GHD Design

Sydney WATER

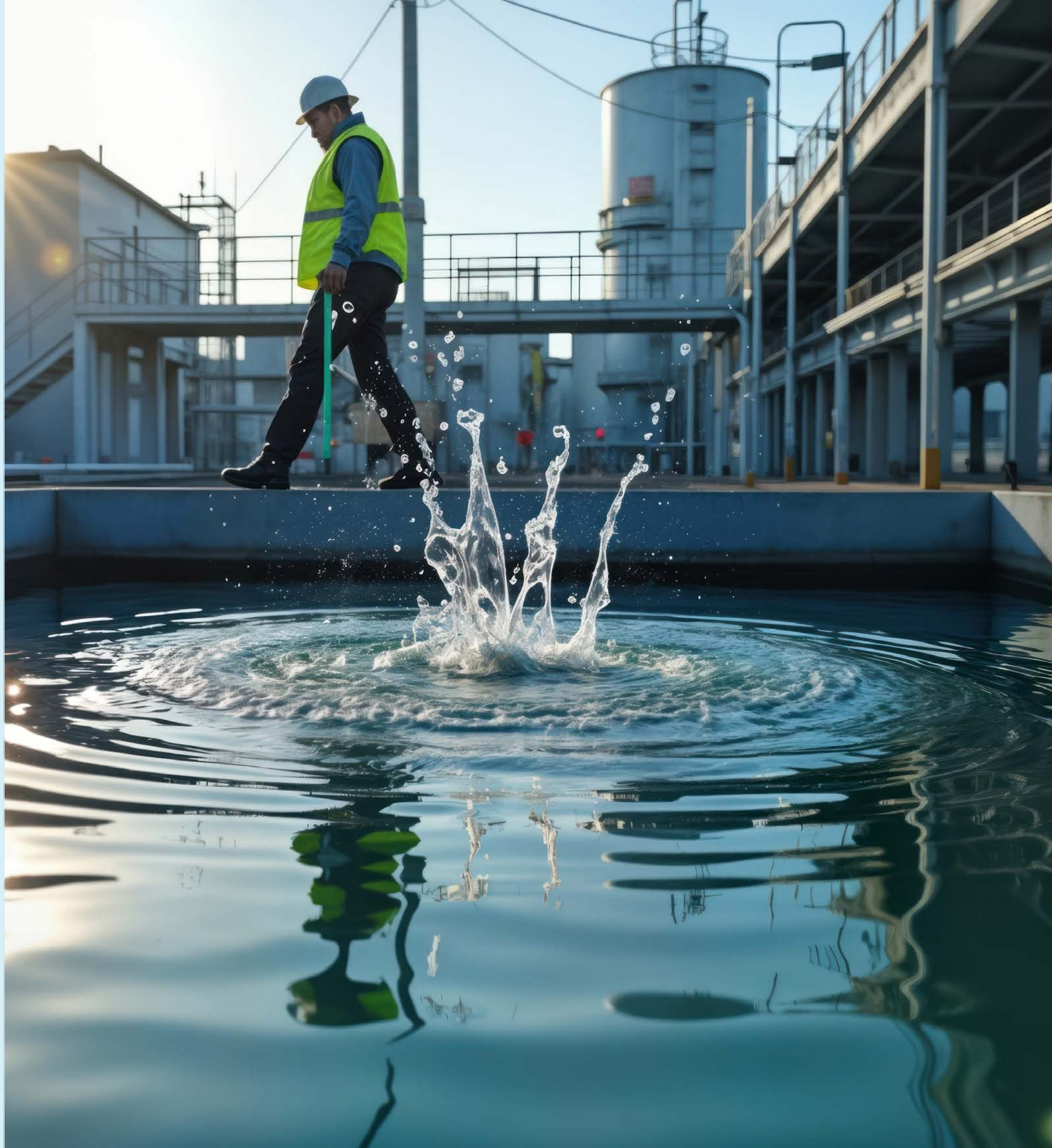
Greater Parramatta and Olympic Peninsula

Water Cycle Management Project

Place & Design Framework

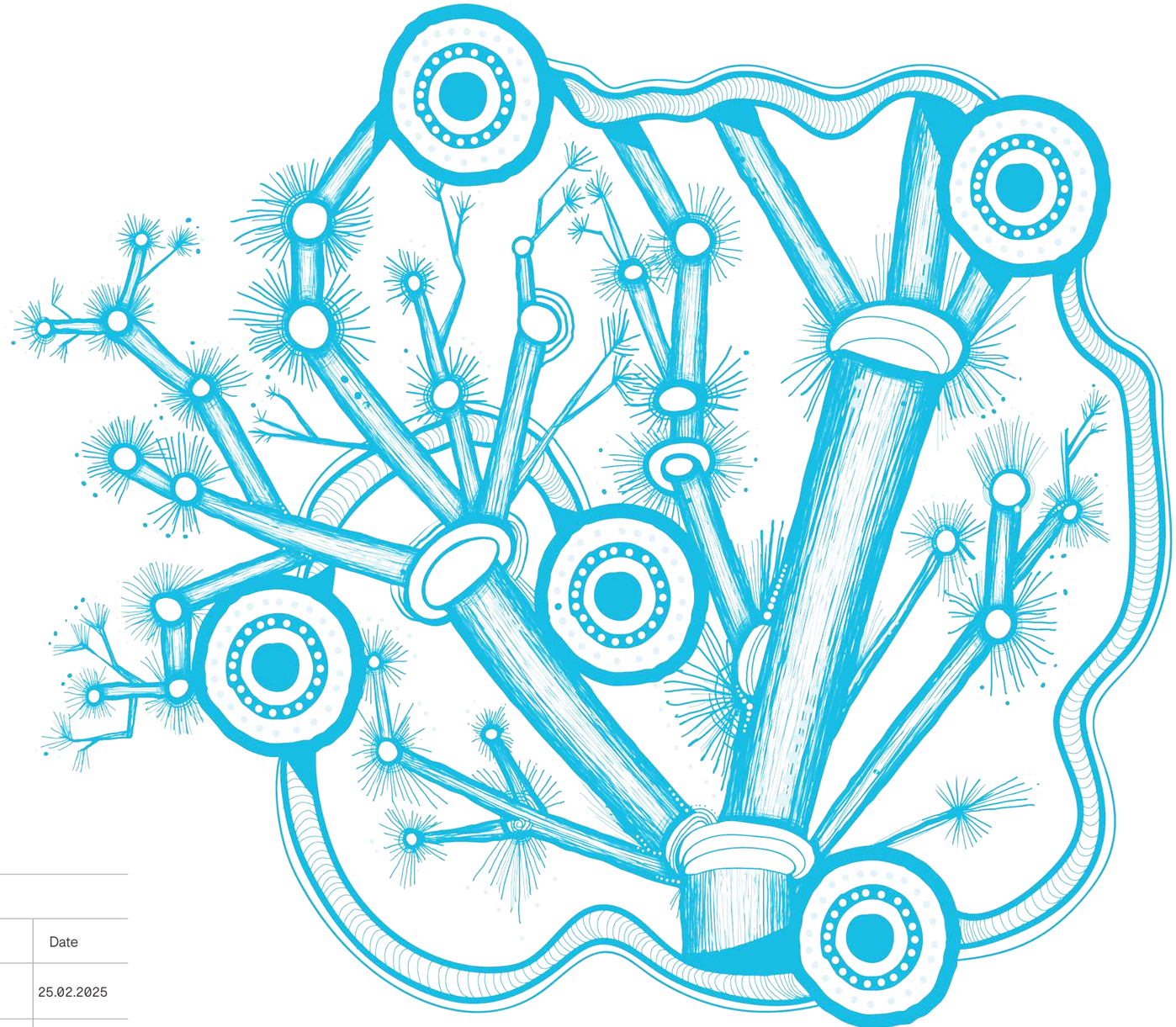
03 October 2025

→ The Power of Commitment



Acknowledgement of Country

GHD Design acknowledges the Dharug peoples as the Traditional Custodians of the land, water and sky throughout the Country the site is located on. We recognise their strength, diversity, resilience and deep connections to Country. We pay our respects to Elders of the past, present and future, as they hold the memories, knowledges and spirit of Australia. GHD Design is committed to learning from Aboriginal and Torres Strait Islander peoples in the work we do.



This artwork is by Tyrown Waigana, a Noongar man from South West Western Australia and connected to the Torres Strait Islands. He joined GHD in 2016 as part of our CareerTrackers program and since then has gone on to establish his own design business, Crawlin Crocodile. Tyrown was the winner of the 2020 prestigious NAIDOC poster competition.

Tyrown's artwork represents the growth of GHD's network of Aboriginal and Torres Strait Islander peoples, and the growth of their culture within GHD.

Sydney WATER

Prepared for Sydney Water Corporation

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File name	GPOP_Draft Place & Design Framework						
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Glossary

Terminology	Definition
Access & Movement	Patterns and infrastructure related to transportation, including roads, paths, and public transit
AHIMS	Aboriginal Heritage Information Management System – a database of Aboriginal heritage sites in NSW
Barometric Loop	A vertical pipe structure used to manage pressure in pipelines, particularly in river release systems
BC Act	Biodiversity Conservation Act
BDAR	Biodiversity Development Assessment Report
Built Form	The physical shape and structure of buildings and infrastructure in an area
Catchment Area	A geographic area where water collects and drains into a common outlet, such as a river or creek
Design Excellence	A design-led process that ensures high-quality outcomes in architecture, urban design, and landscape design
DPHI	Department of Planning, Housing and Infrastructure
EC	Ecological Community (listed under the EPBC Act)
EEC	Endangered Ecological Community
Environmental Buffer Zone	A landscaped area designed to visually and ecologically separate infrastructure from public spaces
EPBC Act	Environment Protection and Biodiversity Conservation Act
EP&A Act	Environmental Planning and Assessment Act 1979
Estuarine Ecosystem	A habitat found where freshwater mixes with saltwater, typically rich in aquatic life
Green and Blue Infrastructure	Natural systems like vegetation (green) and water bodies (blue) that support ecological and urban functions
GPOP	Greater Parramatta to Olympic Peninsula
Hydrology	The study of water movement, distribution, and quality in an area
Industrial Zone	An area designated for manufacturing, warehousing, and other industrial activities

Terminology	Definition
LCU	Landscape Character Unit
Magnitude of Change	The extent of visual or environmental change introduced by a project
NSW SEED	Sharing and Enabling Environmental Data – a NSW Government platform for environmental data
NSOOS	Northern Suburbs Ocean Outfall Sewer – a major sewer system transferring wastewater to North Head WRRF
PCT	Plant Community Type
Public Interface Zone	The parts of the site that interact directly with the public realm, including streetscapes and open spaces
PRW	Purified Recycled Water
Reverse Osmosis (RO)	An advanced water treatment process that removes contaminants by pushing water through a semi-permeable membrane
Residual Landscapes	Areas reserved for future development or expansion, temporarily treated with vegetation or other landscape features
Riparian Habitat	Ecosystems located along riverbanks or watercourses, often rich in biodiversity
Camellia Pumping Station (SP0067)	Sydney Water Pumping Station 67 – an existing heritage-listed pumping station to be upgraded as part of the project
Urban Ecology	The study and management of ecosystems in urban environments
Urban Habitat Links	Corridors or connections that support wildlife movement and ecological continuity in urban areas
VAIA	Visual Amenity Impact Assessment
Visual Sensitivity	The degree to which a landscape or viewpoint is affected by visual changes
WRRF	Water Resource Recovery Facility
WCM	Water Cycle Management – refers to the integrated approach to managing water resources, infrastructure, and environmental impacts within the GPOP project
WSUD	Water Sensitive Urban Design – an approach to urban planning that integrates the water cycle into the built environment

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Introduction



1.1 Project Overview

Project Background

Sydney Water is proposing to build and operate a new Water Cycle Management (WCM) Project on a 22 hectares site at Camellia-Rosehill with associated infrastructure to provide water and wastewater services to support the Greater Parramatta and Olympic Peninsula (GPOP) growth area (the project).

As a key growth area in Sydney, the population in GPOP is projected to double in size by 2056 to 500,000 people. An increase of residents and businesses in the area will generate substantial volumes of wastewater requiring treatment. This growth would place pressure on Sydney Water's existing wastewater network, and in particular on the Northern Suburbs Ocean Outfall Sewer (NSOOS). The NSOOS is a critical sewer which transfers wastewater from a large catchment area to North Head WRRF for treatment. With current growth projections the NSOOS would reach capacity by 2031-32.

The project is needed to provide a water cycle management solution for the GPOP growth corridor that is efficient and cost effective for the community. The proposal avoids duplication of the NSOOS and provides a wastewater solution which is sustainable, resilient and adaptable.

The main elements of the project include:

- A new Water Resource Recovery Facility (WRRF) at Camellia–Rosehill to treat wastewater from the GPOP area and produce high-quality treated water.
- Upgrade to the existing Camellia Pumping Station to enable wastewater transfer to the WRRF and brine discharge via the existing wastewater system.
- A new wastewater transfer pipeline from Camellia Pumping Station to the WRRF.
- A new brine pipeline from the WRRF to the NSOOS, using a new section between the WRRF and Camellia Pumping Station and repurposing an existing pipeline from Camellia Pumping Station to the NSOOS.
- A new river release pipeline to transfer treated water to Parramatta River.
- A release structure in Parramatta River near John Whitton Bridge.
- Ancillary infrastructure.

N.B This Place & Design Framework only focuses on the WRRF site.

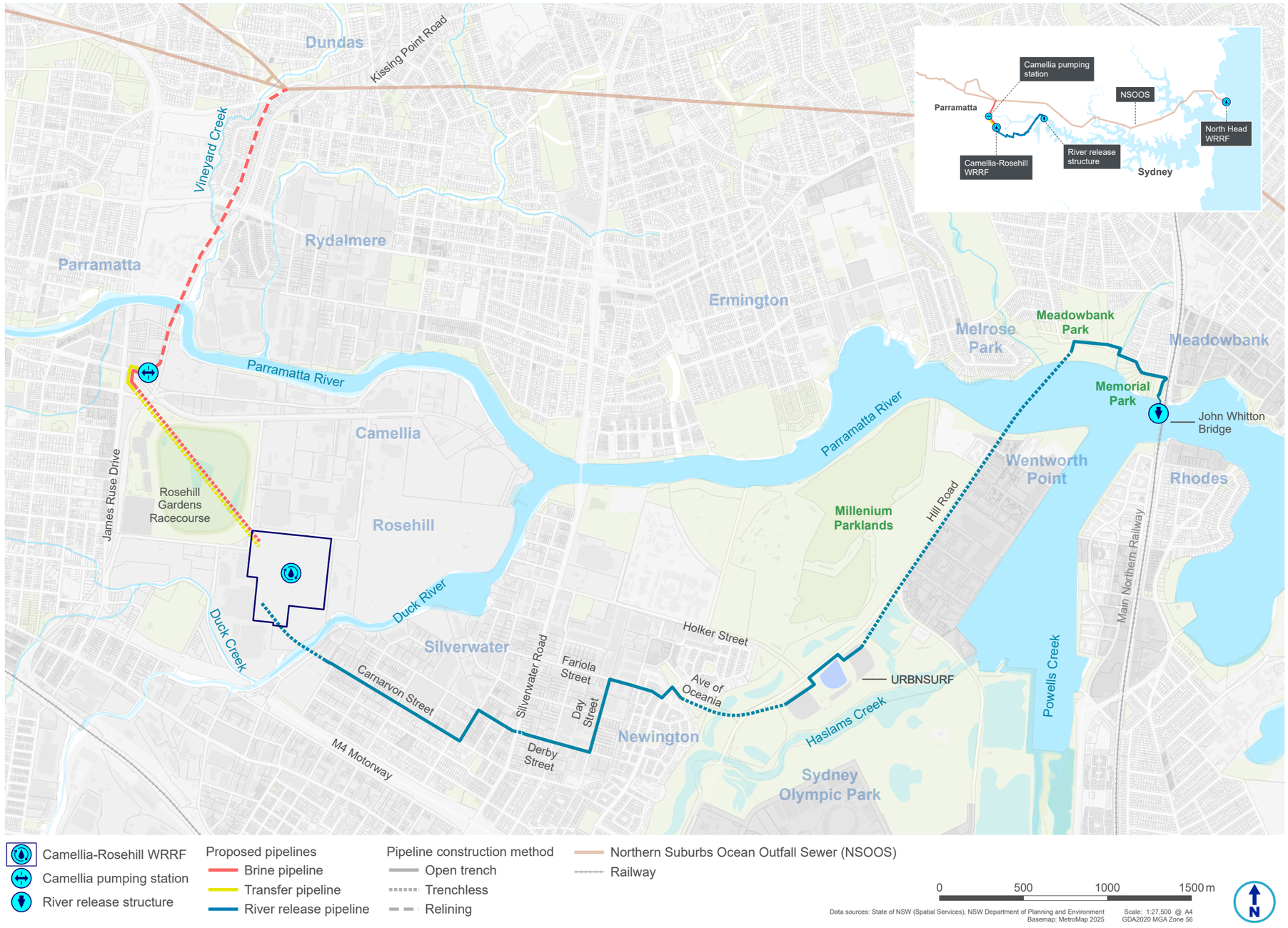


Figure 1. Project Location

The Site

This Place & Design Framework focuses on the WRRF site, which is located on a peninsula between the Parramatta River and Duck River.

The site is within the area of the Camellia-Rosehill Place Strategy, an integrated 20-year vision aimed at revitalising the precinct and supporting the retention and reinforcement of a significant proportion of the existing industrial uses in Camellia. This is particularly important as there are limited industrial areas in the geographic heart of Sydney.

This analysis takes into account the existing developments within the precinct and those proposed under the Camellia-Rosehill Place Strategy. The findings will inform the design outcomes for the site to be implemented in future design development.

There are three key above ground components to the project: the Camellia-Rosehill WRRF, the existing Camellia Pumping Station which is heritage listed, and the barometric loop. However, this Place & Design Framework only focuses on the WRRF site providing a summary of recommendations and next steps to make sure future development is consistent and achieves design excellence.



Figure 2. WRRF Site Location

Project Description

The GPOP WCM project treatment process will involve a number of process units within the project, including:

Project Component	Detailed Description
Water Resource Recovery Facility (WRRF)	The WRRF will have capacity to treat 70 megalitres per day (ML/d). The WRRF will produce advance treated water to minimise impacts on receiving waterways. Brine will also be generated as a by-product of the reverse osmosis treatment process. The main components of the WRRF include: – inlet works – primary, secondary and tertiary wastewater treatment process units – advanced treatment processes involving reverse osmosis (RO) – disinfection systems – biosolids handling facilities – odour control facilities. The WRRF will require a range of process infrastructure such as tanks, bioreactors and digestors. The operation of the WRRF will also require ancillary facilities such as an administration building and associated car park, chemical storage and stormwater infrastructure.
Transfer pipeline	The transfer pipeline is about 1.5 km and will transfer wastewater from the pumping station Camellia Pumping Station to the WRRF.
River release pipeline	The river release pipeline is about 7.6 km long commencing at the WRRF and within the suburbs of Silverwater, Newington, Sydney Olympic Park and Meadowbank. The river release pipeline will discharge high quality advanced treated water into the Parramatta River near John Whitton Bridge, Memorial Park. Above ground infrastructure is limited to valves, four concrete bridge-style aerial crossings over minor waterways in Meadowbank Park, and a 5 metre high barometric loop located near the existing toilet block in Memorial Park. The river release structure involves eight smaller pipelines that extend out underneath the sandstone sea wall and along the riverbed of the Parramatta River. The pipelines will vary in length and diffusers will release water upstream of between the first and third piers of the John Whitton Bridge.
Brine pipeline	The brine pipeline is about 4 km in length and will transfer brine from the WRRF to the NSOOS for treatment and offshore discharge at North Head WRRF. A new pipeline will be constructed between the WRRF and the Camellia Pumping Station. The brine pipeline will reuse an existing pipeline between the Camellia Pumping Station and the NSOOS.
Pumping station upgrades (Camellia Pumping Station)	The existing Camellia Pumping Station will be upgraded to divert wastewater to the WRRF. Upgrades will include the installation of new pumps to deliver wastewater flows to the new WRRF while remaining pumps would pump excess existing flows and brine produced by the WRRF to the NSOOS via existing pressure mains. New connections will be installed to divert the wastewater into the transfer pipeline. The existing site sheds will be replaced with a new electrical switch room along the eastern boundary of the site.

