buffer)
- Rail link (Stage 1 Proposal)
- Existing railway
- Watercourse

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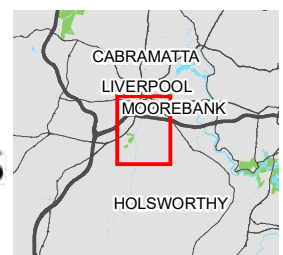


Figure 2-2: Local Context of the Project

2.1.1 Topography and Hydrology

The most prominent natural features in close proximity to the Project are Anzac Creek external to the southern boundary, Georges River to the west of the site and a portion of bushland to the southern and eastern site boundaries.

The topography of the site is generally flat with relative levels (RLs) ranging between 14 m and 16 m Australian Height Datum (AHD). Along the eastern boundary of the Project boundary, the land rises from approximately RL 14 m AHD at each end to a localised peak of RL 22 m AHD about midway along the length of the Project.

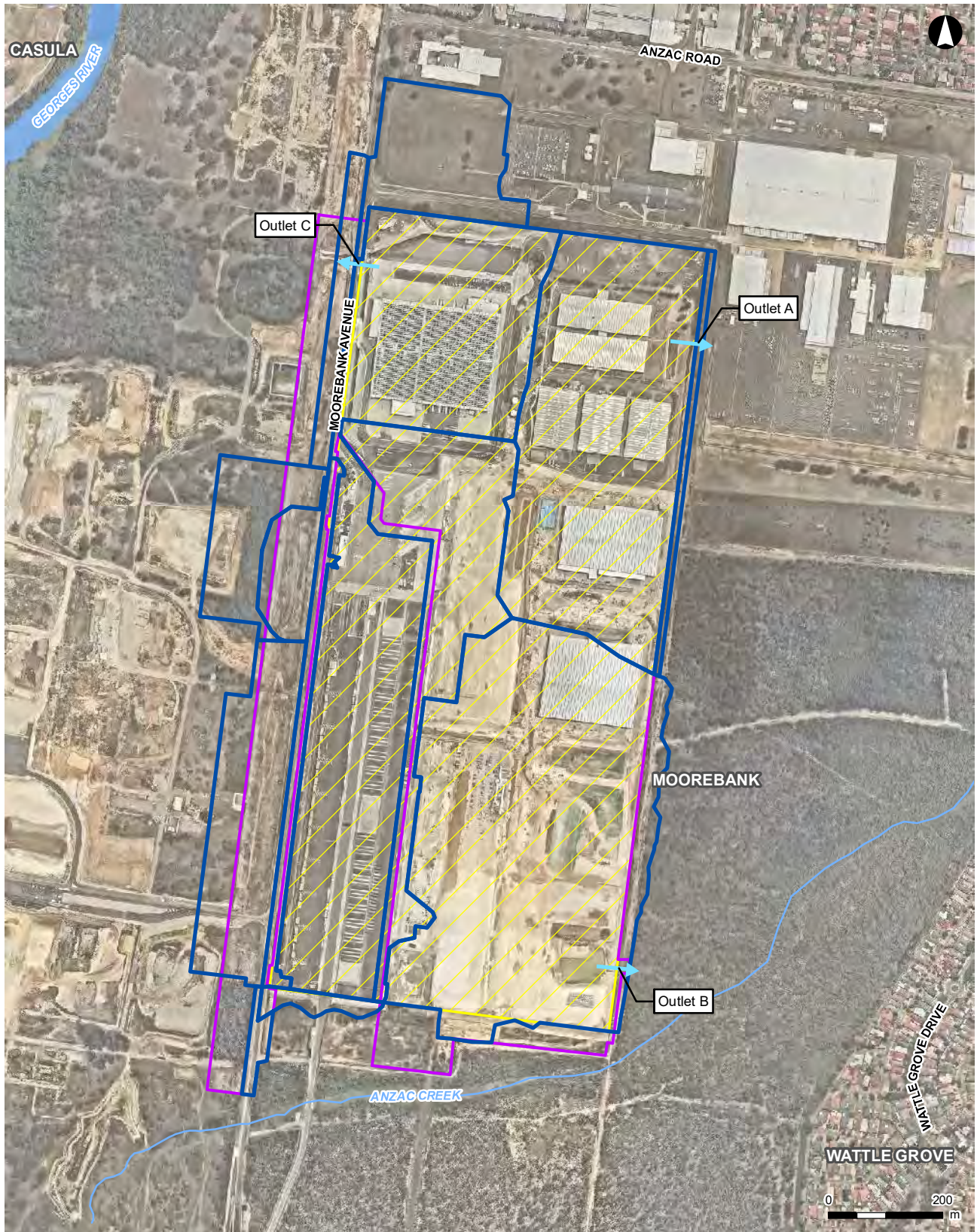
The Project Site has been subjected to substantial development, and considerable changes have been made to the natural landscape. Consequently, the site is underlain with a mixture of residual soils and fill materials, with undisturbed areas retaining some residual topsoil.

The Project falls within the Georges River estuary catchment with Botany Bay as the downstream receiving environment. The existing catchments of the Project Site is shown in Figure 2-3. Hydrology in the local area surrounding the Project Site is characterised by the Georges River approximately 800 m west and Anzac Creek (a tributary to the Georges River) 80 m from the southern boundary.

Anzac Creek is a small tributary of the Georges River. A flood study of the area (BMT WBM, 2008) indicated that the Anzac Creek catchment covers an area of 10.6 km² and is 4 km long, forming in the MPW Site. Anzac Creek flows to the north past the suburb of Wattle Grove and underneath the M5 Motorway at the intersection with Heathcote Road. From there, the creek continues northwards, through Ernie Smith Recreation Reserve, fringed by the Moorebank Industrial Area to the west and the suburb of Moorebank to the east, under Newbridge Road and through McMillan Park, into Lake Moore at Chipping Norton. Anzac Creek discharges to the Georges River approximately 2.5 km to the north-east of the Project and is classified as a first order stream, having a defined channel where water flows intermittently.

The Georges River enters the Liverpool LGA from the south on the western side of the Defence lands at Holsworthy and flows to the north, meeting with Glenfield Creek at Casula. The river then continues to flow north past the Liverpool city centre, under Newbridge Road, past Lighthorse Park and over the Liverpool Weir. Downstream of the Liverpool Weir, the Georges River becomes brackish and is subject to tidal influences. The existing drainage network is shown in Figure 2-4.

Urban Design and Landscape Plan



LEGEND

- MPE Stage 2 construction area
- MPE site
- Existing catchment
- Watercourse

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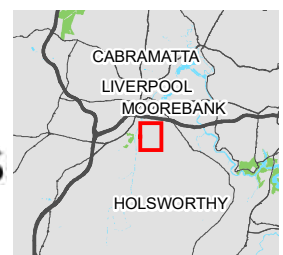


Figure 2-3: Existing Catchments of the MPE Site

Urban Design and Landscape Plan



LEGEND

- MPE Stage 2 construction area
- MPE site
- Existing stormwater infrastructure
- Watercourse

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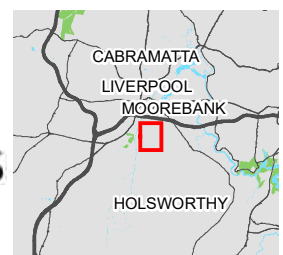


Figure 2-4: Existing Drainage Network

2.1.1.1 Ground Conditions

The Penrith Soils Landscape Map (Soil Conservation Service of NSW, 1989) indicates the soils within the Project are of the Berkshire Park Group. These are soils generally produced upon alluvial landscapes, commonly on elevated Tertiary terraces. They are comprised of shallow clayey sand soils, with frequent ironstone nodules.

A topsoil layer is present across most areas of the Project where pavements or structures are not present. The topsoil has a recorded thickness varying from 0 m to 0.4 m but was typically 0.1 m thick. The topsoil is typically underlain by fill but in some locations, has developed naturally above alluvial or residual soils. The majority of fill encountered beneath the topsoil was granular and was typically a dry, silty sand. The fill layer typically extends to depths of 0.3 m to 0.5 m.

Where investigations extended beneath the Unit 1 fills, older alluvial soils were typically encountered. At the northern and southern extent of the site, the thickness of alluvium was approximately 20 m with a maximum depth of up to 23 m. The depth of alluvium recorded reduced to approximately 5 m within the central portion of the site and less than 1 m thick at the eastern fringe.

2.1.2 Surrounding Land Use

Land surrounding the Project comprises of:

- the MPW Site, formerly the School of Military Engineering, on the western side of Moorebank Avenue directly adjacent to the MPE Site (subject to the MPW Concept Approval)
- the Holsworthy Military Reserve, to the south of the MPE Site on the southern side of the East Hills Rail Corridor, which is owned and operated by Sydney Trains
- residual Commonwealth Land (known as Boot Land), to the east of the MPE Site between the site boundary and the Wattle Grove residential area.

Glenfield Waste Services, south-west of the Project is proposing to develop a Materials Recycling Facility on land owned by the Glenfield Waste Services Group within the boundary of the current landfill site at Glenfield, to the south east of the site.

The area south and east of the Project consists of biodiversity offset area known as the Boot Land. The 'Southern Boot Land', includes an existing rail spur within heavily vegetated remnant bushland.

A number of residential suburbs are located in proximity to the Project, including:

- Wattle Grove, located approximately 360 m to the north-east
- Moorebank, located approximately 1300 m to the north
- Casula, located approximately 760 m to the west
- Glenfield, located approximately to the 1540 m to the south-west.

The Project is located near a number of significant industrial areas including Moorebank and Warwick Farm to the north, Chipping Norton to the north-east, Prestons to the west and Glenfield and Ingleburn to the south-west. The industrial area at Moorebank is the closest industrial precinct to the Project, comprising around 200 ha of industrial development, the majority of which is located to the north of the M5 and between Newbridge Road, the Georges River and Anzac Creek. The Moorebank Industrial Area supports a range of industrial and commercial uses, including freight and logistics, heavy and light manufacturing, offices and business park developments including the Goodman M5 Business Park.

2.1.3 Transport Network

The Project is located approximately 2.5 km south of the Liverpool city centre, and 800 m south of the intersection of Moorebank Avenue and the M5 Motorway. The M5 Motorway provides the main road link between the MPE Site and the key employment and industrial areas within Sydney's west and south-western subregions, the Sydney orbital network and the national road network. The M5 connects to the M7 Motorway and Hume Highway to the west, providing access to the greater metropolitan region and NSW road network. The SSFL is 1 km to the south providing strategic access to and from the site for rail freight (via a dedicated freight rail line) and for trucks via the Sydney Motorway Network.

Traffic circulation throughout the Project will be through a combination of internal roads, service roads and internal transfer roads. The internal road network within the Project Site will:

- enable the efficient movement of vehicles throughout the Project and the dispatch of freight from the warehouses
- facilitate the transport of containers between the Stage 1 IMT (rail terminal) facility and the warehouse and distribution facilities within the Project.

2.1.4 Existing Vegetation

Existing landscape and vegetation known as the 'Cumberland Plain Woodland' runs along approximately one half of the eastern boundary and full length of the southern boundary of the site, forming a physical barrier to surrounding areas. This bushland is primarily regenerated vegetation. The density of the bushland provides significant screening to much of the south and east of the site from surrounding areas.

Based on the results of the field assessment reported in the *Biodiversity Assessment Report* (Arcadis 2017), the vegetation within the Project consists almost entirely of planted trees with a mown or managed understory, which did not meet the criteria for any threatened ecological communities.

The planted tree species were typical of cultivated eucalypts that are commonly found as mature street trees in suburban Sydney, with *Eucalyptus microcorys* (Tallowwood), *E. saligna* (Sydney Blue Gum), *Corymbia maculate* (Spotted Gum) and *C. citriodora* (Lemon-scented Gum) frequently recorded.

The ground layer of the non-paved areas of the Project consisted of mown grass lawns, dominated by *Cynodon dactylon* (Couch), *Pennisetum clandenstinum* (Kikuyu) and other exotic grass species; some native grasses including *Paspalidium distans*, *Austrodanthonia sp.* (Wallaby Grass) and *Eragrostis leptostachya* (Paddock Lovegrass) were observed in some locations, as well as some small native herbs.

A network of drainage channels is located in the southern portion of the Project Site, within areas of tree plantings, and tree and shrub regeneration. The drainage channels support a mixture of native, nonlocal native and exotic trees and shrubs including *Eucalyptus saligna*, *E. tereticornis* (Forest Red Gum), *Corymbia maculate*, *Melaleuca quinquenervia* (Broad-leaved Paperbark), *Casuarina glauca* (Swamp Oak) and *Eucalyptus parramattensis* (Parramatta Red Gum).

Appendix 0D provides the Environmental Control Maps which outline the vegetation communities and threatened flora species throughout the Project Site.

2.1.5 Other

For additional information on other site context aspects, refer to the following sections in the MPE Stage 2 EIS:

- Section 14 – Hazards and Risks
- Section 16 and 17 – Indigenous Heritage and Non-Indigenous Heritage
- Section 18 and Appendix V – Greenhouse Gas and Climate Change Risk
- Appendix F – Utilities and Servicing Strategy.

2.2 Urban Design Context

The sections below describe the potential impacts and mitigation measures associated with various aspects of the Project's regional and local site context, which have been assessed in the EIS and RtS.

2.2.1 Visual Impacts

The construction phase of the Project includes a number of temporary structures, including ancillary facilities, offices and equipment, which will have short term and temporary impacts on the surrounding streetscape. These temporary structures are likely to be visible from areas such as Moorebank Avenue, the nearby passenger rail lines and potentially nearby residential areas of Casula and Wattle Grove. Any visual impacts resulting from the Project's construction phases will be localised and temporary in nature. Notwithstanding this,

a number of actions will be considered during the construction of the Project to further reduce the visual impacts on the surrounding area.

The Project will generally be in keeping with the existing character of the area. Some relatively high and/or bulky structures/equipment may increase the visibility of the Project beyond current levels, with some limited and highly localised visual impacts. Potential views will occur along viewing corridors created by Moorebank Avenue and where topography provides some elevation above potential obstructions to views, such as from Casula to the west.

Overall, the Project is consistent with the surrounding land uses and any impacts will be effectively minimised through the use of landscaping and urban design and so the maximum anticipated visual impact at any view point will be moderate. The final landscape and built form treatments will result in an improvement in the visual amenity of the entire site and will increase the current level of screening to the site. Urban design and planning principles presented in this plan will assist with the breakdown of the bulk and scale of the development.

2.2.2 Transport Network

According to the Operational Traffic and Transport Impact Assessment (OTTIA), road network improvements are required to ensure that satisfactory intersection performance could be achieved, based on no-worsening of the performance of the study intersections both with and without the Project.

The assessment concluded that the Project would result in only marginal traffic impacts to the surrounding road network and the addition of Project traffic did not trigger any intersection upgrade requirements. However, to continue to provide access for the Project and maintain continuity of local traffic network operations after the opening of the Project, road network improvements will be implemented to mitigate cumulative operational impacts at key intersection within the study area, to mitigate potential traffic and access impacts as a result of the Project and to cater for background traffic growth. Refer to the OTTIA for further information on the anticipated traffic impact generated by the Project on the road network.

