

DHL Logistics Facility Badgerys Creek South Lot

Landscape SSDA_Stage 1

October 2024



SITE IMAGE
Landscape Architects



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SEARS Responses

Item	SEARS Requirement	Relevant Section of Report
7	Provide a detailed site-wide landscape plan, that	
	identifies the number and location of trees to be removed and retained, and how opportunities to retain significant trees have been explored and/or informs the plan.	<i>Refer Tree Canopy Plan 019</i>
	details the proposed site planting, including location, number and species of plantings, heights of trees at maturity and proposed canopy coverage	<i>Refer P018 Indicative Plant Schedule and 019 Tree Canopy Plan</i>
	demonstrates how the proposed development would:	
	contribute to long term landscape setting in respect of the site and streetscape.	<i>Refer design proposal and streetscape P004-017</i>
	mitigate the urban heat island effect and ensure appropriate comfort levels on-site.	<i>Refer Tree Canopy Plan 019</i>
	contribute to the objective of increased urban tree canopy cover	<i>Refer Tree Canopy Plan 019</i>
	maximise opportunities for green infrastructure, consistent with greener Places	<i>Refer greener places response P022</i>

Introduction

This report supports a State Significant Development Application (SSDA) (SSD-70818708) submitted to the NSW Department of Planning, Housing and Industry (DPHI) on behalf of DHL Supply Chain (Australia) Pty Ltd (DHL).

The SSDA constitutes a detailed development application (DA) insofar that it is linked to and is consistent with concept plan (SSD- 70316465) by seeking consent for the construction and operation of two singular storey industrial buildings for use as a warehouse and logistics facility with 24 hour/ seven day a week operation plus car parking and associated landscaping within part (25 hectares) of Lot 1 in Deposited Plan 1306448 at 1953-2109 Elizabeth Drive, Badgerys Creek known as the DHL Masterplan site.

This SSDA represents the first of two (2) SSDAs proposed by DHL and will apply to the southern half of the DHL Masterplan site, known as “the site” (the site) Stage 2 relates to the northern half of the DHL Masterplan site, known as the DHL Stage 2 site and is subject to separate SSDA (SSD-70817958).

The project vision is to develop a world class warehouse and logistics facility which is fully integrated with its green infrastructure and Connection to Country. Having been informed by key landscape and Connecting to Country themes, the development of the site can deliver on the objectives that contribute to the Aerotropolis Vision which is to:

- Achieve a landscape led approach and starting with Country- the project has been guided by Cultural Design Principals and local leaders in the Aboriginal community.
- Create a new global gateway which will be a regionally and nationally significant employment area by providing for warehouse and logistics land uses in a highly sought-after location adjacent to the new Western Sydney Airport.
- Design a cool, green new city with a landscape approach that increases urban tree canopy, provides useable open space areas throughout and restores key riparian corridors on the site.
- Transitioning to an Aerotropolis through a sustainable, orderly and transformational development in the Western Sydney Aerotropolis,
- Retaining a green, biodiverse landscape informed by Country and an indigenous lens on maintenance and land management.



Design Vision and Principles

The landscape design shall pursue the established Design Vision and Principles, in alignment with NSW Governments Offices’ aspirations and in particular Connection/Designing with Country outcomes.

_DESIGN IN HUMAN SCALE

Due the proposed site becoming industrial in nature, the need to create Human Scale, is of high importance to create a human centred workplace. Spatial arrangements, good pedestrian connectivity, amenity for relaxation; cultural recognition and gathering are design drivers to aid in this principle.

_INCREASE ECOLOGY/ CREATE TREE CANOPY

The ambition to increase the ecological value of the site. This will be achieved by restoring native plant communities and Water Sensitive Urban design along with ensuring healthy soils are provided for to ensure landscape excellence.

_CONNECTION WITH COUNTRY

Through the pursuit of Connection with Country, the principles are interwoven. Allowing Country to drive the landscape design formed by knowledge passed by Tradition Custodians. Elements of Country are to be expressed throughout creating a more meaningful, harmonious, inviting, and sustainable outcome.

Planning Framework

This report has been prepared to address the following plans and policies

State Environmental Planning Policy (Western Sydney Aerotropolis) 2020

Western Sydney Aerotropolis Development Control Plan 2022

Western Sydney Aerotropolis Precinct Plan 2022

Other relevant background reports include

Greater Sydney Region Plan - A Metropolis of Three Cities

Recognise Country Draft Guidelines for development in the Aerotropolis 2021

Western Sydney Street Design Guidelines 2020

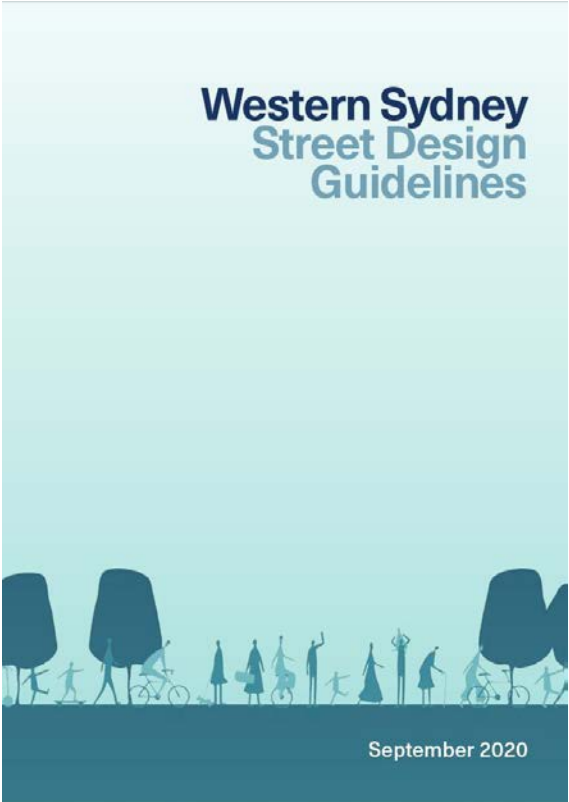
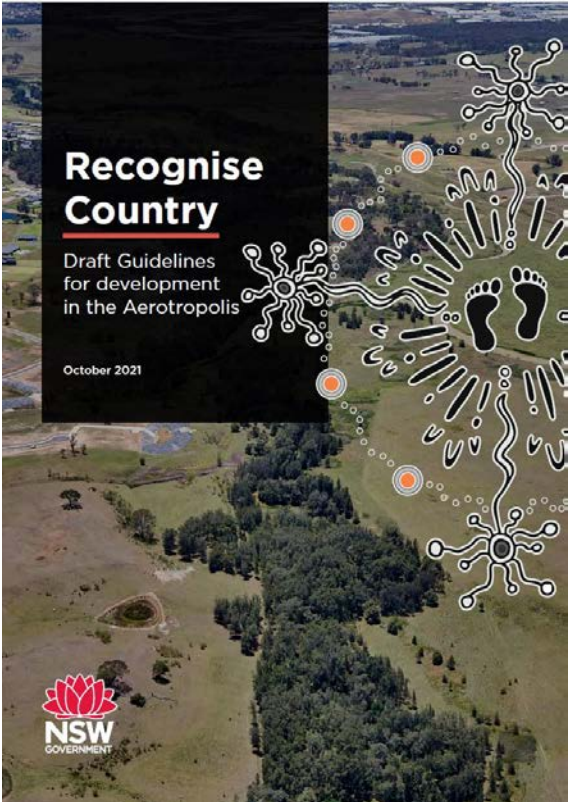
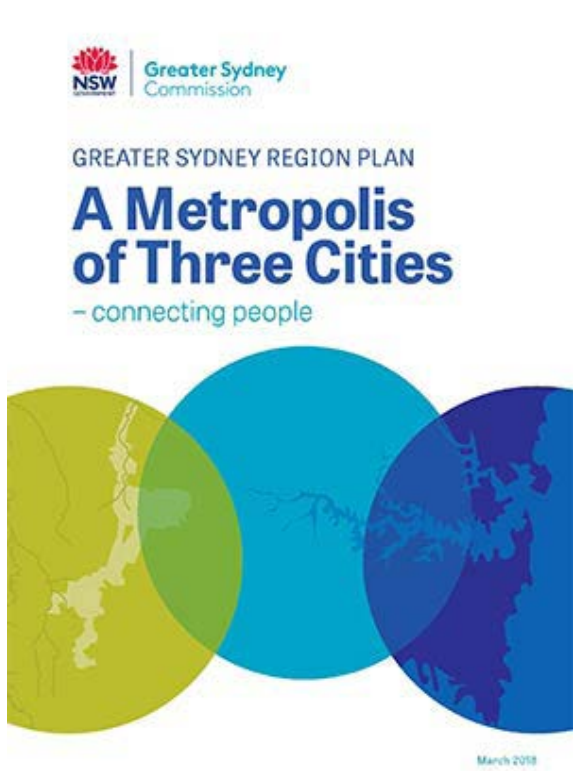
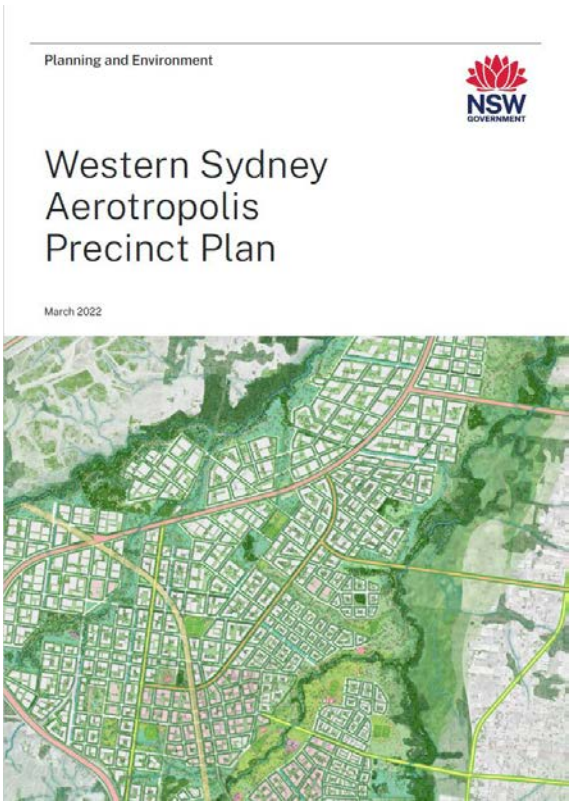
Aviation Safeguarding Guidelines October 2021