Project Component	Detailed Description
Construction activities	Key activities for construction of the WRRF will include: – site establishment – delivery of materials – earthworks – civil works – structure construction – installation of mechanical and electrical plant and equipment – landscaping and rehabilitation – commissioning. The new sections of pipelines from the WRRF to Camellia Pumping Station and the river release location, will be constructed using a combination of trenching and horizontal directional drilling techniques. Between Camellia Pumping Station and the NSOOS, the existing rising main will be relined and repurposed to form part of the brine pipeline. The upgrade of the Camellia Pumping Station will include augmentation of underground infrastructure, installation of pumps, and upgrade of power supply.

Table 1. GPOP WCM Project Components

Construction Program & Details

The indicative program and construction stage for the project is outlined in **Table 2**.

Activity	Indicative Timing
WRRF construction	Q3 2028 – Q4 2030
Camellia Pumping Station upgrade construction	Q2 2029 – Q3 2030
Transfer pipeline construction	Q3 2028 – Q3 2030
Brine pipeline construction	Q3 2028 – Q3 2029
River release pipeline construction including works within Parramatta River	Q3 2028 – Q2 2030
Commissioning	Q4 2029 – Q4 2031
Start operation	Q4 2031

Table 2. Construction program and details

Purpose of the Framework

The Greater Parramatta and Olympic Peninsula Water Cycle Management Project Place & Design Framework has been prepared by GHD Design in a multidisciplinary team on behalf of Sydney Water to support the GPOP WCM Project as a technical study to form part of the Environmental Impact Statement (EIS) for State Significant Infrastructure. The report addresses the Secretary of the Department of Planning, Housing and Infrastructure (DPHI) Environmental Assessment Requirements (the SEARs).

This Place & Design Framework outlines the place analysis, vision and principles, and objectives, outcomes and design response for the project at Camellia-Rosehill, where infrastructure is above ground and visible to the public. During operations the majority of infrastructure would be below ground, or contained within buildings and would not be visible. Particular consideration is given to the WRRF site where the facility would be visible from the public domain.

This report focuses on the Place and Design requirements for Camellia-Rosehill WRRF site and addresses the relevant SEARs. The report:

- Address the relevant SEARs (as detailed in **Table 3**)
- Describes how the project implements a design-led process and is designed and connects with Country.
- Outlines the Place & Design Framework for the WRRF site and how the project will meet the requirements for this framework to be successful.
- Describes how the protection of existing and future built environment and place has been prioritised and where impacts are unavoidable.
- Integrate the Connection to Country values and priorities into the place requirements.
- Identify site and operational constraints and future opportunities.

Relationship to Other Reports

The key documents that have guided and influenced this site-specific framework response are outlined below:

- Greater Parramatta and Olympic Peninsula Water Cycle Management Project Visual Amenity Impact Assessment prepared by GHD Design on 21 August 2025.
- Connecting with Country Report GPOP & PRW Projects prepared by Joy Hortorn Consulting on 28 April 2025.
- Camellia WRRF Reference Design Report (WRRF 05) prepared by Jacobs on 7 March 2025.

Report Structure

The Place & Design Framework is structured as follows:

1. Introduction

Section 1 provides background information on the project, the purpose of this report, how the design responds to the requirement of the SEARs and a summary of the design process undertaken.

2. Strategic Context

Section 2 provides a high level summary of the strategic context to guide the design development.

3. Place Analysis

Section 3 presents a summary of the environmental context, built form, movement and access, and character of the subject area. It also identifies key constraints and opportunities for the WRRF site and project.

4. Vision and Principles

Section 4 establishes a Project Vision, and Place and Green Infrastructure Principles. The Vision is informed by stakeholder aspirations and reflects the objectives of Better Placed (GANSW, 2017), Greener Places (GANSW, 2020), and the Sydney Green Grid (GANSW, 2017), as well as local considerations from the City of Parramatta Council.

5. Objectives, Outcomes & Design Response

Section 5 identifies objectives and desired outcomes for the key spatial zones within the GPOP WCM site and provides design guidance for key built and natural elements.

Response to SEARs

The SEARs for the project outline key issues to be addressed in the Environmental Impact Statement (EIS). This report primarily responds to Key Issue 12 Place and Design. The Desired Performance Outcomes for Key Issue 12 are that:

- The proposal is well-designed, utilising multi-disciplinary design experts to enhance the built environment and contribute to place.
- The proposal is designed with Country through engagement with Aboriginal People to make sure the project values, respects and contributes to healthy Country.
- The proposal contributes to greener places through the enhancement and provision of green infrastructure.
- The development of the design involved consultation with Department of Planning, Housing and Infrastructure (State-led Rezoning team) and other stakeholders.

The specific assessment requirements for Key Issue 12 as detailed in the project SEARs and a summary of the design response is provided in **Table 3**.

Requirement	Summary Response	Report Section
1. A design led process that is informed, collaborative and iterative, which:		
(a) utilises good design processes (such as Design Excellence and Design Review)	The preparation of this framework marks the beginning of good design practice, providing a place-focused structured approach to provide consistency, clarity, and efficiency in urban design decision making, guiding the development and transformation of the urban spaces. This includes incorporating feedback from consultation with key stakeholders such as GANSW and DPHI, which will continue throughout future design development, ensuring alignment with the proposed vision, objectives, and place-specific outcomes.	**Section 1.2**
(b) utilises design experts and multidisciplinary teams	The team brings together expertise from a range of design disciplines including urban designers, landscape architects, ecologists, architects as well as engineering and environmental practitioners. This approach supports a broad range of knowledge and expertise is reflected in the evolving design.	**Section 1.2**
(c) is designed with and connected with Country	The framework aligns with the outcomes of the Connecting with Country work, engaging with vs to make sure the project respects and contributes to a healthy Country. By integrating their knowledge and perspectives, the project aims to create a design that is functional, culturally significant, and respectful of the land's heritage. The framework has also identified design elements that reflect Aboriginal cultural heritage that honour traditional knowledge and a deep connection to Country. Sydney Water will continue to focus on integrating a Country-led collaboration during future design development.	**Section 1.3**
(d) involves the Department of Planning, Housing and Infrastructure (State-led Rezoning team) and other stakeholder	The design process involves consultation with the Department of Planning, Housing and Infrastructure (DPHI) and other stakeholders has occurred and will continue during project delivery.	**Section 1.3**
2. Identify place principles that are reflective of the design objectives in Better Placed, including a focus on:		
(a) fit – contextually, culturally, local and of its place (including future development state of the surrounding environment) (b) performance – sustainable, adaptable and durable (c) working - functional, efficient and fit for purpose (d) value – creating and adding value to the community (e) look and feel – engaging, inviting and attractive.	This framework has been guided by several planning and design policies and frameworks, including the Government Architect's (GANSW) Better Placed, which promotes design-led and integrated approaches to design. This document outlines five design objectives that have been reflected in the project-specific Place Principles. The Place Principles, developed in collaboration with the multidisciplinary team, support the project in fitting contextually and culturally, performing sustainably, working efficiently, adding value to the community, and is engaging and attractive. Specifically: – Creating a contextually and culturally appropriate environment that integrates with the local character and future development plans. This includes respecting the cultural heritage of the area and ensuring the design is locally relevant and adaptable to future changes. – Supporting sustainability, adaptability, and durability to withstand environmental challenges and remain functional over time. This includes using durable materials, incorporating sustainable practices, and designing for long-term resilience. – Making sure the project is functional, efficient, and fit for purpose, meeting the needs of the community and stakeholders. This includes optimising the layout and design for operational efficiency and user convenience. – Enhancing the quality of life and fostering a sense of place. – Creating an engaging, inviting, and attractive environment that enhances the visual and experiential quality of the area. This includes using high-quality materials, incorporating artistic elements, and designing spaces that are visually appealing and welcoming.	**Section 2.1**

Requirement	Summary Response	Report Section
3. Include and illustrate place designs, outcomes and actions for the project that protect and facilitate improvements to the built environment and place, including in relation to:		
(a) built form (including key project elements and amenity impacts on the surrounding environment)	The framework addresses key project elements and their impact on the surrounding environment. This includes considerations for the scale, massing, and appearance of the facility to make sure it integrates well with its context. The framework vision and design principles emphasise creating a cohesive and contextually appropriate built form that enhances the overall urban landscape. Built form guidance includes: – Integrating sustainability and quality through creative facade treatments, durable materials, and articulated roof designs to provide a contemporary and contextual facility. – Applying a unified architectural language across the site, for example, in cladding, screening and creative initiatives. – Featuring quality and sustainable architecture in the administration building, set within a well-landscaped area. These considerations will help the project not only meet functional and operational requirements but also contribute positively to the surrounding landscape and the views towards the facility and as the project progresses through to detailed design.	**Section 5.2** **Section 5.3**
(b) Aboriginal Cultural Heritage and Environmental heritage having regard to the results of any consultation and archaeological investigations	The design considers Aboriginal cultural heritage and environmental heritage. This involves consultation and archaeological investigations to make sure that heritage values are respected and preserved. The framework vision and design principles incorporate elements that honour and reflect the cultural and historical significance of the site. Specific objectives include continued collaboration with Aboriginal People to meaningfully communicate their cultural knowledge and values.	**Section 1.3**
(c) views and vistas: i. an assessment of visual impact and visual representations of the project from key locations to illustrate the project where visual impacts are deemed greater than medium ii. consideration of views from the proposed future redevelopment of the Camellia-Rosehill precinct iii. methods for screening the facility from publicly accessible areas and future redevelopment within the Camellia-Rosehill precinct	A Visual Amenity Impact Assessment (VAIA) evaluates the impact of constructing and operating the project on key viewpoints, including views and vistas. This assessment also provides visual representations of the proposal from key locations and methods for screening the facility from public areas. The framework vision and design principles address the findings and build on the mitigation measures identified to make sure the development of a visually appealing and context-sensitive design that minimise negative visual impacts. Specific objectives include creating an environmental buffer between the facility and public interface to screen the facility from the public domain and mitigate visual impacts.	**Section 3**
(d) provision of adequate bicycle parking and end of trip facilities	The response includes adequate bicycle parking and end of trip facilities within the Administration Building, promoting active transport and supporting sustainable mobility options for users. The framework vision and design principles prioritise creating a user-friendly and accessible environment that encourages sustainable transportation choices.	**Section 5.2.1**
4. Identify green infrastructure design principles that are reflective of the principles in Greener Places and The Sydney Green Grid.		
	This framework has developed the following Green Infrastructure principles which respond to the objectives of *Greener Places* and the *Sydney Green Grid* in addition to the existing conditions, constraints and opportunities of the site. – Regenerative – Preserve and Connect – Healthy Natural Systems – Adaptive	**Section 4.1**

Requirement	Summary Response	Report Section
5. Include and illustrate green infrastructure designs, actions and outcomes for the project including in relation to:		
(a) green infrastructure that supports recreation, biodiversity and waterway health	The design response considers scalable green infrastructure treatments to mitigate the fragmentation of green spaces primarily around the edges of the site and in the public realm. Given the impacted area is highly modified and contaminated, the design references pre-colonised landscape characteristics and future climate projections to inform the future design development.. The design response responds to existing habitat links along Duck River and the western drainage channel and link these corridors to the northern streetscapes and perimeter buffer plantings to benefits, biodiveristy, water quality and ecological health. Green infrastructure within the impacted area includes an outdoor space for staff to relax. Other interventions to be applied should include boundary greening with structured layered vegetation, endemic species, raised planting beds, rooftop gardens and green walls.	**Section 4.1** **Section 5**
(b) how the project will achieve a net increase in tree numbers and canopy within proximity of the impacted area	The Camellia-Rosehill WRRF site has a low level of tree coverage. Some PCT vegetation is present in the south-western boundary, however, this would not be impacted by the project. Sydney Water will collaborate with Parramatta City Council to deliver an upgraded streetscape to Colquhoun and Devon Streets. This landscaping would include planting new vegetation that would enhance the ecology of the site. It would also contribute towards a net increase in the number of trees and long-term tree canopy at the Camellia-Rosehill WRRF site. Sydney Water has designed the project to avoid and minimise impacts wherever possible. This has included minimising the amount of vegetation across the impact area that would be removed. The project would require removal of a small number of trees across the impact area where it is not possible to avoid them entirely. Where trees are required to be removed, Sydney Water would aim to provide a replacement in its original location. Where this is not possible, Sydney Water would liaise with the relevant local Councils to identify appropriate locations for tree replacement	**Section 5**
(c) mitigating urban heat island effects and provide appropriate comfort levels on-site	The facility has been designed to be centrally located with appropriate setbacks from the public interfaces with perimeter green buffers. The Administration Building design has a strong public address with integrated green and blue infrastructure interventions that create a sense of arrival to the facility, share Sydney Water values for water health and care for the environment through visible and human scaled features the landscape. Protection of the Duck River ecological corridor is also supported through provision of planted buffer to mitigate noise and dust and recommended fauna friendly treatments to provide safe passage for endangered amphibian species around the facility.	**Section 5**
(d) how the design of the facility and its interface will integrate into the landscape.	The facility design response considers interaction with the landscape through design element guidance including use of endemic species. This integration is achieved through the strategic use of endemic vegetation, structured planting, and passive irrigation systems that enhance biodiversity and improve soil health. Existing vegetation is retained where possible to maintain habitat connectivity and provide natural screening. The built form is designed to respond to the site's industrial context while incorporating landscape treatments that soften its visual impact. These include green buffers, bioswales, and rain gardens that not only manage stormwater but also contribute to the ecological character of the site. The facility's interface with the public realm is further enhanced through coordinated building and landscape design, providing a coherent and high-quality outcome.	**Section 5**

Table 3. Response to SEARs

1.2 Framework Process

The design process for the WRRF site at Camellia Rosehill has been developed with input from a multidisciplinary team with a broad range of skills in engineering, environmental science and urban design. This collaborative approach prioritised stakeholder input to positively influence the design and drive high-quality built environment outcomes by identifying issues or needs that could be addressed through design.

The process began with a clear understanding of the Secretary's Environmental Assessment Requirements and the specific design and place-making needs of the project. Strategic objectives for the site and the broader GPOP region were identified through alignment with state and local government policies. Workshops with Sydney Water and other stakeholders helped define key aspirations for the design, while context and site analysis revealed challenges and opportunities that informed the design response.

As illustrated in **Figure 3,** the Place & Design Framework plays a central role in guiding the Environmental Impact Statement submission and future design development by the delivery contractor. The framework establishes a clear vision for the project, supported by two sets of design principles, one for Place and one for Green Infrastructure. These principles serve as a foundation for the design objectives, which articulate the desired outcomes and provide criteria for assessing the success of the design.

The framework also identifies specific design elements and outlines the actions required to achieve the project's objectives. These outcomes, both tangible and intangible, will be used to evaluate the design against its goals and makes sure it delivers a high-quality, context-sensitive and resilient solution for the Camellia Rosehill precinct.

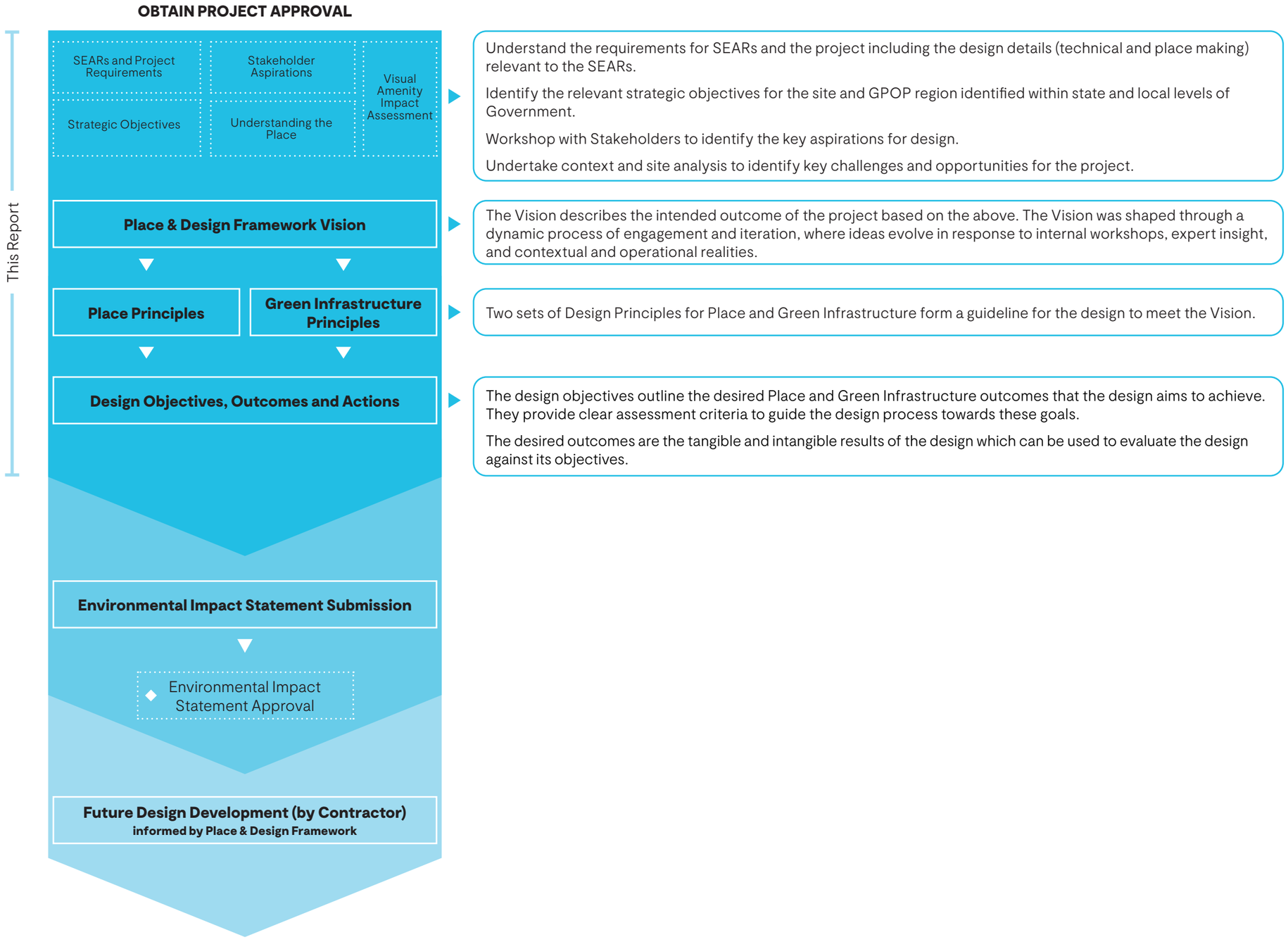


Figure 3. Place & Design Framework's role in the broader EIS and future design development

1.3 Stakeholder Engagement

Overview

The development of the Framework has been informed through collaboration with the following key stakeholders:

- NSW Department of Planning Housing & Infrastructure (State-led Rezoning Team)
- Government Architects NSW

In early 2025, Sydney Water carried out targeted engagement with DPHI and Government Architect NSW to seek feedback on the design for the project. The feedback provided by both agencies and Sydney Water's response is summarised in **Table 4**.

Feedback	Response
The design of the facility should consider potential impacts to views and vistas from potential future residential development on the site of Rosehill Gardens Racecourse	Following initial engagement it was confirmed that Rosehill Racecourse would not be rezoned for residential redevelopment. The assessment of landscape and visual impacts has therefore assumed Rosehill Gardens Racecourse to remain as a private recreational space, and for the surrounding land uses on Devon Street and Colquhoun Street to remain as industrial and commercial.
The design of the WRRF site should consider the level of amenity, and potential odour and acoustic impacts	The WRRF has been designed with noise and odour generating activities located within the centre of the site, away from sensitive receivers.
The WRRF site should provide active transport routes along the Parramatta River, and should provide a through-site connection for vehicles travelling between Camellia and Silverwater.	Sydney Water would work with stakeholders to support the delivery of new footpaths along Devon Street to support an east-west connection through the precinct. The WRRF site does not include waterfront areas of Parramatta River and as such, no riverside active transport connections would be provided as part of the WRRF facility.
Opportunities to provide a green canopy within the site should be prioritised and should consider potential mangrove restoration (where feasible)	Sydney Water would work with stakeholders to provide new landscape plantings along the frontage of Devon Street, and within the north-western corner of the WRRF site. These plantings would result in a net increase of vegetation within the site. The mangroves at Duck Creek are outside of the WRRF site area and would not be impacted by the project. Planting of new mangroves within Duck Creek are outside of the scope of this project.
The design process should identify best-practice international examples of similar facilities to influence the design of the WRRF site.	The design development has considered international examples of similar facilities. The proposed design for the WRRF site has been developed appropriately for the site with consideration to visual treatments used by other facilities in similar commercial and industrial landscapes.

