

# BRADFIELD CITY CENTRE MASTER PLAN URBAN DESIGN REPORT

SEPTEMBER 2023




Western Parkland City  
Authority

HATCH | RobertsDay



TURNER



Title: Bradfield City Centre Master Plan Urban Design Report  
Prepared for: Western Parkland City Authority (WPCA)  
Date: 13.09.2023  
Status: Final  
Master Planning: Hatch RobertsDay  
Architecture: Turner  
Landscape Architecture: Turf Design Studio  
Hydrology: Cville  
Sustainability: Flux

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# ACKNOWLEDGEMENT OF COUNTRY

ABORIGINAL PEOPLE HAVE HAD A CONTINUOUS CONNECTION WITH THE COUNTRY ENCOMPASSED BY THE WESTERN PARKLAND CITY (THE PARKLAND CITY) FROM TIME IMMEMORIAL. THEY HAVE CARED FOR COUNTRY AND LIVED IN DEEP ALIGNMENT WITH THIS IMPORTANT LANDSCAPE, SHARING AND PRACTICING CULTURE WHILE USING IT AS A SPACE FOR MOVEMENT AND TRADE.

WE ACKNOWLEDGE THAT FOUR GROUPS HAVE PRIMARY CUSTODIAL CARE OBLIGATIONS FOR THE AREA: DHARUG/DARUG, DHARAWAL/THARAWAL, GUNDUNGURRA/GUNDUNGARA AND DARKINJUNG. WE ALSO ACKNOWLEDGE OTHERS WHO HAVE PASSED THROUGH THIS COUNTRY FOR TRADE AND CARE PURPOSES: COASTAL SYDNEY PEOPLE, WIRADJURI AND YUIN.

WESTERN SYDNEY IS HOME TO THE HIGHEST NUMBER OF ABORIGINAL PEOPLE IN ANY REGION IN AUSTRALIA. DIVERSE, STRONG AND CONNECTED ABORIGINAL COMMUNITIES HAVE ESTABLISHED THEIR FAMILIES IN THIS AREA OVER GENERATIONS, EVEN IF THEIR CONNECTION TO COUNTRY EXISTS ELSEWHERE. THIS OFFERS AN IMPORTANT OPPORTUNITY FOR THE FUTURE OF THE PARKLAND CITY.

ENSURING THAT ABORIGINAL COMMUNITIES, THEIR CULTURE AND OBLIGATIONS FOR COUNTRY ARE CONSIDERED AND PROMOTED WILL BE VITAL FOR THE FUTURE OF THE PARKLAND CITY. A UNIQUE OPPORTUNITY EXISTS TO ESTABLISH A PLATFORM FOR TWO-WAY KNOWLEDGE SHARING, TO ELEVATE COUNTRY AND TO LEARN FROM CULTURAL PRACTICES THAT WILL CREATE A TRULY UNIQUE AND VIBRANT PLACE FOR ALL.

# CONTENTS

## 01 EXECUTIVE SUMMARY \_\_\_\_\_ 06

## 02 INTRODUCTION \_\_\_\_\_ 22

Aerotropolis Context  
Planning Framework  
Connecting with Country

## 03 SITE ANALYSIS \_\_\_\_\_ 30

The Site Today  
First Nations Cultural Values  
Topography  
Hydrology  
Ecology  
Trees  
Wildlife Buffer  
European Heritage  
Bushfire  
Local Climate  
Transport & Access  
Land Use Zoning  
Obstacle Limitation Surfaces  
Airport Noise  
Constraints Summary

## 04 PLACE FRAMEWORK \_\_\_\_\_ 62

The Place Framework  
Western Parkland City Blueprint  
Bradfield City Centre Vision  
Bradfield Key Values  
Master Plan Objectives

## 05 MASTER PLAN OVERVIEW \_\_\_\_\_ 70

Bradfield Master Plan  
Illustrative Master Plan  
Key Outcomes  
Evolution from the Precinct Plan  
A Vibrant Mixed-Use Centre  
Green and Blue Grid  
A Parkland City  
New Civic Spaces  
Connecting Major Destinations  
A Legible Transport Network  
A Fine Grain Walkable City  
Distinct Neighbourhoods  
Green Loop  
Views from Ridge to Creek  
Transport Infrastructure Corridor

## 06 DESIGNING WITH COUNTRY \_\_\_\_\_ 90

Connecting with Country  
Process of Design and Engagement  
Western Sydney Aerotropolis Aboriginal  
Engagement Outcomes Report  
Western Sydney Aerotropolis Recognise Country  
Guidelines  
Western Sydney Aerotropolis Precinct Plan  
Master Plan Values  
Summary of Response to Country  
Starting with Country  
Green  
Connect  
Travel  
Dream

## 07 PUBLIC DOMAIN & LANDSCAPE \_\_\_\_\_ 138

Policy Alignment  
Strategic Alignment  
Inspiration  
Public Domain Principles  
Key City Spaces

Landscape Master Plan  
Open Space Requirements & Provision  
Tree Canopy & Perviousness  
Tree Retention  
Central Park  
Ridge Park  
City Walk East  
Green Loop  
Local Parks  
The Parklands  
The Parklands Water System  
City Parkland West  
City Parkland East  
Wetland Walk

## **08 MOVEMENT** \_\_\_\_\_ 194

Policy Alignment  
Inspiration  
Movement Principles  
Walkable Neighbourhoods  
Pedestrian Network  
Cycling Network  
Public Transport Network  
Interchange Plan

Parking, Loading, Access  
Future Mobility  
Street Types  
Movement and Place  
Tree Canopy and Perviousness  
Metro Link Boulevard  
Sub-Arterial  
Transit Boulevard  
Commercial High Street Type A  
Commercial High Street Type B  
City Walk West  
City Walk East  
City Streets  
City Lanes  
Parklands Promenade  
Green Loop

## **09 LAND USE** \_\_\_\_\_ 240

Policy Alignment  
Floorspace, Jobs and Population  
Character Areas  
Diversity of Uses  
Social Infrastructure

## **10 BUILT FORM** \_\_\_\_\_ 266

Policy Alignment  
Inspiration  
Built Form Principles  
Methodology and Assumptions  
Built Form Approach to Land Use  
Mixed-Use Built Form Approach  
Enterprise Built Form Approach  
Street and Building Interfaces  
Block Structure Permeability  
Street Wall Height  
Setbacks  
Active Frontages  
Landmark and Gateway Buildings  
Maximum Building Height  
Bushfire Safety  
Tree Canopy and Perviousness  
Floorspace Assumptions and Maximum  
Indicative Massing  
Overshadowing to Public Space

## **11 STAGING** \_\_\_\_\_ 328

Development Staging Plan  
Stage 1

01





SOCIAL

# EXECUTIVE SUMMARY

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# WELCOME TO BRADFIELD CITY CENTRE

Bradfield is the new city centre for the Western Parkland City and the Western Sydney International Airport. The city has a vision to become a thriving, sustainable 24/7 metropolis founded on advanced innovation industries, research and education that underpin high value employment and industry in the broader Aerotropolis.

Bradfield City Centre aspires to lead in sustainability, from the conservation and regeneration of natural systems; caring for Country by honouring First Nations cultural values and knowledge; and prioritising greenery to combat urban heat; through to creating a walkable and transit oriented city.

Bradfield City Centre has the capacity to deliver 10,000 residential dwellings up to and beyond 2056, making a significant contribution to housing supply and choice within the Aerotropolis. The provision of a mix of housing typologies including affordable housing, that is near employment opportunities and transport connections; will support the growth of a diverse residential and worker population, drive future investment; and unlock future growth within vibrant centres where people work, live, visit, and play.

The master plan is a blueprint for the development of a visionary city that will evolve over time to become a renowned centre of excellence for innovation and city making that defines the Western Parkland City.

*Artists impression of Bradfield City Centre, subject to detailed design. The Master Plan does not propose permanent development in the existing 60m wide Special Purposes 2 (SP2) Infrastructure Zone corridor. A decision regarding future rail infrastructure in the corridor is the subject of review by Government.*





# CONNECTED TO COUNTRY

Bradfield City Centre has been shaped by Country through the preservation of the valued waterways, riparian zones, trees, vegetation and culturally sensitive sites; retention of views and connections from the ridges down to the creeks; and restorative planting to support ecologies and care for Country.

The master plan offers places to learn about Country, provides dedicated cultural spaces and weaves a natural and cultural Green Loop through the city. First Nations cultural values and stories will also guide planting, materials, art, lighting, signage and language.

Bradfield City Centre will accommodate infrastructure and facilities such as a First Nations cultural centre, specialised health and childcare services and access to education and housing.

*Artists impression of the Green Loop, subject to detailed design.*



# INNOVATION ECOSYSTEM

Bradfield City Centre is designed to be one of Australia's major innovation ecosystems that co-locates organisations, institutions and high technology industries to collaborate, innovate, research, and develop.

Bradfield City Centre will be globally attractive to businesses and investment with its unique offering as a sustainable parkland city that is well connected locally and globally with extensive public transit to Greater Sydney and 5 minute access to the new Western Sydney International Airport.

*Artists impression of the AMRF Precinct, subject to detailed design (source: Hassell).*

# CLIMATE RESILIENT

Designed and master planned with a landscape and place focus, Bradfield City Centre will be a cool and green city with innovative green corridors for people, plants, water and infrastructure that connect the entire city.

There will be an intertwining network of diverse and vibrant public spaces that provide immersible and sensory experiences, achieving urban cooling through water sensitive design and over 40% tree canopy cover, supporting the health and well-being of all living organisms, including people, habitats, and pollinators.

Buildings will feature greenery to help address urban heat in the city, and will meet high performance requirements across water, energy, waste, adaptability, health and innovation.

*Artists impression only, subject to detailed design.*



An artistic rendering of the Bradfield City Centre at dusk. The scene features several modern buildings with glass facades and balconies, some of which are illuminated from within. A prominent building in the center has a large green wall. In the foreground, a woman is looking at a digital display. To the right, a fountain with blue water jets is lit up. People are seen sitting on the ground in a public space, and a large screen is visible in the background. The sky is a mix of orange and blue, suggesting sunset or sunrise.

# 24/7 VIBRANCY

Bradfield City Centre will become a thriving 24/7 metropolis serving the curfew-free Western Sydney International Airport. It will offer major outdoor event spaces, indoor performance venues, cultural centres, public spaces with evening activation and creative lighting, hotels, restaurants, bars and more to attract workers, residents and visitors to enjoy the active city atmosphere throughout the week, weekends and evenings.

*Artists Impression only, subject to detailed design.*

# CENTRAL PARK

Located in the heart of Bradfield City Centre is Central Park, an approximately 2ha city park intended to become the main civic and gathering place and the main arrival and welcoming place by transit. It is the place where people of all diversities come together, stay, exchange and where the city's life thrives. It is a place that welcomes all, provides a variety of adventures and activities and showcases a green, blue, multicultural city.

*Artists impression of Central Park looking south, subject to detailed design. The Master Plan does not propose permanent development in the existing 60m wide Special Purposes 2 (SP2) Infrastructure Zone corridor. A decision regarding future rail infrastructure in the corridor is the subject of review by Government.*



# GLOBAL CONNECTION

Bradfield City Centre will provide world-class, safe, and accessible public transport that provides a 5 minute journey to the Western Sydney International Airport and rapid connections to Greater Sydney. A major public transport interchange with multiple rail lines and extensive bus network is located in the centre of the city fronting Central Park to provide a welcoming parkland experience on arrival. The interchange is supported with a transit boulevard that connects dedicated busways to destinations north and south of the city.



# CELEBRATING WATER

An outdoor natural-style swimming pool is planned as a major destination attraction for recreation to celebrate the convergence of water from the natural systems and the city and connect the City with its landscape.

*Artists impression for Moore Gully swimming pool, subject to detailed design.*





# WORLD CLASS REGIONAL PARKLANDS

Bradfield City Centre is framed by Thompsons Creek regional parkland, which will ultimately comprise over 50ha, with over half within the Bradfield site, and will connect into the broader Wianamatta Creek system that spans Western Sydney.

The parkland is a place for human recreation and experience, is culturally important and sensitive and is ecologically significant. The parklands will prioritise environmental regeneration, restore waterways and rebuild biodiversity while integrating water and landscape design to create a highly valued and unique place for the city.

The parklands will also accommodate a major performance/ events space, framed with a range of cultural, food and beverage, retail, arts, recreation, hotel and other uses to create a hub of activity.

*Artists impression of Thompson Creek regional parklands looking west, subject to detailed design.*

# STREETS ACCESSIBLE FOR ALL PEOPLE

Bradfield City Centre is structured with a variety of streets that are safe and green to create a walking, cycling and micro-mobility paradise. Speeds will be limited to 40km/hr or less throughout the city, extensive greenery will be achieved with ambitious tree canopy targets and there will be a world-class network of separated bike lanes and safe cycling streets.

From the larger transit boulevards, commercial high streets, and pedestrian malls, to the smaller city streets and fine-grain network of shared zones and pedestrian lanes, the street network will create a highly connected and accessible city for all and will support a vibrant, human scale and social urban fabric with diverse experiences.

*Artists impression of the City Street, subject to detailed design.*



# FINE GRAIN PLACES

Bradfield City Centre aims to create a vibrant, attractive and distinctive urban experience with active street frontages, a variety of street interface design, a network of fine-grain shared zones and pedestrian lanes and attention to the detail of the public domain with high quality materials, art, lighting, furniture and greenery.



*Artists impression for Pedestrian Lanes, subject to detailed design.*

# DESIGN EXCELLENCE

Bradfield City Centre will showcase design excellence in the buildings and public domain through high quality design controls and guidance supported by a design excellence process and commitments to 6-star Green Star ratings.

Bradfield City Centre aims to raise the benchmark in design with Country, design for climate, innovation and sustainability, carbon neutrality, energy and water efficiency and harvesting, sustainable materials selection and provision of greenery on ground, walls and roofs.

*Artists impression only, subject to detailed design.*





**A MASTER  
PLAN FOR  
EXTRAORDINARY  
FUTURES**

An aerial, top-down view of a modern urban development. The scene is dominated by several tall, multi-story buildings with unique architectural features, such as faceted facades and integrated greenery on their balconies and terraces. A central park area is filled with lush green trees and a large, multi-faceted water feature. A blue 'M' logo is visible on one of the buildings. The entire image has a light blue overlay, and the number '02' is prominently displayed in white in the lower-left quadrant.

02

# INTRODUCTION

This Urban Design Report provides the explanation and rationale for the design of the Bradfield City Centre Master Plan and guidance for the design and delivery of buildings, streets and open spaces, having regard to the Aerotropolis planning framework.

The master plan has been developed by a multidisciplinary team of urban designers, landscape architects and architects working in collaboration with experts in First Nations cultural values, sustainability, hydrology, ecology, transport, engineering and economics. This report reflects their collective work and integrated thinking that underpins the master plan.

Firstly the report provides a **Site Analysis** with a summary of key environmental attributes and technical investigations that have been undertaken for the site.

Then the **Place Framework** outlines the vision, values and objectives for Bradfield City Centre which shape the master plan. This includes key place-specific aspirations, qualities and opportunities for the city; the framework for connecting to Country; and a range of city-making elements that in our experience are essential in order to create great places.

The **Master Plan Overview** provides an outline of the design features of Bradfield including the key variations and refinements from the Precinct Plan.

**Design with Country** provides an overview of how the master plan has recognised and responded to Country and First Nations cultural values, which has been a key priority since inception..

The next four chapters provide more detailed explanation of the master plan in terms of **Public Domain and Landscape, Movement, Land Use** and **Built Form**.

The final chapter sets out the proposed **Staging** of development to illustrate how the city is envisaged to develop over time.

Overall this report outlines the integrated thinking underpinning a robust master plan that will guide development of Bradfield City Centre over the coming years.

As with any great city, Bradfield will take time to develop and over the course of its evolution will need to respond to new challenges, opportunities and priorities. As such, there is opportunity for further refinement at detailed design and development stages within the framework and design intent set out in this report.