Other reports to be read in conjunction with the landscape report

Urban design report

Ecological Assessment

Bushfire Assessment



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Landscape SSDA_Stage 1



Drawing Number 005
Issue F
Date 15.10.2024

Site Analysis

The subject site sits within the proposed Northern Gateway Precinct flanked loosely by Badgerys Creek and Cosgroves Creek.

Future roads shall further service the development

The site is gently undulating, populated by some pockets of trees, man made dams related to the pastoral land use.

Mixed, exotic grass species cover most of the site with unsealed access roads and some built structures.

The site within the Northern Gateway Precinct, within the Burra Park (BHL) development.

This application relates to Lots 3 and 4 within the southern half of the site.



Connecting with Country

Before the Landscape Design process began, we have had been fortunate enough to ‘Walk Country’ with Dharug Traditional Custodians.

Facilitated by Yerrabingin a day was spent with the Aunties, walking on Dharug Country. Their passion, connection, issues and stories they were kindly willing to shared - this initiated the Co-Design process.

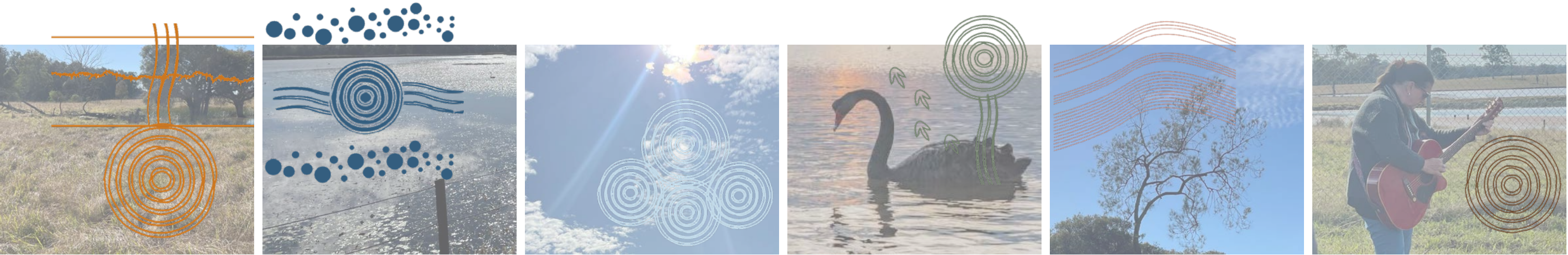
From this session, and existing relationships **Yerrabingin** have developed and distilled the learnings into Elements of Country (not only for this site but for the greater BHL/ Burra Park Masterplan).

Elements of Country have been both embedded and driven the spatial, functional, and material design of the external spaces

Each Element has an interconnected relationship to one another, each interdependent on others success in the design and implementation process.

We believe it is our role as Landscape Architects is to interpret these Elements into the landscape design; functionally, spatially and aesthetically.

Elements of Country iconography courtesy of Yerrabingin.



Deep Country

Expression, honouring and celebration of Country and its elements.

Water Country

Respecting water and its complexity and importance to Country.

Sky Country

The importance of Sky in practical nature (time/ navigation) and its in role in spiritual connection

Non-Human Kin

The understanding of interconnected nature of people and nature, and the symbiotic relationship that is required to sustain healthy, thriving and on going ecosystems.

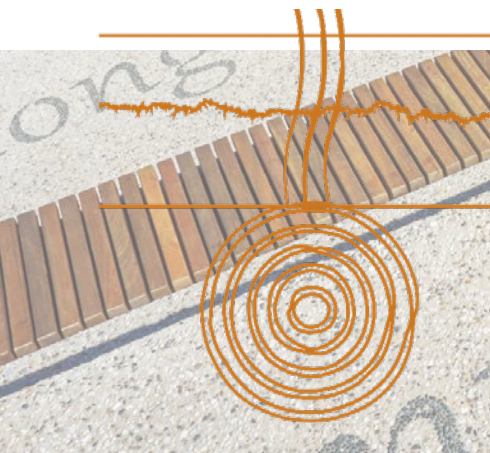
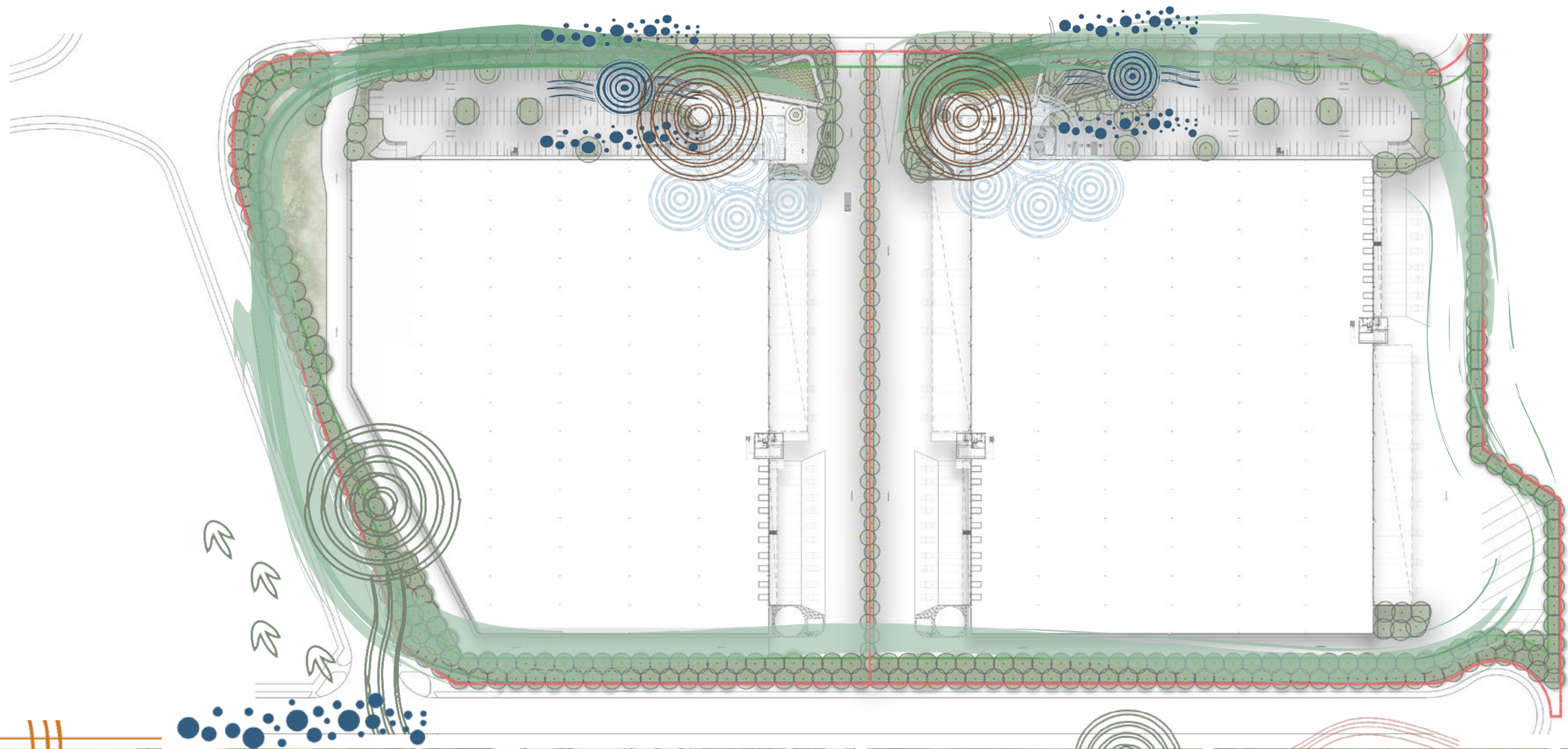
Wind Country

Understanding its spiritual role of expressing movement, rhythm and the natural ‘pulse’ of Country.