Table 4. Summary of feedback from DPHI and Government Architect NSW

Next Steps

Sydney Water is committed to integrating feedback into preliminary design, and collaborating with Dharug community and educators to shape the final design. Design elements will be reviewed and tested during the project delivery.

1. Identify project need

- Concept design work commences

2. Obtain project approval

- Concept design work ongoing throughout planning approval process
- **Develop Place & Design Framework**

3. Engage delivery partner

- Commence detailed design work
- Final design considers Place and Green Infrastructure design principles and objectives in the Place & Design Framework

4. Project delivery

- Ongoing environmental impact management and mitigation

Figure 4. GPOP WCM project engagement process

1.4 Understanding Country

Connecting with Country

Sydney Water has developed a Connecting with Country Engagement Strategy in line with the Connecting with Country Framework by GANSW to identify Aboriginal stakeholders whose cultural knowledge, stories and aspirations can shape the design of the project. The GPOP WCM project intersects the Parramatta River, Duck River and Camellia wetlands, which are significant to the Dharug people. These waterways and landscapes will be impacted to varying degrees, including riverbanks, floodplains and vegetation.

Engagement was carried out with the primary aim of:

- Centering Dharug perspectives in the planning of water infrastructure
- Highlighting cultural values and stories
- Identifying concerns, opportunities and aspirations that can inform the physical and interpretive elements of the project
- Building respectful long-term partnerships between Sydney Water and Aboriginal stakeholders

Key engagement activities included:

- Listening Sessions
- Walks on Country
- Stakeholder workshops, and
- One-on-one cultural consultations.

This process highlighted both risks and opportunities that required consideration during the design process.

Walk on Country

An on-Country session held at the Parramatta River foreshore, Meadowbank and Memorial Park on 27 February 2025 brought together Dharug Elders, Knowledge Holders, and Sydney Water to share cultural knowledge and details about the project. The design suggestions included a yarning circle formed from tree rings, interpretive signage featuring Dharug language and stories, and art installations reflecting the eel Dreaming.

Key Themes

The Connecting with Country Report prepared by Joy Horden identifies key themes that represent the collective wisdom, aspirations, and concerns of Dharug Elders, community members, and Aboriginal organisations engaged across the GPOP WCM project. A full description of this engagement is provided in the Connecting with Country Report by Joy Horton Consulting (**Table 5**).

Key Themes	Explanation	Community and Other Related Priorities Related to the WRRF Site
Water and Country	Water is more than an environmental or engineering consideration; it is a living expression of Country. Water is an Ancestor, a teacher, and a carrier of memory. Its flow is part of the spiritual system that connects land, sky, people, and non-human kin.	– Protecting watercourses such as Duck River and Parramatta River – Honoring the eel Dreaming and seasonal migration cycles – Restoring connectivity between waterways and native species
Sacred Sites, Ceremony and Access	The WRRF site does not have any sacred sites.	– Recognition of burial sites and massacre history along water bodies – Use of native species, tree rings, and stone circles to mark sacred areas respectfully
Education, Storytelling and Language	There was overwhelming support for using both GPOP and PRW projects as platforms for truth-telling, cultural renewal, and youth education. Dharug Elders stressed that future generations must grow up understanding where they live, whose land they are on, and how to care for water.	– Bilingual signage with Dharug and English naming – Interactive and accessible learning tools for schools and community events – Inclusion of Aboriginal artists, authors, and language holders in content creation
Cultural Design, Visual Identity and Art	Design emerged as a consistent theme across all engagement sessions, with community members emphasising that infrastructure must not appear culturally neutral—it should reflect place, embody story, and make the enduring presence of Aboriginal peoples visible after generations of erasure. Visual identity should reflect local ecosystems—eel migration, native pollinators, mangroves, and tree families—with Aboriginal symbolism guiding the design language.	– Wayfinding that reflects cultural stories – Yarning circles, murals, and planted landscapes with bush foods and medicine – Pathways, and stormwater treatments that echo Country's shape and flow – Artistic commissions that visualise water, migration, and the spiritual web of Country
Legacy, Healing, and Long-Term Partnerships	For many stakeholders, the most important outcome is not just what is built—but what relationships are formed and maintained. Healing isn't just acknowledgment—it's infrastructure. It means safe spaces, cultural tenancy, and long-term presence on Country.	– Partnership Agreements with Dharug organisations – Annual reflection reports or site audits led by community – Embedding cultural protocols into maintenance, landscaping, and upgrades

Table 5. Summary of Key Themes and Community Priorities from the Draft Connecting with Country Report GPOP & PRW Projects by Joy Horton Consulting, 2025

Strategic Context

2

2.1 Strategic Documents

2.1.1 NSW Government

Overview

This Framework has been developed to align with NSW Government and City of Parramatta Council policies and strategic priorities including the following:

- *A Vision for Parramatta River* (City of Parramatta Council, 2023)
- *Parramatta River Catchment Group Master Plan* (2018)
- *SIA Practice Note: Engaging with Aboriginal Communities* (Department of Planning and Environment)
- *Connecting with Country* (Government Architect NSW)
- *NSW State Design Review Panel* (Government Architect NSW)
- *Better Placed* (Government Architect NSW)
- *Guidelines for Landscape and Visual Impact* (Transport for NSW, third edition)
- *Design Guide for Heritage* (Government Architect NSW)
- *Design in Context: Guidelines for Infill Development in the Historic Environment* (NSW Heritage Office)
- *Design of Roads and Streets Manual* (Transport for NSW)
- *Movement and Place Framework* (Transport for NSW)

However, the documents highlighted in this Place & Design Framework are considered key strategic and policy documents relevant to the project site and its design outcomes. The key learnings and relevance of each document for this project are detailed across the following pages.



Better Placed

Government Architect NSW, 2017

Better Placed is a integrated design policy for the built environment in NSW. This policy outlines key design approaches and principles aimed at enhancing design quality. It emphasises the importance and benefits of good multi disciplinary design. Better Placed identifies seven objectives for the built environment:

- Better Fit (contextual and local)
- Better Performance (sustainable and adaptable)
- Better for Community (inclusive and diverse)
- Better for People (safe and liveable)
- Better Working (functional and efficient)
- Better Value (creating and adding value)
- Better Look and Feel (engaging and attractive)

The policy positions design as both a process and an outcome, comprising three collaborative steps: Discover, Create, and Deliver. This framework aims to promote good design across NSW whilst responding to key challenges and directions for NSW.

Document Relevance

Better Placed establishes the essential foundations for creating site-specific place design principles tailored to the project site. These principles will guide the development of the Design Principles within this Place & Design Framework, while also integrating the Vision and Design Principles from the Camellia-Rosehill Place Strategy.



Greener Places

Government Architect NSW, 2020

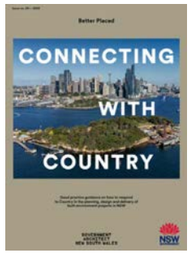
Greener Places provides guidance for planning, designing, and delivering Green Infrastructure in urban areas across NSW. The vision is to create a well-planned network of Green Infrastructure that enhances the attractiveness, connectivity, health, and resilience of the region.

Key principles of the policy include:

- Integration: Merging green spaces with urban development and essential infrastructure, like roads and stormwater systems.
- Connectivity: Establishing a high-quality network of open spaces that link to activity hubs, including town centres, public transport, rivers, and residential areas. This aims to create a cohesive open space network throughout the Central City District and Greater Sydney region.
- Multi-functionality: Designing green spaces that serve multiple purposes, providing ecosystem services and community benefits through strategic planning.
- Participation: Involving stakeholders in developing and implementing Green Infrastructure policies at neighbourhood, local, district, and regional levels.

Document Relevance

Greener Places provides the foundational framework for developing site-specific green infrastructure design principles tailored to the project site. These principles will inform the creation of the Design Principles within this Place & Design Framework, while also considering the Vision and Design Principles established in the Camellia-Rosehill Place Strategy.



Connecting with Country

Government Architect NSW, 2023

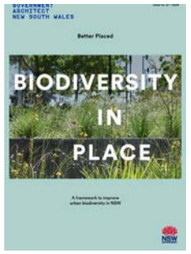
The Connecting with Country Framework was developed by Aboriginal professionals in partnership with Aboriginal People and knowledge holders. This framework aims to guide planning, design, and infrastructure projects, ensuring they support the health and wellbeing of Country. It emphasises the importance of valuing and respecting Aboriginal perspectives, as they understand that caring for Country ensures it will care for us in return.

The framework outlines three long-term strategic goals:

- To reduce the impact of natural events, such as bushfires and flooding;
- To value and respect Aboriginal cultural knowledge, encouraging co-leading design processes; and
- To ensure that Country is cared for in an appropriate manner.

Document Relevance

Connecting with Country gives guidance as to the ways in which through collaboration, Country can be integrated into design and through learning to authentically capture the values and stories of Aboriginal People of Dharug Country.



Biodiversity in Place

Government Architect NSW, 2024

Biodiversity in Place is a practical guide to bring back nature into our cities and to build insect populations that are essential for biodiversity. The framework has been developed to be used by a wide range of stakeholders to instil an ecological agenda into all future development that takes place in our urban spaces across NSW.

Key steps of the framework include:

- Identify the space to improve.
- Choosing an approach, identify an urban typology and define goals
- Identifying key physical approaches to increasing diversity in the urban environments
  Management and care: identifying ways to maintain landscape to improve opportunities for creating habitat throughout all seasons.



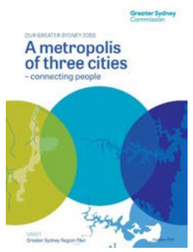
GREEN GRID

Government Architects NSW, 2017

The 2017 Sydney Green Grid Central West report by the Government Architect NSW outlines a vision to enhance green infrastructure across the region, including the Camellia–Rosehill Precinct. The report emphasises the transformation of this precinct into a vibrant, sustainable area by improving connectivity, increasing green spaces, and revitalising the Parramatta River foreshore.

Key recommendations include developing continuous open space corridors to link existing parks and reserves, creating pedestrian and cycling pathways to connect the precinct with surrounding areas, and restoring natural habitats to promote biodiversity. The report also advocates for integrating recreational facilities and community spaces to foster social interaction and well-being.

By implementing these strategies, the Camellia-Rosehill Precinct is envisioned to become a dynamic, green urban environment that supports ecological health and offers an enhanced quality of life for residents and visitors.



A Metropolis of Three Cities - The Greater Sydney Region Plan

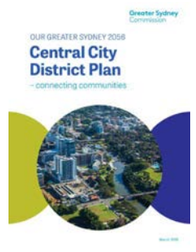
Greater Sydney Commission, 2018

The Greater Sydney Region Plan outlines the New South Wales Government's strategic directions for enhancing Sydney's status as one of the most liveable cities globally.

This plan is organised around 40 planning objectives, which are categorised into five key themes: Infrastructure and Collaboration, Liveability, Productivity, Sustainability, and Implementation. These themes together form a comprehensive framework to support the city's growth.

The plan presents a vision for the next 40 years and a strategic approach for the next 20 years to manage growth and change. The vision aims to create three interconnected cities, ensuring that most residents live within 30 minutes of their jobs, educational institutions, healthcare facilities, services, and recreational areas.

Camellia–Rosehill is located within the Central River City and the Greater Parramatta and Olympic Peninsula (GPOP) economic corridor, emphasising its strategic importance in the region's development.



Central City District Plan

Greater Sydney Commission, 2018

The Central City District Plan is a 20-year strategy guiding growth and change in the Central City to align with the vision of the Greater Sydney Region Plan. It outlines key priorities for Camellia–Rosehill within the GPOP economic corridor:

- Camellia as a next-generation housing precinct: The area is recognised as one of 12 key locations for modern housing, supporting the creation of liveable communities.
- Review and management of industrial and urban service land: Ensuring land use is optimised to balance industrial needs with urban development.
- Enhancing productivity: Camellia is set to become a highly productive part of the Central River City, integrating water, energy, and transport services.
- Connecting green spaces: Parks, bushland, playgrounds, and waterways will be linked through the Greater Sydney Green Grid, promoting sustainability and recreation.

The Plan positions Camellia as a key hub for next-generation housing, complementing the advanced technology and highly skilled jobs precinct. By leveraging existing infrastructure, GPOP will help realise the vision of three interconnected cities, where most residents live within 30 minutes of essential services and amenities.

Document Relevance

Biodiversity in Place provides practical ways to co-balance biodiversity objectives respective of the Camellia-Rosehill WRRF site and its scale. The Place & Design Framework will apply this thinking to assess the local habitat connectivity and identify opportunities to deliver green and blue infrastructure outcomes that support existing and future target species.

Document Relevance

The Place & Design Framework will aim to align with the aspirations of the Sydney Green Grid by maximising opportunities to incorporate hydrological, recreational, and ecological elements into the design.

Document Relevance

The team will emphasise the importance of integrated infrastructure planning and collaboration between the government and communities to support growth and development in the Camellia-Rosehill Precinct.

This will be achieved by ensuring that design outcomes enhance the quality of the area, boost economic activity, create employment opportunities, and embed sustainable practices.

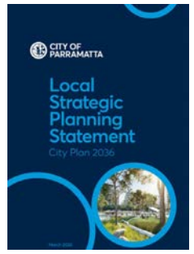
2.1.2 Parramatta City Council



Community Strategic Plan
City of Parramatta, 2022

The City of Parramatta's Community Strategic Plan 2018-2038 (CSP) outlines a community-informed vision for the local government area (LGA) as part of its integrated planning and strategic vision. The CSP highlights the strengths, challenges, and opportunities within the LGA. Key desired outcomes identified by the community that are relevant to the project include:

- working close to home with minimal commute times
- enjoyment of Parramatta's green and open spaces, and the Parramatta River
- an eco-efficient City, where buildings use less energy and water, as well as recycling more and wasting less
- balance between maintaining existing assets and building new ones.



Local Strategic Planning Statement City Plan 2036
City of Parramatta, 2020

The City of Parramatta's Local Strategic Planning Statement (LSPS) outlines a 20-year vision for land use planning, focusing on productivity, liveability, sustainability, and infrastructure. It aims to balance housing and economic growth with environmental protection and community well-being. Key goals include creating jobs, providing diverse housing options, enhancing environmental assets, improving transport connections, and engaging the community in the planning process.

Key priorities of the LSPS in relation to this Framework are:

- Create job opportunities and maintain employment lands.
- Protect and celebrate local heritage and character.
- Preserve natural assets like the Parramatta River and local wetlands.
- Increase public open spaces and improve access to nature.
- Implement measures to adapt to climate change.
- Involve residents and stakeholders in planning processes.

Document Relevance

The GPOP WCM project will be an employment hub for people in the construction industry outside of the Sydney CBD. Additionally, the CSP illustrates the city's commitment to eco-conscious practices, including specific goals related to recycling.

Document Relevance

The Place & Design Framework will make sure that the outcomes address priorities to balance growth with environmental sustainability and community well-being, ensuring that Parramatta evolves into a thriving, livable, and well-connected city.

2.2 Camellia-Rosehill Strategic Documents



Camellia-Rosehill Place Strategy

NSW Department of Planning and Environment, 2022

The site within the Camellia - Rosehill Place Strategy plays a pivotal role in achieving the vision for Camellia–Rosehill as an industry and employment hub within the Greater Parramatta and Olympic Peninsula (GPOP) Economic Corridor. By 2041, this precinct is envisioned to be enhanced with service and circular economy industries, new recreational and entertainment facilities, and improved transport access via light rail, active transport, and road connections.

The Camellia -Rosehill Place Strategy establishes five strategic directions, each with related principles and actions, to guide the future development of the precinct. These directions include recognising and celebrating Country and heritage, boosting economic activity and employment opportunities, improving access and sustainable travel options, delivering high-quality place outcomes, and being net zero ready by 2040.

By aligning with these strategic directions, the site will play a crucial role in transforming Camellia–Rosehill into a showcase of recovery and restoration, a place of economic prosperity, and a vibrant community where people want to live and work.

Key directions for the project include the following:

Industry and Employment Hub:

- The site contributes to Camellia–Rosehill's role as a key industry and employment hub, supporting the growth of service and circular economy industries.
- The retention of heavy industrial land ensures that the precinct remains an employment powerhouse, providing jobs close to public transport and quality public spaces.

Transport and Accessibility:

- Enhanced transport access, including light rail and active transport options, will improve connectivity to the site, making it more accessible for staff and residents. Camellia-Rosehill Place Strategy NSW Department of Planning and Environment, 2022.

Environmental Sustainability:

- The site will be part of the precinct's commitment to being net zero ready, with embedded renewable energy networks and integrated water management strategies.
- Recycled water will be connected to all residences, businesses, and public spaces, supporting the integrated network of green infrastructure and enhancing environmental sustainability.

Quality of Life and Public Spaces:

- The site will benefit from the creation of new quality public spaces, including public open spaces, public facilities, and high-quality street infrastructure.

Heritage and Cultural Value:

- The rich heritage, including the site, will be preserved, celebrated, and promoted, with renewal efforts guided by Aboriginal people.
- Key environmental features such as the Parramatta River and Duck River wetlands will be protected and enhanced, contributing to the area's natural beauty and ecological value.

Document Relevance

The Place & Design Framework will build on and acknowledge that the Camellia-Rosehill Place Strategy guides the renewal of the precinct over the next 20 years. It envisions a thriving town centre with an 18-hour entertainment precinct, up to 15,400 jobs, and 10,000 new homes.

The Place & Design Framework builds on the work done to date by DPHI and prepares a site-specific response that captures the desired future character of the site. It incorporates the design principles identified and endorsed through community consultation, ensuring that the site-specific design principles and objectives deliver high-quality design outcomes to support amenity for residents, staff, and visitors.



Camellia-Rosehill Integrated Master Plan

NSW Department of Planning and Environment, 2022

The Integrated Master Plan intends to guide future growth in the area over the next 20 years. It provides a framework for redevelopment with principles and design guidance. The Master Plan identifies the following design principles and consideration for the industrial sub-precinct:

Design Principles

- Varied lot sizes to support different businesses.
- Potential public access to the wetland and foreshore.
- Minimising industrial buildings' visual and environmental impact with green rooftops, solar panels, and permeable landscaping.
- Linking regional transport networks via Duck River bridges.
- Separating pedestrian zones like the Town Centre from industrial freight routes.
- Improved heavy vehicle access through new entry points and Duck River bridges for freight movement across Sydney, NSW, and Australia.
- Integrating the potential Parramatta Light Rail Stage 2.
- Well-connected street network linking major road corridors.
- Exploring large-scale solar generation.
- Investigating a green buffer around the wetland perimeter.

Document Relevance

The strategic planning in this master plan is preliminary and may be subject to change with ongoing stakeholder engagement, including the proposed north-south link through the site to Silverwater.

Camellia-Rosehill Vision:

"Camellia-Rosehill has an important strategic role as an industry and employment hub within the Greater Parramatta and Olympic Peninsula (GPOP) Economic Corridor. By 2041, the precinct will be enhanced with service and circular economy industries and new recreational and entertainment facilities, all enabled by better transport access via light rail, active transport and road connections.

A well-designed town centre next to the light rail stop will be the focus of community activity.

A new urban services precinct and retention of heavy industrial land will ensure Camellia-Rosehill fulfills its potential to be an employment powerhouse.

New homes and jobs will be close to public transport supported by new quality public spaces including public open spaces, public facilities high quality street infrastructure, and walking and cycling paths.

Key environmental features such as Parramatta River, Duck River and their wetlands will be protected and enhanced. Camellia's rich heritage will be preserved, celebrated and promoted.

Country and culture will be valued and respected with the renewal guided by Aboriginal people.