To accommodate pedestrian and cyclist access through the Precinct, a shared path would be provided on the western side of Moorebank Avenue. Pedestrian and cyclist crossing facilities would be provided at intersections along the Moorebank Avenue upgrade. Pedestrian and cycling provisions within the MPE Stage 2 Site would also be provided for employees. Refer to the CPAFSP for information on the safe and efficient cycle and pedestrian paths for the Precinct.

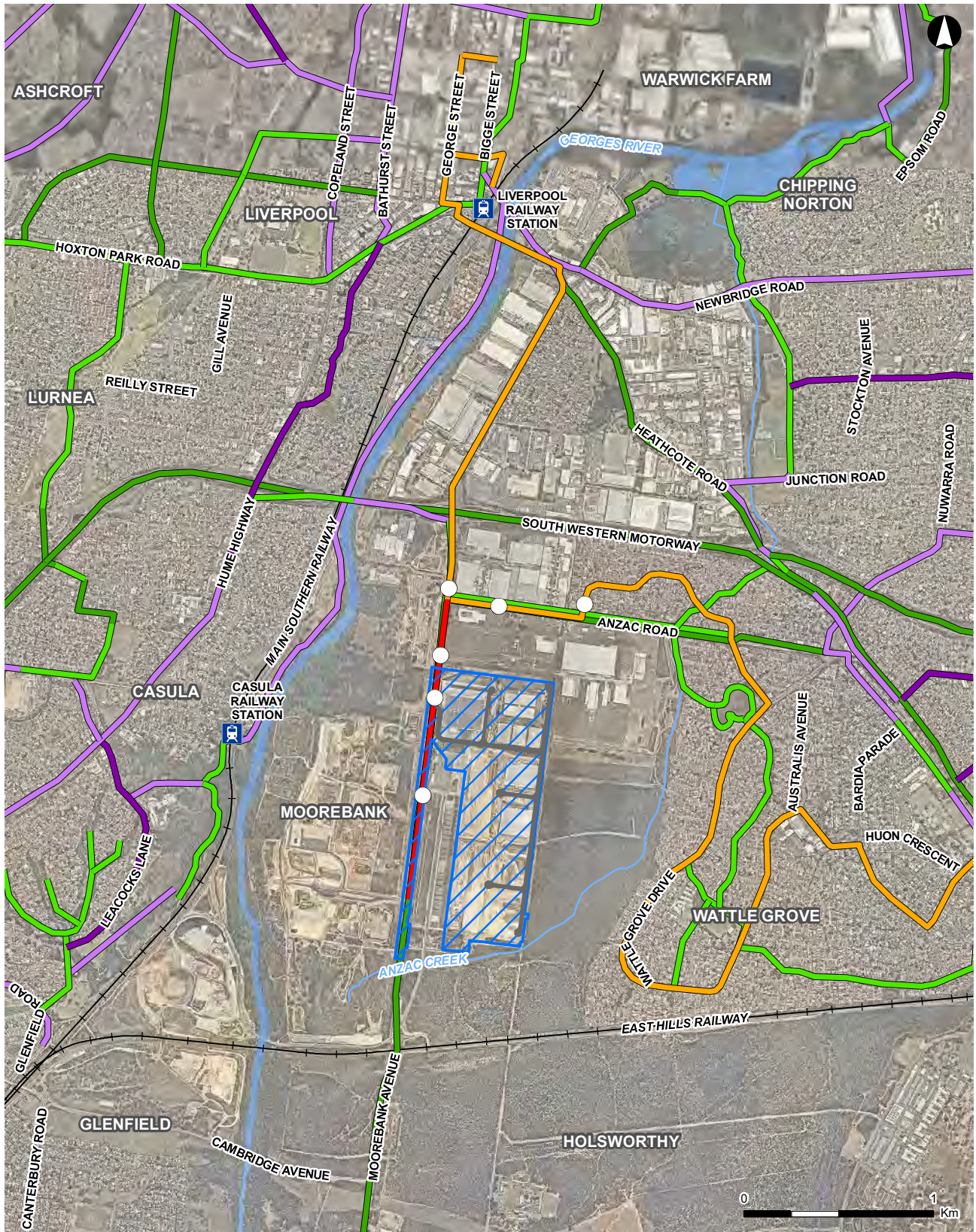
The heavy vehicle movement plan is shown in Figure 2-5 and the local public transport and pedestrian/cycleway network is shown in Figure 2-6.

Urban Design and Landscape Plan



Figure 2-5: Vehicle Movement Plan

Urban Design and Landscape Plan



LEGEND

- | | | |
|------------------------------|----------------------------|-------------------|
| MPE Stage 2 operational area | Liverpool Bike Plan (2009) | Existing bus stop |
| Internal road | Existing off road cycleway | Rail station |
| Bus Route 901 | Existing on road cycleway | Existing railway |
| Limited service bus route | Proposed off road cycleway | Watercourse |
| | Proposed on road cycleway | |

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Figure 2-6: Local Public Transport and Pedestrian / Cycleway Network

2.2.3 Stormwater Management

Construction of the Project will require vegetation clearing and bulk earthworks which have the potential to lead to erosion and generate sediment laden runoff into the Georges River or Anzac Creek, and subsequent impacts on water quality. The Construction Soil and Water Management Plan (CSWMP) and Construction Erosion and Sediment Control Plan (CESCP) for MPE Stage 2 have been prepared in accordance with the principles and requirements of *Managing Urban Stormwater: Soils and construction Volume 1* (Landcom, 2004) (the 'Blue Book'). The CSWMP and CESCP will be implemented during construction and would include sediment basins positioned generally along the northern, southern and western boundaries of the Project, enabling discharge to Anzac Creek and the Georges River.

Development of the Project will result in changes to the Project's Site catchment boundaries during operations. The Project will also generate increased surface water and pollutant loads as a result of the additional impervious surfaces on the site. OSDs in the form of sediment basins, outlet channels and WSUD elements will be sized to provide adequate system capacities and mitigate potential adverse flood impacts and increases in stormwater discharge from the site that may otherwise result from the Project. WSUD measures, including gross pollutant traps and rain gardens, will be designed to ensure the quality of stormwater leaving the Project site would be of equivalent quality or an improvement to the existing conditions. WSUD plans for the site are provided in Appendix 0B.

Refer to the Stormwater Management Plan (SMP) for additional information on the overview of the stormwater management strategy of the Project.

2.2.4 Vegetation

The Project will have minimal impact on threatened flora species listed under the *Threatened Species Conservation Act 1995* (TSC Act) and *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Populations of several threatened plant species have been identified in the Boot Land, to the east and south of the Project. Potential habitat for these species in the Project is poor quality, and subject to fragmentation and/or edge effects.

The clearing of vegetation will result in the loss or relocation of specific fauna habitat components, including live trees, tree hollows, foraging resources, ground layer habitats such as ground timber and well-developed leaf litter. These resources offer sheltering, foraging, nesting and roosting habitat to a variety of fauna, including threatened fauna, occurring within the locality. The Project will also require removal of hollow-bearing trees.

Overall, the Project is in keeping with the surrounding land uses and any impacts will be effectively minimised. Management actions prescribed in the CFFMP aim to avoid and minimise impacts on biodiversity. Some direct impacts are unavoidable impacts, and the loss of threatened flora species and threatened ecological communities will be offset in accordance with a Biodiversity Offset Strategy. Landscaping will also be integrated throughout the Project to improve the visual amenity of the Project and increase the current level of screening of the site.

2.3 Sustainable Design and Maintenance

Ecologically sustainable development (ESD) principles will be incorporated into all facets of the Project where practical and possible, including but not limited to the below:

- passive solar design
- use of renewable energy sources (i.e. solar panels)
- cross ventilation
- selection of material with lower energy manufacturing requirements
- use of locally sourced materials to reduce impacts associated with transport (refer to Figure 2-7 for the locally used spoil sources)
- rainwater capture and reuse (i.e. rainwater reuse tanks)
- water efficient fixtures and fittings

- waste minimisation and recycling.

Refer to Section 6 for further detail on the integration of ESD principles into this UDLP. In addition, the people and places principles in the Australian Urban Design Protocol (AUDP) are also incorporated into this UDLP and include the following:

People

- comfortable
- vibrant
- safe
- walkable

Places

- enhancing
- connected
- diverse
- enduring.

Urban Design and Landscape Plan

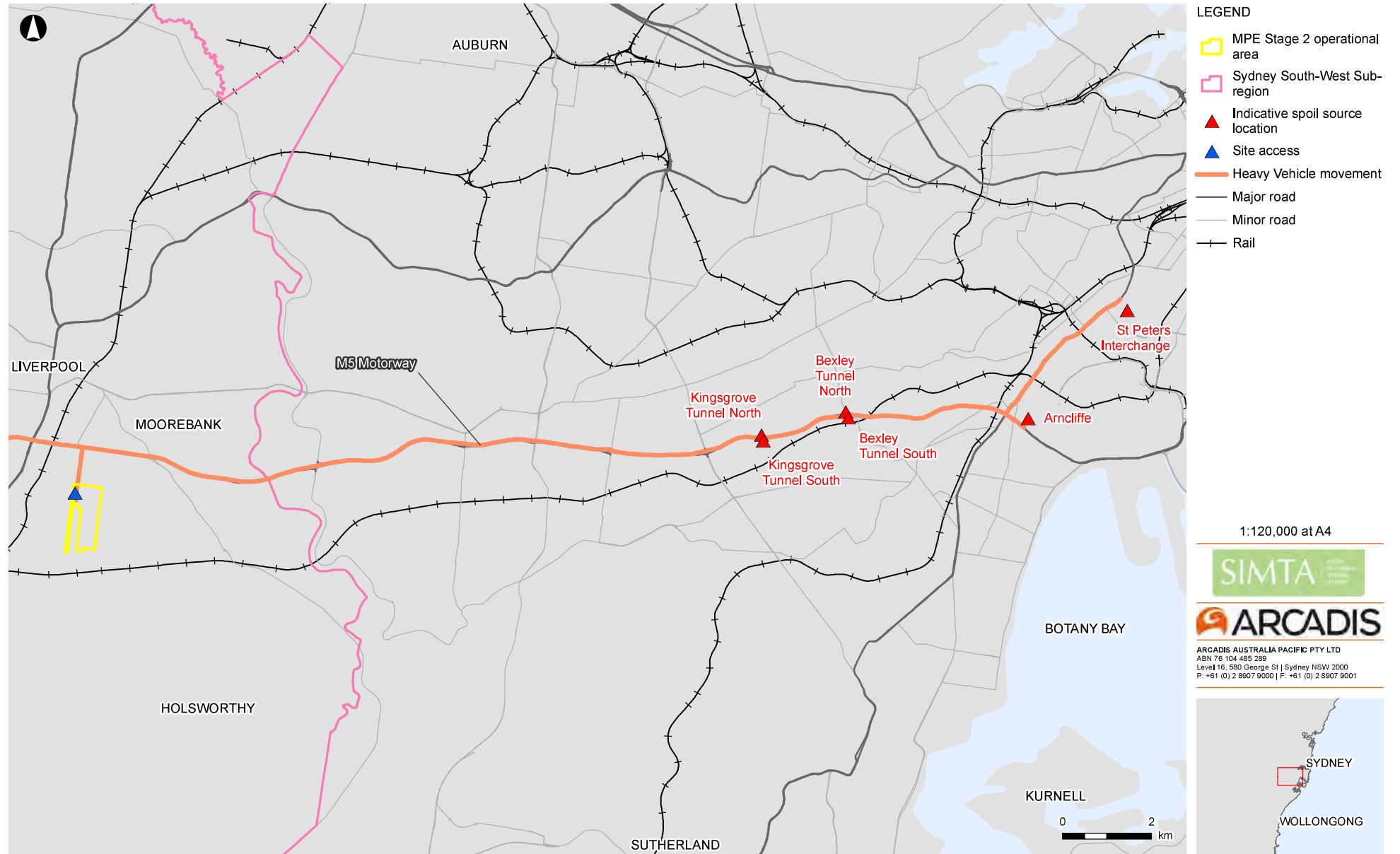


Figure 2-7: Heavy Vehicle Movement Plan (Indicative Spoil Sources)

2.4 Safer by Design Principles

Safer by design principles will be incorporated into all facets of the Project where practical and possible, including but not limited to:

- crime Prevention through Environmental Design (CPTED)
- space/activity management
- access control
- suitably lit and positioned public areas
- fencing
- surveillance including controlled circuit television (CCTV) security and telecommunications systems.

Refer to Section 5 for further detail on safety and security for the Project.

2.5 Relevant Design Standards and Guidelines

Relevant design standards and guidelines for this UDLP include, but are not limited to the following (refer to Table 7):

- Liverpool Development Control Plan (DCP) 2008
- Green Building Council of Australia (GBCA) Green Star Rating
- Clean Energy Finance Corporation sustainability initiatives
- *AS4282-1997 – Control of the Obtrusive Effects of Outdoor Lighting*
- Guidelines under section 79C of the *Environmental Planning and Assessment Act 1979* (Department of Urban Affairs and Planning 2001)
- *State Environmental Planning Policy (SEPP) 64 – Advertising and Signage*
- AUDP principles.

2.5.1 Green Star Initiatives

The Urban Heat Island Mitigation Strategy (Arcadis, 2019) prepared for MPE Stage 2 aims to provide sustainability considerations to influence the amount of anthropogenic heat released into the atmosphere from the Project. The Urban Heat Island Mitigation Strategy has indicated that each of the warehouse buildings will be designed to achieve a minimum 4 star Green Star GBCA rating for design and as-built. Meeting this accreditation will decrease the demand for heating and cooling of the warehouses.

Initiatives of the project design and construction which will contribute to the 4 star Green Star rating will include:

- use of materials that are recycled or considered of high environmental sustainability standard which will be encouraged to be used where practical and possible
- selection of cool building materials, finishes and colours for the Project site which will contribute to mitigation of the urban heat island effect. Materials of high albedo will be encouraged to be used in the development of the warehouses.
- energy efficiency of the building which will be achieved through the use of LED lighting and provision of translucent sheeting (cool roofs) to allow for natural lighting
- use of energy efficient LED lighting for shared paths
- selection of operational machinery should preference machinery with electric engines over combustible engines.
- landscaping comprising 15% vegetation and 10% landscaping across the site, and one canopy tree every 30 m². Landscaping elements will be incorporated within car parking areas and provision of canopy trees throughout the perimeter of the site.
- green space elements including garden beds, planter boxes, canopy trees and other vegetation

- installation of solar panels
- use of underground rainwater reuse tanks
- incorporation of bioretention structures, OSDs and gross pollutant traps as part of the stormwater management controls
- bicycle parking facilities, to facilitate and encourage personal transport activities where possible
- large awning roof over receiving and/or loading docks
- pavement types (concrete and asphalt, and permeable pavements) to decrease reflection of solar radiation
- building layout design, to minimise and manage site surface areas to achieve a reduction in canopy temperature across the site.