Move With Country

Respecting people’s role in Country, and in turn People’s role as custodians and sharing knowledge

Connecting with Country



Deep Country

Subtly and overtly representing Country through spatial design and materiality



Water Country

Providing devices that protect and enhance the Green Grid and hydrology thought the landscape. Also celebrating this process and allowing kin and non human kin to interact and further enhance.



Sky Country

Allowing for open spaces, creating strong visual links to Sky.



Non-Human Kin

Rehabilitation of natural systems to support flora and fauna, replanting of flora, creation of habitat of wildlife.



Wind Country

Planting native trees, grasses on scale that is more than a token gesture.



Move With Country

Creating places for people to feel invited, gather, interact and communicate

Landscape Masterplan

The masterplan site Site proposes 4 ‘Lots’ in which the Landscape Design has considered holistically before creating the finer grain design of the 2 subject sites ‘Warehouses 3 and 4’. (Shown within the Blue dotted line)

Working with SBA Architects, the built form has been driven to create the ‘human scale’ facilities to be adjacent to one another. In turn, the associated Open Spaces, amenity areas, WSUD etc will create a prominent Green Heart to the site.

Further considerations have been made to the boundaries and setbacks allowing elective tree growth and canopy, with associated understory planting.

Part of the Masterplan proposes a communal but publicly accessible large open space within the significant NW corner of the site. This space shall foster an increased ecology to the site, through significant reintroduction of plant species effectively mounded to shield the space from vehicle moments.

Respite seating and BBQ areas with shade structures shall also be created encouraging patronage, fostering community interaction of workers

All spaces, their inclusions and forms have been driven by Country with Country and relative Elements. The further explanations in this report shall exemplify the ingrained principled learned by the Traditional Custodians’, Walk Country, Co-Design sessions and eloquently and respectfully communicated information provided by Yerrabingin to aiding a true Design with Country outcome.



The Design

Both proposed Lot 3 and 4 have similar design inclusions. Both landscape sites aim to follow the Vision and Principles established for the site. Generally, the schemes aim to provide minimal practical area of hardstand, and increasing opportunities for planting and permeable surfaces. The geometry of the design is that of an organic style, subtly referencing water and typography, the outcome creates a relaxed ‘flowing’ series of spaces.

The avoidance of extended straight lines will create vistas terminated with green.

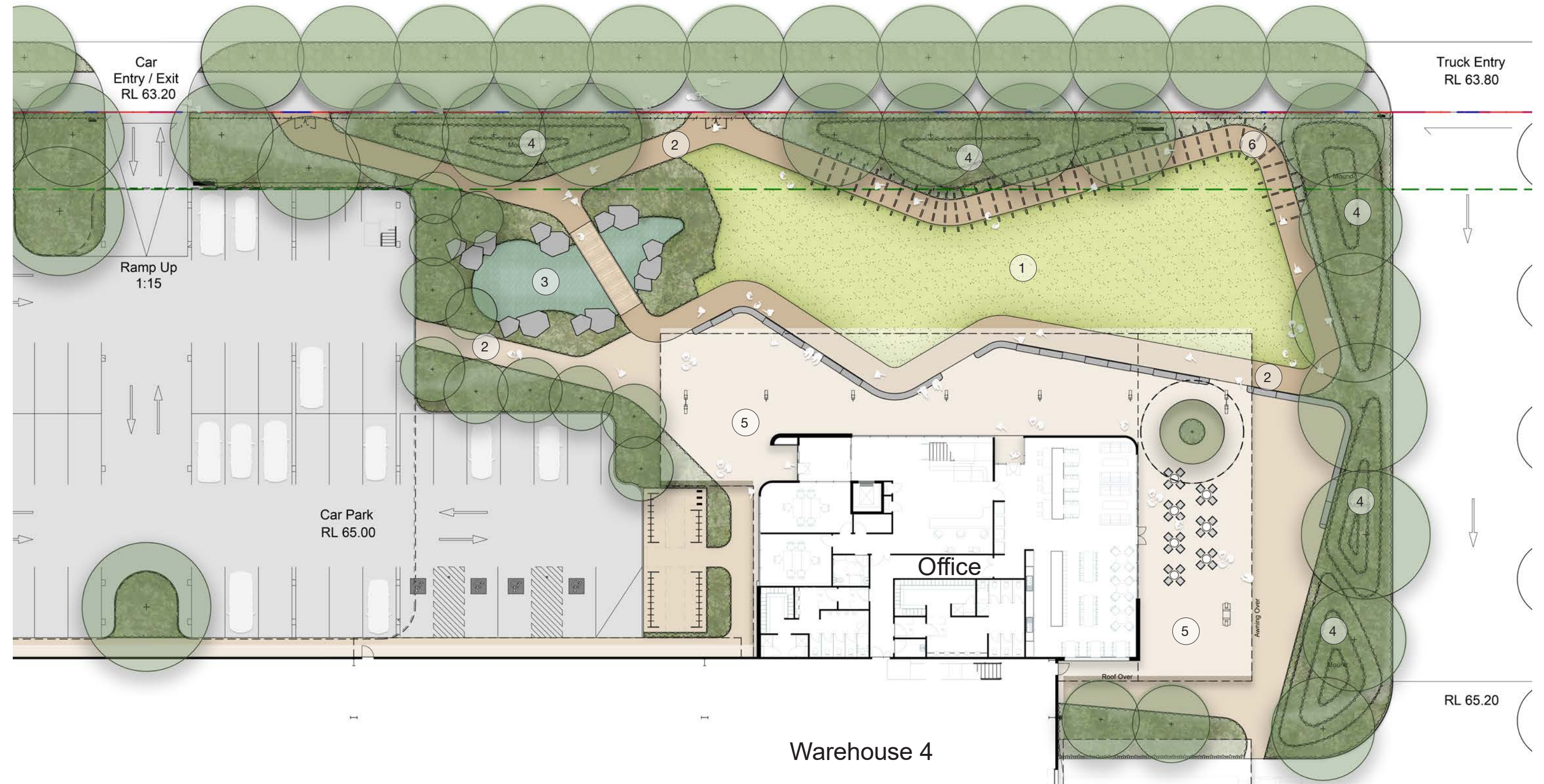




- 1 Open lawn area
- 2 Circulation pathway
- 3 Water management and revegetation zone
- 4 Mounding with massed planting
- 5 Office breakout and amenity
- 6 Pergola to pathway