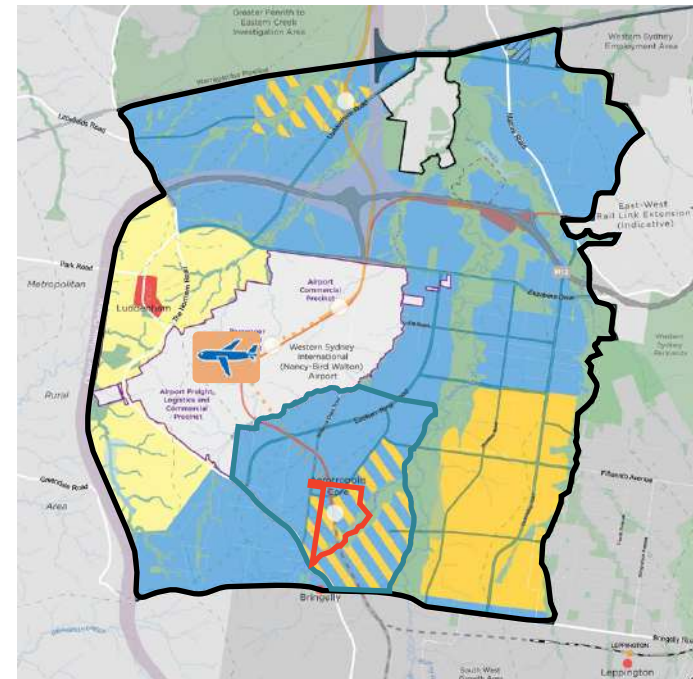
# AEROTROPOLIS CONTEXT

THE WESTERN SYDNEY AEROTROPOLIS WILL BE THE ECONOMIC POWERHOUSE OF WESTERN SYDNEY WITH AN INTERNATIONAL AIRPORT, MAJOR CITY CENTRE AND SUPPORTING EMPLOYMENT LANDS.



## WESTERN PARKLAND CITY DISTRICT PLAN

1.5M RESIDENTS / 800,000 JOBS

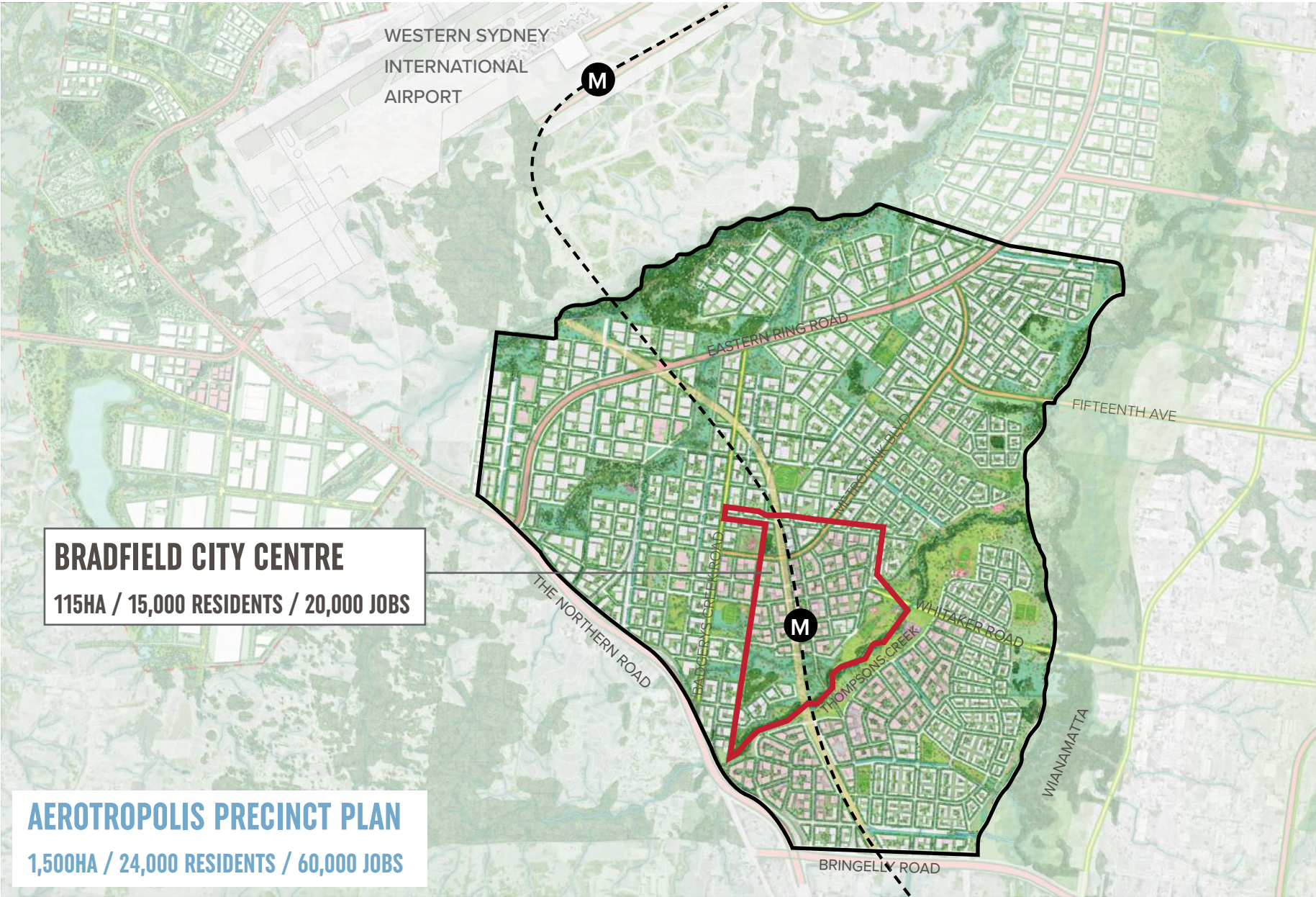


## WESTERN SYDNEY AEROTROPOLIS PLAN

11,000HA / 30,000 RESIDENTS / 100,000 JOBS

- AEROTROPOLIS CORE
- BRADFIELD CITY CENTRE
- ENTERPRISE
- URBAN LAND
- MIXED USE
- AGRIBUSINESS
- ENVIRONMENT AND RECREATION





# PLANNING FRAMEWORK

THIS MASTER PLAN IS SHAPED BY AND RESPONSIVE TO THE BROADER AEROTROPOLIS PLANNING FRAMEWORK

WESTERN SYDNEY AEROTROPOLIS  
PLAN 2020

SEPP (PRECINCTS - WESTERN  
PARKLAND CITY) 2021

WESTERN SYDNEY AEROTROPOLIS  
PRECINCT PLAN 2022

WESTERN SYDNEY AEROTROPOLIS  
DEVELOPMENT CONTROL PLAN 2022

RECOGNISE COUNTRY GUIDELINES  
2022

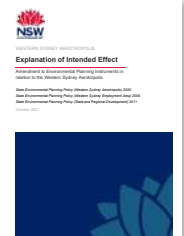
MASTER PLAN GUIDELINES 2021 &  
MASTER PLAN REQUIREMENTS 2022

BRADFIELD MASTER PLAN



## WESTERN SYDNEY AEROTROPOLIS PLAN (WSAP) 2020

- Provides the overarching vision and strategic direction for the Aerotropolis;
- Aligns with the Greater Sydney Region Plan: A Metropolis of Three Cities and the Western City District Plan;
- Informs the development of Precinct Plans and Master Plans in the Aerotropolis.



## STATE ENVIRONMENTAL PLANNING POLICY (PRECINCTS - WESTERN PARKLAND CITY) 2021

- Provides objectives and controls for development in the Aerotropolis;
- Zones land to permit or prohibit land uses and provides development controls;
- Provides the framework for the creation and amendment of a Precinct Plan and Master Plan;
- Provides for complying development pathways.



## WESTERN SYDNEY AEROTROPOLIS PRECINCT PLAN 2022

- Provides place-based objectives and requirements for development;
- Precinct-level structure planning for five precincts in the Aerotropolis;
- Outlines the vision for the Aerotropolis Core to have a dense metropolitan centre around the Aerotropolis Metro station as a focus for business, tourism and social experiences, defined by a new regional park system along Thompsons Creek. It will attract innovation and high technology industries, education uses and residential development; provide high quality buildings and green spaces; and will prioritise pedestrian and active transport;
- Supported with a range of technical reports covering urban design, environmental, social, cultural and economic topics.



## WESTERN SYDNEY AEROTROPOLIS DEVELOPMENT CONTROL PLAN 2022 (DCP)

- Provides baseline development objectives, performance outcomes and benchmark solutions for development;
- Used to assess development applications.



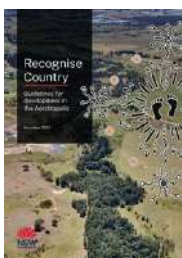
## WESTERN SYDNEY AEROTROPOLIS MASTER PLAN GUIDELINES (2021)

- Outlines the role and statutory framework for the master plan;
- Outlines the process for preparing, exhibiting and approving the master plan including a co-design process with a Technical Assurance Panel (TAP).



## BRADFIELD MASTER PLAN (2023)

- A refinement of the Precinct Plan and DCP specifically for the Bradfield City Centre, having regard to the Aerotropolis planning framework vision, principles and objectives, and specific master plan requirements;
- Provides more detailed investigations and site-specific considerations for connecting with Country, land use, transport, open space, built form, sustainability and staging;
- Includes further development objectives, performance outcomes and benchmark solutions for development;
- Supported with detailed urban design report and technical reports.



## RECOGNISE COUNTRY GUIDELINES 2022

- Provides guidance on addressing the objectives and performance outcomes of the DCP relating to recognising Country, connecting to Country through cultural landscapes, connecting to Country through built form, language and naming.



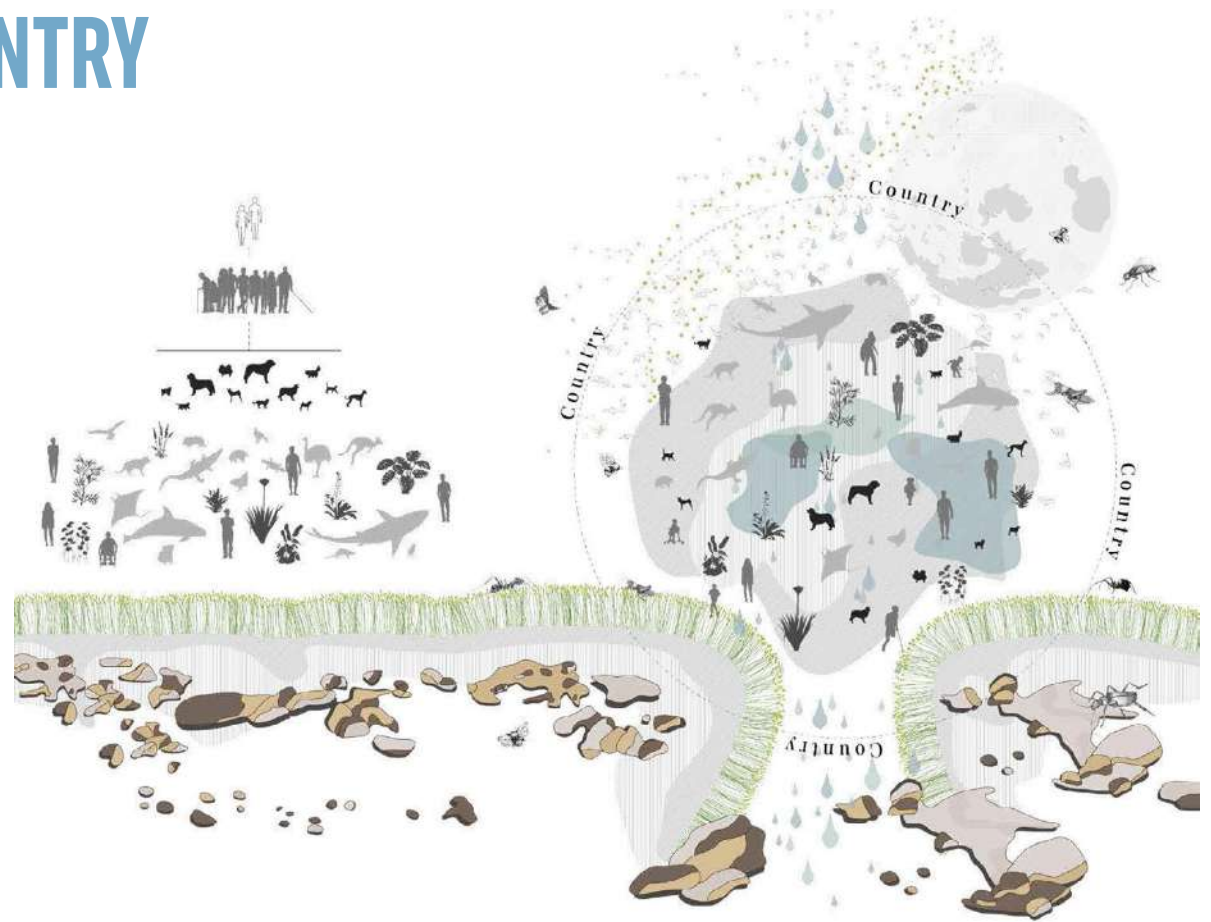
## MASTER PLAN REQUIREMENTS - BRADFIELD CITY CENTRE (2022)

- Outlines the requirements and key issues to be addressed in the master plan and supporting technical reports to be submitted with the master plan.

# CONNECTING WITH COUNTRY

**THE VISION AND MASTER PLAN FOR BRADFIELD IS FOUNDED ON A COMMITMENT TO RECOGNISING AND CARING FOR COUNTRY AND RESPECTING THE CONTINUING CONNECTION FIRST NATIONS PEOPLES HAVE WITH COUNTRY. THIS DOCUMENT OUTLINES HOW THE MASTER PLAN HAS APPROACHED AND RESPONDED TO COUNTRY.**

Information in this document relating to Country has been developed from multiple sources and is the result of input, advice and collaboration between WPCA, Hatch RobertsDay, Turf, Turner, Bangawarra, GHD, Zion and Traditional Custodians. We acknowledge all contributors to this collective work.

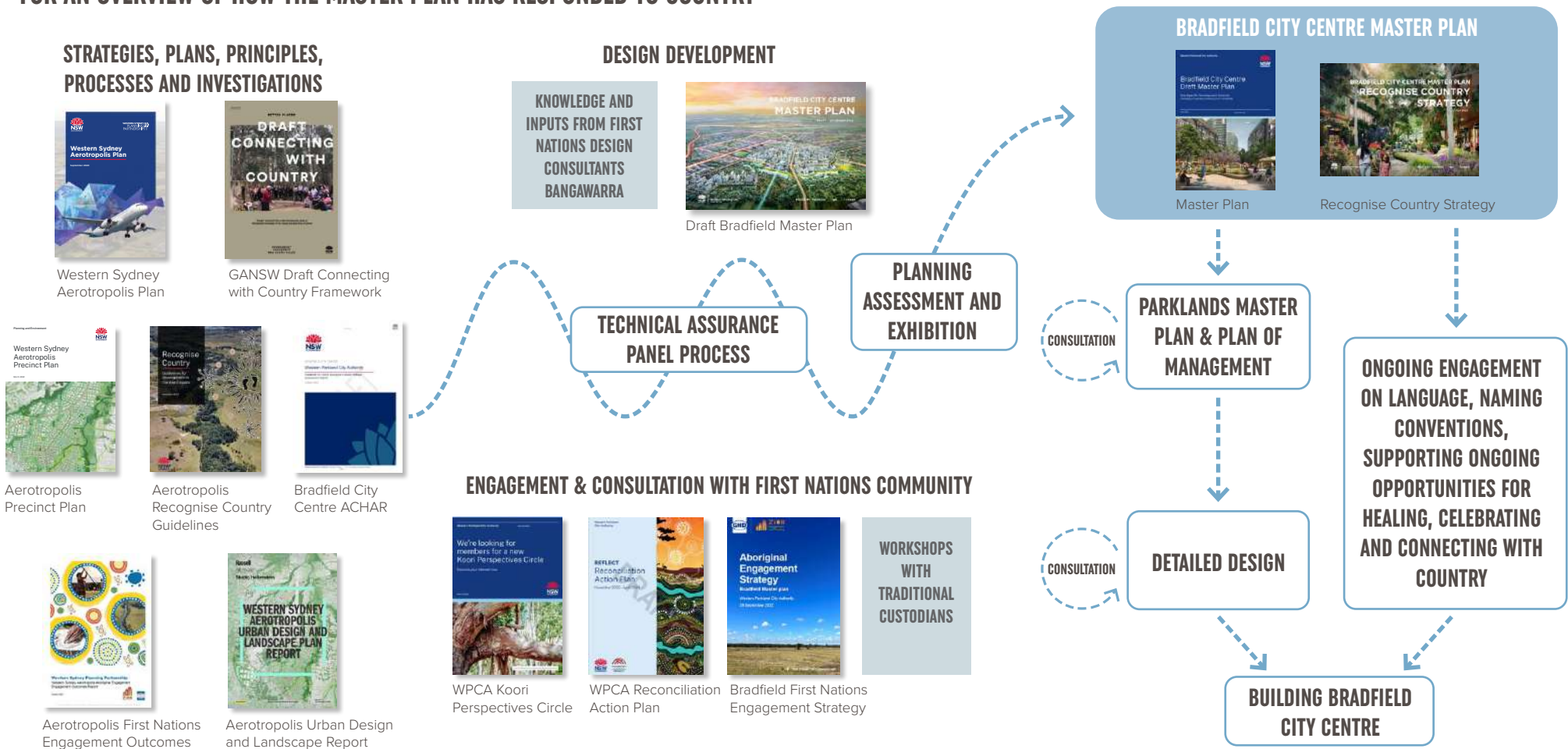


## SEEING, THINKING AND DESIGNING DIFFERENTLY

The conventional anthropocentric approach to design (left) compared to the non-hierarchical perspective guiding First Nations practices (right), which considers all of the entities of the land, soil, rocks, sky, water, plants, animals, stories, and people as independent and held in relation to one another.