2.6 Visual Amenity and Values for Adjoining Receivers

The landscape and built form treatments will provide visual amenity to the Project Site and increase the current level of screening of the Project.

Refer to Section 3 of this UDLP for incorporation of visual amenity and values for adjoining receivers through the use of landscaping and building design. Table 8 also outlines further detail on how the objectives have been incorporated to provide visual amenity and values for adjoining receivers.

2.7 Project Footprint Area

The Project footprint area has been designed to be as minimal as possible and is situated within the area as identified within the RtS.

Refer to Table 9 for further detail on objectives for minimising and addressing the footprint of the Project.

2.8 Urban Design Principles

The urban design principles and overall Project vision have been formed around a set of core values and the AUDP principles, derived from Sections 2.1 to 2.7 presented above, which can be summarised as:

- **Responsive:** The design will be both responsive and sympathetic to the form, colours and textures of the natural and cultural character of the existing landscape. The Project will integrate with and improve the existing site character to form a high performance and quality urban landscape feature.
- **Community:** While the Project will have limited access to the general public, the Project will include a provision for suitable and sufficient amenity which may be accessible by both the occupants and the public (albeit predominantly indirectly). This improved local amenity will incorporate landscaping, open spaces for employees, water sensitive urban design and environmental features, creating a 'sense of place' and conveying a comfortable feeling and sense of community.
- **Considerate:** Landscape and urban treatments will be considerate of the need to provide visual and acoustic shielding in the form of vegetation, landform and structures. A positive visual, environmental and management relationship with adjoining lands will be reinforced.
- **Connectivity:** A suite of design instruments will connect the various MPE Site functions, including well defined landscaping, entry statements, internal pedestrian walkways, newly constructed landforms and streetscape elements, signage, street furniture and other built elements.
- **Identity:** The urban design and landscape form will express the character of the Project and communicate a strong and unique identity that complements the surrounding land uses.
- **Adaptability:** A high quality urban design standard will be adopted which is both adaptable and flexible in each key component, including the warehousing, freight village and road upgrades to enable longevity, maintained value and ability to suit the needs of future generations, for its stakeholders, occupants and the community.
- **Sustainability:** ESD principles will be incorporated into all facets of the Project where practical and possible. WSUD will be integrated into the built and landscaped elements of the Project to maintain site water quality and quantity outcomes. On-site collection and re-use of stormwater and recycled water will be considered where reasonable and feasible and be consistent with the Stormwater Management Plan.

- **Movement:** The urban design will support an internal vehicular and pedestrian traffic network that will be both safe and efficient and may incorporate an integrated public or on-site transport system as well as pedestrian and cycle connections throughout the Project and to surrounding areas.
- **Visually Appealing:** The urban design will be visually appealing to the public and surrounding areas to ensure continuity between the Project and surrounding areas.

2.9 Urban Design Objectives

Table 9 provides a summary of the urban design objectives and the applicable standards that have been adopted for the Project which have been derived from CoC B140(a). These objectives and targets were developed in consultation with technical specialists based on collective industry experience and best practice.

Table 9: Urban Design Objectives

CoC	Aspect	Objectives	Document Reference	Standards
B140(a)(i)	Local environmental values	<ul style="list-style-type: none"> • preferential use of endemic plant species • ensure the underlying natural landscape character permeates throughout the Project • preserve the natural 'random' character of the existing landscape setting • create a relationship to the broader environment • connectivity to habitat to promote ecological health • promote a high standard of water management 	<ul style="list-style-type: none"> • Section 3 • Section 4 • Appendix 0A • Appendix 0C • Appendices 1 to 6 (specific landscaping details for each Area) 	<ul style="list-style-type: none"> • Liverpool DCP 2008 • Liverpool City Council's recommended plant list
B140(a)(ii)	Urban design context	<ul style="list-style-type: none"> • create a distinctive and attractive natural environment within the context of an industrial complex • provide a positive visual, environmental and long term management relationship with adjoining lands and existing developments • maintain landscape values and be sensitive to the existing environmental values of the site and surrounding area • visually and physically connect with the existing landscape and natural vegetation adjacent to the Project • support an internal vehicular and pedestrian traffic network that will be both safe and efficient 	<ul style="list-style-type: none"> • Section 2.2 • Section 3 • Section 4 • Appendix 0A • Appendix 0C • Appendices 1 to 6 (specific landscaping design details for each Area) 	<ul style="list-style-type: none"> • MPE Concept Plan Approval (MP10_0193) • Liverpool DCP 2008

CoC	Aspect	Objectives	Document Reference	Standards
B140(a)(iii)	Sustainable design and maintenance	<ul style="list-style-type: none"> ensure high standards of ecologically / environmentally sustainable design and maintenance are integrated into the Project promote energy efficiency through building siting, orientation and envelope achieving Clean Energy Finance Corporation mandated conditions implementation of the Infrastructure Sustainability Rating Tool 	<ul style="list-style-type: none"> Section 2.3 Section 6 Appendix 0A Appendix 0C Appendix 1 – 6 (specific landscaping design details for each Area) 	<ul style="list-style-type: none"> Infrastructure Sustainability Council of Australia <i>IS Technical Manual Version 1.2</i> GBCA Green Star Rating Clean Energy Finance Corporation sustainability initiatives.
B140(a)(iv)	Community, visitor and worker safety, amenity and privacy, including 'safer by design' principles where relevant	<ul style="list-style-type: none"> consider CPTED, wherever possible provide an aesthetically pleasing and safe environment for workers and visitors alike ensure signage promotes and enhances safety, security and efficient way-finding for pedestrians, cyclists and vehicles at all hours of operation promote appropriate lighting and security systems design to ensure that all employment areas are safe and secure at all hours of operation as well as out of hours 	<ul style="list-style-type: none"> Section 5 Section 6 CPAFSP EOMBASP LSP 	<ul style="list-style-type: none"> Crime prevention and the assessment of development applications guidelines under Section 79C of the <i>Environmental Planning and Assessment Act 1979</i> (Department of Urban Affairs and Planning, 2001) AS 4282-1997 – <i>Control of the Obtrusive Effects of Outdoor Lighting</i> SEPP 64 – Advertising and Signage.
B140(a)(vi)	Addressing the visual amenity and values of adjoining receivers	<ul style="list-style-type: none"> ensure sufficient visual relief is achieved in façade design and elemental articulation where there is significant visual exposure from adjoining sites and the public domain promote integration of the Project with surrounding land uses and minimise the visual impact associated with the Project ensure appropriate mitigation measures are implemented to reduce the visual impact of the Project on surrounding sensitive receivers 	<ul style="list-style-type: none"> Section 3 Appendix 0E – Visual Impact Assessment 	<ul style="list-style-type: none"> Visual impact assessment criteria (as per Section 15 of MPE Stage 2 EIS).
B140(a)(vii)	Minimising and addressing the footprint of the project	<ul style="list-style-type: none"> meet sustainability requirements of the Project 	<ul style="list-style-type: none"> Section 2.7 Section 4 	<ul style="list-style-type: none"> Infrastructure Sustainability Council of Australia <i>IS Technical Manual Version 1.2</i>

CoC	Aspect	Objectives	Document Reference	Standards
	(including at operational facilities)	<ul style="list-style-type: none"> • footprint area to be as minimal as possible and within approved area • increase amount of landscaping on the Project. 		<ul style="list-style-type: none"> • Clean Energy Finance Corporation sustainability initiatives • CoCs

3 MANAGEMENT OF VISUAL IMPACTS

The Visual Impact Assessment (VIA) provided in Appendix 0E identifies the existing viewpoint and potential visual impacts for different viewpoints before and after the development including the proposed landscaping when viewed from Wattle Grove and Casula. The views have been assessed as having low visual sensitivity due to the locality being within an established industrial precinct and the generally short exposure time. Moorebank Avenue road-users will be subject to prominent views of the site and warehouses adjacent to Moorebank Avenue, as shown in Appendix 1.

3.1 Management through Landscaping

In accordance with CoC B140(b), measures to reduce the visual impact of the Project primarily comprise of screen planting in key areas and visual buffers to produce a high-quality landscape that reinforces and extends the surrounding natural content and ecological qualities. Use of a range of proposed species will enable a diversified mixture of plantings to articulate the random natural character of the existing landscape setting. Punctuation of nodal points along Moorebank Avenue with appropriate landscaping will also be implemented.

A “boundary treatment” and “buffer zone” will incorporate a landscape treatment consistent with existing local species in the area and provide an essential schedule of planting to complement the Project’s built-form and screen potential views from residents of Wattle Grove. Further screening will be provided by security fencing that traverses the main public interface and all site perimeter boundaries.

The planting will create a natural feeling through landscape zones and mixed understory planting consisting of native shrubs and ground cover to form a barrier when mature which will mitigate views from surrounding areas, in conjunction with the existing tree planting (where retained) along Moorebank Avenue, and proposed screening and feature walls. It is noted that the eastern boundary of the site abuts the Boot Land, an area reserved for biodiversity offset consisting of native vegetation (refer to Section 2.1.4).

3.1.1 Area 1

Sensitive residential and recreational receiver views of Warehouse 1 from the west (i.e. Carrol Park and Casula) will be screened primarily by existing vegetation and the MPW Site, such that only the tops of warehouse buildings, light poles and some operational equipment of the Project will be visible.

Perimeter site screening using advanced shrubs and canopy trees for Area 1 will be focussed along the western and northern boundaries. This will provide visual relief to users of Moorebank Avenue to the west and the Defence Joint Logistics Unit (DJLU) to the north as well as views from Casula to the west of the Project. The northern boundary for Area 1 is directly north of the freight village (Area 4).

Planting will comprise of mixed tree planting, as discussed in Section 4.1 and shown in Appendix 0C (planting schedule and typical landscape sections). Examples of trees to be considered along the northern and western boundaries of Area 1 include: *Acacia decurrens*, *Eucalyptus ampifolia* and *Melaleuca linariifolia*. Examples of shrubs to be considered along the northern and western boundaries of Area 1 include: *Bursaria spinosa*, *Crowea saligna* and *Philotheca buxifolia*.

Appendix 1 (Area 1 Masterplan) outlines the canopy trees and shrubbery to be planted near the multi-tenant user road. On the east side of the road, *Eucalyptus sideroxylon* and *Acacia sp.* with mixed native planting e.g. *Dianella sp.*, *Lomandra sp.* and *Myoporum sp.* will be planted. On the west side of the multi-tenant user road, *Eucalyptus sideroxylon* will be planted with mixed native planting e.g. *Acacia sp.*, *Philotheca sp.* and *Lomandra sp.* The mature heights of up to 25 m of the canopy trees will provide visual screening of the warehouse. Refer to Appendix 0C for the typical plant schedule which outlines the mature tree height of the proposed plants located along the multi-tenant user road.

3.1.2 Area 2

Area 2 is abutted by the Import Export (IMEX) terminal to the west, and other warehouses within the MPE Site to the north (Warehouse 2 – Area 5) and south (Warehouses 6 and 7 – Area 3). As such, no additional screening considerations are required for Area 2 to the north, south and west. The land directly to east of Area 2 consists of established bushland vegetation within the Boot Land biodiversity offset area which affords ample

screening to mitigate visual impacts to Wattle Grove. In addition to the native bushland, in accordance with CoC B140(b), landscaping adjacent to Warehouse 3 and 4 along the eastern perimeter road of the MPE Site has been designed to minimise any visual impacts. Landscaping will include a composition of groundcovers, shrubs and canopy trees which, when mature, will obscure the warehouse buildings and provide substantial mitigation of visual impacts to receivers east of the site. Refer to Appendix 2 for detailed landscape visuals designs for Area 2.

The species composition of the landscaped plantings includes a range of *Eucalyptus*, *Allocasuarina* and *Melaleuca* trees, *Acacia* and *Callistemon* shrubs, and groundcovers such as *Lomandra longifolia*, Kangaroo grass and Wallaby Grass. These species and a range of others have been selected in the planting palette to reflect the ecological communities of the surrounding bushland. The mature heights of the canopy trees will range from 6 m to at least 18 m and provide visual screening of the warehousing. Refer to Appendix 0C for the typical plant schedule which outlines the mature tree height of the proposed plants located along the eastern perimeter road.

3.1.3 Area 3

Similar to Area 2, Area 3 is bounded by the IMEX terminal to the west and warehousing within Area 2 (Warehouses 3, 4 and 5) to the north. No additional screening considerations are required for Area 3 to the north and west. The land directly to east and south of Area 3 is within the Boot Land biodiversity offset area which, as discussed in Section 3.1.2, provides significant screening of the development from eastern and southern receivers.

In accordance with CoC B140(b), landscaping adjacent to Warehouses 6 and 7 along the eastern perimeter road of the MPE Site has been designed to complement the adjacent native bushland and further enhance amenity and minimise any visual impacts. Landscaping design and species composition will be consistent with that of Area 2 (see Appendix 0C for typical landscape planting schedule and details).

The southern extent of Area 3 includes OSD 2 which will be bordered by a landscaped buffer area. Landscaping in this location shall further screen views of the site from the south.

Landscaping designs for Area 3 are provided in Appendix 3, although final designs may be subject to future tenanting requirements of warehouses.

3.1.4 Area 4

Area 4 is located within the northern portion of Area 1 and encompasses the freight village. It is generally bounded by Moorebank Avenue to the west, the northern portion of Area 1 and the DJLU to the north, Area 5 to the east and the southern half of Area 1 to the south. Vegetation screening provided along the northern and western boundary for Area 1 will subsequently also provide considerable screening for Area 4. Additionally, landscaping along the pedestrian pathway to the north of the freight village will screen this area from view.

In accordance with CoC B140(b), landscaping shall be designed to complement the nearby native bushland and further minimise any visual impacts. Landscaping design and species composition will be consistent with the remainder of the site (see Appendix 0C for typical landscape planting schedule and details).

Landscaping designs for Area 4 are provided in Appendix 4. These are subject to detailed design and future tenanting requirements of the freight village.

3.1.5 Area 5

Area 5 is located in the north eastern corner of the MPE Site and includes Warehouse 2. It is bounded by Area 1 (including Area 4) to the west, Area 2 to the south, and the DJLU to the north. No additional screening considerations are required for Area 5 to the west and south given these boundaries abut other warehouses, although additional canopy planting is proposed in the south-eastern portion of Area 5. To the east of Area 5 is OSD 1 (also part of Area 2) – which includes perimeter landscape planting – and so no additional screening for Area 5 to the east is required.

Perimeter site screening using advanced shrubs and canopy trees for Area 5 will be focussed along the northern boundary to provide visual relief to the DJLU. Planting densities and species compositions have been

designed to be consistent and form a continuous buffer strip with Area 1. Appendix 0C provides typical planting schedules and landscaping details.

Landscaping designs for Area 5 are provided in Appendix 5. These are subject to detailed design and future tenancing requirements of Warehouse 2.

3.1.6 Area 6

Area 6 encompasses Moorebank Avenue, and is west of Area 1 and the IMEX terminal. It is bounded by Area 1 (including Area 4), and the IMEX to the east. Moorebank Precinct West is located to the west.