The precinct will be net zero ready and set a new standard for environmental sustainability with embedded renewable energy networks, integrated remediation and water management strategies, and circular economy industries.

Recycled water will be connected to all residences, businesses and public spaces and will support the integrated network of green infrastructure.

Camellia will be a showcase of recovery and restoration – a place of economic prosperity but also a place where people love to live, work and enjoy."

The 2022 Place Strategy included a road and active transport link through the proposed Camellia-Rosehill WRRF site. Due to operational and safety requirements, Sydney Water was not able to accommodate this in the design of the Camellia-Rosehill WRRF. City of Parramatta Council and DPHI have been consulted about alternative locations for the road and options for active transport links. The current draft Structure Plan shows an alternative road and active transport alignment, east of the proposed Camellia-Rosehill WRRF site.

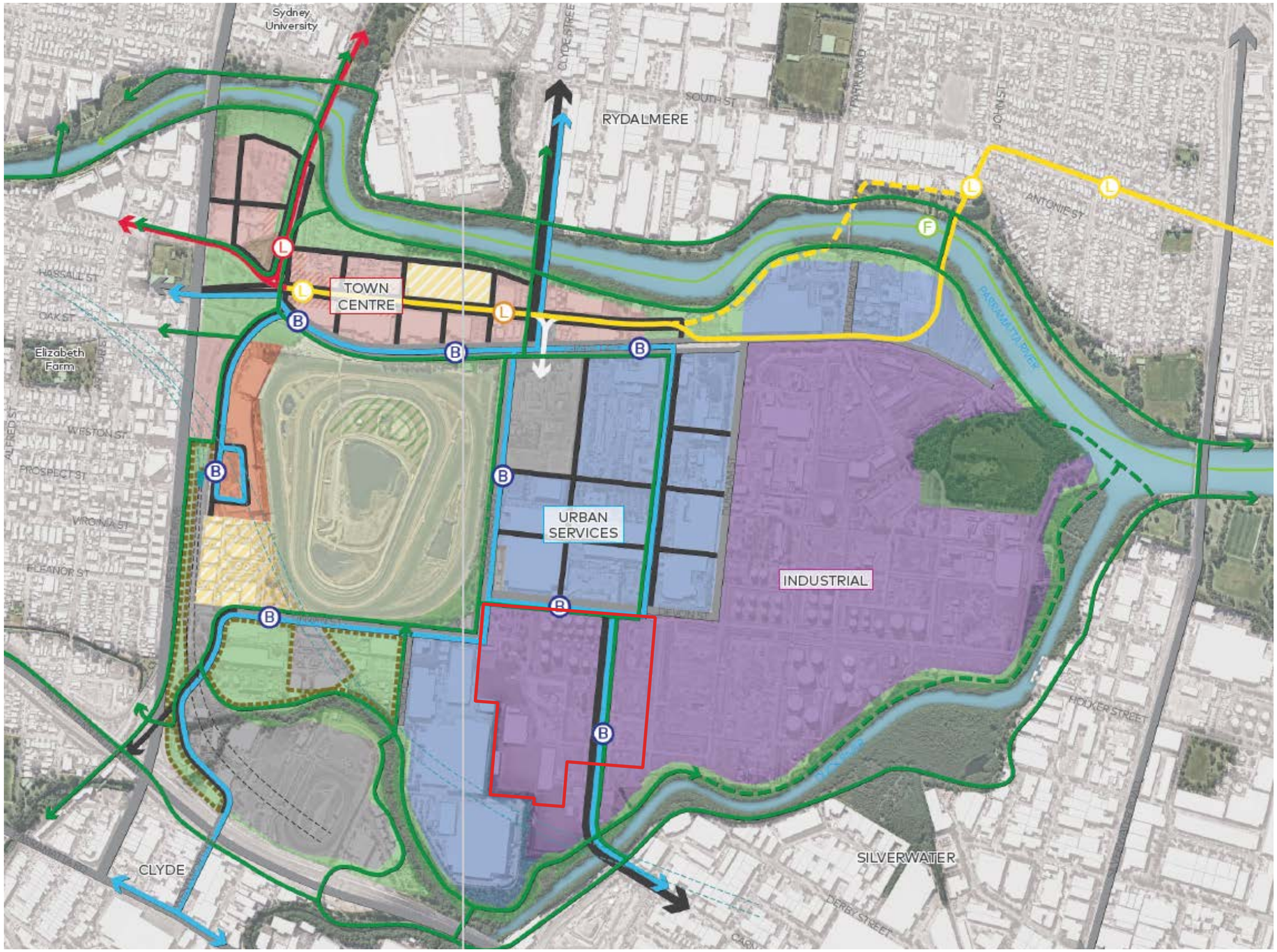


Figure 5. Camellia-Rosehill Place Strategy (Department of Planning and Environment, 2022)

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Analysis

3

3.1 Overview

Section 3 of the GPOP Place & Design Framework presents a comprehensive and multi-layered analysis of the site and its broader context, forming the foundation for informed design and planning decisions. This section integrates environmental, historical, ecological, landscape, and urban data to build a nuanced understanding of the place.

The analysis was structured into several key components:

Green and Blue Infrastructure Assessment

- Detailed study of the Parramatta and Duck River catchments, highlighting ecological value and urban pressures.
- Identification of vulnerable species and habitat connectivity, particularly around PCT 4028 and estuarine ecosystems.

Historical and Cultural Context

- Exploration of Aboriginal and non-Aboriginal heritage, including the significance of Duck River to Aboriginal peoples.
- Documentation of industrial evolution and its environmental impacts.

Landscape Character Analysis

- Visual Amenity Impact Assessment (VAIA) identified five distinct Landscape Character Units (LCUs).
- Assessment of visual sensitivity and magnitude of change across key viewpoints.

Local Context Analysis

- Examination of green and blue networks, tree canopy coverage, built form, and movement patterns.
- Identification of environmental constraints such as flooding and contamination.

Site-Specific Observations

- On-the-ground analysis of the sense of place and existing conditions of streetscapes interfacing with GPOP WCM project site boundary.
- Overarching challenges and opportunities that guide the development of this Place & Design Framework.

N.B. Data Collection & Mapping

Mapping layers were retrieved from datasets held by NSW SEED (Sharing and Enabling Environmental Data in NSW) (NSW Government 2025) and other relevant government reports and websites including the:

- Camellia-Rosehill Integrated Master Plan by NSW Department of Planning and Environment (2022)
- Water Cycle Management for Greater Parramatta and Olympic Peninsula: Biodiversity Development Assessment Report by Arcadis (2025)

The diagrams were produced by GHD Design.

3.2 Greater Context

3.2.1 Green & Blue Network

Catchment Area

Parramatta River and Duck River catchments are notable for their complex and dynamic hydrological interactions as a floodplain. Duck River flows through a highly urbanised and areas, where adjacent impervious industrial land uses contribute to pollution run-off and elevated nutrient loads that impact water quality. Extensive concrete channeling of tributaries like Duck Creek and A'Becketts Creek have altered natural water flow and exacerbated erosion and sedimentation. (Applied Ecology, 2012). The wetlands surrounding the project are also a locally listed heritage item.

Urban Ecology

The area supports a rich estuarine ecosystem, which is particularly beneficial for waterbirds and other aquatic species. Key species include migratory birds and the Grey-headed Flying Fox (Vulnerable, BC Act; Vulnerable EPBC Act) which likely travel between Duck River and Parramatta River, utilising the catchment areas as a stopover or feeding ground. (Arcadis, 2025) Connectivity of native vegetation within the site, particularly native vegetation that conforms to a Plant Community Type (PCT), is fair to poor and is shown in **Figure 6** (Arcadis, 2025).

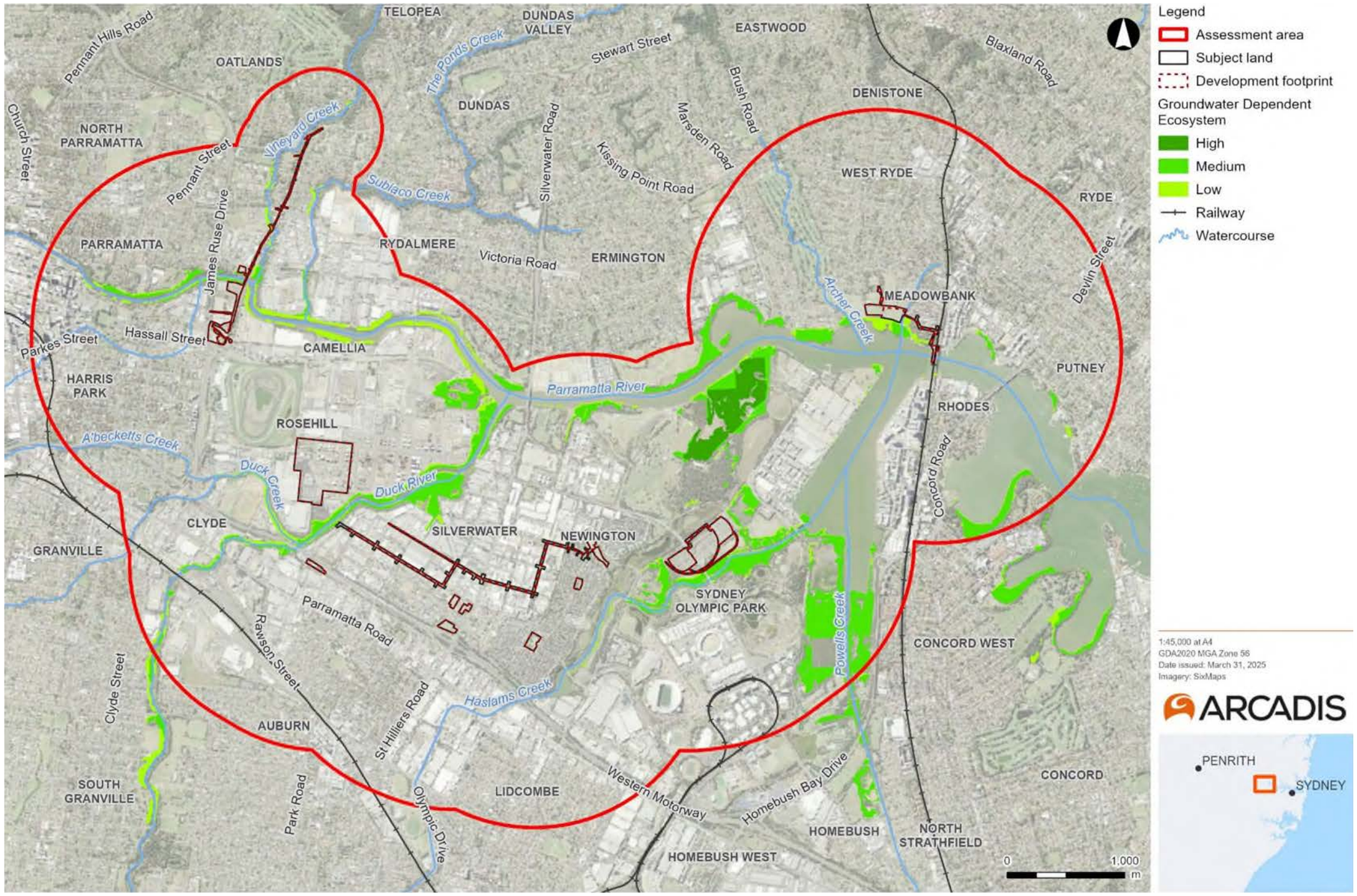


Figure 6. Ground Dependent Ecosystems within the assessment area (Source: Arcadis, 2025)

3.2.2 Site History

Dharug People - Connection to Water

Dharug people are the First Peoples of the Sydney basin, with ancestral lands extending from the eastern coastline at Botany Bay and the Georges River, west to the Blue Mountains, and north to the Hawkesbury River. They are intimately connected to the rivers, creeks, wetlands, and coastal systems that crisscross their lands. These waterways are not only physical landmarks—they are ancestral tracks, sacred pathways, and sources of life. For millennia, the Parramatta and Hawkesbury Rivers were highways of cultural exchange, sustenance, and spiritual connection. (Joy Horton Consulting, 2025)

The Parramatta River (Burramatta) and its surrounding waterways hold deep cultural and spiritual meaning for the Dharug people, serving as sacred sites in the Dreaming and anchoring totemic relationships with species like the longfin eel. These rivers and wetlands were vital places for ceremony, trade, storytelling, and kinship, with features such as river bends and rock outcrops linked to ancestral beings. Wetlands, regarded as the lifeblood of Country, not only sustained ecosystems but also preserved cultural heritage, housing artefacts, burial sites, and ceremonial spaces that continue to be honoured through oral traditions and Elders' guidance. (Joy Horton Consulting, 2025)

Dharug Country

The British invasion and colonisation of Dharug Country inflicted deep and lasting harm on its people, land, and waterways, beginning with early settlements along the Parramatta River (Burramatta). Fertile floodplains were forcibly claimed and fenced, severing Dharug clans from essential food sources and sacred sites. Colonial practices led to widespread environmental destruction through damming, pollution, and deliberate poisoning of waterholes. Beyond physical displacement, colonisation denied the Dharug people legal and cultural recognition, even declaring them extinct. These intergenerational wounds continue to shape community identity and are being addressed today through truth-telling, cultural revival, and efforts to reclaim custodianship. (Joy Horton Consulting, 2025)

Colonisation and land use

The rivers and creeks of the Parramatta area were an important water resource and transport route supporting agriculture and timber production. Rose Hill (later called Parramatta) was established as a farming settlement due to fertile soils and freshwater access. Wetlands were drained and filled for agriculture, including vineyards and orchards. Over the course of the twentieth century the character of the suburb changed to industrial land uses including oil refineries which still exist today.

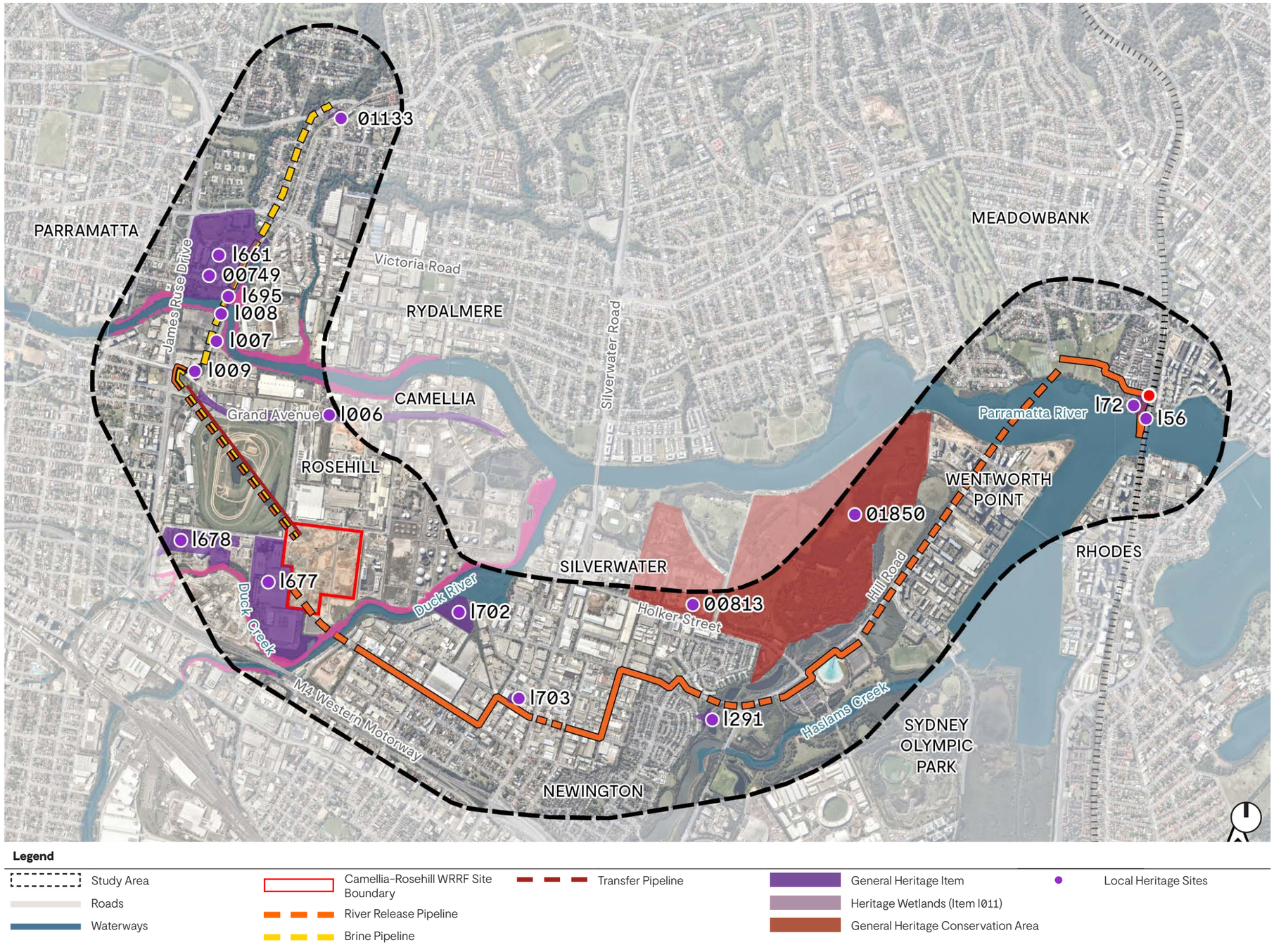


Figure 7. Heritage Map (Source: GHD Design, 2025)

3.2.3 Landscape Character

A Visual Amenity Impact Assessment (VAIA) has been undertaken by GHD Design (2025). The VAIA was prepared in accordance with TfNSW's *Guideline for landscape character and visual impact assessment Environmental Impact Assessment Practice Note EIA-N04* (2020) and DPE's *Cumulative Impact Assessment Guidelines for State Significant Projects* (2022) as its assessment framework to support the Place & Design Framework.

A desktop study of the study area was undertaken to:

- Determine landscape character zones along the project alignment
- Map potential viewing envelopes of the project
- Determine critical or significant views and vistas for visual amenity assessment.

The GPOP Water Cycle VAIA provides a landscape character assessment of the study area, as shown in **Figure 8**. Understanding the landscape character of the site is crucial for achieving a contextually appropriate design response.

For each landscape character zone, the specific characteristics were described before evaluating the impacts. A combination of sensitivity to change and magnitude of change provides a rating of the landscape character impact, as per the assessment matrix shown in **Table 6** and **Table 7**.

Landscape character encompasses the built, natural, cultural, and community aspects that make a place unique. A Landscape Character Unit (LCU) is defined as "an area of landscape with similar properties or strongly defined spatial qualities, distinct from areas immediately nearby" (Transport for NSW, 2023).