# PROCESS FOR DESIGNING WITH COUNTRY

DESIGNING WITH COUNTRY IS A NON-LINEAR PROCESS OF SHARING, TESTING, LISTENING AND RESPONDING. THE DIAGRAM BELOW ILLUSTRATES THE PROCESS THAT HAS AND CONTINUES TO OCCUR. REFER TO SECTION 6 FOR AN OVERVIEW OF HOW THE MASTER PLAN HAS RESPONDED TO COUNTRY



03

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A large, leafy tree stands in a field of tall grass. The entire image is overlaid with a semi-transparent blue filter. The text 'SITE ANALYSIS' is written in white, bold, sans-serif capital letters across the lower right portion of the image. A thin white horizontal line is positioned below the text.

# **SITE ANALYSIS**

# THE SITE TODAY

## CREEK



Dense, leafy character that traverses along the Thompsons Creek corridor, which is currently inaccessible.



## RIDGE-LINE



The highpoint of The Site and main entry experience. Undulated land falls from west to east creating views of The Site.



## WETLAND



Area of wetlands/ground water on the Western edge of The Site featuring two water bodies amongst the woodlands.



## GRASSLAND



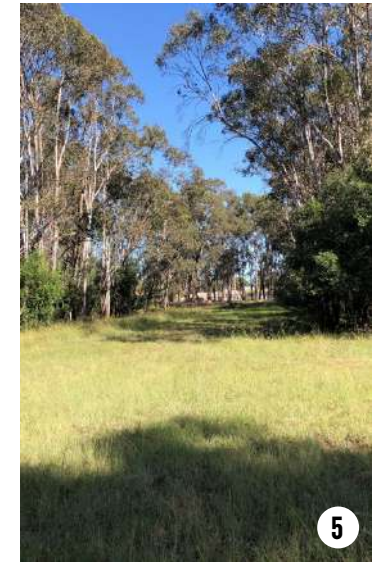
This broad and gently undulating area covers the central parts of The Site featuring overgrown grassland with views across The Site.



## WOODLAND



Dense patches of Cumberland Plain and Alluvial Woodlands. These habitat areas are dispersed amongst clear pathways dissecting through the site.







## OVERVIEW

The site is a single 114.6ha parcel of land owned by the Western Parkland City Authority, and is predominantly cleared with patches of remnant bushland. The site is currently bordered by rural-residential properties, which are zoned for mixed-use and enterprise development under the Precinct Plan. Thompsons Creek, a tributary running into Wianamatta South Creek, borders the south-eastern boundary of the site connecting to the Western Sydney Parklands. There is currently only one access point to a public road, located in the north west corner, however the Precinct Plan allows for the provision of future connections.

# FIRST NATIONS CULTURAL VALUES

**THE CUMBERLAND PLAIN CONTAINS FIRST NATIONS CULTURAL VALUES IN BOTH PHYSICAL AND INTANGIBLE FORM. FURTHERMORE, WATERWAYS PLAY AN IMPORTANT ROLE IN FIRST NATIONS CULTURE FOR THEIR CONNECTION TO MOVEMENT CORRIDORS AND CULTURAL PRACTICES.**



## OPPORTUNITIES

- Embed First Nations cultural understanding and design approach in the master planning process;
- Protect and conserve Cumberland Plain landscape;
- Retention of waterways and trees identified as having cultural value in order to maintain connections and healthy ecosystems;
- Respect the significance of waterways for connection to movement corridors, resources and nutrition;
- Use sustainable materials (prioritise recycled materials from the area) and native endemic plants from the area;
- Use correct terminology, do not use the past tense and ensure that it is clear throughout the development that this is, always has been and always will be First Nations land.
- Where possible, impact should be avoided to the identified First Nations heritage sites recorded in the AHIMS database. An approved First Nations Heritage Impact Permit (AHIP) is required if impacts to sites cannot be avoided.

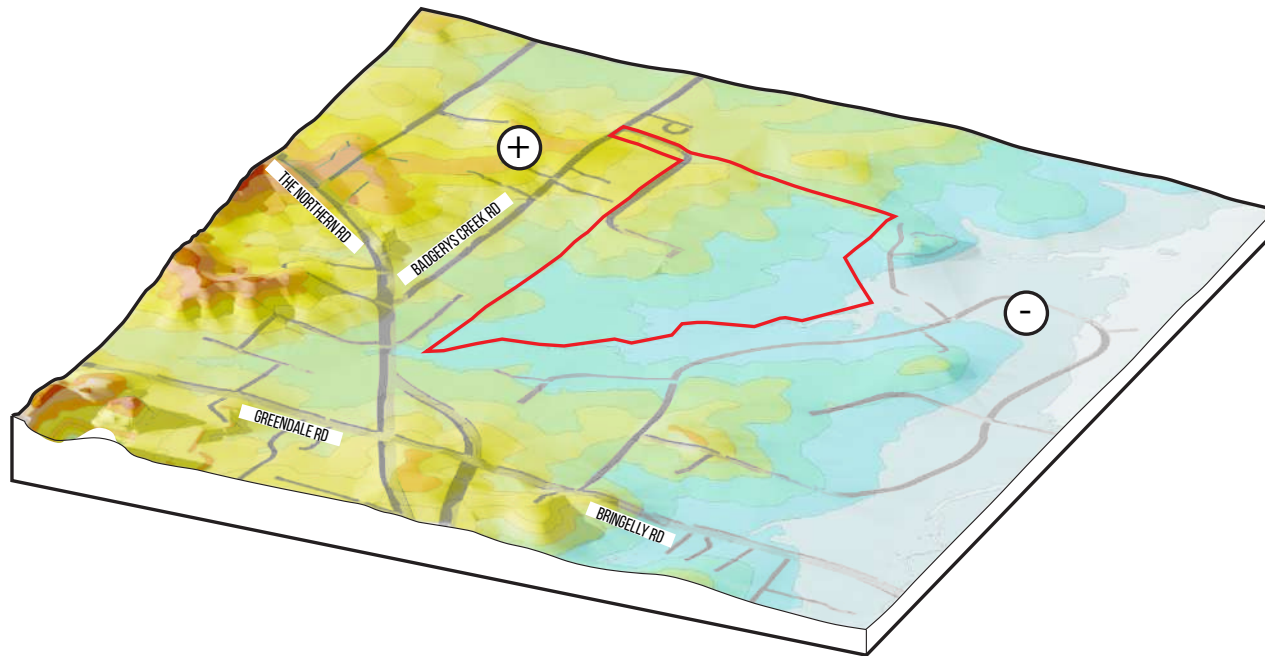


## MASTER PLAN RESPONSE

- Respond to and be consistent with the Aerotropolis Recognise Country Guidelines, and the Bradfield City Centre Aboriginal Cultural Heritage Assessment Report;
- Protect and conserve areas of mapped ENV which covers the areas of [REDACTED] Cumberland Plain woodland and Thompsons Creek.
- The 2x 50m archaeological protection zones should be protected from harm where possible, or if impacted a salvage excavation program would be required with an Aboriginal Heritage Impact Permit (AHIP).

# TOPOGRAPHY

THE TOPOGRAPHY OF THE SITE IS CHARACTERISED BY A GENTLE SLOPE FALLING TOWARDS THOMPSONS CREEK IN THE SOUTH EAST, WITH A TOTAL FALL OF 25M CREATING APPROXIMATELY 1:40 GRADIENT.



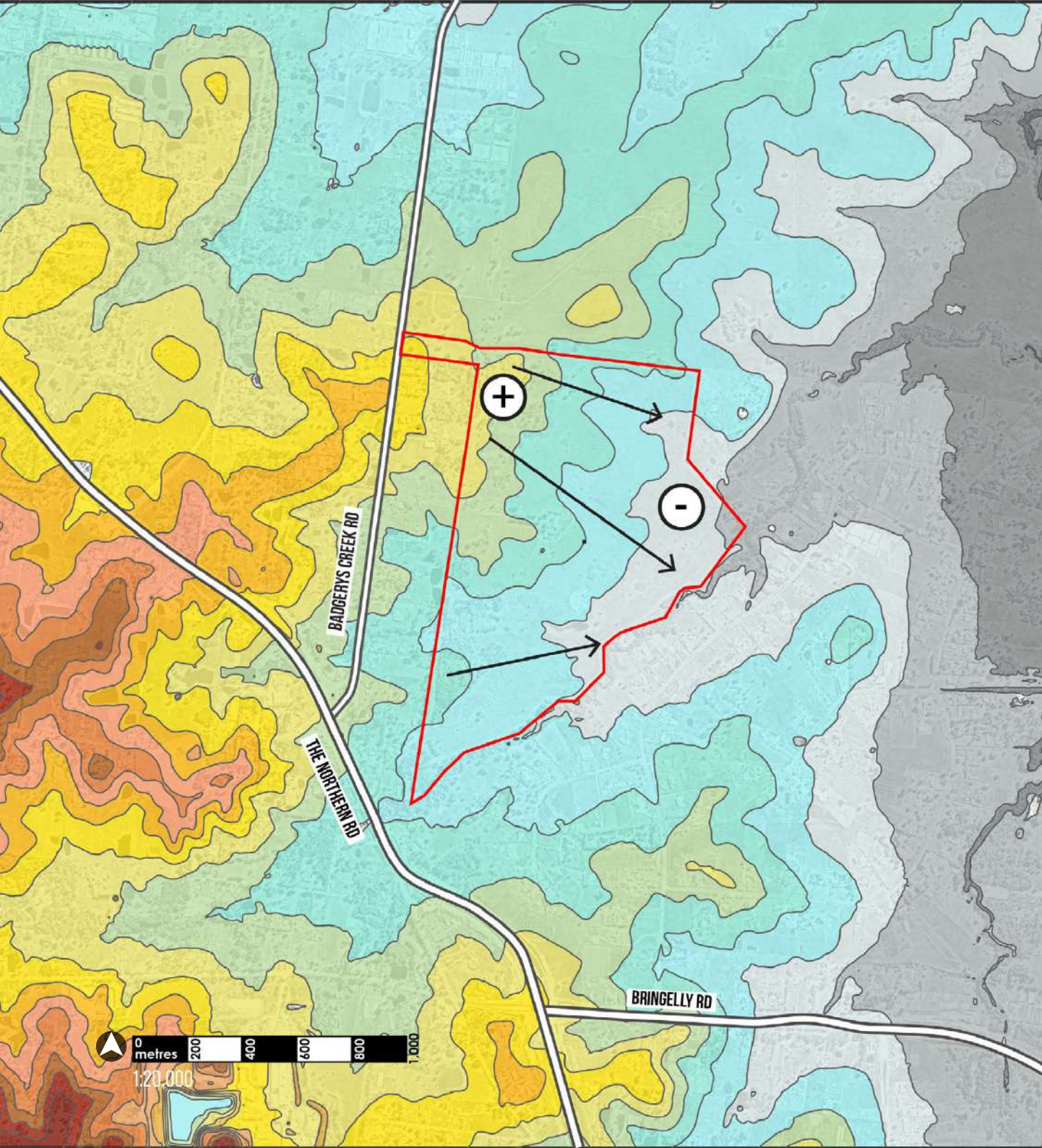
## OPPORTUNITIES

- The slope towards Thompsons Creek establishes the framework for drainage and the blue grid;
- The high point to the north-west provides long vistas to the south-east across Thompsons Creek and beyond;
- Gentle downward slope towards creek provides natural wayfinding and attraction to the parklands.



## CONSTRAINTS

- Minor risks associated with erosion;
- Downstream impacts on local waterways;



### MASTER PLAN RESPONSE

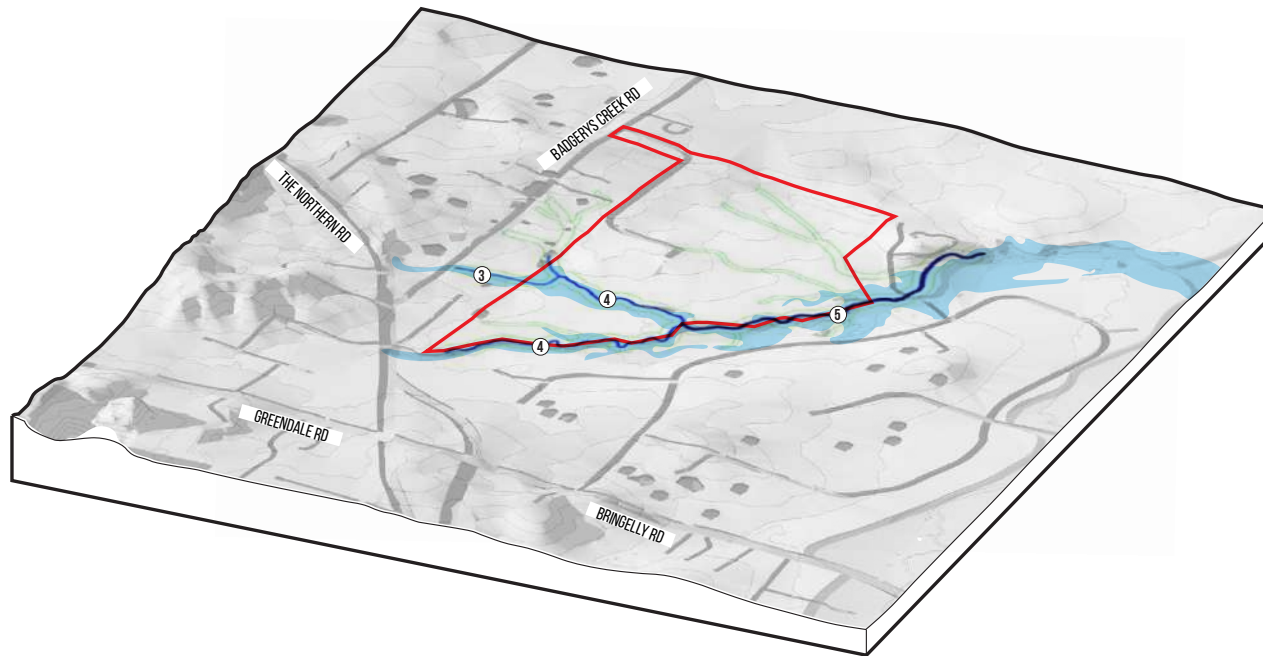
- Design with respect to the topographic landscape of the site;
- Establish a design framework that considers view corridors, water movement and people movement that respond to the natural topography;
- Consideration towards reducing cut and fill where possible.