The Design | Landscape Plan Lot 4 / Warehouse 4

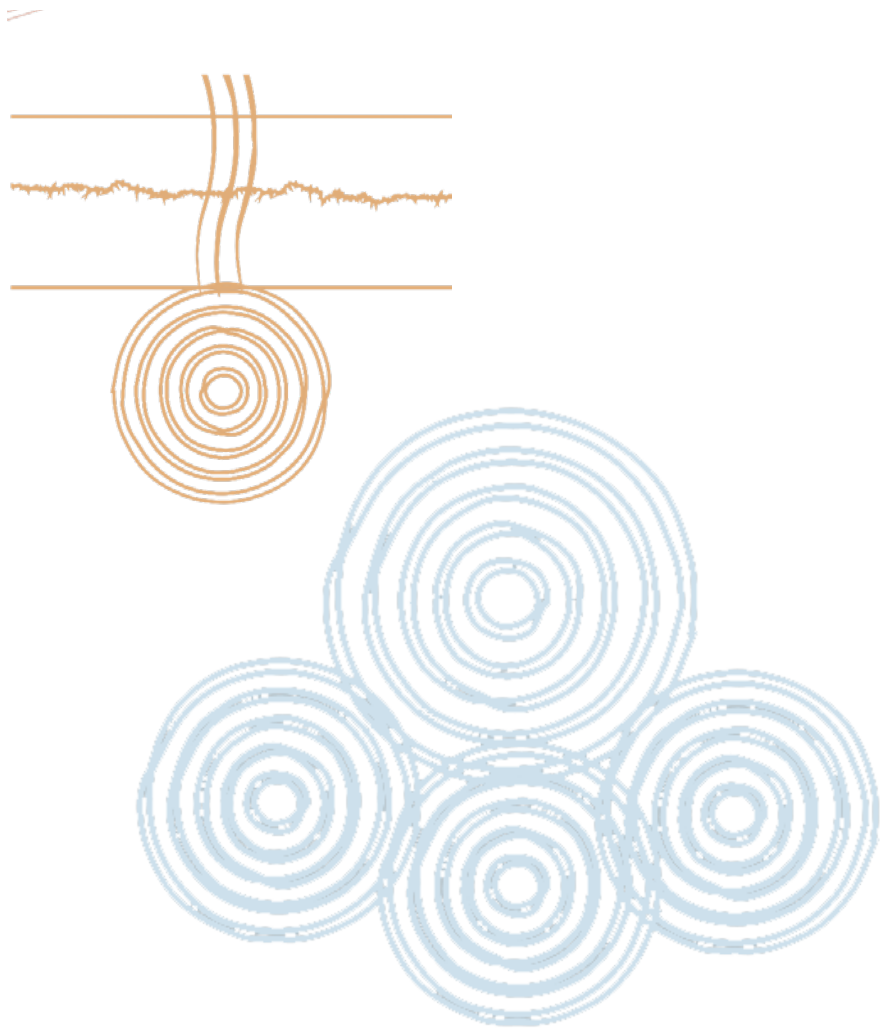


- 1 Open lawn area
- 2 Circulation pathway
- 3 Water management and revegetation zone
- 4 Mounding with massed planting
- 5 Office breakout and amenity
- 6 Pergola to pathway

Open Space

Driven by the Open Sky principle, the creation of large open spaces have been developed respecting this. More than just an symbolic homage to this principle, these open spaces shall be used by staff and visitors as a way to withdraw from the built form and are to be surrounded by mounds of landscape protecting the space from traffic, while providing a strong sense of unencumbered openness – giving strong connection to Sky Country.

Further to this, these open spaces shall provide a good spatial format for community events, such as NAIDOC week events and other auspicious cultural activities. Another overlay of potential education opportunities through plaques/ QR codes to inform and ingrain Country to users will be considered. The surrounding paths can tell the stories of journeys and song, further ingraining Deep Country.

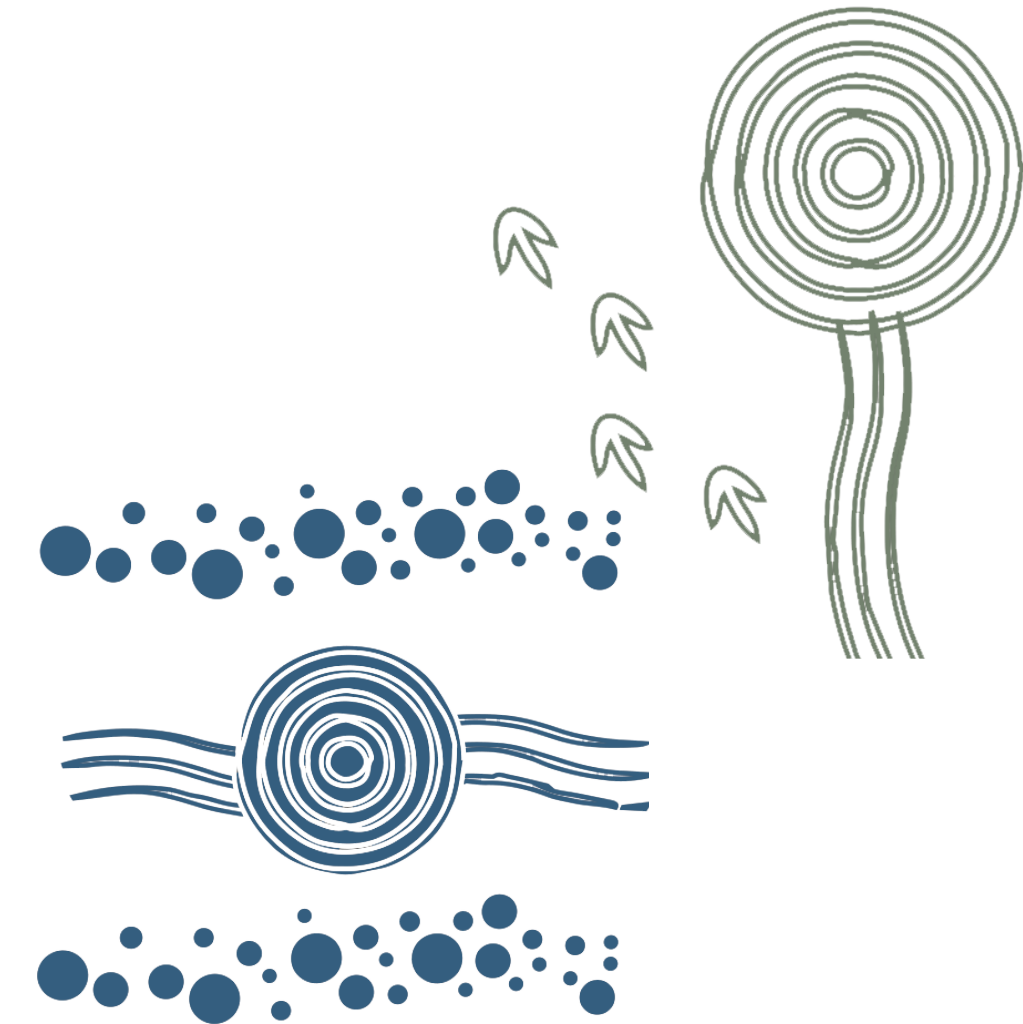
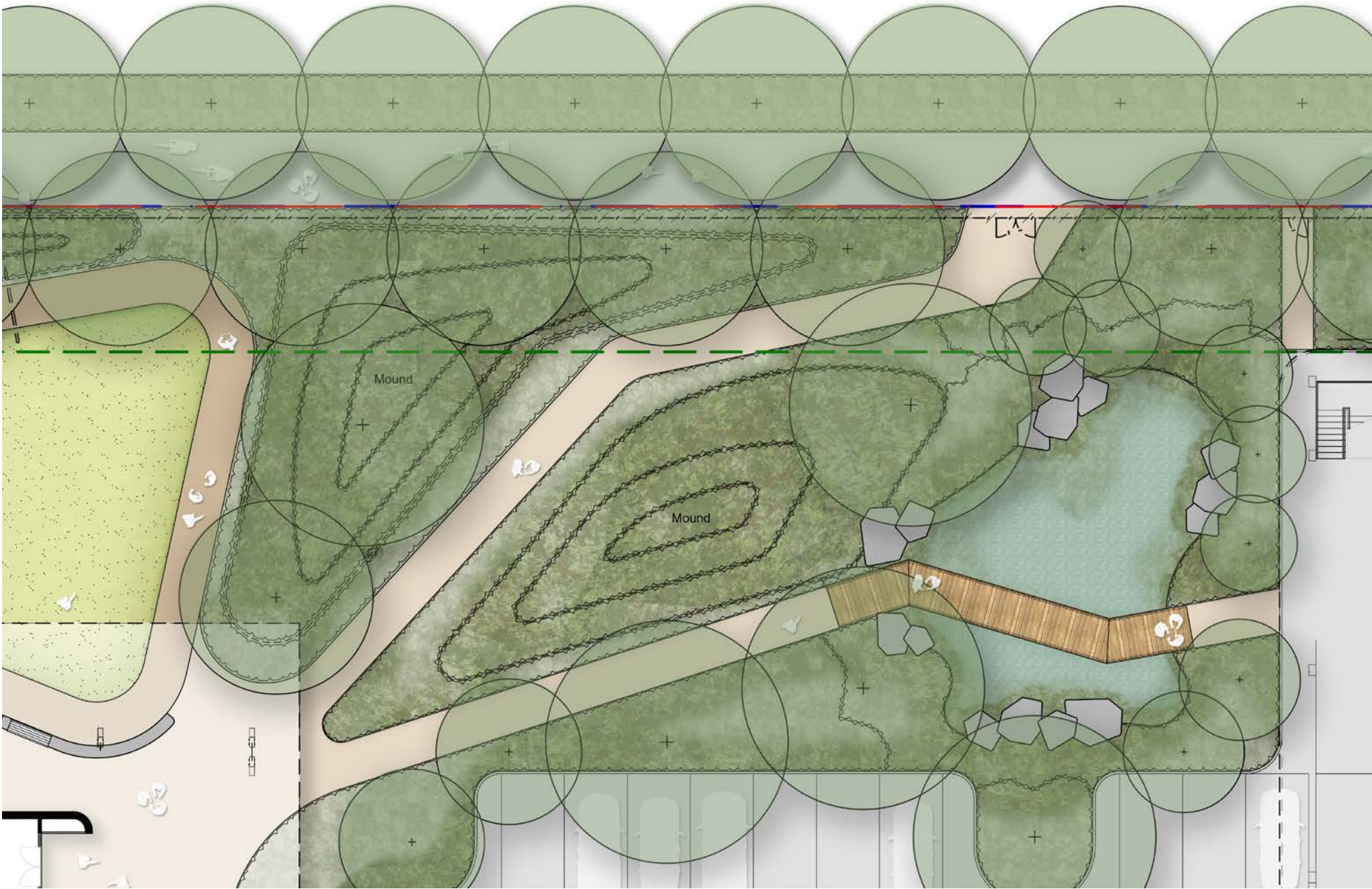