Area 6 includes a garden bed/buffer strip to the east between Moorebank Avenue and the IMEX terminal, and an 18 m landscaped setback to Moorebank Avenue to the west which incorporates a 10 m buffer of soft landscaping in accordance with the CoC. Area 6 also includes OSD 10 within the western landscape buffer (which is subject to separate approvals from TfNSW).

More detailed landscaping details for Area 6 are provided in Appendix 6. These are subject to detailed design, and many incorporate future approval requirements by TfNSW.

3.2 Management through Building Design

3.2.1 Warehouses

The building height of the warehouses will be consistent with the MPE Concept Plan Approval and limited to a maximum height of 21 m, thereby minimising intrusiveness of the buildings in the local landscape from residential areas. As per the above, mature trees will be utilised to obscure the warehouses from view (see Appendix 0C for typical planting sections and Appendices 1 to 6 for Landscape Sections for each Area). The layout of the warehouses will be in line with the safer by design principles outlined in Section 2.4. In addition, the layout of the built forms allows for cross ventilation throughout the site, as shown in Appendix 0A and described in the Urban Heat Island Mitigation Strategy (UHIMS). The spacing between the warehouse buildings permits wind movement across the paved areas which facilitates heat transfer.

Where warehouses present the potential for visual impacts, mitigation will be implemented through adaptive and considered design of the warehouses, including harmonious colour pallets and high-quality finishes/materials and dimensions.

The buildings and structures for the Project will be of a high quality design. The building colours and finishes will be compatible and blend with the surrounding land uses, including non-reflective colours as recommended in the UHIMS. The design principles for building materials and colours include the following:

- colour selections follow a development colour palette, unless tenant corporate colours can be used to highlight entries or building focal points
- high quality materials will be used at building entry or focal points
- materials that are recycled or considered of high environmental sustainability standard are encouraged to be used where practical and possible
- incorporate cool building materials and roofs where possible to mitigate UHI effect.

Site-wide Architectural Plans have been included in Appendix 0A, and detailed design plans for each Area are provided in Appendices 1 to 6. Typical colour palette and finishes for the site are provided in Appendix 0C.

3.2.1.1 Area 1

Warehouse 1 is orientated in a north-south direction, with active areas of the facility on the northern and southern areas, the west and east bounded respectively by Moorebank Avenue and an interior access road. This orientation of Warehouse 1 minimises the visual impact to Moorebank Avenue, Casula and Wattle Grove from the operational warehouse activities (refer to Appendix 0E for Visual Impact Assessment). The north side of Warehouse 1 incorporates the use of colours to minimise large expansions of blank walls directly adjacent to the car park.

The material finishes and colour scheme for Warehouse 1 differs from the indicative colour scheme proposed in the RtS. The key change involves replacement of green and yellow highlighted panels, which occupy less than 15% of the façade surface area for the RtS drawings, with a combination of greys analogous with the rest of the façade. The revised colour palette will retain visual compatibility with the surrounding industrial landscape by maintaining a similar overall colour scheme (consisting of Surfmist, Monument, Windspray and Shale Grey) in appearance when compared with the indicative designs provided in the MPE Stage 2 RtS and Appendix 0C. The substitution of green and yellow elements with greys is not considered to present a substantial change to the UHI effect or overall visual impact of Warehouse 1 building to nearby visual receivers. The compatibility of the existing urban context would mean that the change in Warehouse 1 colour palette, as nominated, would not detract from the visual amenity of any viewpoint. The colour scheme for the Warehouse 1 office building therefore remains consistent with the design intent of the drawings within the MPE Stage 2 RtS.

3.2.1.2 Area 2 and Area 3

The colour palette for the exterior façade of warehouses in Area 2 is consistent with that detailed above for Warehouse 1. Each elevation is segmented by vertical panels of contrasting greys consistent with typical overall colour schemes indicated in Appendix 0C, that provide a more interesting and less obtrusive visual impact than would a uniform wall. The darker colour palette will serve to better integrate the buildings with the surrounding bushland to the east of the MPE Site.

Warehouses 3 and 4 have been limited to 13.7 metres in height, which is substantially less than the 21-metre building height that was assessed in the Visual Impact Assessment from the EIS. As such, the reduced building height will serve to further reduce the visual impacts of the warehouses on surrounding receivers. Further, their orientation is such that the container interchanges are located along the south of Warehouse 3 and north of Warehouse 4, away from the eastern boundary.

Carparking is located along the south of Warehouse 3 and north of Warehouse 4. Screen planting along the eastern boundary shall provide sufficient buffer to mitigate any visual impacts from the east.

Visual impacts of Warehouse 5 are largely mitigated as they are contained within the central portion of the MPE Site and would be predominantly obscured from sensitive receivers to the east (Wattle Grove) by Warehouses 3 and 4, to the west (Moorebank Avenue and Casula) by the IMEX terminal, to the north (Wattle Grove) by Warehouses 1 and 2, and to the south by OSD 2 and boundary screen planting. Warehouse 5 is orientated such that the container interchange is located along the western side of the warehouses, and loading docks, carparking and office facilities are located along the eastern side.

3.2.1.3 Area 3

The building design, material finishes and colour palette for Area 3 will be consistent with details provided for previously approved areas, and in accordance with the typical design details in Appendix 0C, Appendix 1 and Appendix 2.

Carparking is located to the east and the west of Warehouses 6 and 7. Landscape screening has been provided adjacent to the internal road, to the east of the eastern carparking area.

Warehouses 6 and 7 are oriented such that the container interchanges are located on the northern and southern sides of the buildings. Offices are oriented to the central portion of Area 3, and are located on the southern side of Warehouse 6 and the northern side of Warehouse 7. Visual impacts to the warehouses from the east and south will be largely screened by boundary plantings. Area 3 is predominantly obscured from sensitive receivers to the west by the IMEX terminal, and from the north by warehousing within Area 2.

3.2.1.4 Area 4

Final design for the freight village has not been completed at the time of reporting and is subject to detailed design and future tenancing requirements. Building utilisation and configurations are not yet finalised, but will be designed to accommodate the approved 8,000 m² GFA.

Building design is envisaged to be complementary to the colour palette and material finishes for Areas 1, 2, 3 and 5, and generally in accordance with the typical design details in Appendix 0C.

Carparking is located to the south of the freight village. Although car entry/exit ramps are noted on the plans provided, potential additional basement carparking is subject to final design details.

3.2.1.5 Area 5

The colour palette for the exterior façade of Warehouse 2 is likely to be consistent with that detailed for warehouses in Areas 1 and 2 and will provide for a homogenous scheme for the site that is visually unobtrusive for surrounding receivers (See Appendix 0C for typical palette and material finish details).

The building height for Warehouse 2 will be designed to reduce visual impacts of this warehouse. This warehouse has also been orientated such that container interchanges are located away from site boundaries, and carparking and office areas are screened by boundary landscaping.

3.2.1.6 Area 6

Area 6 does not contain any warehouses.

3.2.2 Solar Panels

As recommended by the UHIMS, solar panels will be installed on the warehouses, where practicable. The solar panels will be visually unobtrusive as the solar panels will only be installed on the available roof space of the warehouses and within the approved building height restrictions.

3.2.2.1 Area 1 and 2

The layout and detail of the solar panels to be installed on the roofs of Warehouses 1, 3, 4 and 5 are provided in Appendices 1 and 2. The solar panels integrate the ESD principles listed under CoC B143 and will provide a means of energy efficiency for the operation activities undertaken within Areas 1 and 2.

3.2.2.2 Area 3 and Area 5

Solar panel arrays will be provided on the rooftops of Warehouses 2, 6 and 7, similar to Warehouses 1, 3, 4 and 5, where practicable and subject to final design details.

3.2.2.3 Area 4

Final design for the freight village has not been completed at the time of reporting and is subject to detailed design and future tenanting requirements. Where practicable, the use of solar panels will be incorporated into the building design, subject to available roof space and building height restrictions.

3.2.2.4 Area 6

Area 6 does not include any warehouses and so no solar panels are required.

3.2.3 On-site Detention Basins

The OSDs as indicated in UDLP plans are consistent with the approved stormwater design plans for the MPE Site. OSD basins have been designed to provide adequate system capacities and mitigate potential adverse flood impacts and increases in stormwater discharge from the site that may otherwise result from the Project. The OSDs will also enable the quality of stormwater leaving the Project site to be of equivalent quality or an improvement to the existing conditions. The OSDs are considered to be visually unobtrusive as they will be flush with final design ground levels within the site, and where possible, have been designed to reflect natural geomorphic processes.

Whilst achieving the primary function for any requirement for water filtration and bio-retention, the plantings proposed to the basins are to remain consistent with the overarching site wide objectives of uniform species use, endemic planting character, native landscape language and promote a variety of experiences and visual

amenity from sites across the George's River. Increased treatment in the form of trees and planting will improve visual amenity, allowing the OSD basins to act as a visual buffer to neighbouring sensitive receivers. Landscape design of the OSDs will incorporate tree and vegetation plantings to represent a natural random environment which is consistent with the surrounding built form. Planted trees, shrubs and understorey vegetation will offer potential nesting, sheltering and roosting habitat to native fauna.

3.2.3.1 Area 1

OSD 9 within Area 1 consists of an open concrete-lined channel located to the north and west of Warehouse 1. Landscaping will be provided along the OSD frontages providing visual screening to the OSD retaining wall to minimise visual impacts to sensitive receivers.

The retaining wall will be constructed to allow for the change in final design ground levels of Moorebank Avenue. Palisade fencing that is transparent and dark in colour will be constructed around the OSD basin. For further detail on the retaining wall for OSD 9, refer to Section 4.3.

3.2.3.2 Area 2 and Area 3

Area 2 includes underground OSD tanks beneath the carpark of Warehouse 3 and Warehouse 5. The underground tanks will capture overland stormwater flows from within Area 2. The tanks, being located underground, provide an unobtrusive visual impact.

OSD 1 is located in the northeast corner of the MPE Site in Area 2 and OSD 2 is located in the southern extent of Area 3. Both OSDs are considered visually unobtrusive due to the landscaping present around each basin. Refer to Appendices 2 and 3 for the landscaping details of OSD 1 and 2 respectively. OSD 1 and 2 will be designed to comply with CoC B40(e)(iii) which requires that on site detention basins have a maximum batter slope of 1V:4H. No fencing will be provided around OSD 1 or OSD 2.

3.2.3.3 Area 4 and Area 5

No OSD basins are located within Area 4 or Area 5.

3.2.3.4 Area 6

Area 6 includes OSD 10, to be located to the west of Moorebank Avenue and within the required 18 m landscape buffer. Approvals for the design and construction of basins are subject to separate approval processes with TfNSW, and so detailed basin designs have not been included within this UDLP.

4 URBAN DESIGN AND LANDSCAPE ASPECTS

4.1 Proposed Landscaping and Irrigation

A typical plant schedule is provided in Appendix 0C. Use of a range of proposed species will enable a diversified mixture of plantings to articulate the random natural character of the existing landscape setting. Landscape planting will incorporate a range of canopy trees, shrubs, grasses and groundcovers across the MPE Site. A mixture of planting densities and spacings and including the incorporation of low understory planting ranging to upright trees, will contribute to natural random environment continuity between the site, the streetscape and the public interface. Clumped plantings may be used to achieve the desired planting densities and spacings.

Proposed plant species have been selected for their site-suitability with many species selected from Liverpool City Council's recommended plant list. Many of these species are consistent with the surrounding plant community types which will provide potential habitat connectivity as well as enabling the site to integrate into the surrounding environment. The indicative plant schedule provided in Appendix 0C is preliminary at this stage of the Project development; with confirmation of total plant numbers to be provided at the landscape detailed design stage.

The use of local and endemic species will provide habitat capable of supporting native fauna, as well as providing adequate understory to help support habitat values and integration with the surrounding vegetation areas. Planting will incorporate a range of local species that have been selected for their unique forms, colours and textures. This will aim to provide screening whilst also accenting walkways and open space areas.

Species listed in the plant schedule (Appendix 0C) have been identified along Georges River or in the Boot Land and are characteristic of the plant community types (PCTs; Castlereagh Scribbly Woodland) present. The chosen plant species are endemic species and have low water usage requirements. A Landscape Masterplan for the entire MPE Stage 2 Project is provided in Appendix 0A.

Topsoil and vegetation removed will be considered for re-use for landscaping requirements, wherever possible, which will enable the seed bank to regrow. Seed collection from the local area will also be undertaken as part of the biodiversity offset area establishment.

The soil used for landscaping purposes will be low in phosphorous content as required by native plant varieties. The soil mix specification will be designed to promote the optimum growing conditions for the plant species identified in the landscape plans and be comprised of a sandy to clay loam topsoil mix designed for mass planting of grasses, woody and herbaceous perennial planting. Planting will not be undertaken within the compacted fill area (refer to Section 4.1).

In accordance with CoC B140(e)(iv), at least 15% of the site is to be landscaped at ground level, with a total of 10% consisting of soft landscaping. The Landscape Masterplans (Appendix 0A) provide landscaping details for the MPE Site and identify that the total landscaped area across the site is 16.9%, including a soft landscaped area of 14.2%, which exceed the CoC. Appendices 1 to 6 provide additional details and sections for each Area.

In accordance with CoC B140(e)(v), 1 canopy tree per 30 m² of landscaped area (as an average across the Project Site) will be planted. This will be achieved through the use of a mix of large native canopy trees which will provide opportunities for shade throughout car parking areas and pedestrian pathways; with a variety of tree forms – both small and large – helping to create a hierarchy in the landscape works. The Landscape Masterplan (Appendix 0A) confirms this has been achieved, and provides landscaping details for the MPE Site. Appendices 1 to 6 provide additional details and sections for each Area.

In accordance with CoC B140(e)(iii), tree planting has also been designed to provide canopy throughout the Project to provide shade and amenity. The use of advanced endemic shrubs and canopy trees will optimise shade and reduce the UHI effect at the Project Site. Refer to the UHIMS for further information relating to how the provision of landscaping mitigates the UHI effect. A Landscape Maintenance Schedule for the MLP is provided in Appendix 0C, and provides more specific requirements for plant replacement, erosion control, mulching and pruning, amongst other activities.

Tree locations and densities are shown indicatively in the UDLP set. Exact tree locations, species, and details will be shown in the Detailed Landscape Documentation Packages.

In relation to planting details, generally speaking the soil profile will be a minimum of 200 mm for turf, 400 mm for shrubs and mass planting and 450 mm for trees over a 45 litre (L) bag installation size, with a maximum depth of 600 mm. Appendix 0C (Precinct Landscape Typical Details) outlines the different soil horizons and typical specifications for planting proposed across the site. The top layer of soil will consist of 75 mm of mulch. Garden bed planting of grasses, woody and herbaceous annuals and perennials that have high nutrient requirements for sustained optimum growth and are not subject to compaction by foot traffic will be planted within sandy loam to clay loam topsoil mix. Open granular well drained growing media is beneath the topsoil mix and will incorporate an aggregate drain with positive drainage connected to a site stormwater system. Planting will not be undertaken within the compacted site sub-base, as the depth of soil will be specific to the pot sizing and species as nominated within the planting schedule (Appendix 0C).