Legend

	Site boundary		85-80m
	Direction of slope		80-75m
	120-115m		75-70m
	115-110m		70-65m
	110-105m		65-60m
	105-100m		60-55m
	100-95m		55-50m
	95-90m		50-45m
	90-85m		

# HYDROLOGY

**THOMPSONS CREEK AND MOORE GULLY ARE THE MOST PROMINENT WATER FEATURES ON THE SITE AND ARE A KEY INFLUENCE ON THE MASTER PLAN.**



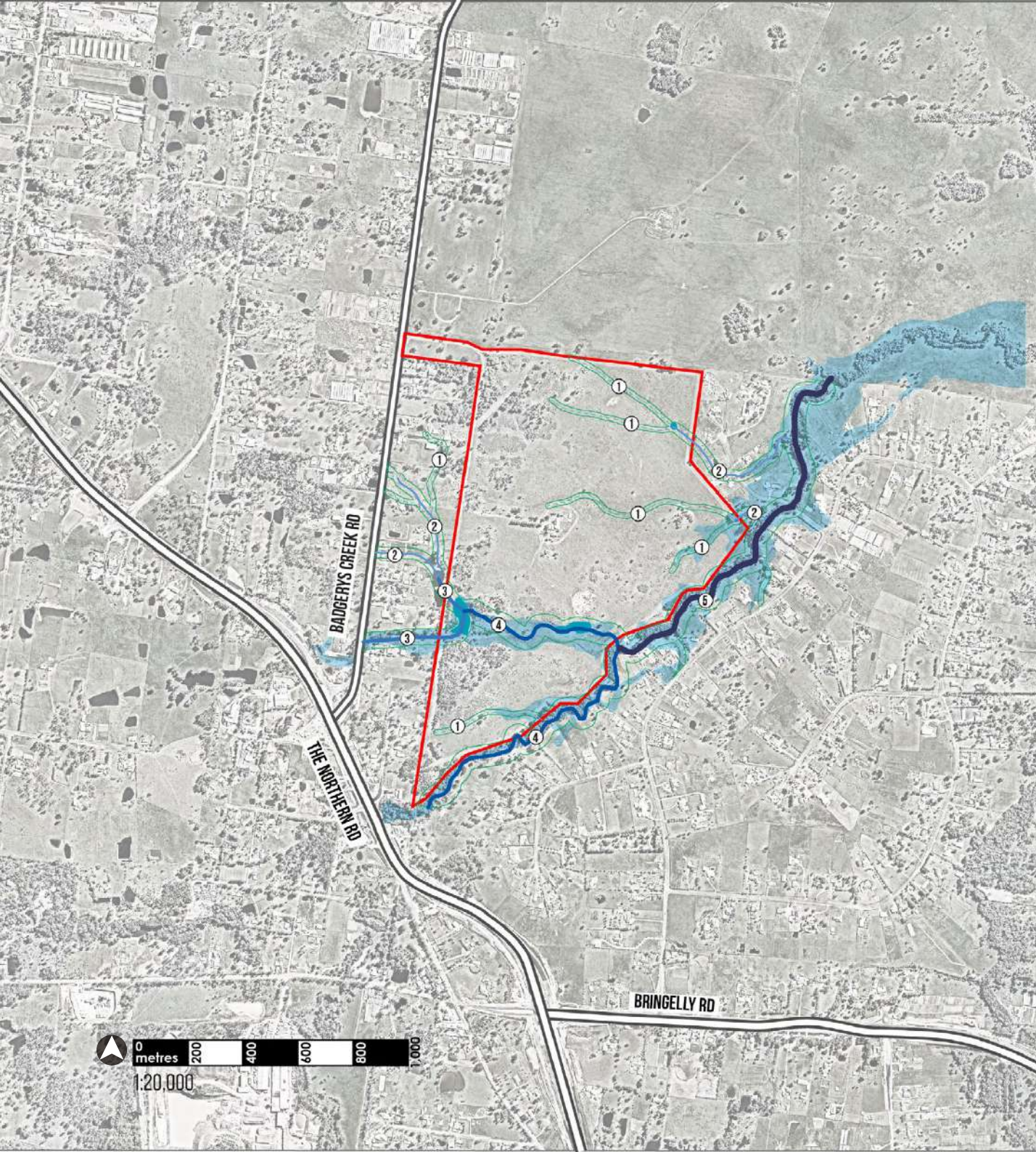
## OPPORTUNITIES

- The waterways are valuable for amenity, recreation and cooling of the future city;
- Thompsons Creek is to be protected in its natural form to form part of the green and blue corridor of Wianamatta South Creek;
- In its current state, Moore Gully is an opportunity to be re-imagined and integrated into the city;
- Existing farm dams can potentially be utilised for public open space, recreation and irrigation.



## CONSTRAINTS

- Flood affected land associated with Thompsons Creek affects small parts of the site;



## MASTER PLAN RESPONSE

- Protect and restore Strahler Order 2, 3, 4 and 5 streams including Thompsons Creek and Moore Gully;
- Integrate Strahler Order 1 streams into the public domain and streetscape landscape design;
- Exclude development within the 1% AEP flood zone;
- Manage the risk of floods greater than 1 in 100 year in size.

### Legend

- Site boundary
- 1% AEP flood zone
- Wetlands/Dams
- 5
- 4
- 3
- 2
- 1
- Riparian Corridor

# ECOLOGY

A NUMBER OF ECOLOGICAL COMMUNITIES ARE PRESENT ON SITE INCLUDING WETLANDS, CUMBERLAND PLAINS WOODLAND, REGENERATIVE SHRUB LAND, ALLUVIAL WOODLAND AND ENDANGERED SPECIES.



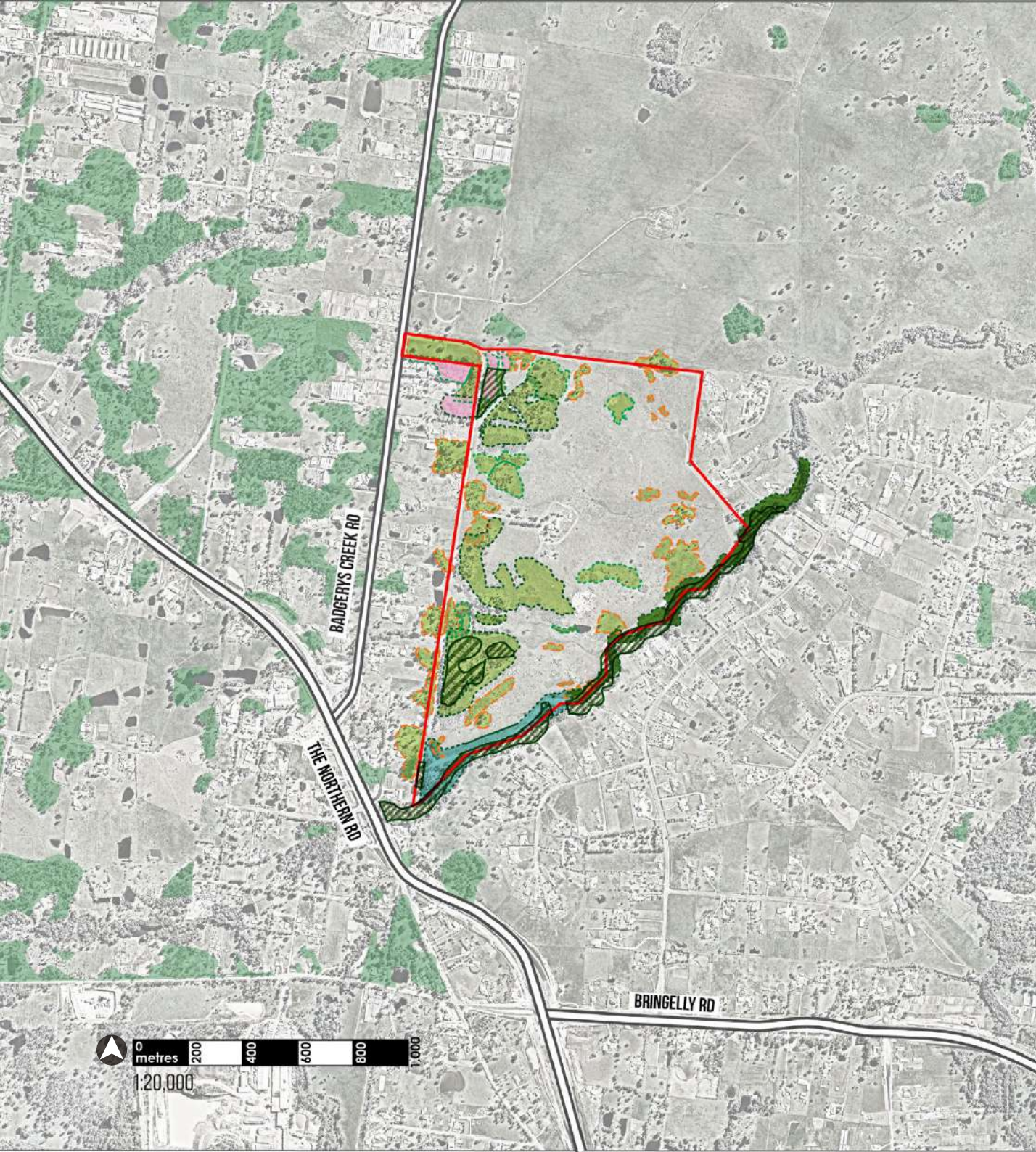
## ✓ OPPORTUNITIES

- Thompsons Creek provides the green and blue spines defining the south and eastern edge of the precinct;
- Significant tree groupings and greenery provides the opportunity to create unique places of natural beauty;
- The intensification of tree canopy cover and landscaping can reduce ambient temperatures and urban heat island;
- High-quality vegetation on ridges can create an interconnected web of well-located open spaces connected through the Western Parkland City;
- High-quality active and passive open spaces could be created adjacent to riparian corridors which connect ridges to the Wianamatta-South Creek spine.

## ● CONSTRAINTS

- Areas of Existing Native Vegetation (ENV) identified for protection to be retained.





## MASTER PLAN RESPONSE

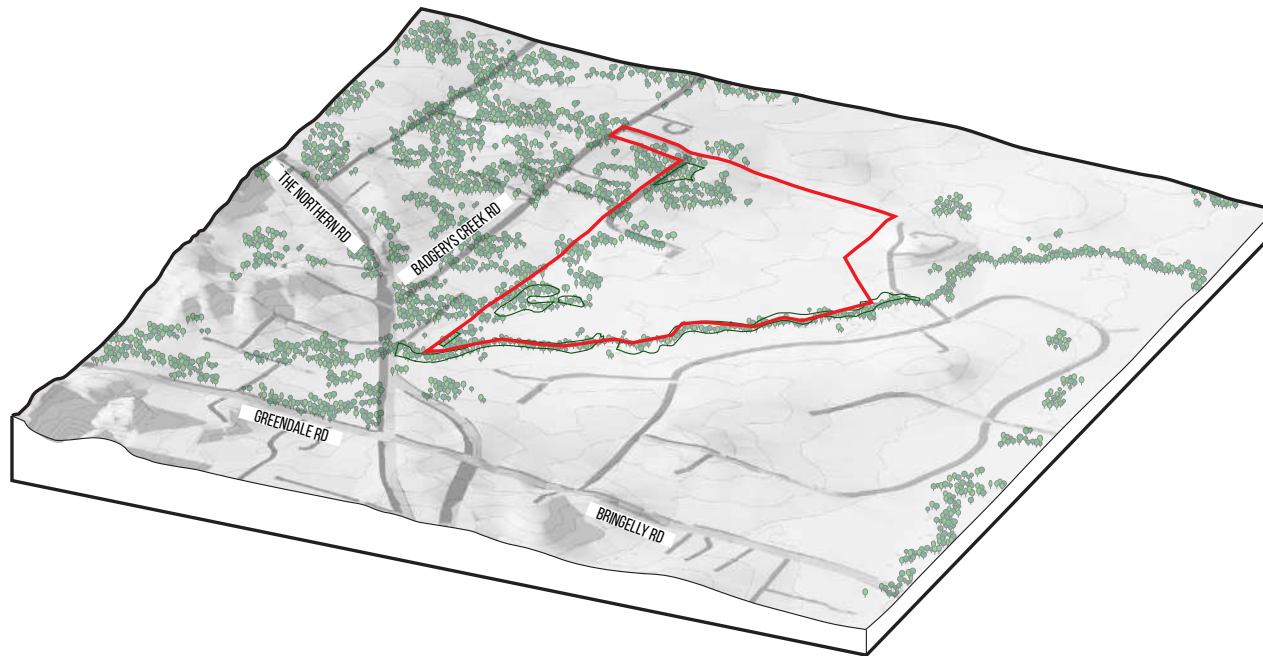
- Retain Existing Native Vegetation (ENV) identified for protection;
- Retain as much high quality vegetation in other areas where possible.

### Legend

- Site Boundary
- Existing Native Vegetation (ENV) to be retained
- High value vegetation (Cumberland Plain Woodland defined as high value in Biodiversity Assessment)
- Moderate value vegetation
- Low value vegetation
- Swamp Oak
- Forest Red Gum
- Grey Box
- Broad-leaved Ironbark
- Other vegetation

# TREES

**THE MAJORITY OF MATURE TREES ON SITE ARE LOCATED AROUND THOMPSONS CREEK, MOORE GULLY AND THE NORTHERN RIDGE AND ARE IDENTIFIED FOR PROTECTION.**

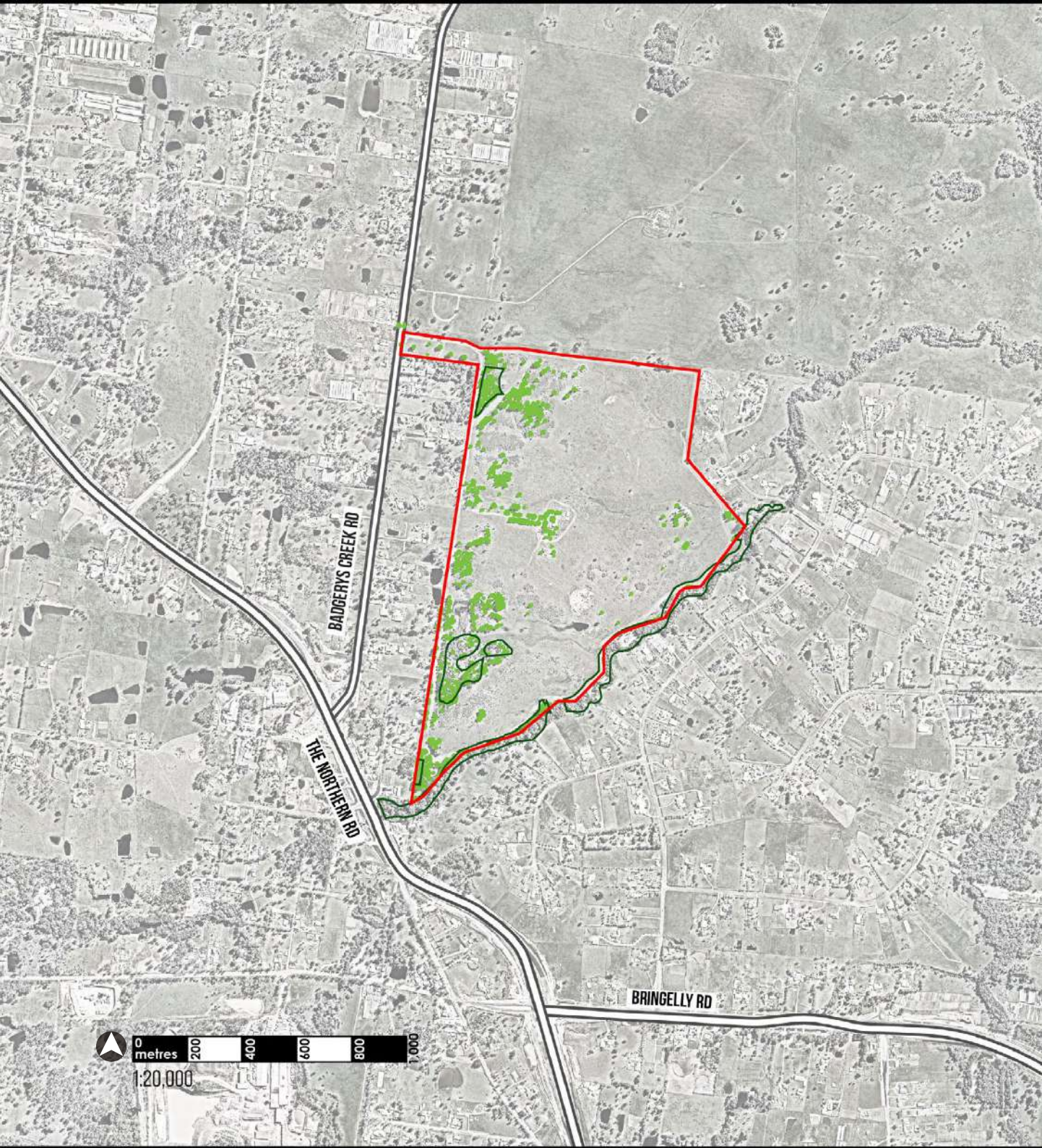


## ✓ OPPORTUNITIES

- The majority of mature trees are located in areas identified for protection including Thompsons Creek, Moore Gully and the northern ridge, and will provide amenity and ecological value in the future city;
- Preservation of trees can be enhanced and celebrated;
- The majority of the site does not contain trees and is suitable for urban development.

## ● CONSTRAINTS

- Mapped areas of Existing Native Vegetation (ENV) to be retained.