The VAIA has identified five distinct LCUs in the GPOP study area based on the built, natural, and cultural features of the landscape. These LCUs are:

The five LCUs identified in the study area include;

- LCU1 – Parramatta River and urban waterways
- LCU2 – Low density urban residential
- LCU3 – Medium to high density urban residential
- LCU4 – Industrial
- LCU5 – Parklands and reserves

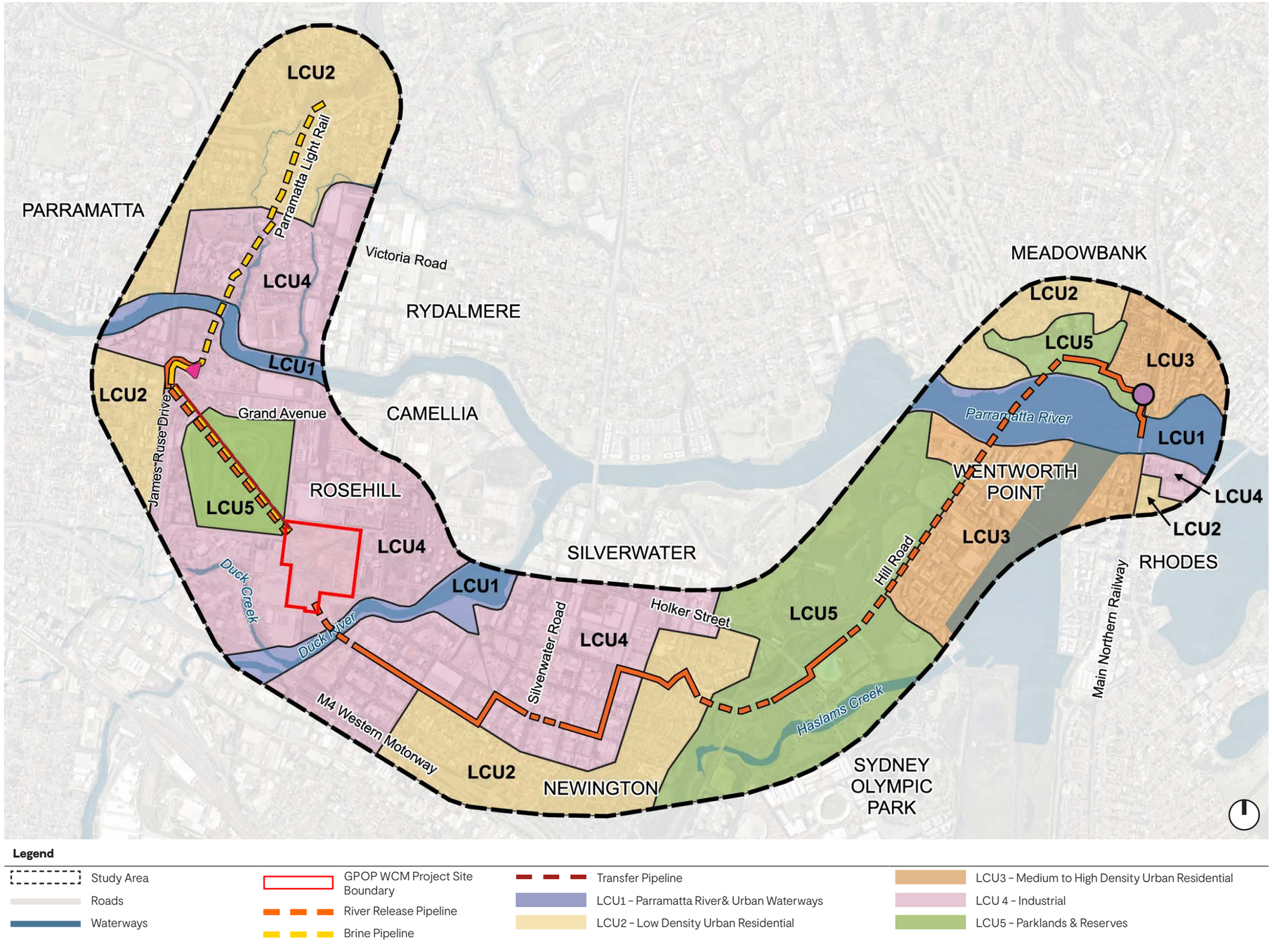


Figure 8. Landscape Character Unit Map (Source: GHD Design, 2025)

Industrial

The Camellia-Rosehill WRRF site is located within LCU4 which comprises industrial and commercial developments, predominately in the Camellia-Rosehill and Silverwater areas. The urban, industrial area includes large warehouse buildings with associated fencing, car parks, driveway and other infrastructure commonly associated with industrial zones.

Landform	– Flat and low-lying land with minimal topographical relief
Vegetation	– Mostly cleared with limited vegetation and trees and occasional boundary planting. – Grassed along streetscapes, occasional tree planting
Hydrology	– Urban surface flows across hard surfaces to concrete kerbs and gutters and roadside drainage
Land Use	– Industrial facilities and warehousing – Commercial buildings as part of business parks – Heritage listings within the LCU include: – Rydalmere Hospital Precinct (SHR #00749) – Sewage Pumping Station 67 (I009) – WSU Parramatta Campus (I661) – Clyde Carlingford Rail Bridge abutments – Rosehill (I695) – Clyde Carlingford Rail Bridge abutments – Camellia (I008) – Grave of Eliner Madgee & child (I007) – RTA Depot (1678) – Capral Aluminium (I677) – Ernest Feling Pty Ltd (I703)
Infrastructure / Built Form	– Heavy industrial facilities with associated infrastructure – Two to three storey warehouse style industrial buildings and facilities with plain facades, signage, security light-ing and awnings – Sealed road network including large, open carparks and footpaths – Overhead powerlines and street lighting and signs

Table 6. LCU4 Existing Characteristics

Future Development Consideration

Given the current ambitions to develop the Camellia-Rosehill precinct over the next 20 years for new jobs and homes, it is important to consider the potential future impacts from the project. Five (5) viewpoints from the assessment were identified within the Camellia-Rosehill precinct (**Table 7**).

VP02 Camellia Pumping Station	The Camellia pumping station would be integrated into the future Camellia-Rosehill town centre. Upgrades to the pumping station would commence in 2028 for a duration of about 25 months. It is highly likely that these works would be completed prior to construction of the town centre. During operations, most infrastructure would be contained within the existing pumping station building and would not be visible from public areas. Currently this viewpoint is of Moderate landscape sensitivity. It is anticipated that following delivery of the new town centre, that the landscape sensitivity would increase to High. Future developments that are adjacent to the pumping station site would likely have some visibility of the asset.
VP03 James Ruse Drive	Under the Camellia-Rosehill Place Strategy (DPE, 2022) land in this viewpoint would be retained as open greenspace. The brine and transfer pipelines would be belowground and would not be visible from the public domain. As a result, it is anticipated that there would be negligible impacts to views from the Camellia-Rosehill precinct.
VP04 Rosehill Gardens Racecourse	The assessed viewpoint is in an area designated as future Entertainment and residential. The assessment concluded that there were Low visual impacts owing to distance and the capacity of the panoramic view's ability to visually absorb the WRRF facility from one of the highest vantage points in the racecourse grandstand. This is unlikely to change as the WRRF would visually blend with the surrounding built fabric (including the existing industrial estate) and the landscape.
VP05 Unwin Street	This viewpoint is looking east towards the WRRF from an area designated as potential future public open space at the south-east corner of the Rosehill Gardens Racecourse. An area designated as urban services exists just south of the viewpoint which would likely include commercial development with potential views of the WRRF. Low to Moderate visual impacts would likely be experienced from these new developments, particularly from users of the new green open space directly adjacent the WRRF to the west.
VP06 Devon Street	This viewpoint is from an area designated as Urban Services as part of the Camellia-Rosehill Place Strategy with site specific provisions to accommodate existing uses. This new designation allows for a range of uses including commercial development. Should there be any residential development to the north of the WRRF, a commercial buffer within the urban services zone would potentially mitigate visual impacts, resulting in a low anticipated impacts on future development

Table 7. Future development considerations

3.3 Local Context

3.3.1 Local Green & Blue Network

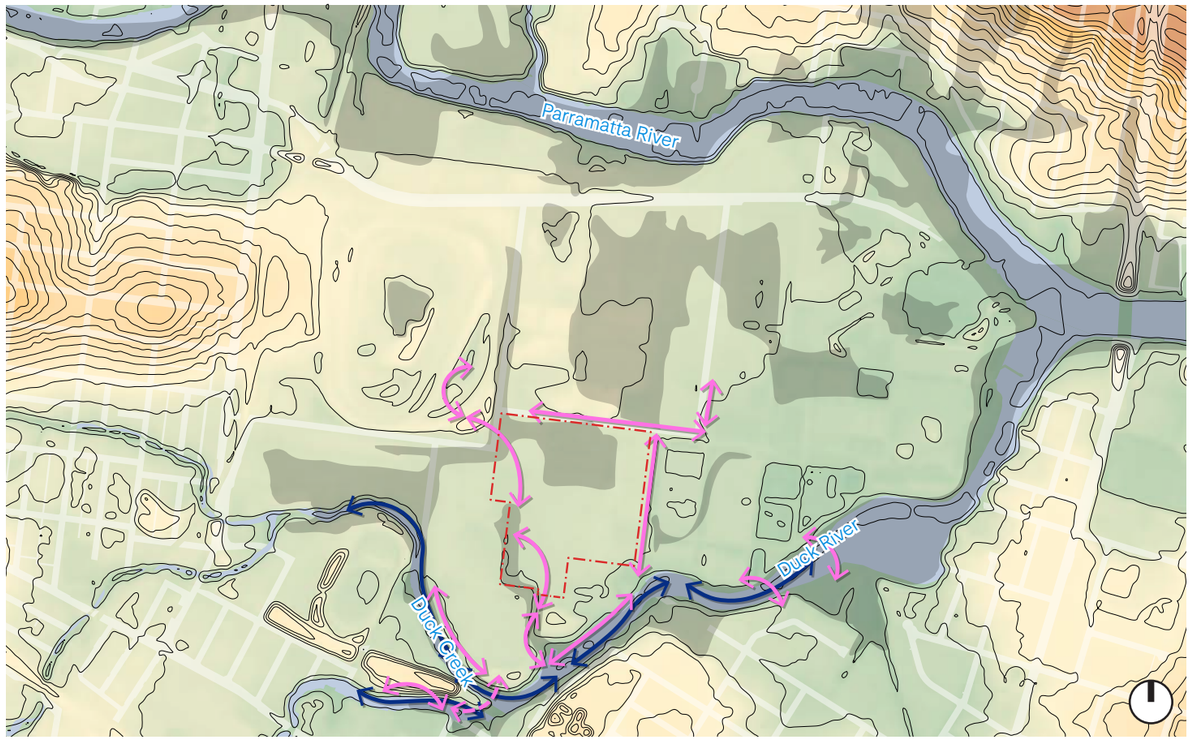
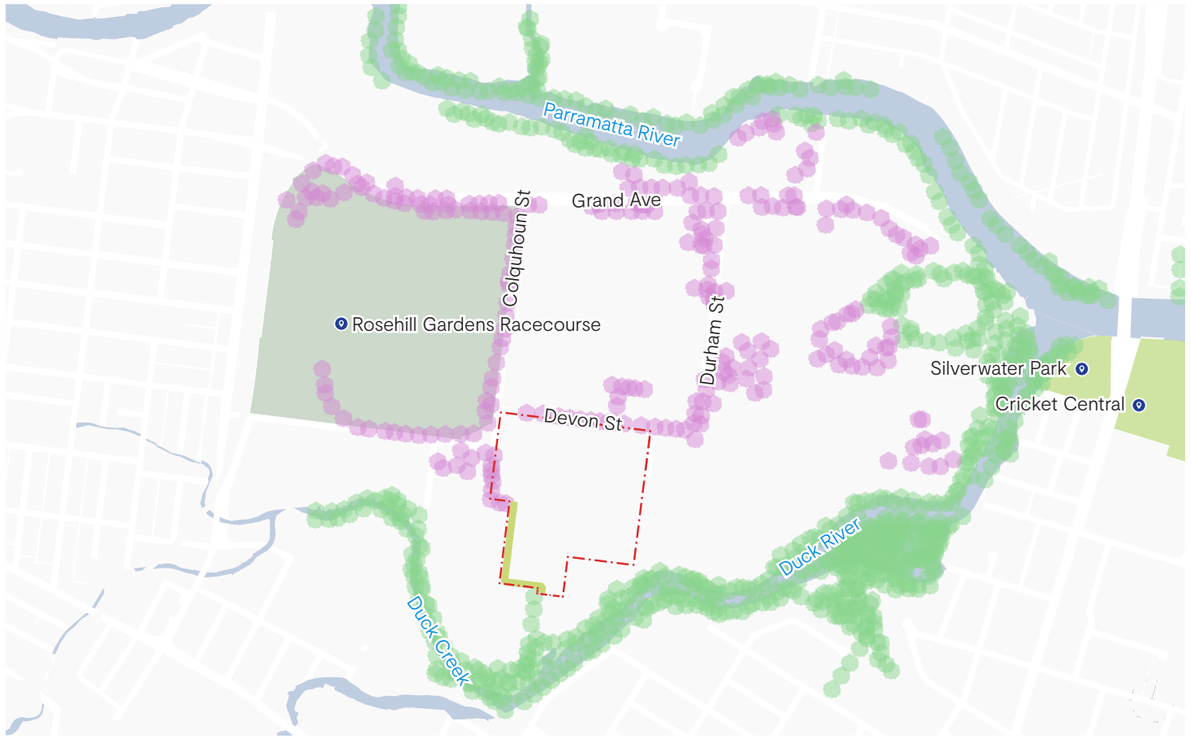


Figure 9. Local Green & Blue Network Map (Source: GHD Design, 2025)

3.3.2 Tree Canopy



Environmental Conditions

- The Camellia-Rosehill industrial area is on flat, low-lying land (RL 4m). Key hydrological features include the Parramatta River, Duck River, and Duck Creek. Flooding occurs mainly along the river edges and low-lying areas due to natural topography and drainage patterns.

Urban Typologies

- The following typologies (consistent with those identified in *Biodiversity in Place Framework*) relevant to the site or surrounds include:
  - Existing Urban Habitat Links
  - Riparian Habitat Links
  - Street corridors with tree planting
  - Waterways with extensive estuarine and riparian vegetation communities

Vegetation

- PCT 4028 occurs at the outlets of two underground stormwater drains within an industrial area. The stormwater drains discharge into a concrete-lined channel that is crowded with dense aquatic and semi-aquatic vegetation. The steep banks above the concrete channel are lined with mature Casuarina glauca (Swamp Oak), other exotic species and a handful of native understorey species. The actual extent of PCT 4028 within the site at Camellia is limited to two C. glauca with exotic vegetation at the base of the stem at the edge of the patch. (Arcadis, 2025)
- Native vegetation and species that require offsetting as identified in the Biodiversity Development Assessment Report (Arcadis, 2025) are the PCT2028 and Green and Golden Bell Frog (Litorea aurea), which overlays the PCT2028 extent on the western boundary of the Camellia-Rosehill WRRF site.

Tree Canopy

- Streetscape vegetation is limited to Devon Street (northside only), where large canopy trees have been planted, providing shade and habitat for urban wildlife.
- The Camellia-Rosehill WRRF site is highly modified with no existing vegetation or tree canopy cover except along the western boundary where PCT 4028 state listed plant community is located

3.3.3 Built Form

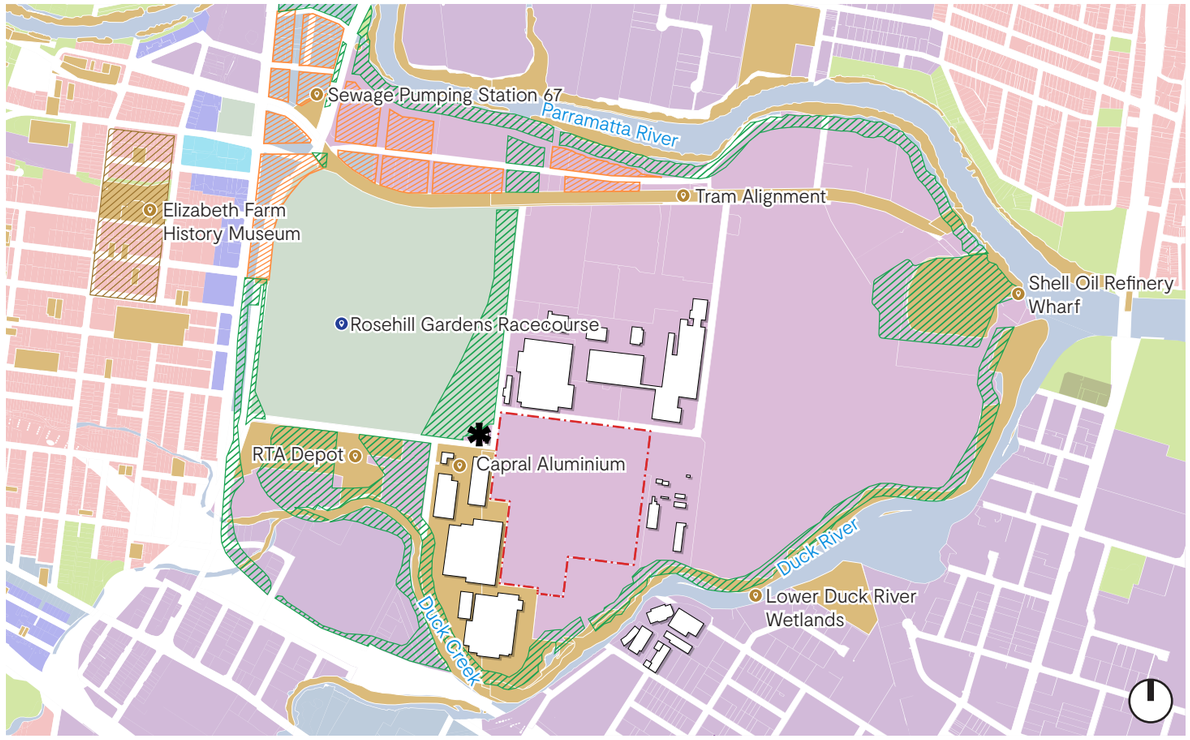


Figure 11. Built Form Map (Source: GHD Design, 2025)

Cultural and Historic Context

- The broader area includes several local and State heritage-listed items, but the Camellia-Rosehill WRRF site has no heritage significance. Items in the vicinity of the site which have the potential to be impacted by the project include:
  - Capral Aluminium site (I677) located adjacent to the west and southwest side of the site boundary.
  - Lower Duck River Wetlands (I011) located southeast of the site boundary following along Duck Creek towards Parramatta River.
- Two Aboriginal heritage items are listed: a potential archaeological deposit southwest of the site and a former open camp site northwest of the site.

Built Form and Land Use

- The area is primarily defined by its general and heavy industrial land uses. Due to this industrial legacy, soils in most of the area are contaminated.
- The built form consists mainly of large warehouses with extensive parking and vehicle-dominated access.
- Existing residential areas are located north of the Parramatta River in Ermington, and west of the Rosehill Gardens Racecourse.
- Public open space is limited, with private open spaces used for horse racing, training, conventions, and exhibitions located primarily at Rosehill Gardens Racecourse.

3.3.4 Access & Movement



Figure 12. Access & Movement Map (Source: GHD Design, 2025)

Access and Movement

- The area is dominated by heavy vehicle traffic, with significant volumes entering and leaving the precinct at all hours.
- The existing active transport network is limited, with no dedicated cycling infrastructure and a disconnected network of roadside footpaths.
- Currently limited crossing opportunities over James Ruse Drive, Parramatta River, and Duck River create barriers for walking and cycling.
- The Camellia-Rosehill Place Strategy proposes future active transport links and bus routes along Devon Street and Colquhoun Street as well as a shared path along Duck River.

Amenity

- Noise is generated around primary and secondary roads like the M4 Western Motorway and James Ruse Drive.
- Heavy industrial uses and trucks using the road network also generate significant noise.

3.4 The Current Site

The site is situated in a predominantly industrial to the west and heavy industrial to the north west, characterised by multistory warehouse-style industrial buildings and facilities. These structures typically exhibit minimal facade articulation, with little interface with the street, and feature associated signage and awnings.

The lot located west of the site is a heritage item known as the Capral Aluminium Building (I677), which is considered to have local heritage significance as an example of early Australian production and manufacturing.

A key destination located near the site is the Rosehill Gardens Racecourse, a private recreation area that hosts approximately 25 race meetings each year according to the Australian Turf Club.

The proposed site is mostly a cleared landscape with limited vegetation and canopy coverage along the west side of the site boundary leading south towards Duck Creek.

There are occasional street trees and overgrown green verges along Devon Street and Colquhoun Street with limited sealed footpaths for pedestrians.

The surrounding road network is sealed and includes large parking areas for staff and other users. The roads around the site have concrete kerbs and gutters with roadside drainage systems and driveway access into each industrial lot.

There is limited retail and hospitality space in the precinct, a small cafe is located on Goodmans property to the west of the site.