A low-volume drip irrigation system will be installed to support establishment and maintenance of proposed site landscaping. The position of control box, solenoids and irrigation conduits will be designed by qualified irrigation engineers. Controllers will be mounted on a stable wall, power rack or formed and constructed concrete based pedestal mount. Approximately 25 mm of water will be delivered to plant areas each week during establishment (depending on weather conditions). After establishment, irrigation rates can be decreased in certain areas of the landscape depending on the species. Unless recommended otherwise by the manufacturer, all work will be carried out using equipment and installation process as outlined in the relevant Australian Standards and industry codes. The product will be Netafim range (or equivalent) including controller(s), inline drip emitter tube, solenoid, valves, pressure valves, air and low drainage valves. Refer to Appendix 0C for further detail on the typical low-volume drip irrigation system to be used across the site.

Rainwater reuse tanks will be installed and used throughout the site. Rainwater will be collected from the roofs of warehouses and/or the freight village buildings and flow into separate underground rainwater reuse tanks through a system of drainage pipes. The rainwater reuse tanks are generally located close to the office and landscaped areas to minimise the length of underground pipework from the tank to the areas requiring the water. Pumps will be provided at the rainwater reuse storage tank for the distribution of water for the irrigation system. Rain switches will be included to manage the system during rain periods.

All personnel required to inspect and maintain services within the rainwater tank shall be trained in accordance with the relevant WHS requirements. Overland flows will be diverted to stormwater drainage at the site as per the SMP - W1P, Updated SMP, SMP – Balance of Site and the Stormwater Management Report for Warehouses 6 and 7. In accordance with the CoC B140(f), the typical plant schedule for the site is provided in Appendix 0C and is outlined below:

- plant densities for trees are 5 m to 6 m centres, for shrubs is 0.5 m to 2 m centres, and groundcover is between 3 m to 9 m²
- pot size of trees will range from 140 mm to 100 L, shrubs will be 140 mm to 200 mm, and groundcover will be a minimum of 150 mm
- expected mature height of trees will range in height from 6 m to 60 m, shrubs will range between 0.5 m to 4 m and groundcover will range from creep to 1 m
- expected canopy spread of trees will range from 3 m to 18 m, for shrubs is 0.5 m to 4 m, and groundcover is creep to 1 m.

4.1.1 Area 1

Where planting will occur, a mixture of site-suitable plant species have been selected as shown in the landscape drawings for Area 1 (Appendix 1) and following the site landscape plan schedule (Appendix 0C). Many of these species are consistent with the surrounding plant community types which will provide potential habitat connectivity as well as enabling the site to integrate into the surrounding environment. Select areas along the north, east and west perimeters of Area 1 will be utilised for advanced shrubs and canopy trees.

Hydromulching/hydroseeding may be considered for some landscaping areas to achieve a rich mixture of trees, shrubs and groundcovers. This will be subject to seasonal variation at the time of plant installation and will be subject to nursery availability and pot sizes at the time of plant procurement. A garden bed feature will also be located north of Warehouse 1 office to provide visually amenity for employees and visitors (refer to Appendix 1).

Landscape soil profiles and irrigation systems will be consistent across the site and are as detailed above. Planting densities, cover and species are as per CoC B140(f) and typical sections in Appendix 0C.

Appendix 1 provides additional detail, including landscape sections, elevations and perspectives, for Area 1.

The rainwater reuse tank is located underground adjacent to the north-east corner of Warehouse 1. The rainwater will be collected from the roof of Warehouse 1 and flow into the 75,000 L underground rainwater reuse tank through a system of drainage pipes. Refer to Appendix 1 and Appendix 0A for the location of the rainwater reuse tank in Area 1.

4.1.2 Area 2, Area 3 and Area 5

The landscape design for Areas 2, 3 and 5 is included in Appendix 0A and further detailed in Appendices 2, 3 and 5. The overall landscaping strategy for these areas is consistent with that outlined for the Precinct with regards to soil profiles, species composition, rainwater harvesting and reuse for irrigation.

The MPE Site achieves a minimum of 15% total landscaping (of which 10% will be soft landscaping) in accordance with CoC B140(e)(v).

There will be landscaped garden beds in the car park areas, which will provide a canopy tree every 6-8 car parking spaces for shade provision. Additional garden beds with shrubs and canopy trees are situated adjacent to the internal road and car park, and at the entry to Warehouses 2, 5 and 8 to provide visual amenity. Additional landscaping is also provided surrounding OSD1 and OSD 2. The dominant landscaping within Areas 2, 3 and 5 lies adjacent to the eastern perimeter road near Warehouses 2, 3, 4, 6 and 7 and along the southern internal road surrounding OSD 2 (see Section 3.1).

Landscape soil profiles and irrigation systems will be consistent across the site and are as detailed above. Planting densities, cover and species are as per CoC B140(f) and typical sections in Appendix 0C.

Appendices 2, 3 and 5 provide additional details, including landscape sections, elevations and perspectives, for Areas 2, 3 and 5 respectively.

The rainwater reuse tanks are located:

- Warehouse 2 – north-western corner
- Warehouse 3 – north-eastern corner
- Warehouse 4 – south-eastern corner
- Warehouse 5 – under Warehouse 5 carpark
- Warehouse 6 - north-eastern and north-western corners
- Warehouse 7 – south-eastern and south-western corners

The rainwater reuse tanks will collect rainwater from the roofs of warehouses and flow into their respective underground rainwater reuse tanks through a system of drainage pipes. Pumps are provided at the rainwater reuse storage tank for the distribution of water for the irrigation system. Rain switches are included to manage the system during rain periods. All personnel required to inspect and maintain services within the rainwater tank shall be trained in accordance with the relevant WHS requirements. Refer to Appendices 2, 3 and 5 for location of rainwater reuse tank in Areas 2, 3 and 5.

4.1.3 Area 4

The landscape design for Area 4 is included in Appendix 0A and Appendix 4. The overall landscaping strategy for the freight village is consistent with that described for the Precinct, with regards to soil profiles, species composition, rainwater harvesting and reuse for irrigation.

Landscaped garden beds will be located in the car park areas, which will provide a canopy tree every 6-8 car parking spaces for shade provision. Additional garden beds with shrubs and canopy trees are situated in the car park, adjacent to the eastern boundary, and surrounding the turning bay located near the western boundary. Raised planters with seating elements will be placed in the central forecourt area of the freight village.

The plant schedule for Area 4 is consistent with the remainder of the Precinct and the typical details provided in Appendix 0C.

The indicative location of the rainwater tank is adjacent to the Area's eastern boundary. The rainwater reuse scheme is consistent with that of other Areas.

4.1.4 Area 6

The landscape design for Area 6 is included in Appendix 0A and Appendix 6. The overall landscaping strategy is consistent with that described for the Precinct, with regards to soil profiles and species composition.

Appendix 0A indicates that approximately 55.7% of Area 6 will be landscaped (including along Moorebank Avenue and surrounding OSD 10) with a total of 43.9% of soft landscaping provided. Landscape buffer requirements are consistent with CoC requirements and are detailed in Section 4.2. Landscape design for Area 6 will also be consistent with relevant Road and Maritime Services (RMS) landscape design guidelines.

Where sufficient water is available in OSD 10 within Area 6 and is of appropriate water quality for irrigation use, OSD water may be used for irrigation of Area 6; otherwise, water carts may be used to irrigate Area 6, as required.

Detailed design and landscaping of Area 6 may be subject to separate approval from TfNSW.

4.1.5 Compensatory Planting – MPE Stage 1 UDLP

The initial stormwater design proposed by the SSD 6766 MPE Stage 1 EIS included a landscaped open stormwater channel (bioretention swale) along the eastern and northern boundary of the IMEX terminal area (west of Warehouse 5, 6 and 7). With the approval of MPE Stage 2, changes to the site levels and the stormwater management regime resulted in water redirected to a bioretention swale on the western boundary of MPE Stage 1, thus removing the need for the eastern bioretention swale on MPE Stage 1.

The removal of the eastern bioswale amended the UDLP design for the IMEX, and resulted in a loss of 19,094 m² (1.9 ha) of landscaping within the IMEX. DPE was advised (Arcadis; 25 March 2020) that compensatory landscaping would be provided within the MPE Stage 2 Site, as additional compensatory landscaping areas within MPE Stage 1 IMEX were not available.

DPE provided approval for the MPE Stage 1 UDLP (Revision 11, dated 29 August 2019) in accordance with Condition C3 of SSD 6766, subject to (*italics* for emphasis):

- *the temporary bio-retention channel located on the eastern side of Moorebank Avenue (as illustrated in Drawing LA01) being retained until the approval status of OSD 10 along Moorebank Avenue is known; and*
- ***the MPE Stage 2 UDLP clearly demonstrating how the percentage of landscaping lost on the IMEX site has been compensated, consistent with the calculations outlined in drawing SSS2-RCG-AR-SKC-159 of your supporting memo (dated 25 March 2020).***

The MPE UDLP – Combined Site Plan SSS2-RCG-AR-SKC-159 (Reid Campbell, Issue E, 11 March 2020) was included as an attachment to the 25 March 2020 memo and included a total landscaping area (TLA) across MPE Stage 2 of 129,913 m² and a total landscaping site coverage of 18.01%. The plan notes indicate that:

- *Unless referenced to a site plan, areas are indicative only and subject to change and detail design. Refer to area specific site plans for details where available.*
- *Landscape calculations are subject to landscape architects input.*
- *Landscape calculations subject to works and measurements on site.*

SSS2-RCG-AR-SKC-159 (Reid Campbell) was updated as Issue L (30 October 2020) for the MPE Stage 2 Consolidated UDLP (Appendix 0A) with a TLA of 122,918 m² and 17% total landscaping site coverage.

Whilst adjustments to TLA between Issue E and Issue L included minor MPE site development layout design changes to warehouse car parking and building footprint areas, site landscape design, and vehicle and pedestrian access ways, Reid Campbell has confirmed that the TLA 129,913 m² (Issue E) calculation included

the basin floor area of OSD 2 (10,421 m²) located within Area 3. The calculation methodology for TLA was modified some time after Issue E, and no OSD basin floor area was included in the TLA for Issue L.

To appropriately compare the overall TLA between SSS2-RCG-AR-SKC-159 Issue E and Issue L, the basin floor area of OSD 2 (10,421 m²) (as applied in Issue E) would have to be combined with Issue L's TLA of 122,918 m², generating a comparable adjusted TLA for Issue L of 133,339 m² and representing 18.48% total landscaping site coverage (refer to Table 10).

Table 10: Compensatory planting of MPE Stage 2 operational site area – review of SSS2-RCG-AR-SKC-159 Issue E and Issue L.

SSS2-RCG-AR-SKC-159	MPE Stage 2 Total Landscaping Area (TLA) ¹		Notes
	m ²	% Coverage	
Issue E (11/03/2020)	129,913 m ²	18.01%	TLA calculation includes OSD 2 basin floor (10,421 m ²)
Issue L (30/10/2020)	122,918 m ²	17%	TLA calculation excludes OSD 2 basin floor
Adjusted comparable TLA calculation (Issue L)	122,918 m ² + 10,421 m ² = 133,339 m ²		
Total adjusted comparable TLA (Issue L)	133,339 m ²	18.48%	The adjusted TLA complies with MPE Stage 1 Approval requirements for ≥ 18.01% coverage on MPE Stage 2

Note:

¹ Total MPE Stage 2 Site operational area - 721,304 m².

The adjusted comparable TLA for MPE Stage 2 under the Consolidated UDLF (Issue L) exceeded the 15% total landscaping requirement under CoC B140(e)(iv), and met the requirements for an 18.01% MPE Stage 2 compensatory TLA for the site as identified in the SSD 6766 MPE Stage 1 Approval. Appendix 0A of this UDLF has been further updated to show an overall 16.9% total landscaping site coverage (SSS2-RCG-AR-SKC-159, Watson Young).

It should be noted that the TLA provided in Issue L (122, 918 m²) was subject to change and detail design.

4.2 Setback Provision

Setback provision for Moorebank Avenue has been designed in accordance CoC B140(e)(i) and includes Area 1 and Area 6 only. Setback provision for the eastern boundary will be designed in accordance CoC B140(e)(ii) and will include Areas 2, 3, 4 and 5.

4.2.1 Area 1 and Area 6

In accordance with CoC B140(e)(i), a minimum landscaped width of 10 m will be implemented within an 18 m setback along the Moorebank Avenue frontage as shown in Appendix 0A. The landscaping will provide a visual screen to the Project from the roadway while reinforcing the identity of the area through the use of carefully selected native tree species with tree canopies and lower screen planting. In addition, the landscaping provided for the setbacks will contribute to the reduction in UHI effect at the Project Site.

4.2.2 Area 2, Area 3, Area 4 and Area 5

The layout of the warehouse carparking at Warehouses 3 and 4 incorporates landscaping setbacks for adequate landscape width to support canopy trees. The car parking areas for Warehouse 3 and 4 are internally facing (Appendix 2).

In accordance with CoC B140(e)(ii), the car parking areas, freight village and warehouses are set back a minimum of 5 m from the eastern internal road to provide visual screening of the warehouses (Appendices 2,

3 and 5). The eastern façade of warehouses, including Warehouses 6 and 7, and the freight village meet this requirement from the eastern internal road.

The setback includes a 5 m to 10 m landscape strip located adjacent to the warehouses, which consists of vegetation including groundcovers, shrubs and canopy trees to provide visual screening of the buildings. The proposed landscaping in these setback areas is discussed in Section 3.1 and is included in Appendix 0A and Appendices 2, 3, 4 and 5.

4.3 Retaining Walls

Retaining walls are discussed in each staged submission, where relevant.

4.3.1 Area 1

As there is a significant height difference occurring at the boundary of OSD 9 and the ground surface at Moorebank Avenue, a retaining wall for Area 1 is located along OSD 9 and the landscaped area of the Project boundary. The fence along OSD 9 and a cross-sectional view of the retaining wall including landscaping are shown in Appendix 1 (UDLA-04).

Retaining walls will be composed of concrete with a concrete formed finish; no graphics are proposed. Walls will be backfilled to specified levels.

4.3.2 Area 2, Area 3 and Area 5

For Area 2, stormwater will be detained within two underground tanks and within OSD 1. For Area 3, stormwater will be detained in OSD 2. Refer to Appendix 0A for the locations of the underground tanks and OSD 1 and OSD 2. No OSD is provided within Area 5.

No landscape retaining walls are proposed for Area 2, Area 3 or Area 5 due to relatively level topography. OSD 1 and OSD 2 will be designed to comply with CoC B40(c)(iii) which requires that all on-site detention basins have a maximum batter slope of 1V:4H. Appendices 2 and 3 provide details of OSD design and planting. Appendix 0B provides WSUD plans.

4.3.3 Area 4

The stormwater from Area 4 will discharge into OSD 9 along with stormwater from Area 1 (Appendix 0A and Appendix 0B). No additional OSD is required for the freight village.

No retaining walls are required within Area 4.

4.3.4 Area 6

For Area 6, stormwater will be detained within OSD 10. OSD basin design construction may be subject to separate approvals from TfNSW and so basin detailed designs are not included within this UDLP.