**MASTER PLAN RESPONSE**

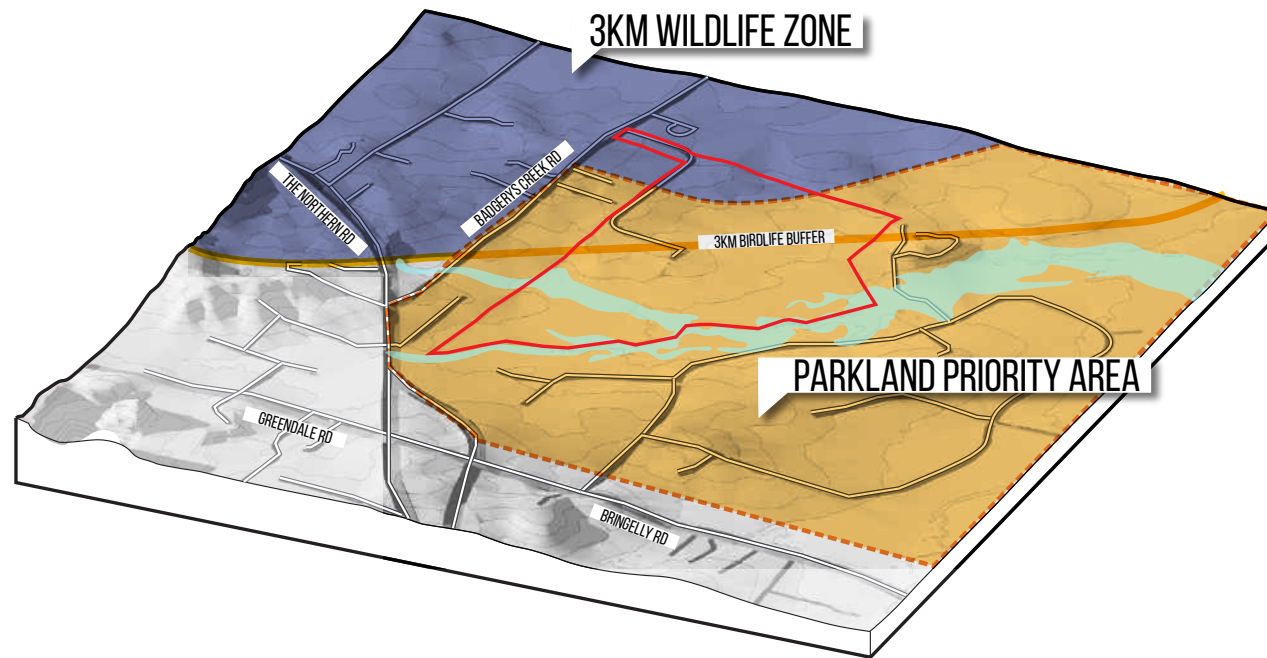
- Protect areas of Existing Native Vegetation (ENV) identified for retention;
- Retain as much high quality vegetation in other areas where possible or relocate as family groups to retain on-Country where possible.

Legend

- The Site
- Existing trees
- Existing Native Vegetation (ENV) to be retained

# AIRPORT WILDLIFE BUFFER

DCP CLAUSE 10.3.2.P02 SPECIFIES A LIST OF SUITABLE LANDSCAPE SPECIES ACROSS AEROTROPOLIS WITH ADDITIONAL LANDSCAPING CONSIDERATIONS REQUIRED WITHIN 3KM OF THE FUTURE AIRPORT.



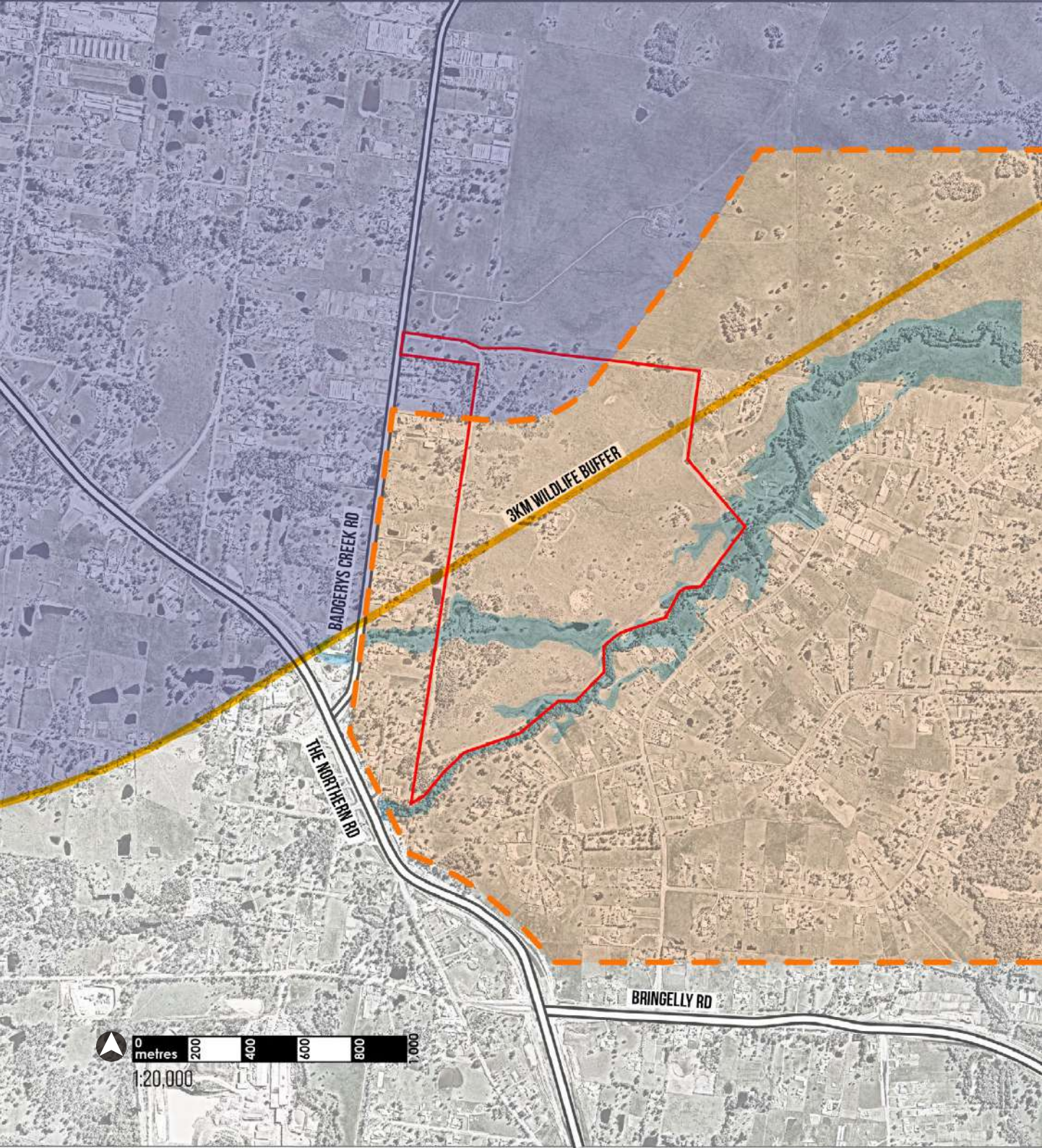
## OPPORTUNITIES

- The site is partially in areas within the 3km wildlife buffer but inside the priority/parkland areas (Aerotropolis DCP Phase 2 - figure 9);
- Opportunity to create parkland identity within the city centre;
- Celebrate and enhance biodiversity value along Thompsons Creek and Moore Gully area.



## CONSTRAINTS

- Careful consideration of tree and vegetation species;
- Any alternative landscape species not identified in the Draft Western Sydney Aerotropolis DCP Phase 2 Appendix B will be required to have an ecologist report submitted with the Landscape Plan.



**MASTER PLAN RESPONSE**

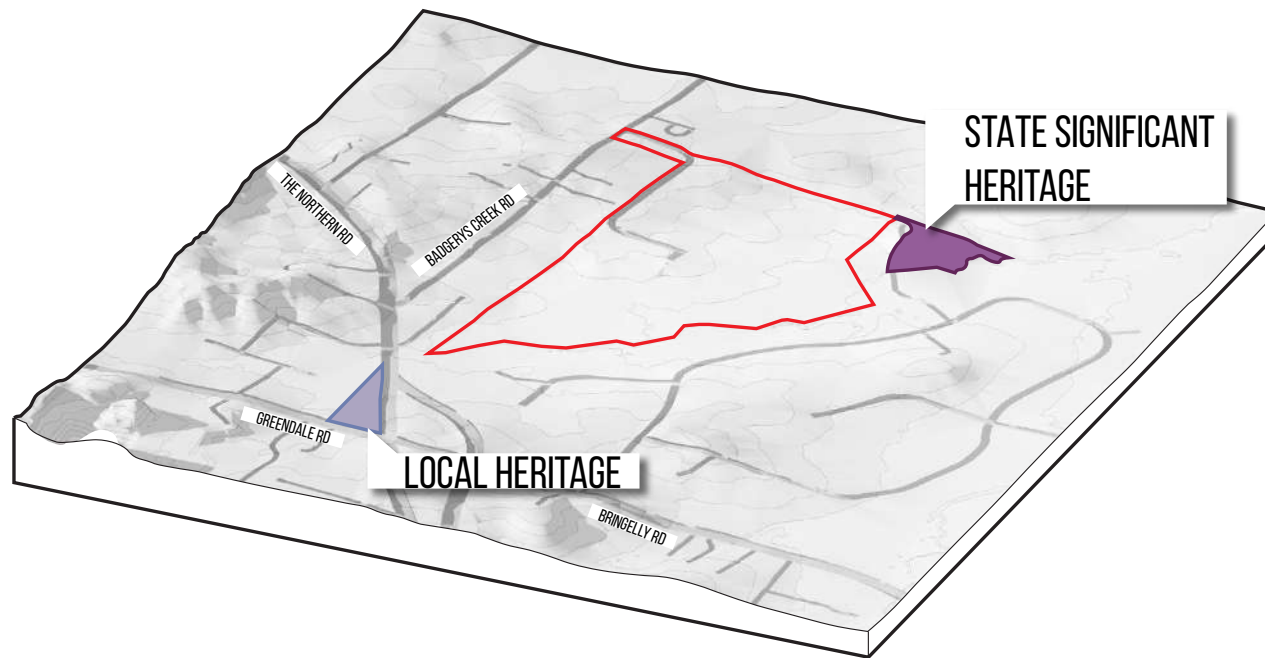
- Consistency with DCP Phase 2 Appendix B landscape species;
- Compliance with the use of landscape species identified within the 3km wildlife buffer zone and the Parkland priority area;
- Have regard to the National Airports Safeguarding Framework.

Legend

- The Site
- 1% AEP flood zone
- 3km wildlife zone
- Parkland priority area
- 3km wildlife buffer

# EUROPEAN HERITAGE

**'KELVIN PARK GROUP' ADJOINS THE SITE AND IS IDENTIFIED AS A STATE SIGNIFICANT HERITAGE ITEM. IT INCLUDES SITE LANDSCAPING, HOMESTEAD, KITCHEN WING, SERVANT'S QUARTERS, COACH HOUSE, 2 SLAB BARN AND RELICS.**



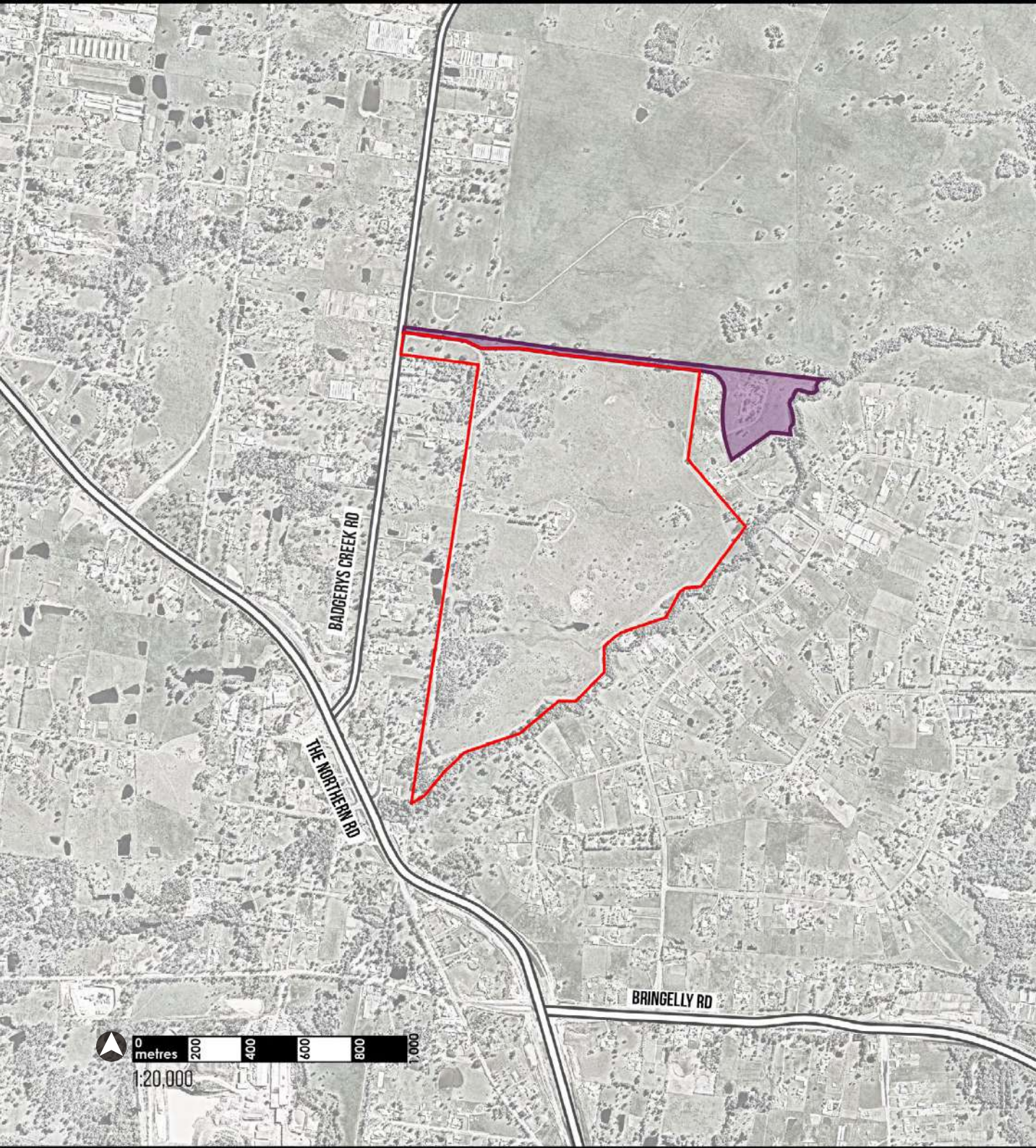
## OPPORTUNITIES

- No heritage values present on the site that are listed on Local, State or Commonwealth Register;
- Interface of the study area with this site could be enhanced to celebrate its strong history;
- The Royal Australian Air Force (RAAF) Bringelly has historical significance for its association with RAAF Communications network and the development of communications technology, however all buildings and infrastructure have been removed posing no constraint to development.



## CONSTRAINTS

- The current use of the adjoining heritage item is a private residence.



## MASTER PLAN RESPONSE

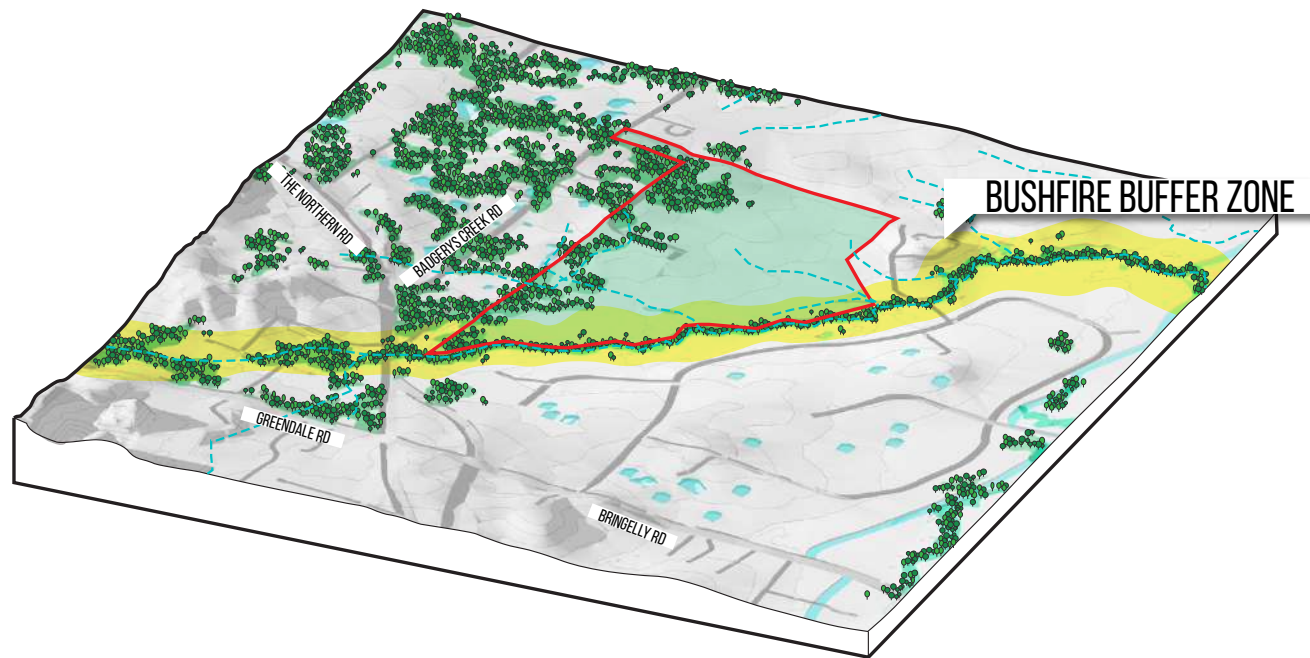
- Consider land use and development compatibility in the areas near Kelvin Park heritage site.