Water Sensitive Urban Design

As previously mentioned, the importance culturally and ecologically of the adjacent creeks and waterways, and their related tributaries The Landscape Design plays an important role mitigating impacts of development. The reinforcement of hydrology and its interconnected nature has brought rise the inclusion of significant water devices being included in both sites. The inclusion of Water on site not only expresses the importance of Water Country, but more inlays Care for Country of this element; natural de-toxifying water and recharging the water table (a particularly strong message delivered to us by the Dharug Aunties)

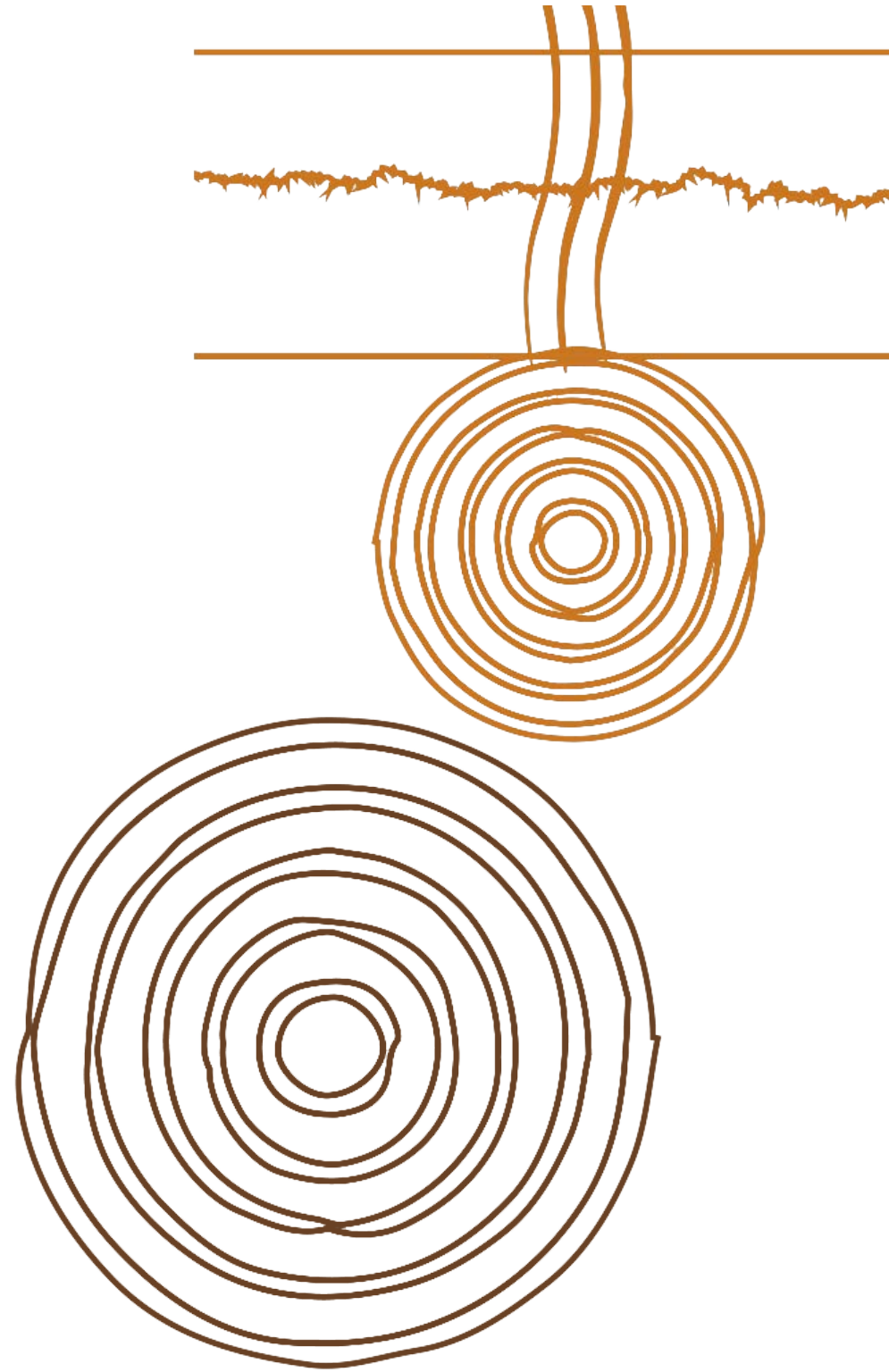
Other initiatives that will be explored include permeable pavements and carpark WSUD rain gardens.

Further benefits from this design intervention such as the increased and diversification of ecology and the positive and restorative impact of hearing and seeing water.



Circulation and Breakout Spaces

In pursuit of creating Human Centred/ Human Scale space, breakout spaces have been created close to the built form. They will act as a convenient outdoor space for workers and visitors, protected in many parts from the elements. Seating walls for respite and meals, will visually further reinforcing the designs organic geometry and creating subtle division of spaces within.



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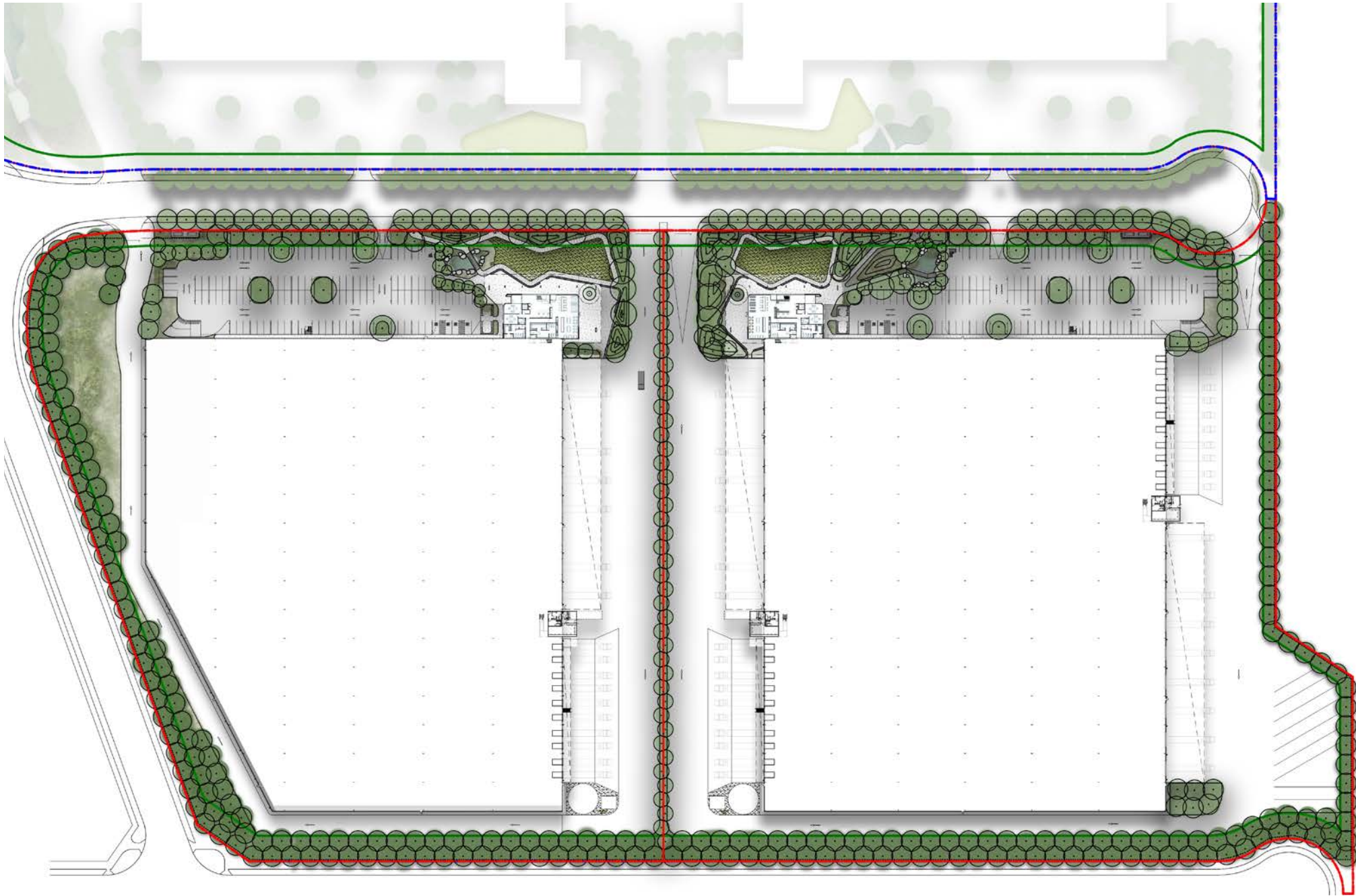