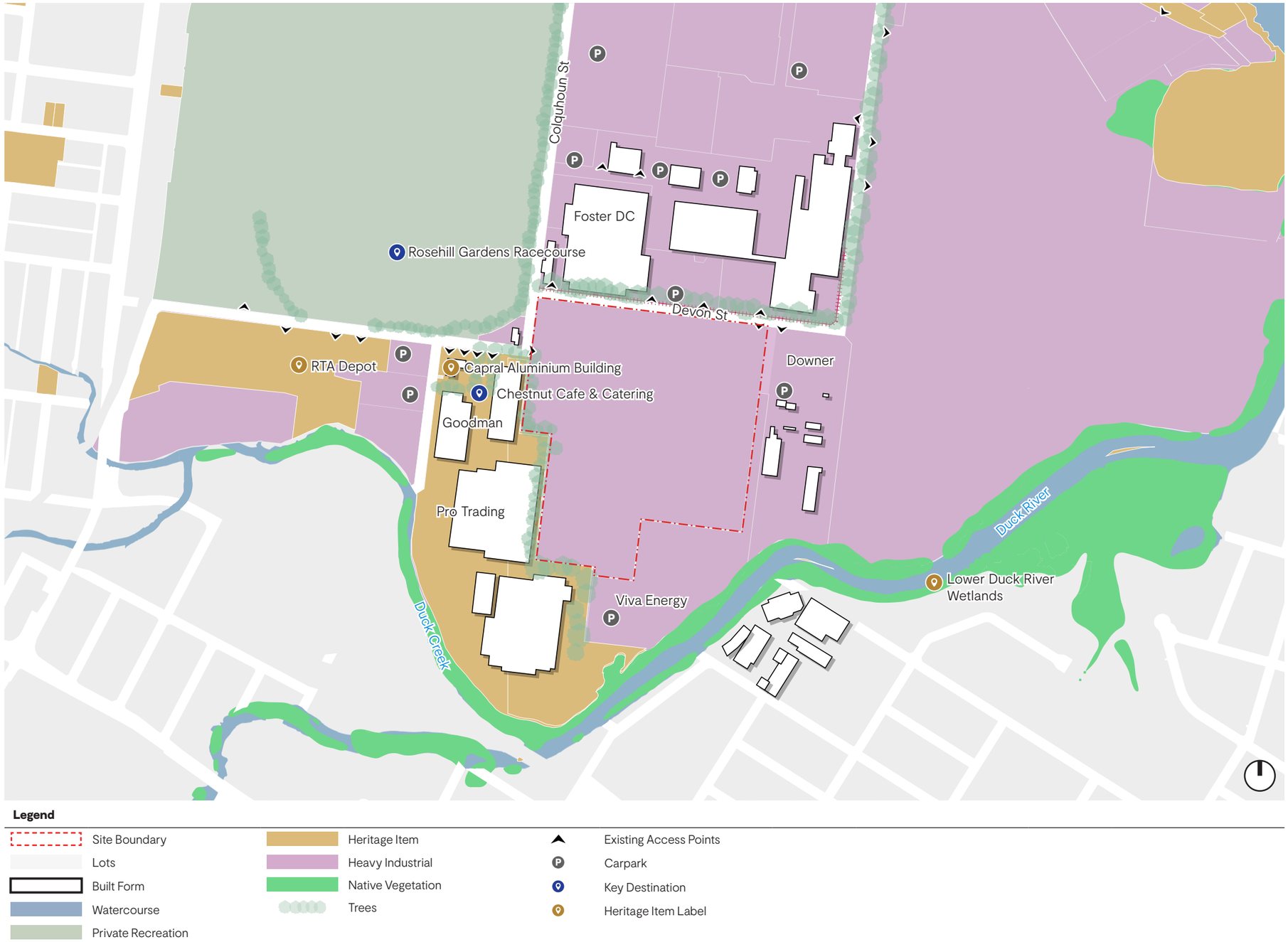


Figure 13. Place Analysis (1:7500 @A3) (Source: GHD Design, 2025)

3.4.1 Site Images



Figure 14. View east along Unwin Street and Shirley Street intersection towards Goodman Rosehill Industrial Estate (Source: Google Images, 2024)



Figure 15. View east along Unwin Street across the GPOP WCM project site facing infrastructure on Downer Rosehill Sustainable Road Resource Centre (Source: Google Images, 2024)



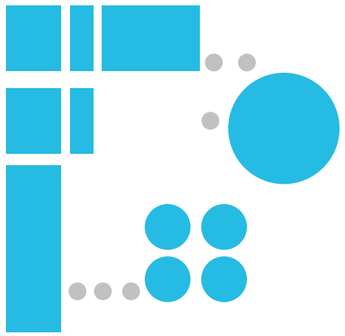
Figure 16. View east along Devon Street from the boundary of Rosehill Gardens Racecourse (Source: Google Images, 2024)



Figure 17. View south along Colquhoun Steet and Devon Street intersection facing Goodmans Rosehill Industrial Estate (Source: Google Images, 2024)

3.4.2 Sense of Place

The analysis has identified the following key spatial themes, which capture the unique place qualities of the area. The design response should consider how these themes can be expressed through form and arrangement of the site.



Supersized Industry

The neighbourhood is characterised by large-scale industrial built form. The Camellia-Rosehill WRRF site is surrounded by multistorey warehouse-style industrial buildings and facilities, which exhibit minimal facade articulation and have little interface with the street.



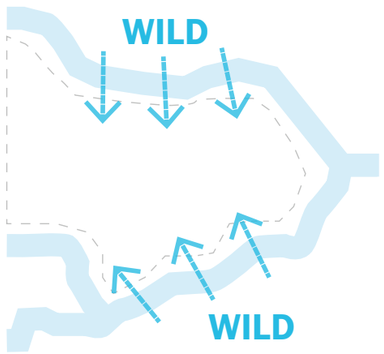
The Big Sponge

The region is defined by its function as floodplain. The site is situated on flat, low-lying land with unique hydrological and ecological conditions given the proximity to the confluence of the Parramatta and Duck Rivers.



Linearity

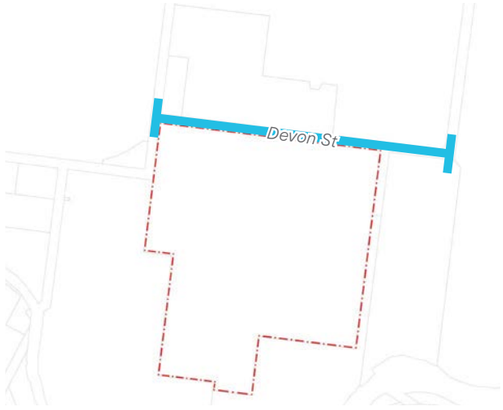
Long, straight streets open to the sky define the industrial landscape. Devon Street and Colquhoun Street are characterised by wide carriageways and on-street vehicle parking, with limited pedestrian amenities.



Wild vs. Contrived

The peninsula forms the nexus between the contrived industrial land and the encroaching natural waterways at its perimeter. The site is highly modified with low to no vegetation cover, but the surrounding area includes significant estuarine and riparian vegetation communities.

3.4.3 Streetscape Interfaces

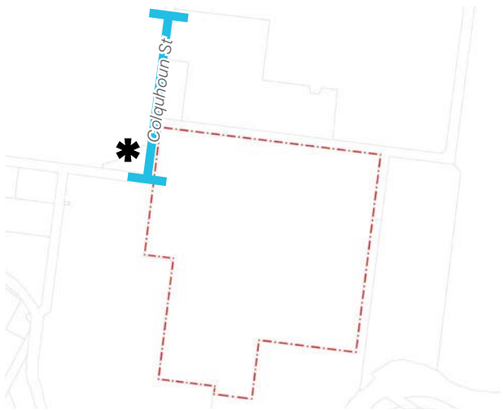


Devon Street Character

- Devon Street has been identified as a future bus route and cycleway in the Camellia-Rosehill Place Strategy, this is likely to change the street character significantly.
- The existing heavy vehicle movement will also continue to contribute towards the future street character.

Existing Conditions

- Devon Street is characterised by wide carriageways and street parking lanes on both sides. However, the long-term parking of vehicles, including trucks, and limited footpaths creates a low amenity pedestrian environment.
- Devon Street is a thoroughfare for heavy vehicle movement in the precinct which further detracts from the pedestrian experience.
- The street features narrow verges relative to the width of the carriageway and has no dedicated pedestrian footpaths. The northern verge is lined with established native street trees that provide shade and enhance the overall character. The southern verge contains relatively newly planted trees.
- Property boundaries primarily comprise of mesh fencing, hedges and blank brick walls which is characteristic of industrial uses.



Colquhoun Street Character

- Colquhoun Street has been identified as a future bus route and cycleway in the Camellia-Rosehill Place Strategy. This is likely to change the street character significantly.
- The southern corner of Rosehill Gardens Racecourse is marked as a 'transport and utility facility' in the Camellia-Rosehill Place Strategy which will also impact the street interface with the Camellia-Rosehill WRRF.

Existing Conditions

- Colquhoun Street is characterised similarly to Devon Street, featuring wide carriageways and on street vehicle parking. The street also experiences frequent heavy vehicle movement; however, the entire western interface is fenced off for the Rosehill Gardens Racecourse.
- The street has narrow verges relative to the width of the carriageway and currently lacks dedicated pedestrian footpaths. There are no street trees due to high voltage power lines running along the entire length of the street, which continue along Unwin Street.
- Along the street, various interfaces include mesh fencing and blank brick walls on the western side, while the western side features a vegetated edge that provides screening for the Rosehill Gardens Racecourse. The main entry to the Camellia-Rosehill WRRF site is located at the intersection of Colquhoun Street and Unwin Street.

3.5 Challenges

Place

1. Existing site contamination and high voltage restrictions on site boundaries impact public realm potential and interface design.
2. Flooding constraints present limitations for ground plane design.
3. Elevated site level requirements and retaining walls will create integration and transition challenges with public domain.
4. Facility function and built form interface to support compatibility and integration with adjacent land uses.
5. Corner of Colquhoun Street and Devon Street is a key street interface with different land uses.
6. Providing green intervention on future asset expansion zones may create future management challenges when required.
7. Long street frontages may create blank low-amenity streetscape.
8. Managing shared heavy vehicle and light vehicle access from Colquhoun Street.
9. High odour emitting facilities will have impacts on adjacent uses.
10. Visual impact of large-scale facility and air dispersion stacks on key views, particularly from Rosehill Gardens Racecourse.
11. Future development of Camellia based on Camellia-Rosehill Place Strategy may overlook the facility.

Green Infrastructure

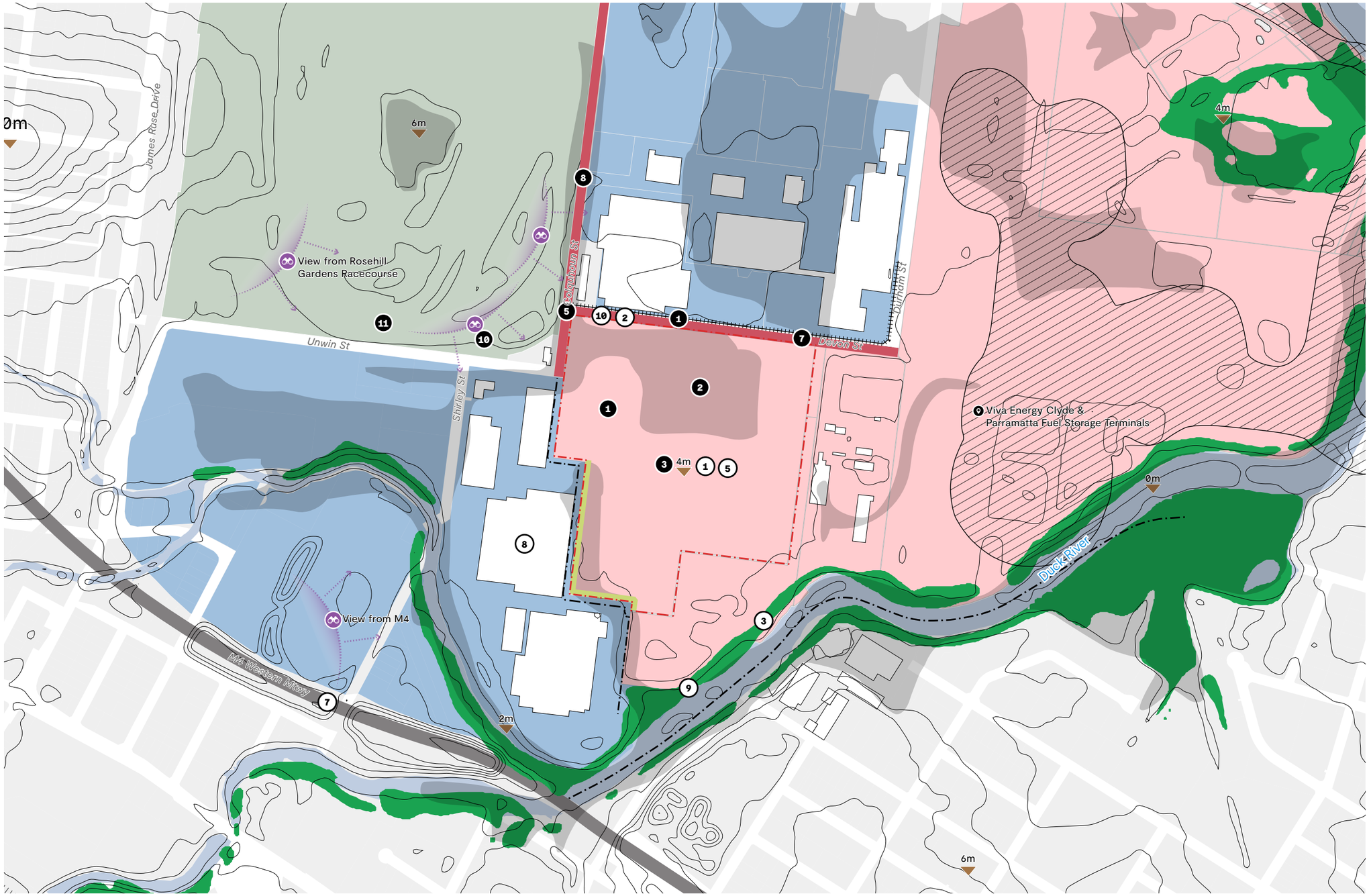
1. Site layout and design must not negatively impact water flow patterns and local flora and fauna.
2. Operational requirements for the project site limit capacity for planting large canopy trees, due to conflicts with operations and underground services.
3. Impacts on waterways from weed invasion, especially exotic vines and scramblers in the drainage corridor.
4. Sediment flows and erosion from stormwater affect the site.
5. Increase in impervious surfaces could lead to flash flood events.
6. Maintenance costs may be higher than standard requirements.
7. Noise and light pollution from surrounding industry, M4- Western Motorway and James Ruse Drive place impacts on wildlife and species movement.
8. High urbanised catchment around the site increases litter and rubbish in adjacent stormwater systems connecting to Duck River.
9. Riparian buffer to the drainage channel is very narrow.
10. Habitat resources on the site are limited to the drainage channel and Devon Street.



Figure 18. Colquhoun Street has limited pedestrian amenity or public domain



Figure 19. Limited ecological value existing on site and trees on site



Legend

- Site Boundary
- Built Form
- Watercourse
- Private Recreation
- Future Urban Services
- Vegetation/Riparian Corridor
- High Site Contamination
- Flooding
- Road & Vehicle Consideration
- PCT 4028
- Low Level Planting
- High Voltage Restrictions
- Contours (2m intervals)
- Stormwater Flow/Drainage
- Key Destinations
- Views & Vistas
- RL Heights
- Place Challenges No.
- Green Infrastructure Challenges No.

Figure 20. Site Challenges (1:7500 @ A3) (Source: GHD Design, 2025)

3.6 Opportunities

Place

1. Enhance the interface between the site and surrounding areas to create a distinct and high amenity streetscape subject to consultation with Parramatta City Council.
2. Improve the streetscape of Devon Street by including a retaining wall and fencing, alongside the consideration of materials and planting, to address proposed level change.
3. Minimise the visual impacts of infrastructure through design considerations including external treatments, finishes, articulation and colours.
4. Create a buffer between the site facilities and the street to improve integration of different land uses.
5. Consider the site interfaces as opportunities to create design solutions which invite public interaction.
6. Consider views from higher levels over the site as an opportunity to integrate learnings from Connecting with Country and art for the benefit of the community.
7. Understand and manage the vehicle access from Colquhoun Street for efficient and safe movement.
8. Identify public interfaces and site infrastructure, including the odour stack, which could provide the opportunity for educational and creative initiatives which focus on the site's purpose, legacy or cultural history.
9. Integrate Connecting with Country learnings and practices that honour and celebrate Country and the site as well as improve the place identity.

Green Infrastructure

1. Shift footpath on Devon Street to maximise capacity for greening and screening.
2. Retain and enhance Devon Street swale and tree planting to diversify biodiversity, where possible.
3. Future residual land to be regenerated with planting of endemic species to improve soil health, biodiversity and contribute positively to the broader environment temporarily, or until next stage is needed (approximately 2050).
4. Create educational opportunities along the public interfaces of the site that express the ecology and history of Duck River, given the limited capacity to view the waterway from the street or site.
5. Enhance habitat resources through increasing plant diversity, vegetation structure and capacity for flowering and fruiting throughout the year.
6. Work towards improving landscape maintenance practices to protect the waterway health of Duck River and connected wetlands.
7. Work towards improving the ecological health of the drainage channel, subject to consultation with Parramatta City Council and land holder.
8. Green wall integration on buildings which interface the streets.

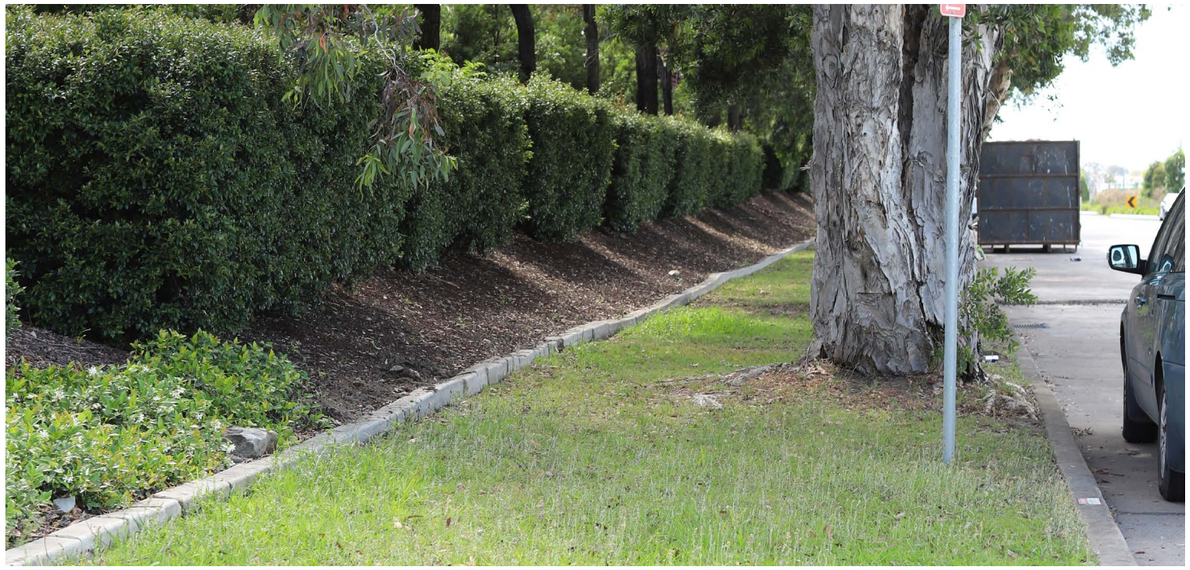


Figure 21. Mature trees and vegetation looking east along Devon Street

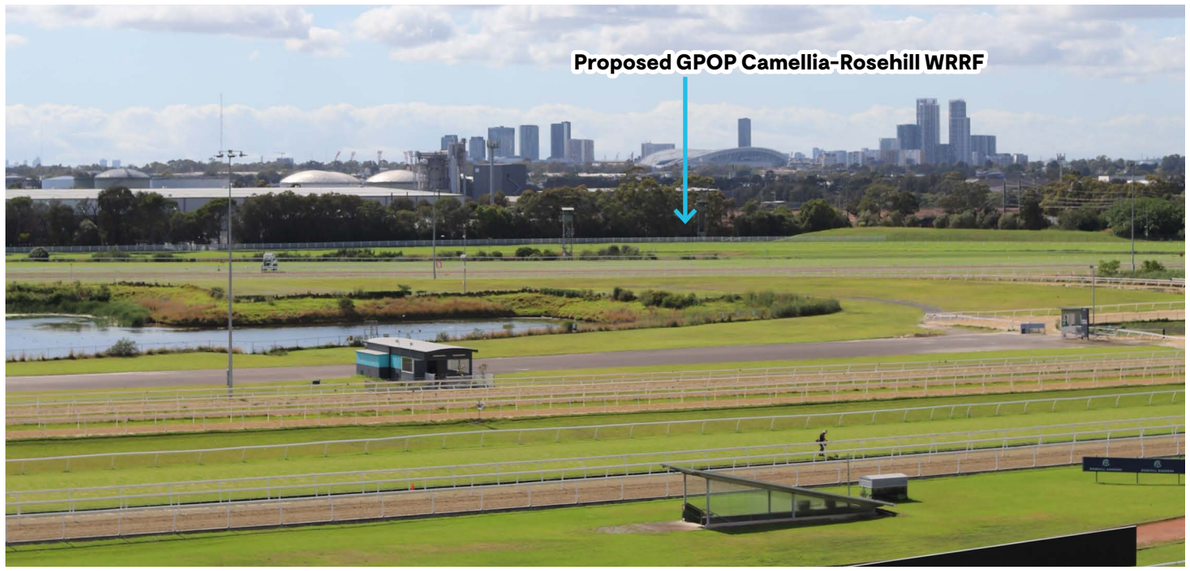


Figure 22. View south east towards the Camellia-Rosehill WRRF site from the Rosehill Gardens Racecourse