### Legend

-  Site
-  State Significant Heritage

# BUSHFIRE

THE SITE CONTAINS EXISTING VEGETATION, SOME OF WHICH IS CONSIDERED ECOLOGICALLY SENSITIVE. WHERE EXISTING VEGETATION IS RETAINED FOR ECOLOGICAL PURPOSES, APPROPRIATE BUFFERS ARE REQUIRED TO SUPPORT AND PROTECT FUTURE DEVELOPMENT AGAINST A BUSHFIRE EVENT.



## OPPORTUNITIES

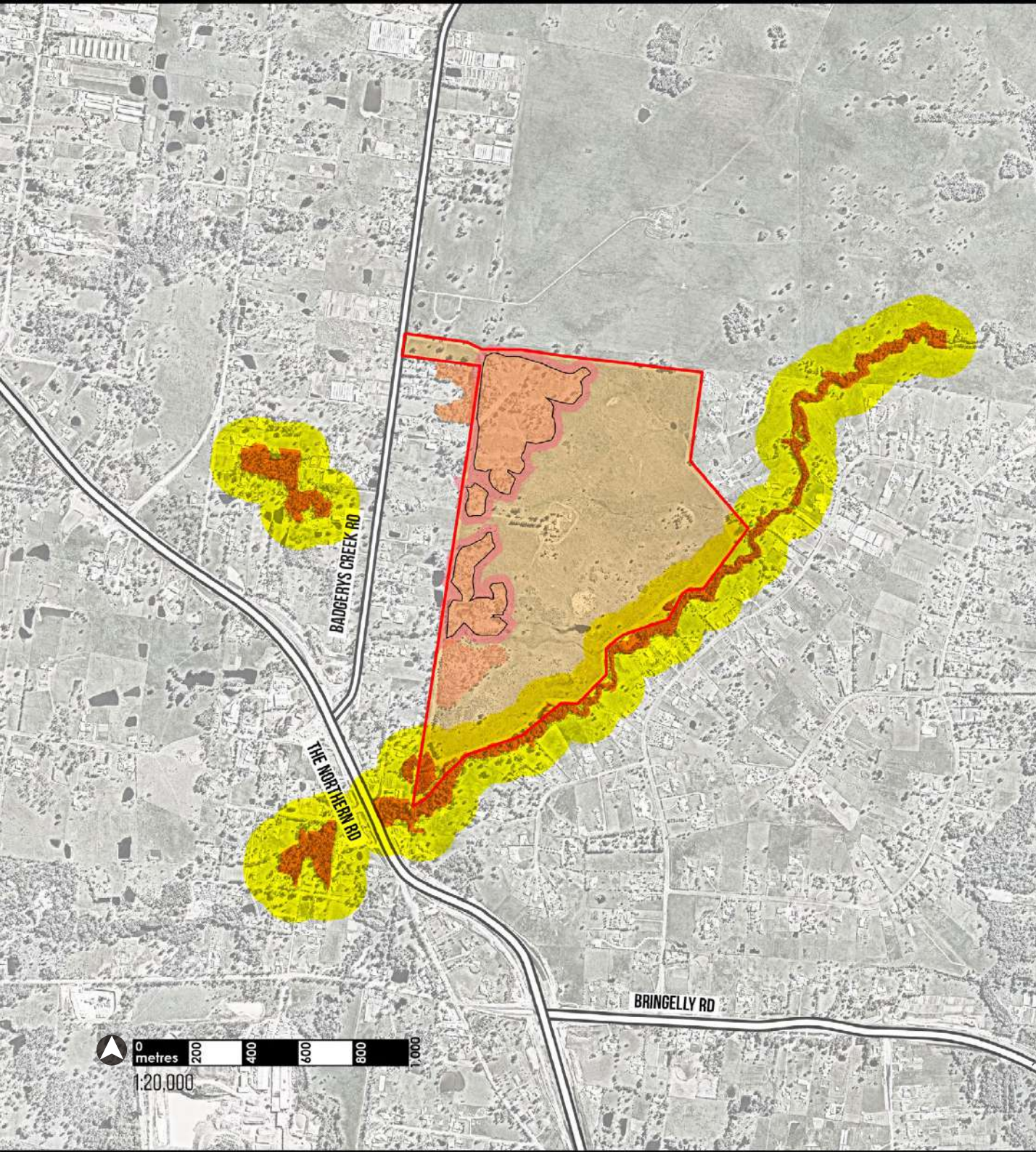
- 100m buffer zone can be utilised as linear parkland along Thompsons Creek;
- Redevelopment is feasible with compliance to the provisions for bushfire protection within the layout and design;
- Western Edges can be dedicated to parkland to preserve the ecological values and communities.



## CONSTRAINTS

- 100m buffer exists for Category 1 Vegetation within Thompsons Creek, restricting development close to the creek;
- Category 2 Woodlands will require a 30m buffer zone if retained;
- Bushfire Attack Level (BAL) compliance required for Residential buildings,
- Finalisation of the hazard extend along Thompsons Creek/ Moore Gully, and allowance for bushfire protection measures meeting the solutions of Planning for Bushfire Protection.





**MASTER PLAN RESPONSE**

- Comply with recommendations set out in the bushfire assessment and comply with the provisions for bushfire protection zones.

Legend

- The Site
- Potential Bushfire Risk if Retained (Bushfire Report 2019)
- Category 1 Vegetation (Liverpool LGA)
- 100m buffer zone (Liverpool LGA)
- Category 2 Woodlands (Liverpool LGA)
- 30m buffer zone (Liverpool LGA)
- Category 3 Grassland (Bushfire Report 2019)

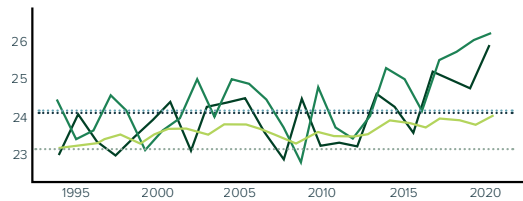
# LOCAL CLIMATE

**WESTERN SYDNEY IS GENERALLY HOTTER AND DRIER THAN EASTERN SYDNEY AND THE GAP IS EXPECTED TO WIDEN AS CLIMATE CHANGE WORSENS.**

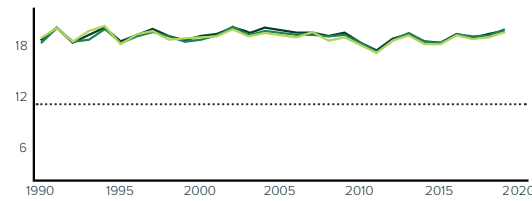
## CURRENT WESTERN SYDNEY CLIMATE

**Legend**

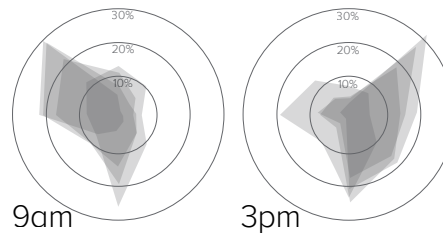
- 1. Badgerys Creek
- 2. Richmond RAAF Airbase
- 3. Sydney CBD, Observation Hill



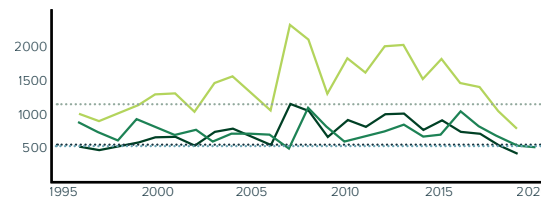
Temperature (°C)



Solar Exposure (MJ/m2)



Annual Wind Trends



Rainfall (mm)

Source: Bureau of Meteorology

## OVERVIEW

The inland, flat terrain of Western Sydney experiences lower rainfall and 6-10 degrees higher maximum temperatures than those of the eastern suburbs and inner-city. Current projections indicate that hot days are to become more frequent and hotter, with duration of droughts to increase as well as harsher fire weather. Winter and spring rainfall will decrease, and summer and autumn rainfall will increase. Evapotranspiration will increase and soil moisture will decrease, particularly in winter and spring. Sydney's future climate will consist of higher temperatures, less rainfall and more extreme weather.

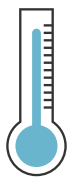
## OPPORTUNITIES

- Increase canopy cover and integrate blue-green grid to urban form to provide natural cooling, increase ground permeability, support biodiversity and create healthy environments;
- Opportunity for climate responsive architecture;
- Opportunity to integrate cooling technology for daytime activation and capitalise on cooler evening weather for night time activities;

## CONSTRAINTS

- Potentially uncomfortable climate for walking, recreation and doing business;
- Potentially higher energy requirements for cooling and higher water requirements;
- More difficult to sustain urban greenery in public domain and on walls and roofs in a hot dry climate.

### 2070 TEMPERATURE PROJECTIONS FOR SYDNEY



Average maximum  
**increase 1.9 degrees**  
Average minimum  
**increase 2 degrees**

### HOT DAYS (OVER 35 DEGREES)

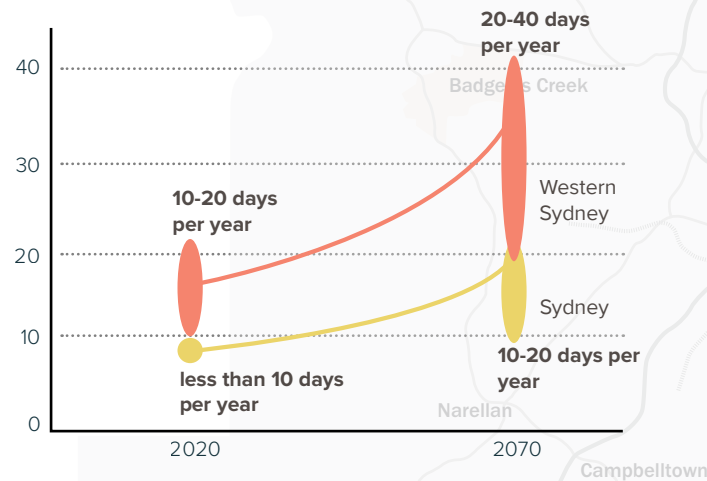


### 2070 RAINFALL PROJECTIONS FOR SYDNEY

**8.9%**   
increase annual mean

**12.3 - 13/6%**  
increase summer/ autumn

**0.1 - 3.1%**  
decrease winter/ spring

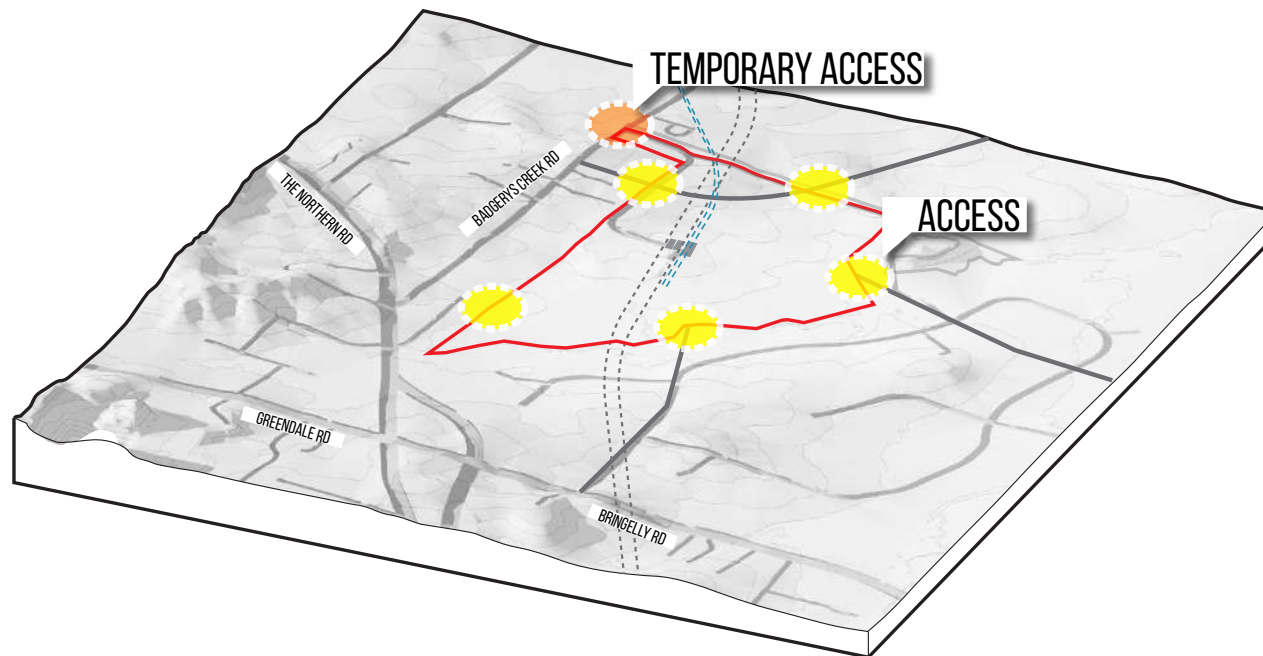


### MASTER PLAN RESPONSE

- Maximise tree canopy cover, retain and revitalise existing waterbodies and integrate the blue-green grid to mitigate the impacts of urban heat;
- Implement the recommendations in the sustainability framework pertaining to carbon emissions, water systems, circular economy, building performance and healthy environment.

# TRANSPORT AND ACCESS

UNDER THE SEPP AND PRECINCT PLAN, THE METRO STATION, 60M INFRASTRUCTURE CORRIDOR AND KEY ROAD ACCESS POINTS TO THE SITE HAVE BEEN ESTABLISHED.

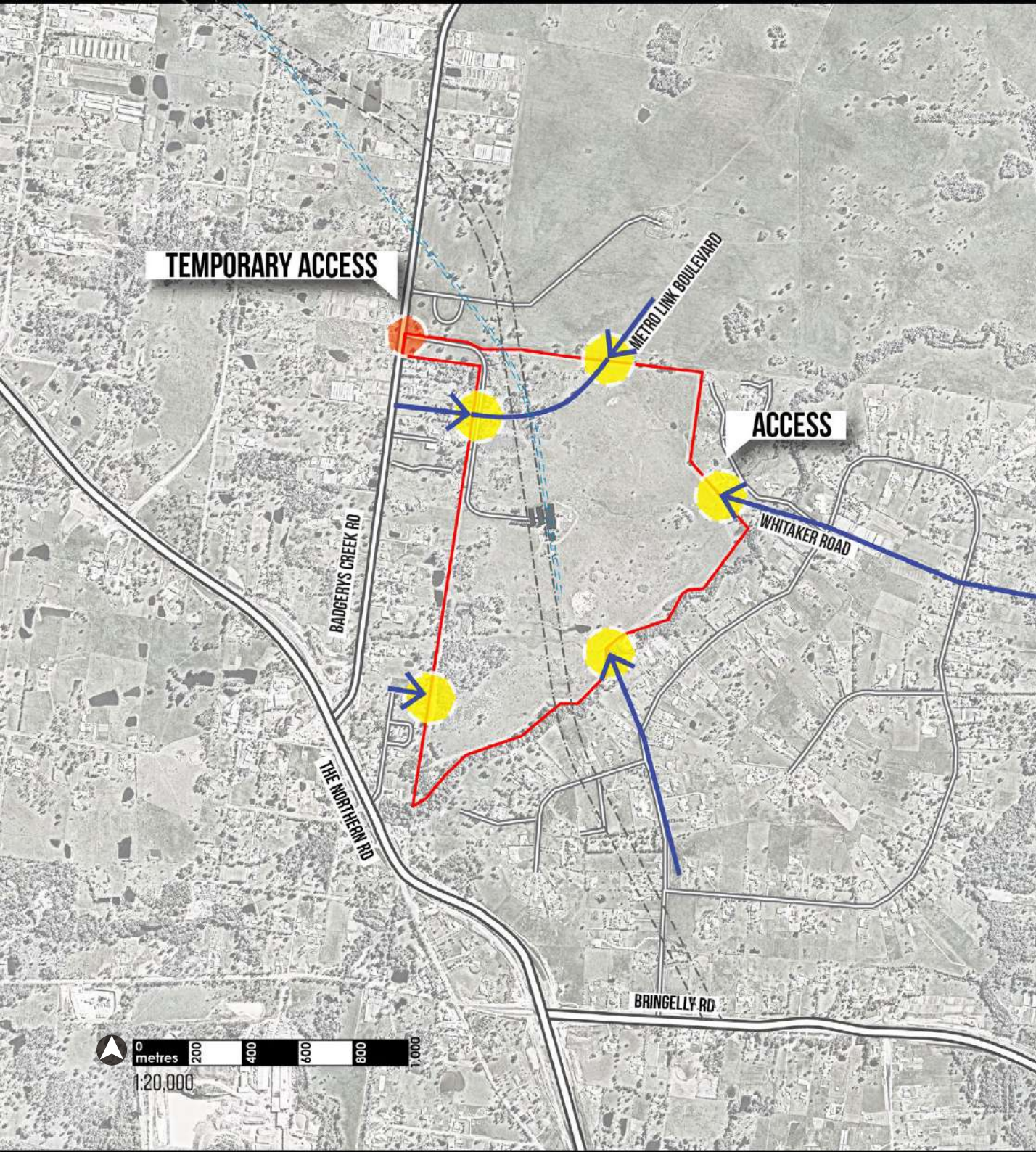


## ✓ OPPORTUNITIES

- Metro Link Boulevard connects the site with Western Sydney Airport and other surrounding centres;
- Metro Link Boulevard enhances gateway and arrival experience;
- The Bradfield City Centre will provide mass transit public transport services which will assist in the creation of a new metropolitan centre;
- Public transit hub including metro and future rail stations in the heart of the city;
- Optimise accessibility to supporting transport infrastructure to enhance connectivity from subject site to surrounding precincts;
- Rapid bus will connect Bradfield to broader Western Sydney Areas.