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Boundary Interfaces

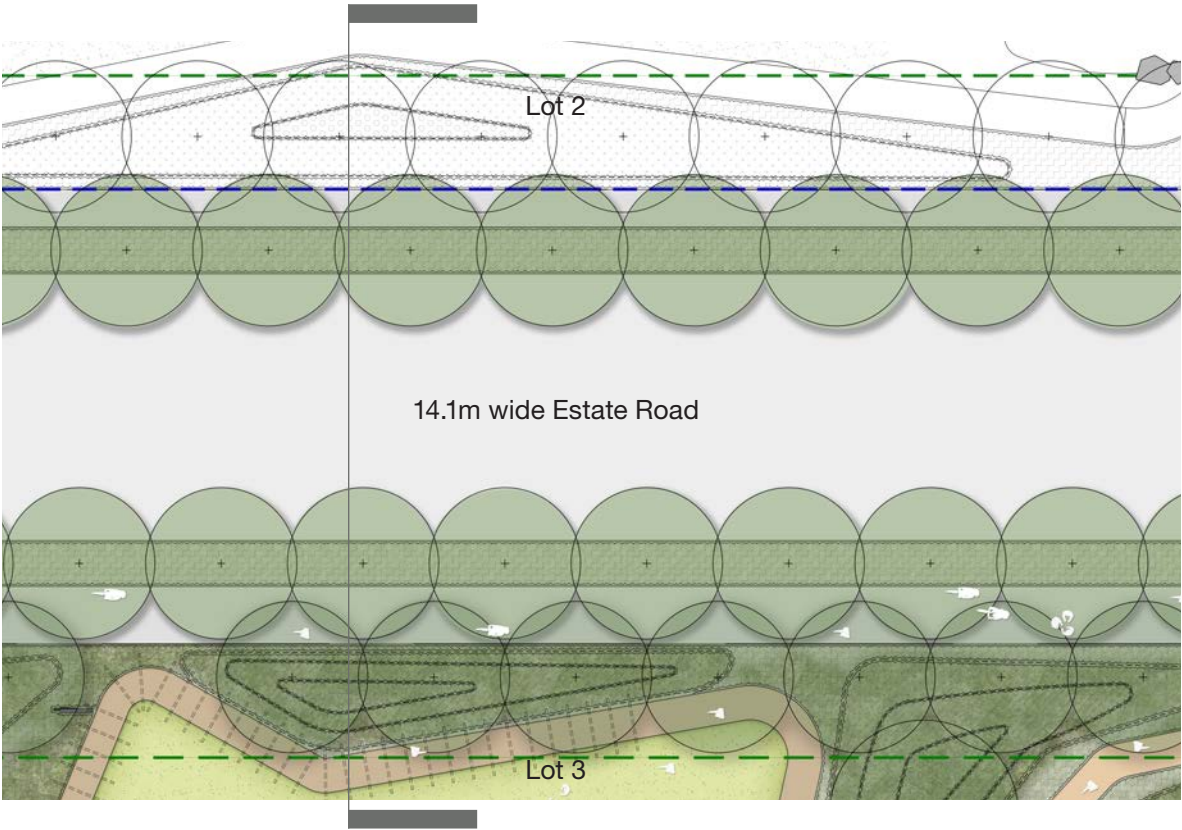
Building setbacks have been provided to ensure good vegetative screen to and from the site. Along with providing an increase to the scheme's tree canopy and ecological benefits, CwC Element of **Wind Country** shall be evoked, particularly in the Western Boundary where more significant trees can be planted and thrive. Reminders of the rhythm of nature through canopies of trees moving with the winds and their associated understories, these boundaries will play not only a practical, but important spiritual role for First Nations' people.



Streetscape

The streetscape shall follow the Northern Gateway Masterplan document by Clouston Associates. p57.

The layout of trees follow a regular spacing of interconnected canopy, ensuring good potential canopy cover and shading of hardstand.



Footpath



Understory massed grasses and groundcovers



Tree planting with connected canopy



Massed shrub planting on mounding



Section A - Estate Road

Planting Strategy

The selection of planting shall play a major role in respecting the Element of **Non-Human Kin**. As a result the importance of plant selection and design is vital in creating (or rehabilitating) Country.

Selection of plant species takes into account the prescribed planting within the Northern Gateway Masterplan, overlaying re-establishment of flora communities, cultural and Connection with Country species, and finally being mindful of the Aerotropolis constraints.

Another important consideration shall be Bush Fire Protection. While its recognised there are some conflicting desired outcomes between canopy coverage aspirations and asset protection. Working closely with Bushfire consultants, we will aim to maintain as much of the original design intent and outcomes as described with in this report.

Botanic Name		Common Name	Mature Size		Pot Size	Density	Native \ Exotic	Notes
			Height	Spread				
STREET TREES								
TREES								
Ame	Acacia melanoxylon	Blackwood	15m	8m	100L	As Shown	N	PCC
Bac	Brachychiton acerifolius*	Illawarra Flame Tree	12m	6m	100L	As Shown	N	
Bmy	Backhousia myrtifolia*	Cinnamon Myrtle	7m	4m	100L	As Shown	N	Managed Tree Species
Bpo	Brachychiton populneus	Kurrajong	12m	5m	100L	As Shown	N	PCC
Cap	Ceratopetalum apetalum*	Coachwood	20m		200L	As Shown	N	
Cau	Celtis australis	European nettle tree	14m	10m	200L	As Shown	E	
Ctr	Cryptocarya triplinervis*	Three-veined Laurel	15m		200L	As Shown	N	
Ere	Elaeocarpus reticulatus*	Blueberry Ash	9m	4m	100L	As Shown	N	
Gbi	Ginkgo biloba	Ginkgo	11m	5m	100L	As Shown	E	PCC
Hfl	Hymenosporum flavum	Native frangipani	10m	5m	100L	As Shown	N	PCC
Hpe	Harpullia pendula*	Tulipwood	6m	4m	100L	As Shown	N	
Psi	Pistacia sinensis	Chinese pistachio	8m	5m	100L	As Shown	E	PCC
San	Syzygium anisatum*	Aniseed myrtle	15m	8m	200L	As Shown	N	Managed Tree Species
Ssi	Stenocarpus sinuatus	Firewheel tree	25m	8m	200L	As Shown	N	
BOUNDARY PLANTING								
TREES								
Aan	Arbutus andrachnoides	Grecian Strawberry tree	7m	7m	100L	As Shown	E	PCC
Ahi	Angophora hispida*	Dwarf Apple Gum	6m	4m	100L	As Shown	N	Managed Tree Species
Bci	Backhousia citriodora*	Lemon Myrtle	8m	4m	100L	As Shown	N	Managed Tree Species
Bmy	Backhousia myrtifolia*	Cinnamon Myrtle	7m	4m	100L	As Shown	N	Managed Tree Species
Bpo	Brachychiton populneus	Kurrajong	12m	5m	100L	As Shown	N	PCC
Ere	Elaeocarpus reticulatus*	Blueberry Ash	9m	4m	100L	As Shown	N	
Gtr	Gleditsia triacanthos 'Shademaster'	Honey locust	10m	8m	100L	As Shown	E	PCC
Ltu	Liriodendron tulipifera	Tulip tree	15m	7m	100L	As Shown	E	PCC
Pel	Podocarpus elatus	Plum pine	10m	6m	100L	As Shown	N	
ON-LOT PLANTING								
TREES								
Aex	Alphitonia excelsa*	Red ash	15m	8m	200L	As Shown	N	PCC
Aan	Arbutus andrachnoides	Grecian Strawberry tree	7m	7m	100L	As Shown	E	PCC
Bci	Backhousia citriodora*	Lemon Myrtle	8m	4m	200L	As Shown	N	Managed Tree Species
Bpo	Brachychiton populneus	Kurrajong	12m	5m	200L	As Shown	N	PCC
Can	Cupaniopsis anacardioides*	Tuckeroo	8m	6m	100L	As Shown	N	PCC
Cca	Calodendrum capense	Cape chestnut	10m	10m	100L	As Shown	E	PCC
Eac	Ehretia acuminata*	Koda	10m	8m	100L	As Shown	N	
Ere	Elaeocarpus reticulatus*	Blueberry Ash	9m	4m	100L	As Shown	N	
Gbi	Ginkgo biloba	Ginkgo	11m	5m	100L	As Shown	E	PCC
Qil	Quercus ilex	Holm oak	20m	12m	200L	As Shown	E	PCC
Wfl	Waterhousea floribunda*	Weeping Lilly pilly	13m	10m	200L	As Shown	N	Managed Tree Species
Zse	Zelkova serrata	Japanese Zelkova	11m	9m	100L	As Shown	E	PCC
ON-LOT CARPARK PLANTING								
TREES								
Ahi	Angophora hispida*	Dwarf Apple Gum	6m	4m	100L	As Shown	N	Managed Tree Species
Bpo	Brachychiton populneus	Kurrajong	12m	5m	100L	As Shown	N	PCC
Cca	Calodendrum capense	Cape chestnut	10m	10m	100L	As Shown	E	PCC
Gtr	Gleditsia triacanthos 'Shademaster'	Honey locust	10m	8m	100L	As Shown	E	PCC
Hpe	Harpullia pendula	Tulipwood	8m	6m	100L	As Shown	N	PCC
Hti	Hibiscus tiliaceus*	Native Hibiscus	5m	4m	100L	As Shown	N	
Wfl	Waterhousia floribunda*	Weeping Lilly pilly	13m	10m	100L	As Shown	N	Managed Tree Species
SHRUBS & ACCENTS								
	Acacia flexifolia	Bent-leaf Wattle	1.5	2	300mm	As Shown		
	Atriplex nummularia	Old man saltbush	3	4	300mm	As Shown	N	
	Billardiera scandens	Common Apple Berry	1.5	3	300mm	As Shown	N	
	Callistemon pallidus	Lemon Bottlebrush	3	2	300mm	As Shown		
	Doryanthes excelsa	Gymea Lily	3	0.3	300mm	As Shown		
	Leucadendron salignum 'Winter Red'	Conebush	1.2	1.8	300mm	As Shown		
	Melaleuca thymifolia	Honey Myrtle	1.2	2	300mm	As Shown		
	Ozothamnus diosmifolius 'Radiance'	Rice Flower	2	1.2	300mm	As Shown		
	Westringia fruticosa 'Grey Box'		0.5	0.5	300mm	As Shown		
GRASSES & GROUND COVERS								
	Acrotriche serrulata	Honey Pots	0.3	1	150mm	5/m2	N	
	Adenanthos cuneatus 'Coral Carpet'				150mm	5/m2		
	Anigozanthos flavidus 'Landscape Scarlet'				150mm	5/m2		
	Astroloma humifusum	Cranberry Heath	0.5	1.5	150mm	5/m2	N	
	Dianella caerulea				150mm	5/m2		
	Dianella revoluta 'Little Rev'				150mm	5/m2		
	Dichondra repens				150mm	5/m2		
	Juncus usitatus				150mm	5/m2		
	Lomandra fluviatilis 'ABU7'				150mm	5/m2		
	Lomandra hystrix				150mm	5/m2		
	Lomandra longifolia 'Tanika'				150mm	5/m2		
	Poa labillardieri 'Eskdale'				150mm	5/m2		
	Rhagodia spinescens				150mm	5/m2		
	Westringia fruticosa 'Flat 'n' Fruity'				150mm	5/m2		