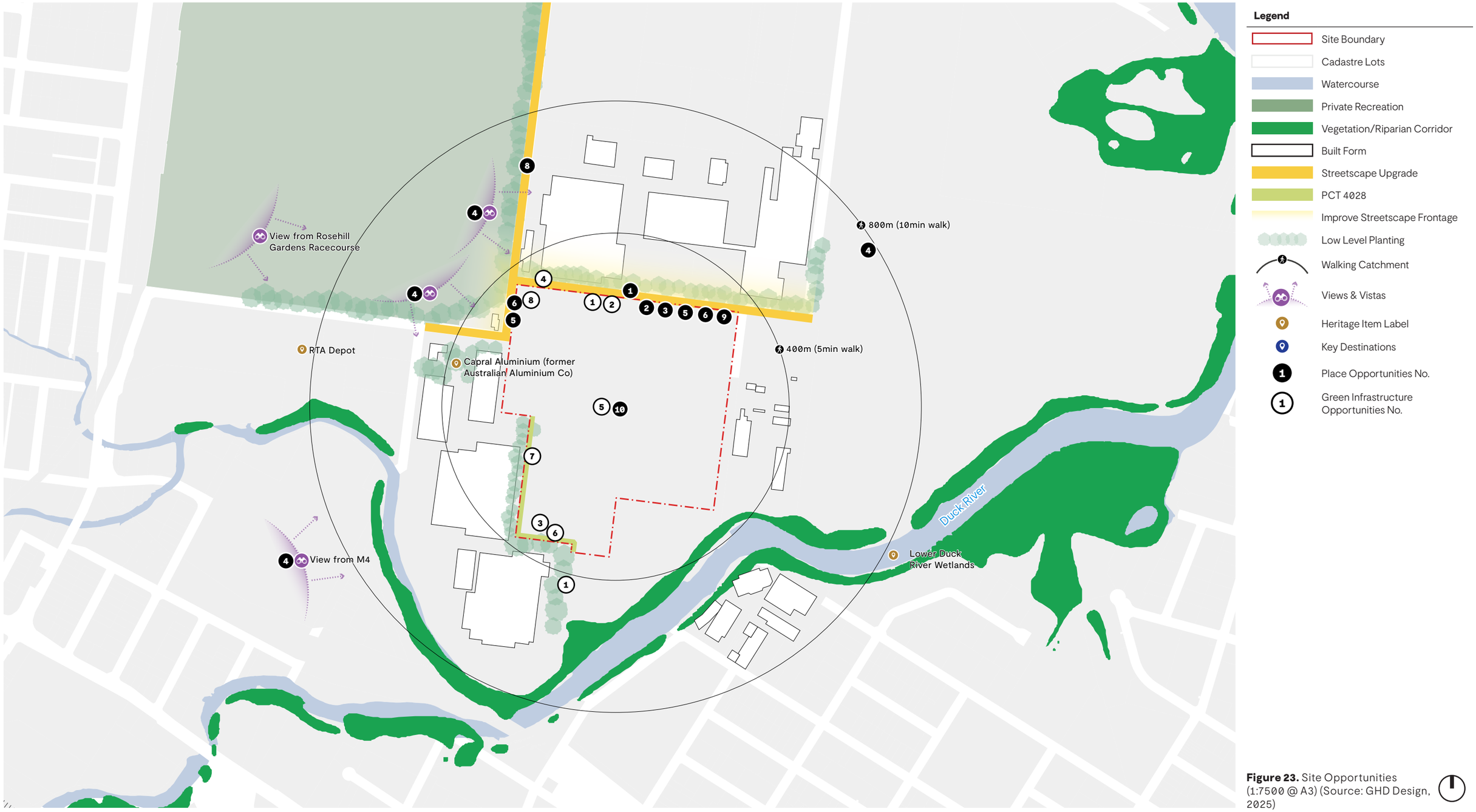


Figure 23. Site Opportunities (1:7500 @ A3) (Source: GHD Design, 2025)

Vision & Principles

4

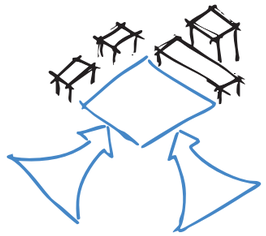
4.1 Framework Vision

" The Greater Parramatta and Olympic Peninsula Water Cycle Management Project will be a highly efficient water processing facility that exemplifies best practice, efficiency, safety, and water security. It will underpin Sydney Water's commitment to delivering a resilient and reliable water supply for Greater Sydney, while contributing to the place value and the urban landscape of its surrounding precinct. "

4.2 Design Principles

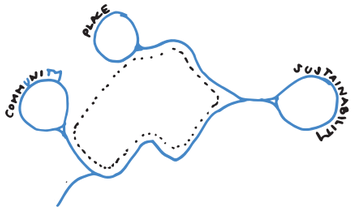
The following guiding Design Principles have been established to make sure the project meets the Place and Design Framework Vision and delivers a high-quality, responsive design outcome.

These principles reflect priorities for both Place and Green Infrastructure, driving positive outcomes across the site and ensuring urban design is being considered during the project design development.



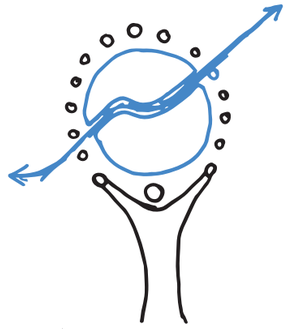
01
Focus on Integration

Integrate and connect the site with the wider precinct context by focusing on interfaces, providing diverse landscaped frontages and streets for people that are high amenity buffers.



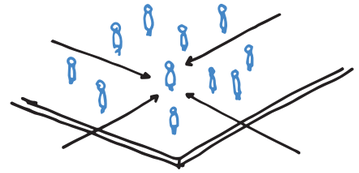
02
Establish a Legacy

Incorporate Design Excellence processes and outcomes to demonstrate Sydney Water's commitment to sustainability, place and community.



03
Founded on Respect

Collaborate with the Dharug people to develop a design that Connects with Country and daylights their stories and connection to the place.



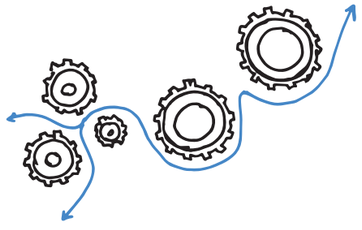
04
People Focused

Design with people at the heart, ensuring employee, visitor and community focused streetscapes and interfaces.



05
Celebrate Water

Incorporate water themes and features in public interfaces to provide interest and meaning whilst maintaining the site's industrial character.



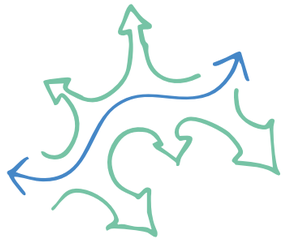
06
Drive Operational Efficiency and Safety

Deliver best practice water treatment and safety measures with built in flexibility to evolve and innovate over time, future proofing and ensuring longevity of this essential infrastructure into the future.



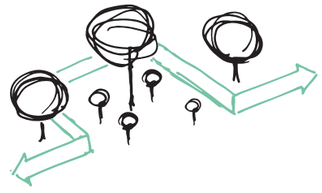
07
Regenerative

Respect and work with the lay of the land by keeping water at the surface where possible and restoring the estuarine landscape character and natural processes.



08
Preserve and Connect

Preserve and expand the ecological values on the western boundary of the site into the site to strengthen habitat connectivity.



09
Healthy Natural Systems

Strengthen and connect green networks throughout the site to create multifunctional spaces that support both human and non-human use, while simultaneously delivering ecosystem, environmental benefits.



10
Adaptive

Give space and buffers that are flexible so that the landscape can evolve and change over time to withstand climate change and other environmental challenges.

Objectives, Outcomes & Design Response

5

5.1 Overview

The design response recommendations will assist in the development of detailed design solutions and are applicable across multiple scales. They provide guidance on design objectives, desired spatial outcomes, and specific design elements. These recommendations address key issues and considerations essential for achieving design excellence in the GPOP WCM site.

The below figure outlines the design response guidance process:

Design Principles

The design principles guide the design process and approach.

Design Objectives

The objectives are specific and measurable goals to assess the design.

Desired Outcomes

The desired outcomes are the tangible and intangible results of the design which can be used to evaluate the design against its objectives.

Design Element Guidance

Key design element guidance outlines benchmark projects, the intended look and feel, and the expected level of quality—each aligned with the project's overarching vision and design principles.

Recommendations

The recommendations identify how the design process needs to progress to achieve the desired objectives of the project.

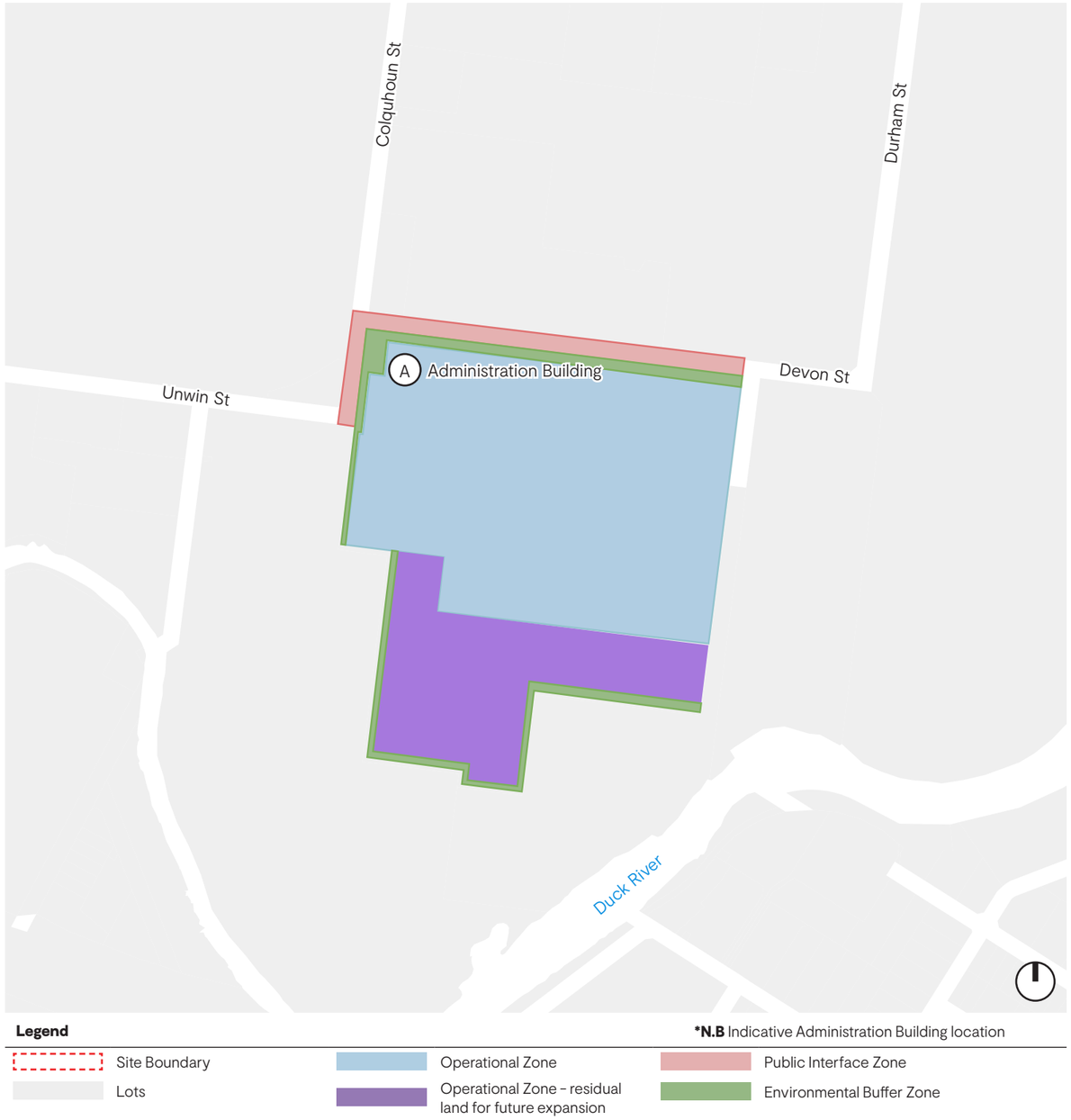
Figure 24. Place and Design guidance process

GPOP WCM Spatial Zones

Design objectives & desired outcomes are described for the four key spatial zones within the GPOP WCM site:

- **Operational Zone**
- **Public interface Zone**
- **Environmental buffer Zone**

Further design requirements and precedent projects are outlined for design elements to demonstrate the desired look and feel and level of quality and guide the creation of a cohesive and functional facility that aligns with the project's vision and design principles.



5.2 Design Objectives & Desired Outcomes

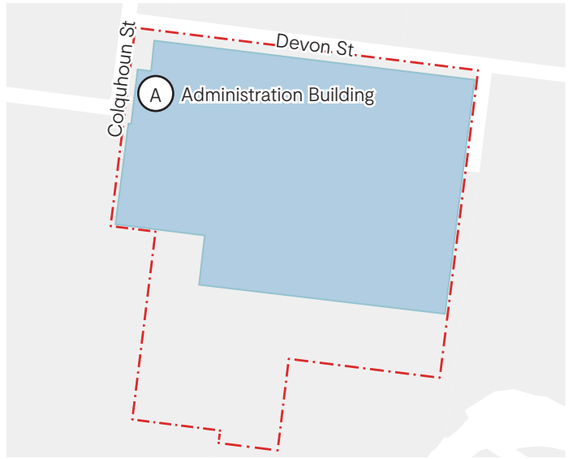
5.2.1 Operational Zone

The facility ground and operational zone is characterised by the functional element of the facility, which includes the optimisation, layout and plant infrastructure.

Proposed infrastructure includes:

- Inlet works – preliminary treatment
- Wastewater treatment process units
- Advanced treatment processes (reverse osmosis)
- Disinfection systems
- Biosolids handling and odour control facilities
- Ancillary infrastructure: administration building, access roads, utilities, car parking, and storage.

The public-facing aspects of the facility would provide an enhanced visual appeal, contributing to people's experience at street level, the uplift of the area and visually strengthening the facility's presence within the neighbourhood.



***N.B** Indicative Administration Building location

The design objectives for this zone are:

Objective	Relevant Principles
A safe, functional and inviting space that has managed residual site contamination to provide a healthy workplace.	**02, 05, 06**
A welcoming workplace which provides end-of-trip facilities for employees to encourage cycling, e-mobility and active transport by ensuring convenience and accessibility.	**02, 04**
A facility that balances the operational needs with environmental resilience through co-locating underground services in easements to make space for patches of structured vegetation and large canopy trees with passive irrigation.	**05, 06, 07, 09**
Expression of architectural form and design features that captures the sense of place.	**01, 02, 03, 04, 06**
Improved traffic movements of heavy and light vehicles from Colquhoun Street into the facility that integrate safely and efficiently with the facility entrance.	**01, 02, 03, 04**
Mitigation of impacts on staff, visitors and the public from high odour emitting buildings and large-scale facility structures through their strategic placement and orientation.	**01, 02, 04, 06, 09**

Desired Outcomes:

Site layout

- Implement a grid layout of service roads and footpaths for ease of navigation and clear demarcation of functions of the site for both vehicles and site staff.
- Provide two entry points to the site for efficient and safe entry and exit points for both heavy and light vehicles.
- Odour outputs from the site are located away from sensitive receptors and comply with regulatory standards.
- Set back the administration building from Devon Street to allow for a dedicated outdoor staff area, which contributes to the public street address of the facility.
- The arrangement of built form and soft landscaping should not inhibit the operation or maintenance of the operational infrastructure.
- Stormwater overland flow paths should not be impeded by any built structures.

Urban form

- Public facing built form should respond to the industrial character of the area.
- Distinguish the administration building from other operational facilities through scaled features to avoid it looking like a shed.
- The site should be an attractive workplace that expresses Sydney Water values through the design layout.
- The site should provide outdoor spaces that support passive recreation to enhance the mental and physical wellbeing of staff and visitors.
- The site should be sustainable in its design maximising low carbon materials and efficient solutions.
- The site design should consider operational and maintenance implications of any proposed material and finishes fencing and landscape solutions
- Provide equitable and gender-safe facilities such as, lighting, accessible toilets and breakout spaces that foster inclusivity and safety for all users.

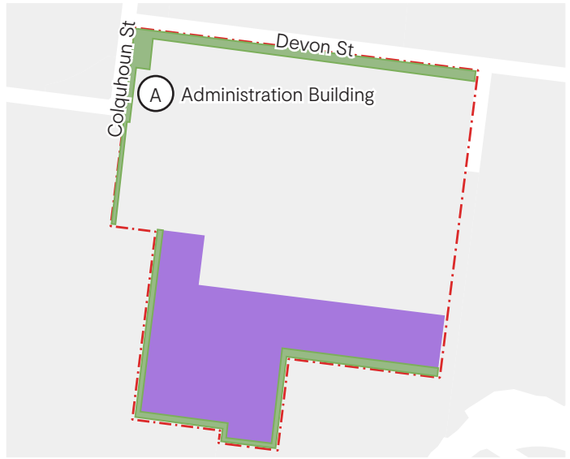
Water use

- The use of potable water for irrigation should be minimised through landscape design that prioritises passive irrigation techniques, such as capturing and reusing rainwater, directing runoff to planted areas, and selecting drought-tolerant species.

5.2.2 Environmental Buffer Zone

The environmental buffer zone aims to create a physical and visual buffer between the facilities operational zone and the public realm.

The environmental buffers would be located along the southern, northern and western boundaries of the site to provide visual and ecological protection to the facility.



***N.B** Indicative Administration Building location

The design objectives for this zone are:

Objective	Relevant Principles
An environmental buffer between the facility and public interface screens the facility from the public domain and mitigates visual impacts.	**01, 04,** 08, 09, 10
At-grade landscape treatments on Devon Street should visually uplift the public interface to integrate the high voltage easements, pedestrian movements and level transitions.	**01, 02, 04,** 09
An innovative facility that applies and trials research-based landscape treatments such as phytoremediation to improve site biodiversity, soil health and water quality, where possible.	**02, 03,** 07, 10
Establishment of rich biodiverse facility grounds that cater for humans and non-humans such as pollinators, frogs, turtles and owls.	**03, 05,** 09, 10
Retention of existing vegetation to provide a scaling device in the landscape and form the backbone for habitat connectivity to Duck River and along the Racecourse.	**03, 05,** 09, 10
Align with the proposed green corridor outlined in the Camellia Rosehill Place Strategy strategic document by NSW Department of Planning and Environment in 2022.	**01,** 07, 08, 09, 10

Desired Outcomes:

Visual amenity

The VAIA identified five vantage points from which the visual impact of the Water Resource Recovery Facility (WRRF) is evaluated:

- VP02 - Sydney Water Pumping Station
- VP03 - James Ruse Drive
- VP04 - Rosehill Gardens Racecourse
- VP05 and VP06 - Unwin Street and Devon Street

The assessment indicates that visual impacts are moderate during the construction phase of the project, and low during th operations phase of the project. This finding is attributed to the absence of sensitive visual receivers near the GPOP WCM project.