## ● CONSTRAINTS

- There is currently one temporary access point to the site, with additional access points and connections are provided in Precinct Plan;
- Requirement to incorporate fixed infrastructure corridor into master plan;
- Require additional connections to Badgerys Creek Road impacting on adjoining landholdings on the west;
- Require to connect to planned infrastructure (Whitaker Avenue and Southern connection).



### MASTER PLAN RESPONSE

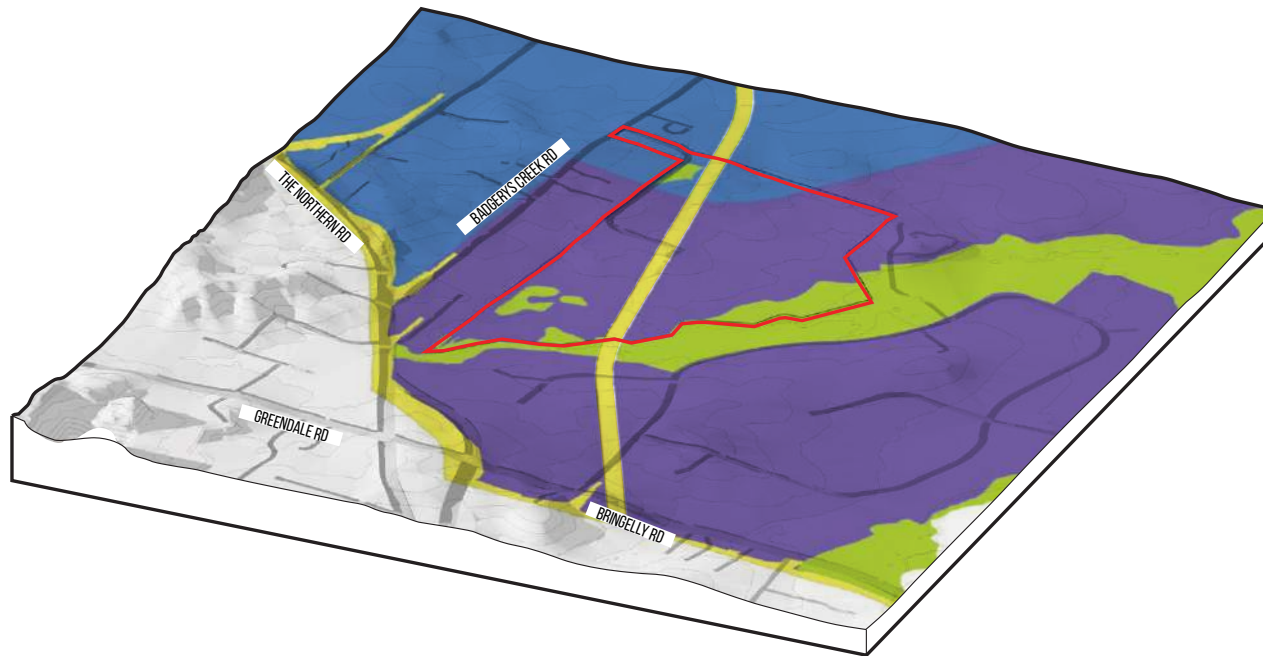
- Respect and integrate all major transport connections set out in the SEPP and Precinct Plan including the Metro station, 60m Infrastructure Corridor, Metro Link Boulevard, Whitaker Road and the southern connection.

#### Legend

- The Site
- Main Access Points to Site
- Existing Road Network
- 60m Future Rail Corridor
- Metro Alignment
- Metro/ Rail Boxes
- ➔ Key Infrastructure Corridors

# LAND USE ZONING

THE SITE IS PREDOMINANTLY ZONED MIXED USE, WITH A SMALLER AREA OF ENTERPRISE ZONE IN THE NORTH, DISCRETE AREAS OF ENZ ZONE AND A 60M WIDE TRANSPORT INFRASTRUCTURE CORRIDOR THROUGH THE MIDDLE.



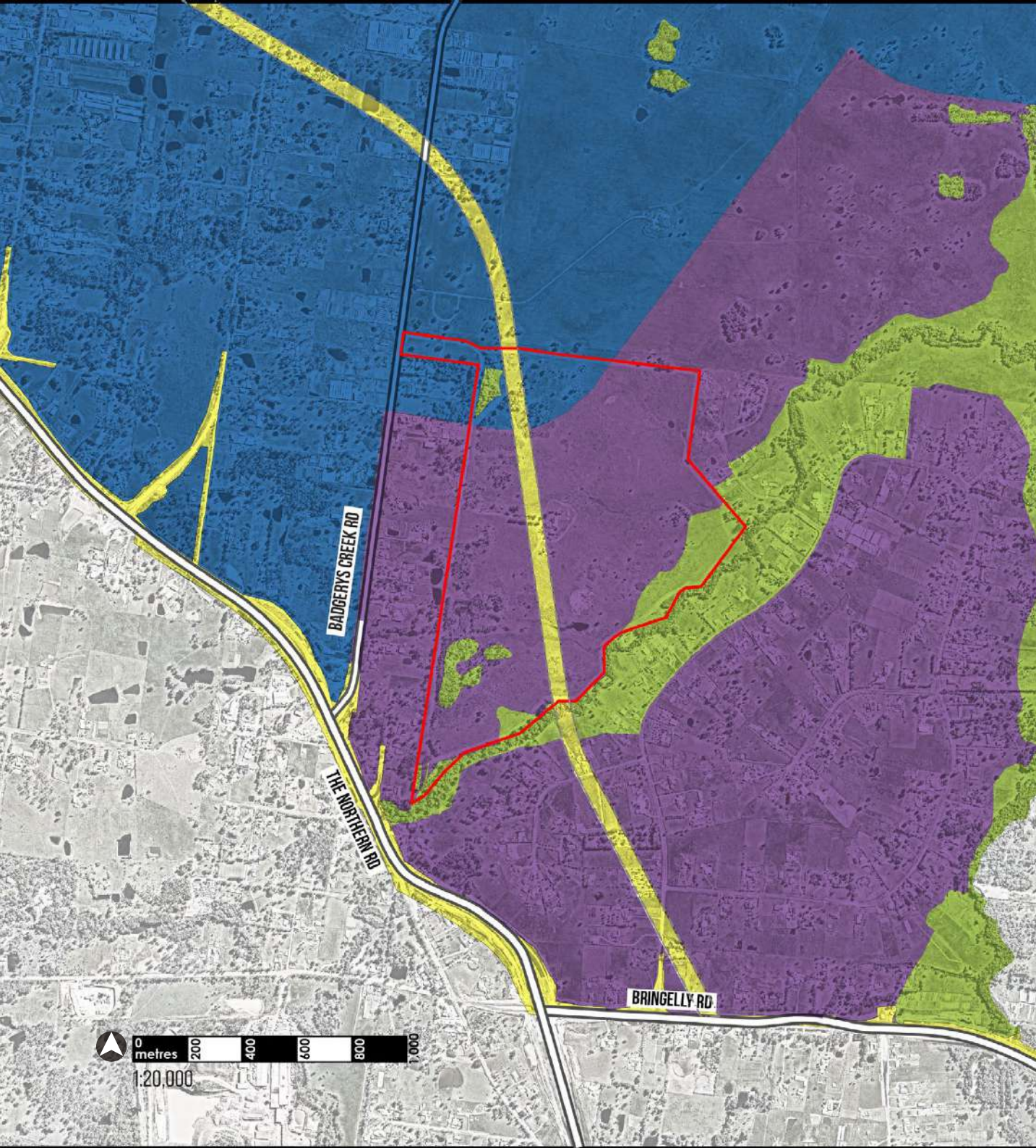
## OPPORTUNITIES

- Opportunity to create a vibrant mixed use city centre that is transit oriented and interfaces with a significant green corridor;
- A mix of enterprise area and mixed use areas to attract significant new business and employment;
- Significant contribution to housing supply and diversity in the aerropolis;
- Significant contribution to creating Thompsons Creek Regional Parkland;



## CONSTRAINTS

- Consider the transitioning from different land zoning, and the design response to unique urban environment and its built form;
- 60m wide Transport Infrastructure Corridor through the middle of the site has implications on urban environment and built form.



### MASTER PLAN RESPONSE

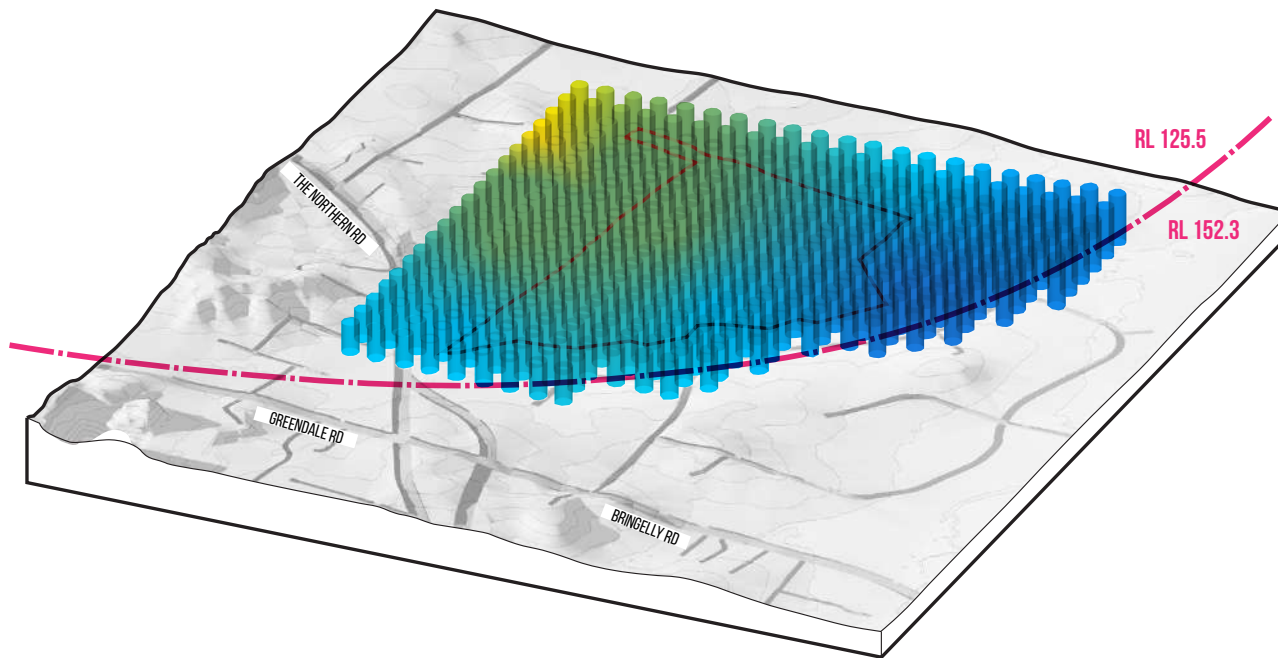
- Comply with the land use boundaries and provisions set out in the SEPP.

Legend

- The Site
- Environment & Recreation Zone
- Mixed Use Zone
- Enterprise Zone
- Infrastructure

# OBSTACLE LIMITATION SURFACES

**DUE TO THE AIRSPACE RESTRICTIONS OF WESTERN SYDNEY INTERNATIONAL AIRPORT, THE SITE HAS A HEIGHT LIMIT OF RL 125.5M WHICH EQUATES TO 12-18 STOREYS ACROSS THE SITE DEPENDING ON TOPOGRAPHY.**



## OPPORTUNITIES

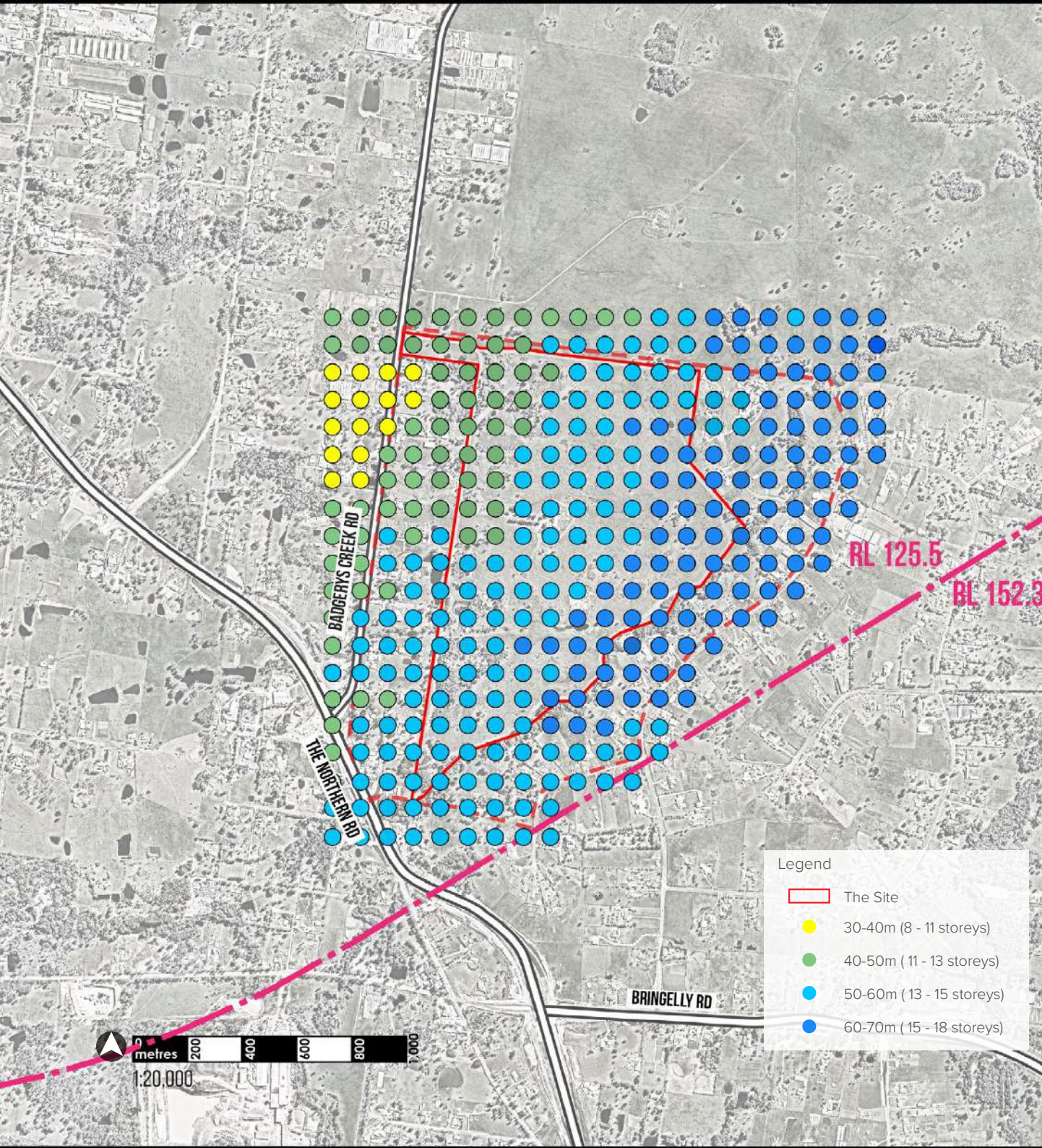
- Potential for additional height on case by case assessment once the PANS-OPS is defined;
- Allows for built form diversity.