Planting species adopted from Northern Gateway Public Domain and Landscape Strategy (Issue B), Prepared by CLOUSTON Associates dated 30th November 2021
PCC Penrith City Council preferred species list



Waterhousea floribunda



Doryanthes excelsa



Billardiera scandens



Brachychiton acerifolius



Tree Canopy

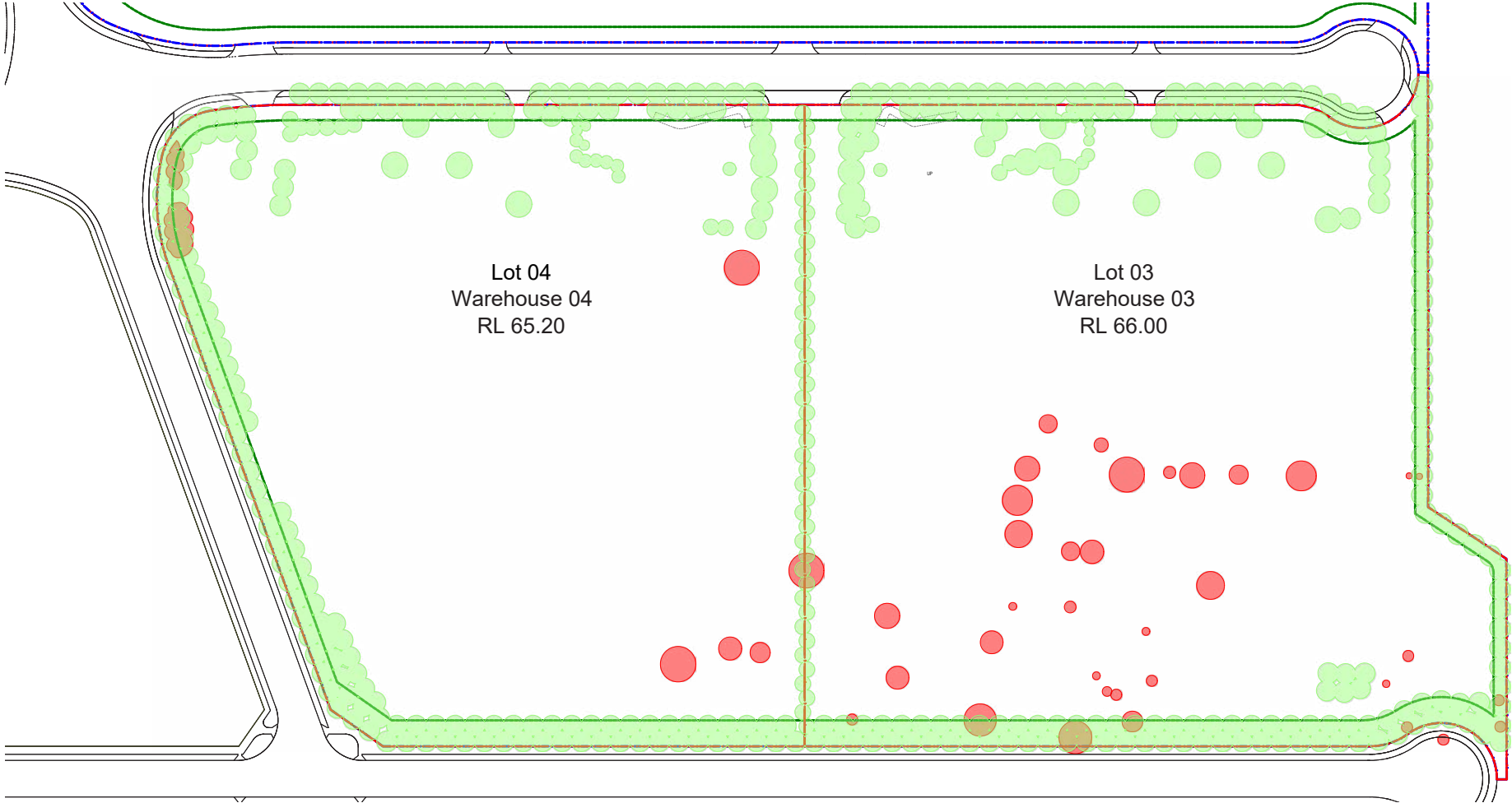
A key consideration thought the landscape design is the inclusion and provision of generous areas of softscape which will facilitate the growth of a healthy tree canopy.

Tree canopy coverage will contribute to shade cover over hardstand areas reducing heat island affect while playing a key role in establishing the CwC Element of **Wind Country**

Tree canopy contribute to the function of the ecological corridors of the green grid described earlier in this report.

The site currently includes scattered existing trees. These are unable to be retained due to necessary civil works. Replacement tree canopy is well in excess of current cover.

Tree canopy targets are derived from the Draft Greener Places Design Guideline and DCP documents Canopy cover areas include on lot and estate road areas.