Environmental buffers

- Native shrubs create a natural screen to the site whilst contributing to urban greening and biodiversity.
- Dense vegetation and a mix shrubs contribute to noise management by absorbing and deflecting sound.
- Planning for solar on roofs to help with energy offsetting.

Stormwater management

- Potential inclusion of bioretention areas and "daylighting" the water to assist the existing storwater overland flow path that is within the site, but not subject to capping.

Natural systems

- Planting boxes where possible should be utilised within internal road reserves to provide amenity and screening whilst not impacting underground services, contributing to the net increase of trees.
- Alternative revegetation techniques should be used to temporarily cover future residual land to prevent erosion and dust. Explore innovative horticultural solutions, such as Woody Meadows or collect seed from local remnant grasslands and re-seed as short - midterm coverage.

Biodiversity

- Provision of habitat resources through increased plant diversity, contributing to the net increase of trees.
- Provision for and to contribute to the net habitat around the site for pollinators, butterflies and birds.

Water use

- The use of potable water for irrigation should be minimised through landscape design that prioritises passive irrigation techniques, such as capturing and reusing rainwater, directing runoff to planted areas, and selecting drought-tolerant species.

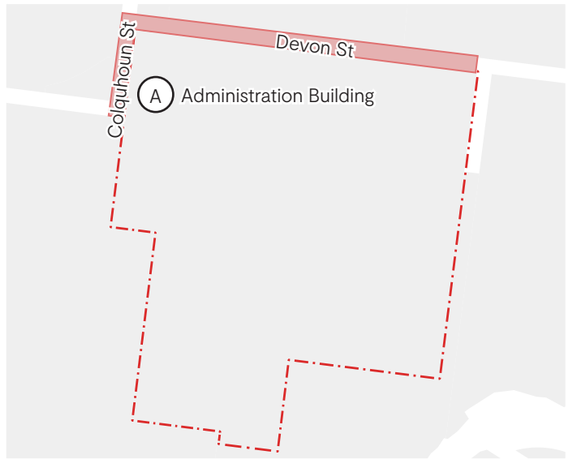
5.2.3 Public Interface Zone

The public interface zone is defined as the key interfaces the site will have with the street and public realm, which includes:

- Devon Street
- Colquhoun Street
- Devon Street open space

Providing contributions to the public realm will provide urban uplift and establish a positive legacy for Sydney Water and the local community including amenities for staff.

Sydney Water would continue to work with relevant stakeholders to make sure the public interface zone outcomes are consistent with the development objectives for the wider precinct. Sydney Water would work with Parramatta City Council on delivering improvements to the public domain, including the nature strip on Devon Street which is owned and managed by the Council.



***N.B** Indicative Administration Building location

The design objectives for this zone are:

Objective	Relevant Principles
The appearance of all built form integrates sustainability and quality through creative facade treatments, durable materials and articulated roof designs to make sure the site is contemporary and contextual.	**01**
Continued collaboration with the local Aboriginal community to communicate the expression of their cultural knowledge and values in a meaningful way.	**03, 05, 08**
At-grade landscape treatments on Devon Street should visually uplift the public interface to integrate the high voltage easements, pedestrian movements and level transitions.	**01, 02, 04, 09**
An enhanced public linear frontage to Devon Street and Colquhoun Street that benefits ecological health, showcases water and the riparian vegetation community. Built design elements should be varied to integrate changes in material, artistic elements and heritage interpretation.	**02, 03. 05, 08**
Expression of architectural form that captures the sense of place and integrates design features that are visible from the public realm and from above such as solar panels, art on the ground or vegetation in planter boxes where possible.	**01, 02, 03, 04, 06**
A facility for learning and capturing stories about technology, science, history and water.	**02, 04, 05**
A public facing administration building that addresses the street and creates an iconic entrance for the facility.	**01, 05**

Desired Outcomes:

Site layout

- Reveal history and celebrate cultural values and stories in permanent (landscape, public realm, naming, public art) ways informed by close engagement with Dharug people and knowledge holders.
- Creative works and art should be integrated in the site's design to create visual interest and appeal.
- Activate the Devon and Colquhoun Street corner by integrating design features to foster interaction and strengthen the sense of place.
- Enhance public awareness and learning of water treatment and health through integration of interpretive signage and elements.
- Integrate rain gardens and bioswales along footpaths and within the Devon Street open space to filter pollutants and slow down stormwater runoff.
- An activated and safe space with consideration of Crime Prevention Through Environmental Design (CPTED) to accommodate staff and visitor safety on and off site during night hours.
- The site should incorporate varied water themed interventions including Water Sensitive Urban Design and water features to communicate Sydney Water values and Aboriginal cultural themes.
- Water should be daylighted and its flow slowed wherever feasible, allowing it to follow more natural pathways. This approach supports ecological processes, enhances biodiversity, and contributes to a more resilient and visually engaging landscape.

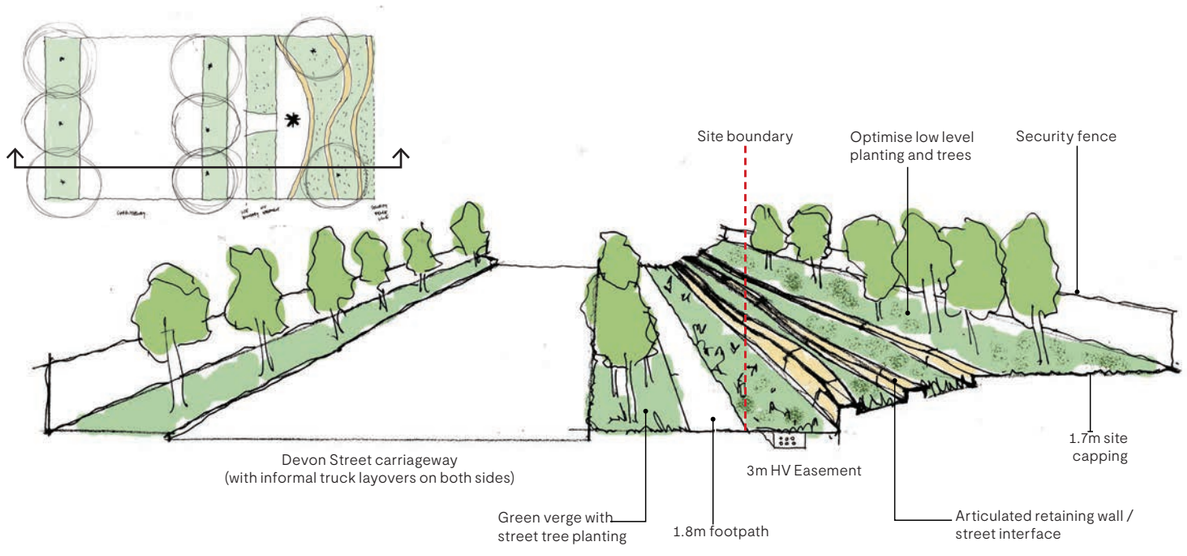


Figure 25. Devon Street public realm spatial testing

5.3 Design Element Guidance

The quality and integration of design elements—such as built form architectural treatments, wayfinding and interpretive knowledge sharing, workplace amenity, retaining walls and fencing and green and blue infrastructure —is just as critical as the overarching facility urban structure, as these components shape the workplace experience, reinforce place identity, and contributes to the successful operation of the GPOP WCM.

This section outlines the desired look and feel of key design elements with precedent projects which demonstrate potential design outcomes.

During the design development, the Camellia-Rosehill WRRF should be designed with rigour and consideration of its context from an urban design lens to have a lasting positive legacy for the community and Sydney Water who would work with stakeholders to support the delivery of the future development of the WRRF site.

Built Form

- Built form across the site should have a uniform treatment which complements the architectural design of the administration building.
- Implement an industrial themed or other consistent material palette across the site.
- Consider bold geometry for the built form to embrace the super-scaled context.
- Infrastructure elements to reference Eel Dreaming stories and artwork in creative ways.
- Apply environmentally sustainable development principles to the articulation of built form, including its volume, scale, colour, materiality, and texture, in ways that contribute positively to the local character.



Brunswick Power Terminal Station: Beca, 2019.



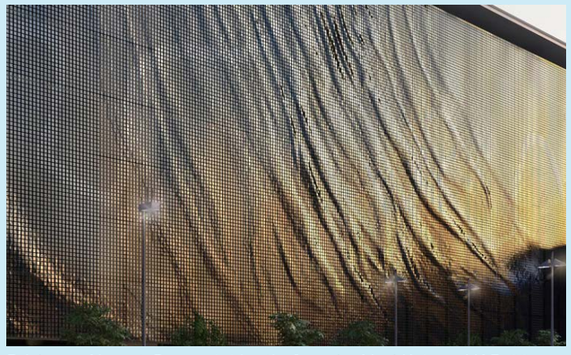
Arklow Wastewater Treatment Plant: Clancy Moore, 2025.

Administration Building Form

- Orientate built form and roof structure to maximise solar gain in winter and redirect prevailing wind from outdoor spaces.
- Building design to respond to the industrial scaled geometry of the facility infrastructure and surrounding place character.
- Elevate administration building above ground level to reduce impact on overland water flow of the site and maximise secure parking under the building.
- Building under croft should be an inviting place with high quality amenity (increased natural light, concealed services and green infrastructure).
- Consider outlook from administration building to take in vistas across Duck River and the Rosehill Gardens Racecourse.
- Integrate ramping into the architectural design response to minimise clutter and create a resolved geometry.
- Any under croft structural elements should be of a high quality design and contribute to the character of the building.



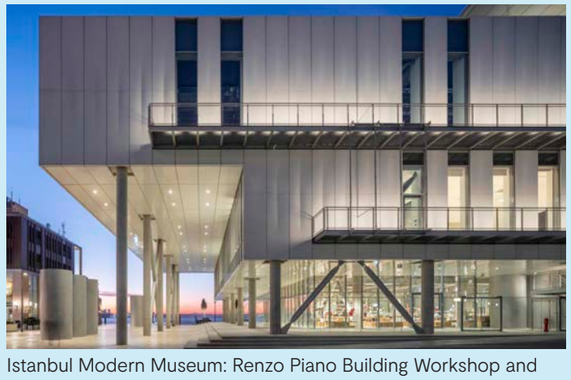
Sewage Treatment Plant of San Claudio: Padilla Nicás Arquitectos, 2016.



Brisbane Airport Car park kinetic facade: Ned Kahn + UAP, 2011.



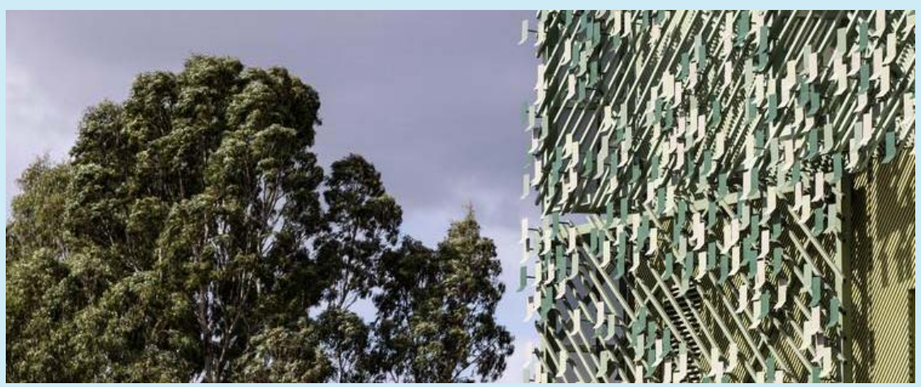
Concept WRRF Yixing Water Resource Recovery Facility: THAD SUP Atelier, 2021



Istanbul Modern Museum: Renzo Piano Building Workshop and Arup, 2023.

Facade Treatments

- Use materials like aluminum cladding, translucent polycarbonate to create a modern and visually interesting facade.
- Incorporate louvers, perforated panels and/or integrated solar panels to enhance both aesthetics and functionality.



Brunswick Power Terminal Station: Beca, 2019.



Brisbane Airport Car Park kinetic facade: Ned Kahn + UAP, 2011.

Workplace Amenity

- Install bike parking for cyclists and other e-mobility or active transport users to provide convenience and accessibility.
- Design and implement outdoor spaces that support passive recreation to enhance the mental and physical well-being of staff and visitors.
- Provide equitable and gender-safe facilities by providing accessible toilets and break-out spaces that foster inclusivity and safety for all users.
- Incorporate a yarning circle using natural materials in a tree ring formation.
- In flood prone areas, access roads and pathways should be designed to be protected from flooding.
- Lower surface and air temperatures of the site by planting trees and vegetation (where possible), minimising hard impervious pavements and applying light coloured surfaces to reflect light and heat.

Wayfinding & Interpretive Knowledge Sharing

In line with the community priorities outlined in Section 1.4, Sydney Water would continue to engage with the Aboriginal community throughout the project lifecycle. The following opportunities have been identified to recognise Aboriginal cultural heritage in the design of the WRRF site:

- Prioritise the use of native species, tree rings, and stone circles to mark sacred areas respectfully.
- Consider opportunities to include Aboriginal artworks that visualise water, migration, and the spiritual web of Country.



Takina Wellington Convention and Exhibition Centre, Wellington: GHD, 2025

Retaining Walls

- Use materials such as insitu concrete, natural stone or modular sandstone blocks in a natural way to retain the earth.
- Where there are level differences utilise retaining wall systems to create a sense of movement and pockets of greening along the streetscapes to re-introduce a natural edge treatment.
- Minimise the use of high retaining walls to avoid additional safety elements.
- Conceal solid retaining walls with planting where space permits.



Barangaroo Reserve: PWP, 2019.

Fencing

- Perimeter fences to be screened with planting to soften its appearance and enhance biodiversity.
- Use repeating modules, patterns or integrated seating/art elements to create visual rhythm and coherence to break up long stretches.
- Incorporate local stories, public art, or cultural motifs into fence panels or screens to enrich the sense of place
- Use semi-transparent fencing (e.g., pickets, slats, mesh) along public frontages to support informal surveillance and visual connection with the street.
- Avoid tall, solid barriers that isolate the property or block sightlines.



Brunswick Power Terminal Station: Beca, 2019.

Blue Infrastructure

- Implement a water-sensitive urban design (WSUD) approach with varying scaled interventions to achieve water health and environmental benefits.
- Minimise litter generation on site and prevent its transport to Duck River by capturing it at smaller channels and piped outflows from the site.
- Implement with soft engineering solutions that benefit ecosystem services instead of concrete kerbs or trapezoidal drains. Avoid additional 'grey' infrastructure to manage water and opt for green or blue infrastructure to improve ecosystem connectivity and health.
- Water should be daylighted where possible to replicate natural processes in the treatment and movement of stormwater.



Bendigo Park, Victoria: GHD Design, 2024.

Regenerative Landscapes

- Alternative revegetation techniques should be used to temporarily cover residual land - areas reserved for the future expansion, to prevent erosion and dust. Explore innovative horticultural solutions, such as Woody Meadows or collect seed from local remnant grasslands and re-seed as short-mid term coverage.
- Develop a Weed Management Strategy as part of the site Integrated Management Planning system to establish maintenance and monitoring processes to prevent invasive species spreading and entering Duck River.
- Planting should be staged prioritising the installation of large canopy tree species, where possible.
- Trees removed during works to be repurposed and retained on site, such decorative carved posts and educational elements.

Biodiversity

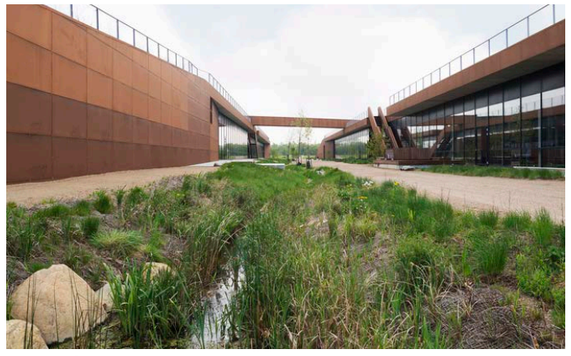
- Provision of habitat resources through increased plant diversity, contributing to the net increase of trees.
- Species should be selected to improve vegetation structure and provide flowering and fruiting throughout the year for pollinators, butterflies and birds.

Green Infrastructure

- Lower surface and air temperatures of the facility by planting trees and vegetation (where possible), minimising hard impervious pavements and applying light coloured surfaces to reflect light and heat.
- Construct planters from durable materials like concrete, timber or metal and make sure they are elevated to avoid interference with underground utilities and are mobile.
- Plant palette selection should be based on the project's Biodiversity Development Assessment Report and Connecting with Country Report to reflect the endemic vegetation, such as Cumberland Plain flora.
- Provision of healthy soil and space for root zones for optimum plant growth, consider raised beds or containers for trees where in ground planting is compromised.
- Specify climate resilient planting stock using tools, such as the Macquarie University Which Plant Where.
- Soft engineering solutions should be applied to address erosion issues, instead of retaining walls or concrete channels.



SAHMRI Building Plaza: Woods Bagot, 2014.



Solrødgård Water Treatment Plant: Henning Larsen, 2017.



Solrødgård Water Treatment Plant: Henning Larsen, 2017.

5.4 Recommendations

Recommendations

The following table (**Table 8**) concludes the recommendations based on this Place & Design Framework that is to be taken into consideration for future development in the GPOP WCM project site:

Ecology & Environment	Apply green and blue infrastructure interventions	– Improve habitat connectivity, especially around PCT 4028 and estuarine ecosystems; mitigate impacts of urban stormwater run off and pollution into Duck River.
Cultural Heritage	Respect and integrate Aboriginal cultural heritage	– Acknowledge and express the cultural significance of Duck River to Aboriginal peoples; interpret and integrate the industrial character.
Landscape Character	Design contextually with landscape units	– Use the five identified LCUs to guide design responses; consider visual sensitivity and magnitude of change in planning.
Visual Impact	Implement mitigation strategies	– Especially for viewpoints VP05 and VP06, use screening and design integration to reduce visual impacts of the GPOP WCM project.
Urban Design	Improve streetscape and tree canopy cover	– Increase tree planting (where possible) along streets like Devon and Colquhoun Streets; enhance pedestrian experience and biodiversity i consultation with Parramatta City Council. – Enhance streetscape with native plants and trees for shade and a more inviting atmosphere.
Access & Movement	Expand active transport infrastructure	– Provision of clear wayfinding and safe multi-mode access into the facility and throughout to improve pedestrian experience. – Pedestrian paths should be provided on adjacent street verges, alongside bus stop accessibility on Devon Street for ease of movement, in consultation with Parramatta City Council.
Flooding & Hydrology	Plan for water-sensitive urban design	– Address low-lying topography and flood-prone areas and integrate sustainable drainage systems.
Urban Growth	Land use change	– Update the framework to align with strategic legislation, in response to planned revisions to the Camillia Rosehill Place Strategy.
Public Realm	Integrate the public realm	– Work closely with Parramatta City Council to integrate the Devon Street public realm treatment with the facility buffer zone so that it contributes positively to the urban environment. – Urban form facing the streetscapes should encourage active frontages, minimising blank walls and enhancing public domain interfaces.

Table 8. Recommendations

5.5 Next Steps

The WRRF Place & Design Framework will guide future design development of the design to make sure decisions align with the project's vision, principles, objectives and desired outcomes, while achieving design excellence and enhancing the quality, character, and experience of the facility.

Sydney Water will next commence the detailed design phase of the project, building upon the strategic foundations established in the Place and Design Framework. This next phases will translate high-level principles into tangible outcomes, with the final design reflecting the core Place and Design objectives—contextual fit, cultural relevance, sustainability, functionality, and community value. The design will be guided by the framework's emphasis on active frontages, public domain integration, and environmental responsiveness, delivering a place-led solution that is both resilient and locally meaningful.

Engage delivery partner

- Commence detailed design work
- Final design considers Place and Design principles and objectives in the Place and Design Framework
- Reflect any updates to strategic planning documentation

Project delivery

- Ongoing environmental impact management and mitigation

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