No retaining walls are proposed for Area 6.

4.4 Pedestrian Movements

The pedestrian and cyclist access and connectivity for the entire site is shown in Appendix 0A. Pedestrian access will be via the off-road shared path from Moorebank Avenue, adjacent to the DJLU intersection. Several signalised T-intersections spaced approximately 250 m to 600 m apart featuring signalised pedestrian crossings on Moorebank Avenue provide safe crossing access to the Project Site. This will also provide access to existing and future public transport infrastructure and the surrounding areas.

Further details for secure bicycle parking and pedestrian paths are provided in the CPAFSP. Appendix 0A of the UDLP demonstrates the shared paths and pedestrian paths for the entire MPE Site. Typical bicycle parking facilities are provided in Appendix 0C.

4.4.1 Area 1 and Area 4

Pedestrians will be able to access Warehouse 1 and the facilities within the freight village through the provision of shared paths from Moorebank Avenue. A shared path is present on the eastern boundary access point from Moorebank Avenue, extending along the multi-tenant user road.

Another shared path, located near the northern boundary of the freight village, provides access to Warehouse 1 and Area 4, and provides direct access to the undercover bicycle parking facilities located on the northeast section of Warehouse 1 and within the central area of the freight village. This shared path runs through the garden beds consisting of canopy trees such as *Acacia sp.*, *Corymbia sp.*, *Eucalyptus sp.* and *Melaleuca sp.* with low level native planting e.g. *Callistemon sp.*, *Crocea sp.*, *Dianella sp.* and *Myoporum sp.*.

Landscaping in this area may potentially include seating benches located adjacent to the shared pathway providing opportunities for staff meal breaks. Appendices 1 and 4 demonstrate the bicycle parking facilities and shared path throughout Areas 1 and 4 respectively.

4.4.2 Area 2 and Area 3

Cyclists will be able to access Warehouses 3, 4 and 5 through the provision of a shared path extending south along the internal road between Warehouses 1 and 2. The shared path continues east between Warehouse 5 and Area 2 on the northern side of the internal road. From here, cyclists have access to both Area 2 and Area 3 from the eastern internal perimeter road.

Pedestrians will be able to access Warehouses 3 to 7 via the shared path along the internal road network. From the eastern boundary, the shared path continues west along the internal road separately between Warehouses 3 and 4, providing direct access for pedestrians into the warehouse offices and to Warehouse 5, and between Warehouses 6 and 7. Pedestrian crossings are provided to enable safe crossing points for pedestrians where required.

Details are provided in Appendices 2 and 3.

4.4.3 Area 5

Cyclists will be able to access Warehouse 2 through the provision of a shared path that is located along the northern boundary between the site and the DJLU, or via the path that extends south along the internal road between Warehouses 1 and 2.

As for other Areas, pedestrians will also be able to access Warehouse 2 via the shared pathways along the internal roads – which will be appropriately signposted with pedestrian crossings where required.

Further details are provided in Appendix 5.

4.4.4 Area 6

As shown in the Landscape Section 1 for Area 6 (Appendix 6) a shared path is to be provided along Moorebank Avenue for pedestrian and cyclist access. The path will be appropriately signposted with pedestrian crossings where required.

Detailed design of Area 6 may be subject to a separate approval from TfNSW. Further detail is provided in the CPAFSP.

4.5 Car Parking

Where the specific requirements of CoC B140(e)(vi) cannot be addressed without compromising car parking provision, alternatives will be considered that provide an equivalent or greater outcome in terms of provision of shade for car parks and/or screening of warehouses in accordance with B140(e)(iii).

4.5.1 Area 1

For Warehouse 1, an alternative to CoC B140(e)(vi) is provided that enables the inclusion of an additional 2,500 m² landscaped strip to the immediate north and west of the car park area. This landscape strip incorporates low shrubs and canopy trees to provide an equivalent or greater shade benefit, without compromising required car park provision. The purpose of the trees located in the car park are for shade and not for visual screening within Area 1. The canopy trees located along Moorebank Avenue will provide visual screening of Warehouse 1.

Appendix 1 (UDLA-02) indicates that the carpark area will include tall, upright *Eucalyptus sideroxylon* to provide shade and amenity to the area. During installation, trees planted in the carpark will be approximately 2 m to 3 m tall with an expected mature height of 12 m.

Shadow diagrams in Appendix 1 (UDLA-09) have been developed for Warehouse 1 demonstrating winter and summer shadows from buildings and vegetation in 5 years and 15 years' time at 3 pm in comparison to the location of car parking spaces.

4.5.2 Area 2, Area 3 and Area 5

Car parking spaces for all warehouses within Areas 2, 3 and 5 have included landscape bays with canopy trees every 6-8 spaces. Canopy trees and shrubs are situated directly adjacent to the car park spaces for the provision of shade. Landscaped setbacks and additional canopy tree plantings adjacent to the pedestrian pathways into Warehouse 5 and to the south of parking in Area 5 (north of Warehouse 2) provide further shade within the car parks.

Shadow diagrams have been developed for Area 2 (Warehouses 3, 4 and 5), Area 3 (Warehouses 6 and 7) and Area 5 (Warehouse 2) demonstrating winter and summer shadows from buildings and vegetation in 5 years and 15 years' time at 3 pm in comparison to the location of car parking spaces. See Appendices 2, 3 and 5 for shadow diagrams.

4.5.3 Area 4

Car parking spaces within the freight village have included landscape bays with canopy trees every 6-8 spaces. Canopy trees and shrubs are situated directly adjacent to the car park spaces for the provision of shade. Additional canopy tree plantings adjacent to the pedestrian pathway provides further shade within carparks.

Shadow diagrams have been developed for the freight village demonstrating winter and summer shadows from buildings and vegetation in 5 years' and 15 years' time at 3 pm in comparison to the location of car parking spaces. See Appendix 4 for freight village shadow diagrams.

4.5.4 Area 6

No car parking is provided within Area 6.

4.6 Employee Outdoor Meal Break Areas

The employee outdoor meal break areas throughout the MPE Stage 2 Project will be designed to accommodate the forecasted staff numbers for each warehouse. The areas will provide outdoor amenity for the employees during their breaks and provide a comfortable and relaxing atmosphere for the employees to aid in their wellbeing. The employee outdoor break area will be located close to warehouses to allow for easy access by employees. An indicative employee outdoor meal break area design is provided in Appendix 0C, which is similar to that approved for Area 1.

Further detailed information and supporting plans are provided in the Employee Outdoor Meal Break Area Subplan (EOMBASP), accompanying this UDLP.

4.6.1 Area 1

An employee outdoor meal break area to the north-east of Warehouse 1 has been incorporated into the design. Appendix 1 (Area 1 Masterplan) shows the location of the employee outdoor meal break area in relation to Warehouse 1. Landscaping for the employee outdoor meal break area at Warehouse 1 will include planter boxes and a tensile steel wire support with climbing plants, as shown in the typical detail provided in Appendix 0C.

In addition, landscaping considerations include potential seating benches located adjacent to the shared pathway north of the freight village. The additional seating will provide other opportunities for staff meal break areas. Refer to Appendix 1 (UDLA-02) (and Appendix 4) for the location of the potential seating benches located adjacent to shared pathway.

4.6.2 Area 2, Area 3 and Area 5

Employee outdoor meal break areas have been provided in the following locations:

Area 2:

- Warehouse 3 – eastern side of Warehouse 3, adjacent to office 3A
- Warehouse 4 – western side of Office 4B
- Warehouse 5 – one adjacent to office in the south-eastern corner of the Warehouse 5 precinct and one adjacent to the office in the north-eastern corner of the Warehouse 5 precinct

Area 3:

- Warehouse 6 – south-eastern and south-western sides of Warehouse 6, adjacent to the offices
- Warehouse 7 – north-eastern and north-western sides of Warehouse 7 adjacent to the offices.

Area 5:

- Warehouse 2 – north-western side of Warehouse 2, adjacent to the office.

For Warehouses 2, 3, 4 and 5 landscaping will include climbers and screen planting. The warehouse tenants will supply loose furniture and seating. Recycling bins will also be provided in the area to encourage employees to recycle wherever possible. Vermin proof waste bins will be located near to the lunchroom. Landscaping for the employee outdoor meal break areas will be as per the typical detail provided in Appendix 0C.

There are two employee outdoor meal break areas each for Warehouses 5, 6 and 7 which have been positioned to take advantage of north-easterly summer breezes and also to provide ample natural light whilst protecting against the westerly sun. Landscaping for the employee outdoor meal break areas will be as per the typical detail provided in Appendix 0C and subject to tenant requirements. As for other warehouses, tenants will supply loose furniture and seating which will include several outdoor picnic table settings. Vermin proof waste bins will be located near to the lunchroom. Recycling bins will also be provided in the area to encourage employees to recycle wherever possible.

Appendix 2 shows the location of the employee outdoor meal break areas for Warehouses 3, 4 and 5, Appendix 3 shows their locations for Warehouses 6 and 7, and Appendix 5 shows the location for Warehouse 2. Designated employee outdoor meal break areas within Area 5 are preliminary and subject to detailed design, once tenancing requirements are known. These areas will be designed, however, to be consistent with the typical design provided in Appendix 0C and the requirements of the EOMBASP.

4.6.3 Area 4

In accordance with CoC B141(e), a communal employee/visitor eating area is provided in the central forecourt area of the freight village. Suitable landscaping and screening will enhance amenity for visitors and employees, and provide shade and privacy for users.

Landscaping for the communal employee/visitor eating areas will be consistent with the typical detail provided in Appendix 0C. As for the warehouses, tenants will supply loose furniture and seating which will include several outdoor picnic table settings. Vermin proof waste bins will be located near to the eating area. Recycling bins will also be provided in the area to encourage employees and visitors to recycle wherever possible.

4.6.4 Area 6

Area 6 does not contain any employee outdoor meal break areas.

4.7 Fencing

In accordance with CoC B140(e)(viii), perimeter fencing higher than 1.2 m will be transparent and dark in colour but will not be constructed of chain wire. Examples of the typical palisade fence are shown in Appendix 0C. The palisade fence will also be integrated into screening landscaping on the boundaries of the Project.

In accordance with Planning for Bushfire Protection 2006 (and the more recent Planning for Bushfire Protection 2019) provisions, non-combustible fencing will be installed throughout the site to manage bushfire threat and maintain the required performance standards of asset protection zones across the Precinct. Safety fencing will also manage unauthorised access to specific areas of the site.

In accordance with CoC B140(h), waste bins will be located adjacent to warehouse buildings. The waste bins will be generally located in areas adjacent to the loading docks, and will be screened from view using solid metal-slat fencing and/or landscaping. An example of indicative fencing used to screen warehousing waste storage areas is provided in Figure 4-1.

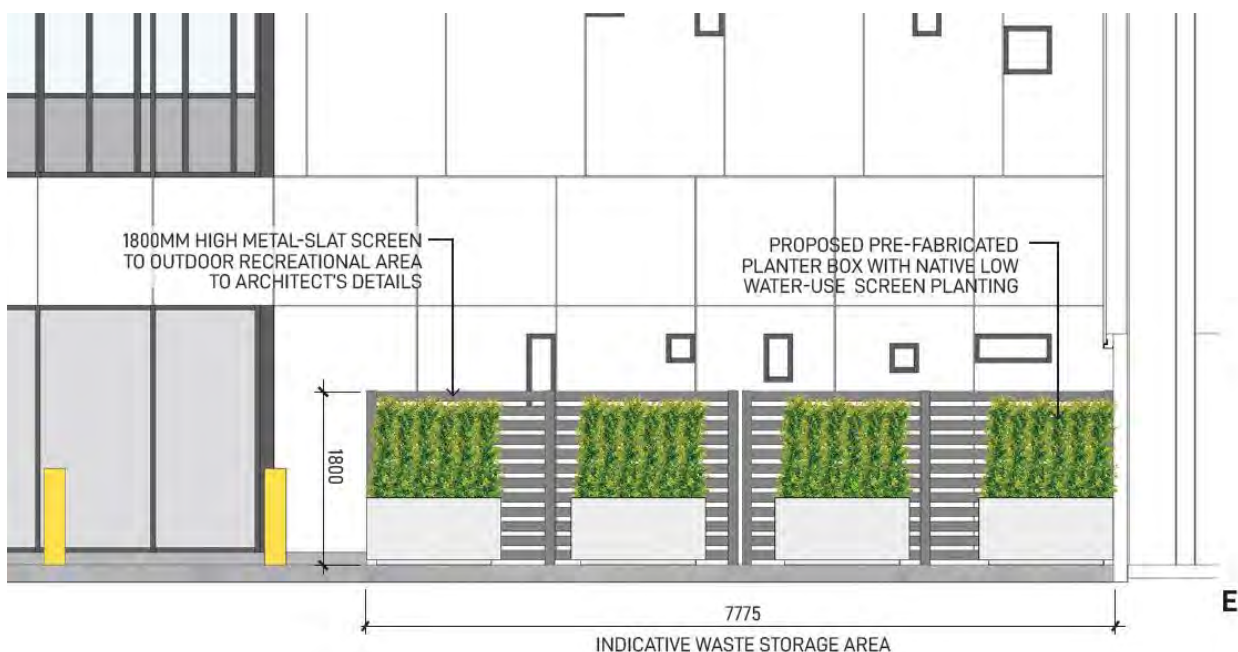


Figure 4-1: indicative fencing used to screen warehousing waste storage areas.

4.7.1 Area 1

Palisade style fencing will be constructed along the boundary of the OSD 9 basin and Moorebank Avenue, as there is a significant height difference which occurs at the boundary of the OSD 9 basin and the ground surface at Moorebank Avenue.

The fenced waste bin storage for Warehouse 1 is located on the south boundary of Warehouse 1, as shown in Appendix 1. Waste bin screening will be undertaken through solid slat fencing Colorbond® (or similar) as shown in Appendix 0C. No opportunities for landscaping around the waste bins or other outside storage areas have been identified; visual screening through fencing is deemed appropriate given the location of the bins in hardstand away from employee amenity areas.

4.7.2 Area 2, Area 3 and Area 5

Palisade style fencing will be constructed along the eastern boundary of Warehouse 3, 4, 6 and 7, as per the typical details as provided in Appendix 0C. There will be no fencing required around OSD 1 or OSD 2.

For security and safety reasons to restrict public interaction with the container interchange (Autostrad), the 2100mm high perimeter fencing between the northern and southern boundaries of Area 3, and along the western boundary of Area 3 and the IMEX terminal area is to be constructed of chain mesh with barbed wire over, to 2400mm high. This type of security fencing is consistent with Section 6 and Appendix G of the approved MPE Stage 1 UDLP.