	Removed Canopy Cover	2383 sqm	approximately 46 trees
	Proposed Tree Canopy Cover	18,929 sqm (16.31%)	443 trees

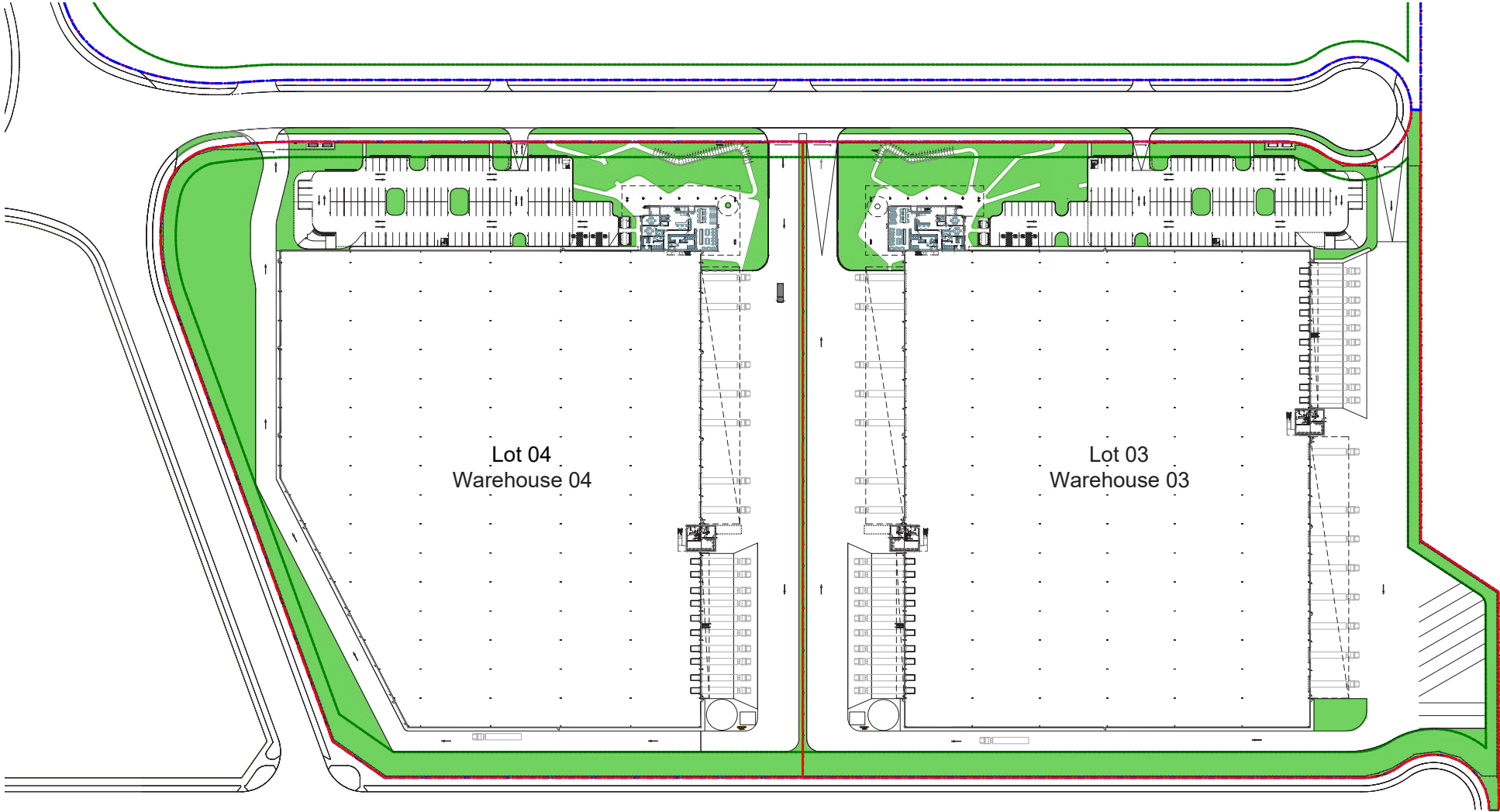
Deep Soil

Deep soil landscape areas are provided throughout open spaces and on lot areas.

Deep soil planting is consolidated at property boundaries between sites, site setbacks and frontages and open spaces.

Large deep soil areas provide space for effective tree canopy cover and successful multi tiered landscape.

Areas below include on lot landscape and estate road areas.



Proposed Deep Soil 17,404qm

Material Strategy

Materiality through the landscape design has the opportunity to express Deep Country. Creating connection through the use of natural materials, where possible of local origin. Material such as stone from Country can will be used in applications such as careful placement of boulders for seating, local aggregates used for walls, paths, and other hard landscape materials. Sustainable timbers for softening, bridge walkways and furniture are example of how Deep Country can be recognised and respected throughout. Other layers such as symbolic and totemic inlays within paving, sculpture can be used to further honour Country.

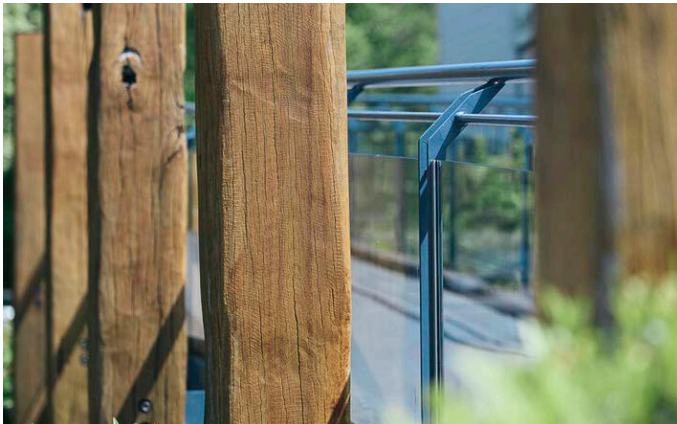
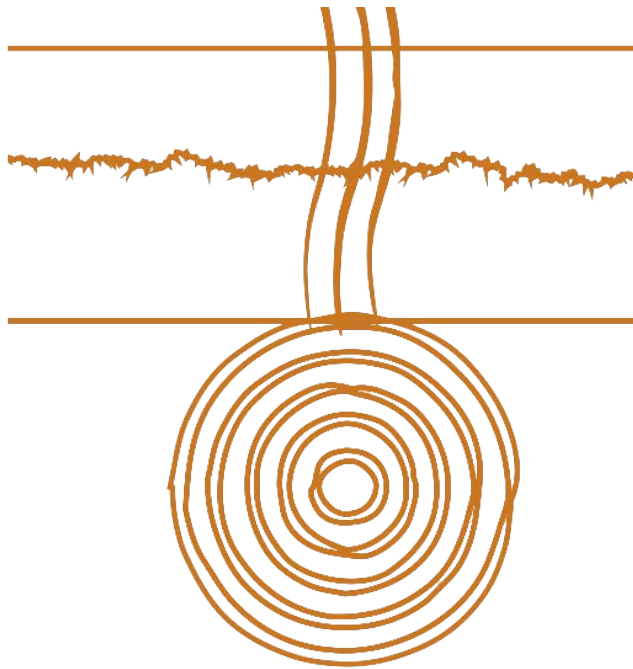


Image courtesy of Yerrabingin

Draft Greener Places Design Response

Designing to the Greener Places and Better Placed Design Framework for Green Infrastructure:

Following the ethos of the ‘Greener Places’ design framework, this project focuses on providing a development harmonious with the existing setting.

Incorporating the Greener Places and Better Places principles through the landscape design philosophy

1. Integration & Better for community

Combine green infrastructure with urban development and grey infrastructure

Green infrastructure is provided throughout the proposed stage 1 works. Canopy tree planting, supported though generous deep soil landscape areas ensures shading to hardstand developed areas. Landscaped areas include diverse multi layers planting that contribute to biodiversity and habitat.

2. Connectivity

Create an interconnected network of open space

Spaces have been design to foster for human social connections and interactions with nature. Connecting to the broader DHL masterplan concept which includes a publicly accessible recreation space, as well as the BHL site a network of open spaces.

Open spaces on offer range from on site amenity areas conveniently located by office space to serve workers throughout the day though to border significant green infrastructure around the Cosgrove and Oakey Creek Corridor. Pedestrian connection to these spaces are catered for within the shaded public domain circulation network.

3. Multi functionality & Better Fit

Deliver multiple ecosystem services simultaneously

The landscape plan for stage one delivers a variety of ecosystem services

- Water management and treatment within basins and permeable landscape area
- Biodiversity within planting
- Climate regulation though provision of tree canopy and softscape.

4. Participation & Better Value

Involve stakeholders in development and implementation

This report describes the co-design process which has been undertaken with Dharug Traditional Custodians to date.

On going relationships and co-design will occur throughout the design development, implementation and ongoing use and operation of the site.

These principles are supported by three key strategies of

Open space for recreation

A variety of spaces have been provided for recreation on lot 3 and 4. These cater for passive and active recreation. Formal and informal gatherings throughout the seasons and time of day. Care has been given to ensure the spaces are human in scale though the use of landscape mounding and park like features.

Urban tree canopy

The landscape design proposes canopy cover across the extent of the ground plane resulting in a net increase in canopy cover this is to be supported by an understory of locally native species complementing local ecologies of the area.

Connecting bushland and waterways

The addition of tree planning across the site will complement existing surrounding tree canopy. New plantings will ensure diversity in the maturity of trees ensuring secession in stock- protecting and increasing canopy cover in the future.

Within the site, a WSUD approach will ensure that water coming though the site will be appropriately captured treated and reused.

- The key benefits of adopting the Greener Places and Better Places framework as a basis for this design include:
- Locally harmonious landscape character
 - Consideration of micro climates within the site
 - sharing of the cultural and environmental stories of the area