The fenced waste bin storage areas are located:

- Warehouse 2 – along the northern face of Warehouse 2, east of the office and EOMBA
- Warehouse 3 – adjacent to employee outdoor meal break area and south-eastern corner of Warehouse 3
- Warehouse 4 – north of employee outdoor meal break area and south-western corner of Warehouse 4
- Warehouse 5 – adjacent to Dock Office 1 and the loading dock
- Warehouse 6 – southern side of Warehouse 6
- Warehouse 7 – northern side of Warehouse 7, adjacent to dock offices.
-

Waste bin screening for Warehouses 2, 3, 4, 6 and 7 will be undertaken with 1800 mm high horizontal metal slat screens. Pre-fabricated planter boxes with native low water use plants may also provide additional screening. Refer to Appendices 2, 3 and 5 for locations of the fenced waste bin storage areas.

Warehouse 5 waste storage areas are fully enclosed and do not require landscaping.

Fencing details for Area 5 are considered representative and cannot be confirmed until warehouse detailed design and tenancing requirements are known. The fencing scheme for this area, however, will be consistent with the remainder of the site and the typical details provided in Appendix 0C.

4.7.3 Area 4

Indicative waste storage facilities are provided in the north-eastern corner of Area 4.

Waste storage and fencing details for Area 4 is considered representative and cannot be confirmed until building detailed design and tenancing requirements are known. The waste storage and fencing schemes for Area 4 will be consistent with the remainder of the site and the typical details provided in Appendix 0C.

4.7.4 Area 6

The detailed design of Area 6 and OSD 10 may be subject to a separate approval from TfNSW, and fencing requirements will be established at that time. Any fencing that is required (for example, around the perimeter of OSD 10) will be consistent with that of the greater MPE Site, and the typical fencing details provided in Appendix 0C.

5 SAFETY AND SECURITY

The Project includes a number of on-site security measures to ensure the protection and safety of the Project, its employees and authorised visitors, while incorporating safer by design principles. Security at the Project will include:

- suitable lighting positioned to maximise security through passive surveillance
- CPTED including safe access to pedestrian and cyclists into the facility (refer to CPAFSP)
- palisade fencing along the entire boundary of the Project
- security fencing to restrict access to the container interchange (Autostrad) (Area 3)
- a CCTV security system at key locations including Project entrances and along boundaries
- an integrated telecommunications system which involves connection to all main buildings and structures
- access control through the use of signage and perimeter landscaping. Safety measures will include common directory board located at the entrance of the precinct to orient and direct site users, wayfinding and tenant signage, marked crossings, lighting and CCTV as required (refer to the Signage Sub Plan (SSP) for further details).

With restriction on access, active surveillance and opportunities for passive surveillance, the risk of graffiti within the Project is considered to be low. There is the potential for external signage to be subject to graffiti, however the CCTV monitoring will reduce this risk. Regardless, if graffiti of external signage is encountered the Site Supervisor will be responsible for managing the clean-up of the graffiti.

Consistent with the principle of maintaining well cared for spaces outlined in *Crime prevention and the assessment of development applications Guidelines under section 79C of the Environmental Planning and Assessment Act 1979* (Department of Urban Affairs and Planning, 2001), graffiti will be removed soon after it is identified. In most instances, it is anticipated that any graffiti to external signage will be removed by the Site Supervisor within 48 hours of the incident. If graffiti has offensive content, more immediate removal will be organised. The OEMP has been updated to further detail the procedure for reporting and removal of graffiti (refer to Section 4.5 of the OEMP).



Figure 5-1: Typical OSD warning and danger signage.

5.1 Area 1 and Area 4

Public safety needs will be addressed both within and surrounding OSD 9. Access into OSD 9 will be controlled and limited to trained maintenance personnel only. Access to OSD 9 by the general public will be prevented through the use of lockable access grates and covers. Hazard signage will be located at all entry points to OSD 9 along with step irons. Figure 5-1 outlines typical OSD area signage, including warning and danger signs.

5.2 Area 2, Area 3 and Area 5

Public safety needs will be addressed surrounding OSD 1 and OSD 2. Hazard and signage will be located around OSD 1 and OSD 2. Figure 5-1 and Appendix 0C outlines typical OSD area signage, including warning and danger signs.

Each warehouse tenancy is fully fenced to control the movements of vehicles and pedestrians accessing the operational areas within Area 2, Area 3 and Area 5. Shared paths and safe traffic crossings are provided for cyclists and pedestrians to limit the interactions between pedestrians and light/heavy vehicles moving throughout the MPE Site. As described above, lighting, access control, CCTV and way-finding signage will assist in providing a safe and secure workplace and surrounds.

5.3 Area 6

The detailed design of Moorebank Avenue upgrade and OSD 10 may be subject to the design requirements of, and subsequent approval from, TfNSW. Public safety needs with regards to the road and open OSD basin shall be in accordance with relevant TfNSW requirements, incorporating the principles and recommendations of this UDLP.

6 URBAN DESIGN RECOMMENDATIONS AND INTEGRATION

6.1 Implementation of UDLP recommendations

The urban design recommendations for the site, how they are incorporated into the final Development Layout Plans (A22), WSUD Plans (A23) and Architectural Plans (A24) as required by CoC B140(k) are outlined below in Table 11.

Appendix 0 contains the updated and consolidated Development Layout Plans, WSUD Plans and Architectural Plans. Detailed plans for Areas 1 to 6 are provided in Appendices 1 to 6.

Table 11 Recommendations Incorporated into Key Aspects for Areas 1 to 6

CoC	Key Aspect	UDLP Recommendation Incorporated			
		Area 1	Area 4	Area 2, Area 3 and Area 5	Area 6
B140(k)(i)	Updated final Development Layout Plans (A22)	<ul style="list-style-type: none"> inclusion of an employee outdoor meal break area to the south-west of the warehouse office inclusion of additional 2,500 m² landscaped strip to the immediate north and west of the car park area that incorporates low shrubs and canopy trees to provide an equivalent or greater shade benefit, without compromising required car park provision inclusion of solar panels on the roof of Warehouse 1 inclusion of shared paths inclusion of bicycle parking spaces near the Warehouse 1 office minimisation of large expanses of blank walls by providing different colours/ shading of building materials inclusion of the employee outdoor meal break out for the Warehouse 1 office inclusion of landscaping 	<ul style="list-style-type: none"> landscaping included in carparks to provide shade and visual amenity additional landscaping included along internal road verge inclusion of shared paths and landscaping end of trip and bicycle storage facilities provided communal employee/visitor meal area provided end of trip and bicycle storage facilities provided alternation of external façade colouring to mitigate visual impact and avoid large expanse of blank walls setback from perimeter road to establish dense screening vegetation 	<ul style="list-style-type: none"> warehouses include employee outdoor meal break areas landscaping included in carparks to provide shade and visual amenity additional landscaping included along internal road verge additional landscaping included at access point to Warehouse 5 carpark inclusion of solar panels on each warehouse roof inclusion of shared paths to access each warehouse end of trip and bicycle storage facilities provided at each warehouse alternation of external façade colouring to mitigate visual impact and avoid large expanse of blank walls setback from perimeter road to establish dense screening vegetation along Warehouse 2, 3, 4, 6 and 7 to improve visual amenity and UHI effect 	<ul style="list-style-type: none"> landscape buffer, including soft landscaping setbacks, have been provided as required by the consent detailed design of Area 6 and associated OSD basins may be subject to separate TfNSW approvals landscaping shall complement environmental setting and planting scheme established throughout the project area

CoC	Key Aspect	UDLP Recommendation Incorporated			
		Area 1	Area 4	Area 2, Area 3 and Area 5	Area 6
		<ul style="list-style-type: none"> prominent building facades fronting public interface areas and main internal roads will consist of a variety of building materials and colours 		<ul style="list-style-type: none"> large awnings provided to mitigate UHI effect and passively manage climate within warehouses 	
B140(k)(i)	WSUD Plans (A23)	<ul style="list-style-type: none"> provision of OSD 9 to manage water from Warehouse 1 prior to discharge fencing and appropriate setbacks around the perimeter of OSD 9 to be applied where required to ensure public safety rainwater tanks store rainfall collected from rooftops for landscaping irrigation 	<ul style="list-style-type: none"> provision of OSD 9 to manage water from freight village prior to discharge fencing and appropriate setbacks around the perimeter of OSD 9 to be applied where required to ensure public safety rainwater tanks store rainfall collected from rooftops for landscaping irrigation 	<ul style="list-style-type: none"> underground OSD tanks included to manage water quality rainwater tanks store rainfall collected from warehouse rooftops for landscaping irrigation incorporation of OSD 1 and OSD 2 to manage water prior to discharge 	<ul style="list-style-type: none"> incorporation of OSD 10 and to manage stormwater runoff from Moorebank Avenue detailed design of basin may be subject to separate approval from TfNSW
B140(k)(ii)	Architectural Plans (A24)	<ul style="list-style-type: none"> refer to Updated final Development Layout Plans (A22) Appendix 0A 	<ul style="list-style-type: none"> refer to Updated final Development Layout Plans (A22) in Appendix 0A 	<ul style="list-style-type: none"> refer to Updated final Development Layout Plans (A22) in Appendix 0A 	<ul style="list-style-type: none"> refer to Updated final Development Layout Plans (A22) in Appendix 0A
B140(k)(iii)	OEMP (C3)	<ul style="list-style-type: none"> refer to ESD principles in Table 12 for operational practices to be incorporated 	<ul style="list-style-type: none"> refer to ESD principles in Table 12 for operational practices to be incorporated 	<ul style="list-style-type: none"> refer to ESD principles in Table 13 for operational practices to be incorporated 	<ul style="list-style-type: none"> refer to ESD principles in Table 14 for operational practices to be incorporated

6.2 Integration of other plans in UDLP

The tables in the sub-sections below indicate how the relevant aspects of other plans required by CoC B140(l) – (q) are incorporated in this UDLP.

6.2.1 Area 1 and Area 4

Table 12 UDLP Integration with Plans for Area 1 and Area 4

CoC	Plan / Aspect Required to be Incorporated in UDLP	Incorporation into UDLP	Where Addressed (document / figure)
B140(l)	Stormwater Management Plan (B40)	<ul style="list-style-type: none"> Soft landscaping has been provided along the site perimeter to maximise opportunities for infiltration. 	<ul style="list-style-type: none"> Appendix 0A Appendix 1 Appendix 4
		<ul style="list-style-type: none"> Landscaping chosen is native and therefore requires minimal irrigation to both improve the visual amenity of the Project and reduce site demand for water. 	<ul style="list-style-type: none"> Appendix 0A (species list) Appendix 1 Appendix 4
		<ul style="list-style-type: none"> Rainwater harvesting will allow for water reuse 	<ul style="list-style-type: none"> Section 4.1 Appendix 1 Appendix 4 Appendix 0A Appendix 0B
		<ul style="list-style-type: none"> Stormwater runoff from minor rainfall events (up to and including the 10% AEP event) will be conveyed via a pit and pipe drainage network to OSD 9. In larger events (up to the 1% AEP event) the roadways will act as overland flow paths to convey flow to the OSDs. 	<ul style="list-style-type: none"> SMP – W1P and Updated SMP Appendix 0B
B140(m)	Heritage Interpretation Plan (B101)	<ul style="list-style-type: none"> The Heritage Interpretation Plan (HIP) has been prepared (Artefact, 2019) and will form part of the OEMP. This document identifies the freight village (Area 4) as the most appropriate location to locate interpretive media that recognises and provides education on the heritage of the Moorebank Logistics Park area. Interpretive media will include on-site and off-site media On-site media includes interpretive panels, adaptive reuse of architectural elements and interpretive historical artefact display. <p>Off-site media includes the creation of Moorebank Heritage website pages, hosted</p>	<ul style="list-style-type: none"> Heritage Interpretation Plan (Artefact, 2019), as part of the MPE OEMP

CoC	Plan / Aspect Required to be Incorporated in UDLP	Incorporation into UDLP	Where Addressed (document / figure)
		by SIMTA (eventually transitioned onto the Moorebank Logistics Park website)	
B140(n)	Urban Heat Island Mitigation Strategy (B139)	<ul style="list-style-type: none"> Landscaping: Includes provenance of canopy trees along the Project boundary and the car parking areas. Perimeter screening along Moorebank Avenue and the northern boundary of Area 1 will utilise advanced endemic shrubs and canopy trees to optimise shade. The designed landscaped strip to the north and west of the car park area for the precinct, will incorporate low shrubs and canopy trees to provide shade. A raingarden will be established downstream of OSD 9, alongside the existing east-west concrete channel. The raingarden will maintain a saturated zone, allowing vegetation established within the rain garden access to water during dry periods. 	<ul style="list-style-type: none"> Appendix 1 Appendix 4 Appendix 0A SMP – W1P and Updated SMP Appendix 0B
		<ul style="list-style-type: none"> Solar panels: Provision of solar panels/PV cells on the roof of Warehouse 1 and where possible within the freight village 	<ul style="list-style-type: none"> Appendix 0A
		<ul style="list-style-type: none"> Cool roofs: Use of translucent sheeting (Zincalume or equivalent) for roofing material where possible to minimise solar absorption 	<ul style="list-style-type: none"> Appendix 0A
		<ul style="list-style-type: none"> Building materials: Use of cool building materials and finishes including: <ul style="list-style-type: none"> metal wall cladding - Monument and Windspray is used sparingly to minimise the overall solar absorption of the warehousing envelopes metal wall cladding – Surfmeister and Shale Grey is classified as ‘light’ and therefore used as the primary colours of cladding on the warehouse to minimise solar absorption Large awning roofs will be incorporated to provide additional shade and reduce solar absorption by pavements within the vicinity of Warehouse 1 	<ul style="list-style-type: none"> Appendix 0A Appendix 0C
		<ul style="list-style-type: none"> Anthropogenic heat: Energy efficiency of the building will be achieved through the use of LED lighting and provision of translucent sheeting to allow for natural lighting. 	<ul style="list-style-type: none"> LSP
B140(o)	Flora and Fauna Management Plan (B108)	<ul style="list-style-type: none"> Outlines the native vegetation surrounding areas that have been identified. The trees/vegetation chosen for landscaping at 	<ul style="list-style-type: none"> Appendix 1 (Area 1 Masterplan)

CoC	Plan / Aspect Required to be Incorporated in UDLP	Incorporation into UDLP	Where Addressed (document / figure)
		<p>the site have been chosen to reflect the native species.</p> <ul style="list-style-type: none"> Species listed in the plant schedule have been identified along Georges River or in the Boot Land, and are characteristic of the plant community types (PCTs) (Castlereagh Scribbly Woodland) present. The chosen species are endemic species and have low water usage requirements. 	<ul style="list-style-type: none"> Appendix 4 (Area 4 Masterplan) Appendix 0C
B140(p)	Bushfire Management Plan (B144)	<ul style="list-style-type: none"> Selection of landscaping has been designed to minimise bushfire impact and through on-going maintenance will contribute to a reduction in bushfire threat. Local provenance species have been chosen for landscaping to ensure the plant species coincide with Australian climate. 	<ul style="list-style-type: none"> Appendix 1 Appendix 4 LVMSP Appendix 0C
B140(q)	Details of where and how employee facilities including but not limited to secure bicycle parking, pedestrian paths, outdoor eating areas have been incorporated into the UDLP	<ul style="list-style-type: none"> CPAFSP <hr/> <ul style="list-style-type: none"> EOMBASP 	<ul style="list-style-type: none"> Section 4.4 Appendix 1 Appendix 4 Appendix 0A CPAFSP EOMBASP
B142	Ecologically Sustainable Development	<ul style="list-style-type: none"> Passive solar design: <ul style="list-style-type: none"> The use of light-coloured materials are incorporated for Warehouse 1. For example, Shale Grey (WC1) which is classified as 'light' and is therefore used as the primary colour of cladding on the warehouse to minimise solar absorption <hr/> <ul style="list-style-type: none"> Use of energy efficient plant and equipment <hr/> <ul style="list-style-type: none"> Use of renewable energy sources: <ul style="list-style-type: none"> solar panels to be installed on the roof of Warehouse 1 for energy efficiency <hr/> <ul style="list-style-type: none"> Cross ventilation: <ul style="list-style-type: none"> very wide canyon of the warehouse buildings permits wind movement across the paved areas which facilitates heat transfer <hr/> <ul style="list-style-type: none"> Selection of material with lower energy manufacturing requirements: <ul style="list-style-type: none"> Where it is deemed that material is technically suitable (from a structural 	<ul style="list-style-type: none"> Appendix 0A <hr/> <ul style="list-style-type: none"> Energy efficient plant and equipment will be used in Areas 1 and 4, where possible <hr/> <ul style="list-style-type: none"> Appendix 0A <hr/> <ul style="list-style-type: none"> Appendix 0A <hr/> <ul style="list-style-type: none"> N/A

CoC	Plan / Aspect Required to be Incorporated in UDLP	Incorporation into UDLP	Where Addressed (document / figure)
		<p>engineering perspective) and cost effective, it will be used preferentially to virgin materials. Examples of this may include: pulverised fly ash as a replacement for cement within concrete, glass sand as a replacement for natural sand, use of sustainable sourced timber such as FSC or PEFC, and recycled pavement.</p>	
		<ul style="list-style-type: none"> ● Use of locally-sourced materials to reduce impacts associated with transport: <ul style="list-style-type: none"> – planting will incorporate a range of local species that have been selected for their unique forms, colours and textures – importation of fill from within Sydney projects. 	<ul style="list-style-type: none"> ● Appendix 1 ● Appendix 4 ● Figure 2-7: Heavy Vehicle Movement Plan (Indicative Spoil Sources)
		<ul style="list-style-type: none"> ● Rainwater capture and reuse: <ul style="list-style-type: none"> – rainwater tanks will be provided for rainwater capture and reuse as per the SMP 	<ul style="list-style-type: none"> ● Section 4.1 ● Appendix 1 ● Appendix 4 ● Appendix 0A ● Appendix 0B
		<ul style="list-style-type: none"> ● Water efficient fixtures and fittings: <ul style="list-style-type: none"> – low-volume drip irrigation system will be provided for maintenance of landscaping 	<ul style="list-style-type: none"> ● Section 4.1 ● Appendix 0C (Typical Precinct Landscape Detail)
		<ul style="list-style-type: none"> ● Waste minimisation and recycling: <ul style="list-style-type: none"> – provision of an area in the employee outdoor meal break area, warehouse office and freight village to allow for the collection and segregation of waste. 	<ul style="list-style-type: none"> ● EOMBASP

6.2.2 Area 2, Area 3 and Area 5

Table 13 Integration of plan recommendations into Area 2, Area 3 and Area 5 UDLP

CoC	Plan / Aspect Required to be Incorporated in UDLP	Incorporation into UDLP	Where Addressed (document / figure)
B140(l)	Stormwater Management Plan (B40)	<ul style="list-style-type: none"> Each warehouse includes rainwater collection tanks for reuse on landscaping irrigation 	<ul style="list-style-type: none"> Appendix 0A Appendix 0B Section 4.1
		<ul style="list-style-type: none"> Landscaping species selection consists of native species which have low irrigation demands 	<ul style="list-style-type: none"> Appendix 0A Appendix 2 Appendix 3 Appendix 5
		<ul style="list-style-type: none"> Stormwater runoff from each warehouse is detained and 'cleaned' in on-site detention tanks to ensure water discharged from site satisfies the specified water quality standards 	<ul style="list-style-type: none"> Appendix 0A Appendix 0B
B140(m)	Heritage Interpretation Plan (B101)	<ul style="list-style-type: none"> The Heritage Interpretation Plan (HIP) has been prepared (Artefact, 2019) and will form part of the OEMP. This document identifies the freight village (Area 4) as the most appropriate location to locate interpretive media that recognises and provides education on the heritage of the Moorebank Logistics Park area (see Table 12). 	<ul style="list-style-type: none"> NA
B140(n)	Urban Heat Island Mitigation Strategy (B139)	<ul style="list-style-type: none"> Landscaping: Provision of landscaped bays in car park areas and adjacent to warehouses will assist temperature regulation through evapotranspiration and shade 	<ul style="list-style-type: none"> Appendix 0A Appendix 2 Appendix 3 Appendix 5
		<ul style="list-style-type: none"> Solar panels: Provision of solar panels/PV cells on the roof of Warehouses 2 to 7 	<ul style="list-style-type: none"> Appendix 0A
		<ul style="list-style-type: none"> Cool roofs: Use of translucent sheeting (Zincalume or equivalent) for roofing material to minimise solar absorption 	<ul style="list-style-type: none"> Appendix 0A
		<ul style="list-style-type: none"> Building materials: Use of cool building materials and finishes Large awning roofs will be incorporated to provide additional shade and reduce solar absorption by pavements within the vicinity of Warehouses. Warehouse 5 includes two 40-metre deep awnings that provide a large expanse of shaded pavement alongside the warehouse loading dock which will mitigate UHI effect and help to passively regulate internal warehouse temperature 	<ul style="list-style-type: none"> Appendix 0A
		<ul style="list-style-type: none"> Anthropogenic heat: Energy efficiency of the building will be achieved through the use of LED lighting and provision of translucent 	<ul style="list-style-type: none"> LSP

CoC	Plan / Aspect Required to be Incorporated in UDLP	Incorporation into UDLP	Where Addressed (document / figure)
		sheeting to allow for natural lighting inside the warehouses.	
B140(o)	Flora and Fauna Management Plan (B108)	<ul style="list-style-type: none"> • Outlines the native vegetation surrounding areas that have been identified. The trees/vegetation chosen for landscaping at the site have been chosen to reflect the native species. • Species listed in the plant schedule have been identified along Georges River or in the Boot Land and are characteristic of the plant community types (PCTs) (Castlereagh Scribbly Woodland) present. The chosen species are endemic species and have low water usage requirements 	<ul style="list-style-type: none"> • Appendix 0A • Appendix 2 - • Appendix 3: • Appendix 5
B140(p)	Bushfire Management Plan (B144)	<ul style="list-style-type: none"> • Landscaping planted for screening along the eastern boundary of the Project Site has been located on the inside of the internal perimeter road to ensure suitable defendable space is provided within the asset protection zone (APZ) adjacent to the bushfire hazard source in the Boot Land to the east. • Landscape designs have made consideration of the future vegetation management requirements within the inner protection area of the APZ. 	<ul style="list-style-type: none"> • Appendix 0A • Appendix 2 • Appendix 3 • Appendix 5
B140(q)	Details of where and how employee facilities including but not limited to secure bicycle parking, pedestrian paths, outdoor eating areas have been incorporated into the UDLP	<ul style="list-style-type: none"> • CPAFSP addresses the provisions for cyclist and pedestrian to access the site. This includes safe, clearly signposted shared pathways, bicycle storage and end of trip facilities. • EOMBASP indicates the provision of and design of employee outdoor meal break areas that have been provided at each warehouse 	<ul style="list-style-type: none"> • Section 4.4 • Appendix 0A • CPAFSP • EOMBASP • Appendix 0A • Appendix 2 • Appendix 3 • Appendix 5
B142	Ecologically Sustainable Development	<p>Passive Solar Design</p> <ul style="list-style-type: none"> • High albedo finishes utilised on the façade of the buildings • Large awnings used over loading dock entries to provide shade, minimise heat absorption on pavements and walls of the warehouses, to reduce the energy demands for climate control inside the buildings <p>Use of energy efficient plant and equipment</p> <ul style="list-style-type: none"> • Solar panels provided on the warehouse rooftops will minimise the reliance on grid-supplied power. The use of energy efficient plant and equipment situated within the warehouses is adopted at the discretion of the 	<ul style="list-style-type: none"> • Appendix 0A • Appendix 0A

CoC	Plan / Aspect Required to be Incorporated in UDLP	Incorporation into UDLP	Where Addressed (document / figure)
		<p>warehouse tenants and is beyond the scope of this UDLP.</p> <hr/> <p>Use of renewable energy sources</p> <ul style="list-style-type: none"> Provision of large solar panel arrays atop warehouses will provide a substantial renewable energy supply. Provision of renewable electric power incentivises warehouse tenants to utilise battery-powered plant such as electric forklifts rather than diesel or LPG non-renewable equivalents <hr/> <p>Cross-ventilation</p> <ul style="list-style-type: none"> Distance between buildings in Areas 2 and 3 are very wide providing ample space for air circulation. Use of large awnings, tree plantings and other soft landscaping will increase the provision of shade and evapotranspiration throughout the area which combined with air circulation will mitigate urban heat island effects <hr/> <p>Selection of material with lower energy manufacturing requirements</p> <ul style="list-style-type: none"> Landscaped vegetation includes species endemic to the area and adapted to the local climate which minimises the energy and resources, such as water and soil, required to establish and maintain it. Where possible topsoil that is already suitable for local plant species will be reused on site to reduce the need to use external inputs to “manufacture” suitable soil profiles for landscaping. <hr/> <p>Use of locally sourced materials to reduce impacts associated with transport</p> <ul style="list-style-type: none"> Where possible topsoil has been collected and reused on-site for landscaped areas in order to minimise the need to import material from off-site and to retain soils of local provenance. Engineered fill used across the site has been sourced from local excavations associated with other development in the Sydney metro area, which has avoided the need to import material from distant quarry locations. <hr/> <p>Rainwater capture and reuse</p> <ul style="list-style-type: none"> Each warehouse has been fitted with substantial rainwater collection tanks to allow water reuse for irrigation and other purposes 	<ul style="list-style-type: none"> Appendix 0A Appendix 2 Appendix 3 Appendix 5 Appendix 0A Section 4.1 Section 4.1 Figure 2-7 Section 4.1 Appendix 2 Appendix 3 Appendix 5 Appendix 0A

CoC	Plan / Aspect Required to be Incorporated in UDLP	Incorporation into UDLP	Where Addressed (document / figure)
			<ul style="list-style-type: none"> Appendix 0B
		<p>Water efficient fixtures and fittings</p> <ul style="list-style-type: none"> Low-volume drip irrigation system will be provided for maintenance of landscaping 	<ul style="list-style-type: none"> Section 4.1 Appendix 2 Appendix 3 Appendix 5
		<p>Waste minimisation and recycling</p> <ul style="list-style-type: none"> As discussed above, engineered fill has been sourced from local sources that may have gone to waste otherwise Where possible topsoil is being recycled for reuse in landscaped areas Rainwater is being harvested for irrigation purposes The EOMBA will include recycling bins to facilitate the recycling of personal waste by warehouse occupants 	<ul style="list-style-type: none"> Figure 2.7 Section 4.1 EOMBASP

6.2.3 Area 6

Table 14 UDLP Integration with Plans for Area 6

CoC	Plan / Aspect Required to be Incorporated in UDLP	Incorporation into UDLP	Where Addressed (document / figure)
B140(I)	Stormwater Management Plan (B40)	<ul style="list-style-type: none"> Soft landscaping has been provided along Moorebank Avenue to maximise opportunities for infiltration 	<ul style="list-style-type: none"> Appendix 0A Appendix 0B Appendix 6
		<ul style="list-style-type: none"> Landscaping chosen is native and therefore requires minimal irrigation to both improve the visual amenity of the Project and reduce site demand for water 	<ul style="list-style-type: none"> Appendix 0B Appendix 0C Appendix 6
		<ul style="list-style-type: none"> Rainwater harvesting will allow for water reuse 	<ul style="list-style-type: none"> Section 4.1 Appendix 0A Appendix 0B
		<ul style="list-style-type: none"> Stormwater runoff from minor rainfall events (up to and including the 10% AEP event) will be conveyed via a pit and pipe drainage network to OSD 10. In larger events (up to the 1% AEP event) the roadways will act as overland flow paths to convey flow to the OSD 	<ul style="list-style-type: none"> Stormwater Management Plan – BOS Appendix 0B

CoC	Plan / Aspect Required to be Incorporated in UDLP	Incorporation into UDLP	Where Addressed (document / figure)
B140(m)	Heritage Interpretation Plan (B101)	<ul style="list-style-type: none"> The Heritage Interpretation Plan (HIP) has been prepared (Artefact, 2019) and will form part of the OEMP. This document identifies the freight village (Area 4) as the most appropriate location to locate interpretive media that recognises and provides education on the heritage of the Moorebank Logistics Park area (see Table 10). 	<ul style="list-style-type: none"> See Table 12 NA
B140(n)	Urban Heat Island Mitigation Strategy (B139)	<ul style="list-style-type: none"> Landscaping: Perimeter screening along Moorebank Avenue will utilise advanced endemic shrubs and canopy trees to optimise shade. A raingarden will be established in OSD basins where possible. These will maintain a saturated zone, allowing vegetation established within the rain garden access to water during dry periods 	<ul style="list-style-type: none"> Appendix 0B Appendix 0C Appendix 6
B140(o)	Flora and Fauna Management Plan (B108)	<ul style="list-style-type: none"> Outlines the native vegetation surrounding areas that have been identified. The trees/vegetation chosen for landscaping at the site have been chosen to reflect the native species. Species listed in the plant schedule have been identified along Georges River or in the Boot Land and are characteristic of the plant community types (PCTs) (Castlereagh Scribbly Woodland) present. The chosen species are endemic species and have low water usage requirements 	<ul style="list-style-type: none"> Appendix 6 Appendix 0C
B140(p)	Bushfire Management Plan (B144)	<ul style="list-style-type: none"> Selection of landscaping has been designed to minimise bushfire impact and through on-going maintenance will contribute to a reduction in bushfire threat Local provenance species have been chosen for landscaping to ensure the plant species coincide with Australian climate. 	<ul style="list-style-type: none"> Appendix 6 LVMSPP
B140(q)	Details of where and how employee facilities including but not limited to secure bicycle parking, pedestrian paths, outdoor eating areas have been incorporated into the UDLP	NA	NA

APPENDIX 0 MPE PRECINCT

Appendix 0A - Site and Landscape Masterplans

Appendix 0B - WSUD Plans

Appendix 0C - Typical Figures, Drawings and Site Plans

Appendix 0D - Environmental Control Maps (Arcadis, 2020)

Appendix 0E - Visual Impact Assessment (Reid Campbell, 2019)

Appendix 0F - Evidence of Consultation

APPENDIX 1 AREA 1

APPENDIX 2 AREA 2

APPENDIX 3 AREA 3

APPENDIX 4 AREA 4

APPENDIX 5 AREA 5

APPENDIX 6 AREA 6