## CONSTRAINTS

- The OLS limits building height to a maximum RL125.5m which allows 12-18 storey buildings;
- The Precinct Plan currently limits temporary structures above the OLS;



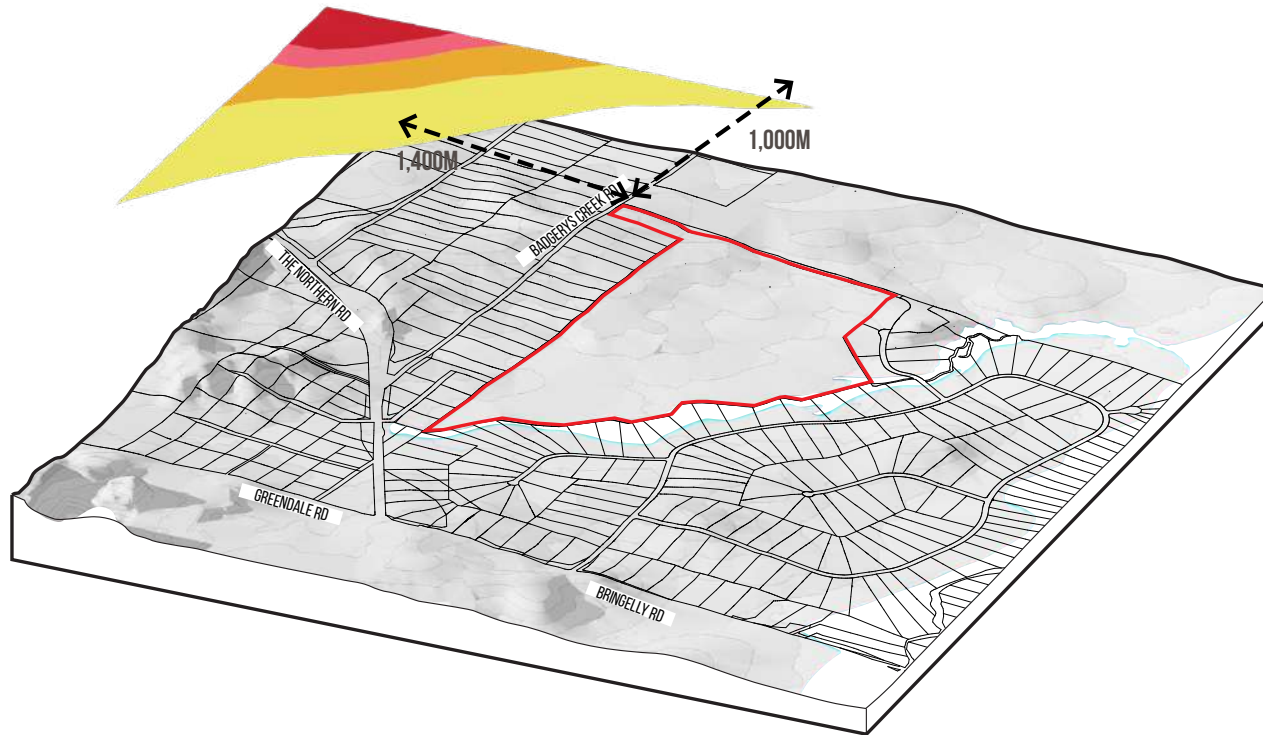


### MASTER PLAN RESPONSE

- Respect building height limitations set by the RL 125.5m OLS;
- Investigate future height potential when the PANS-OPS is defined.

# AIRPORT NOISE

THE SITE IS NOT IMPACTED BY THE FUTURE WESTERN SYDNEY AIRPORT AIRCRAFT NOISE LEVELS. THE SITE IS LOCATED 1KM FROM THE 20 - 25 AUSTRALIAN NOISE EXPOSURE FORECAST (ANEF) WHERE RESTRICTIONS START TO BE APPLIED, THEREFORE IS SUITABLE FOR ALL TYPES OF LAND USES.



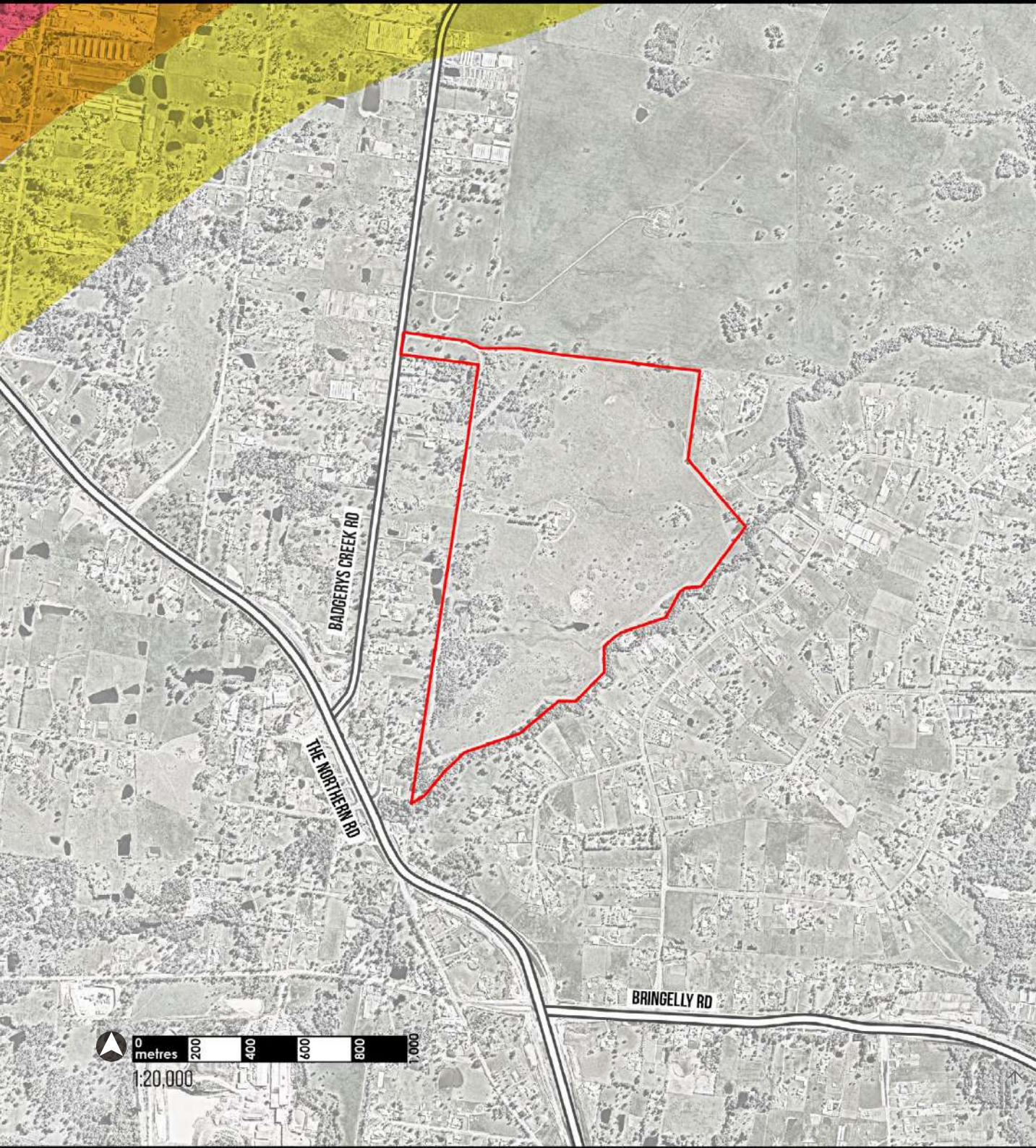
## OPPORTUNITIES

- Create a city centre that is suitable for all land uses including residential.



## CONSTRAINTS

- There are no identified impacts associated with the ANEF.



## MASTER PLAN RESPONSE

- Noise associated with the airport poses no impacts to master planning.

### Legend

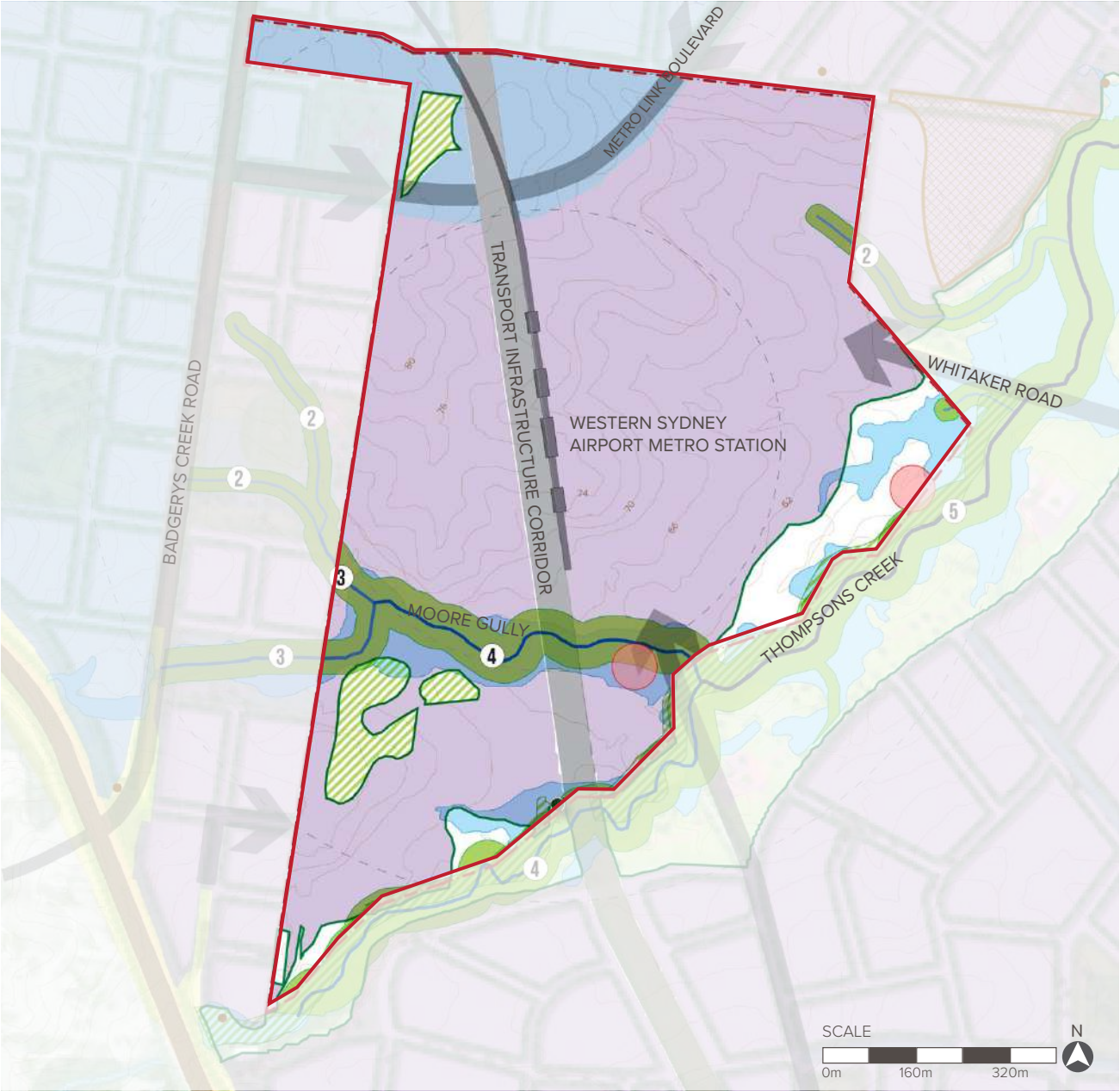
- The Site
- ANEF between 20 & 25
- ANEF between 25 & 30
- ANEF between 30 & 35
- ANEF exceeding 35

# SUMMARY OF MASTER PLAN CONSTRAINTS

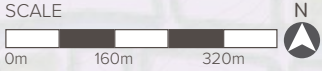
Topic	Master Plan Response
<b>Topography</b>	<ul style="list-style-type: none"> <li>• Design with respect to the topographic landscape of the site;</li> <li>• Establish a design framework that considers view corridors, water movement and people movement that responds to the natural topography.</li> <li>• Consideration towards reducing cut and fill where possible.</li> </ul>
<b>Hydrology</b>	<ul style="list-style-type: none"> <li>• Protect and restore Strahler Order 2, 3, 4 and 5 streams including Thompsons Creek and Moore Gully;</li> <li>• Integrate Strahler Order 1 streams into the public domain and streetscape landscape design;</li> <li>• Exclude development within the 1% AEP flood zone;</li> <li>• Manage the risks of floods greater than 1 in 100 year in size.</li> </ul>
<b>Ecology</b>	<ul style="list-style-type: none"> <li>• Retain Existing Native Vegetation (ENV) identified for protection;</li> <li>• Retain as much high quality vegetation in other areas where possible.</li> </ul>
<b>Trees</b>	<ul style="list-style-type: none"> <li>• Retain mapped Existing Native Vegetation (ENV);</li> <li>• Retain as much high quality vegetation in other areas where possible.</li> </ul>
<b>Airport Wildlife Buffer</b>	<ul style="list-style-type: none"> <li>• Consistency with Draft DCP Phase 2 Appendix B landscape species;</li> <li>• Compliance with the use of landscape species identified within the 3km wildlife buffer zone and the Parkland priority area;</li> <li>• Have regard to the National Airports Safeguarding Framework.</li> </ul>
<b>Obstacle Limitation Surfaces</b>	<ul style="list-style-type: none"> <li>• Respect building height limitations set by the RL 125.5m OLS;</li> </ul>
<b>Airport Noise</b>	<ul style="list-style-type: none"> <li>• Noise associated with the airport poses no impacts to master planning.</li> </ul>

Topic	Master Plan Response
<b>First Nations Cultural Values</b>	<ul style="list-style-type: none"> <li>• Respond to and be consistent with the Aerotropolis Recognise Country Guidelines, and the Bradfield City Centre Aboriginal Cultural Heritage Assessment Report;</li> <li>• Protect and conserve areas of ENV to be retained which covers the areas of [REDACTED], Cumberland Plain woodland and Thompsons Creek.</li> <li>• The 2x 50m archaeological protection zones should be protected from harm where possible, or if impacted a salvage excavation program would be required with an Aboriginal Heritage Impact Permit (AHIP)</li> </ul>
<b>European Heritage</b>	<ul style="list-style-type: none"> <li>• Consider land use and development compatibility in the areas near Kelvin Park heritage site.</li> </ul>
<b>Bushfire</b>	<ul style="list-style-type: none"> <li>• Comply with recommendations set out in the bushfire assessment and comply with the provisions for bushfire protection zones.</li> </ul>
<b>Climate</b>	<ul style="list-style-type: none"> <li>• Maximise tree canopy cover, retain and revitalise existing waterbodies and integrate the blue-green grid to mitigate the impacts of urban heat;</li> <li>• Implement the recommendations in the sustainability framework pertaining to carbon emissions, water systems, circular economy, building performance and healthy environment.</li> </ul>
<b>Transport</b>	<ul style="list-style-type: none"> <li>• Respect and integrate all major transport connections set out in the SEPP and Precinct Plan including the Metro station, 60m Infrastructure Corridor, Metro Link Boulevard, Whitaker Road and the southern connection.</li> </ul>
<b>Land Use Zoning</b>	<ul style="list-style-type: none"> <li>• Comply with the land use boundaries and provisions set out in the SEPP.</li> </ul>

CONSOLIDATED CONSTRAINTS MAP



- Legend
- The Site
  - Environmental and Recreation Zone (ENZ)
  - Existing Native Vegetation to be retained (ENV)
  - Mixed Use Zone
  - Enterprise Zone
  - 5
 5th Order Creek
  - 4
 4th Order Creek
  - 3
 3rd Order Creek
  - 2
 2nd Order Creek
  - Riparian Corridor
  - 1% AEP flood zone
  - Archaeological protection zone 50m
  - 2m Contours
  - SEPP Transport Infrastructure Corridor
  - ➔ Precinct Plan key connections



04



# PLACE FRAMEWORK

## WESTERN PARKLAND CITY BLUEPRINT



## BRADFIELD CITY CENTRE MASTER PLAN

### VISION

A CITY OF EXTRAORDINARY FUTURES

### VALUES

GREEN      TRAVEL      CONNECT      DREAM

### MASTER PLAN OBJECTIVES

CONNECTED TO COUNTRY	INNOVATION ECOSYSTEM	CLIMATE RESILIENT	24/7 VIBRANCY	WORLD CLASS PARKLANDS
A CENTRAL PARK	GLOBAL CONNECTION	STREETS FOR ALL PEOPLE	FINE GRAIN PLACES	DESIGN EXCELLENCE

# WESTERN PARKLAND CITY BLUEPRINT

**THE WESTERN PARKLAND CITY IS THE ECONOMIC POWERHOUSE OF GREATER SYDNEY, COVERING EIGHT LOCAL GOVERNMENT AREAS AND 100,000 HECTARES OF OPPORTUNITY**



The Parkland City will be a green and resilient city with a unique natural landscape that protects biodiversity and supports an increasingly sustainable and compact urban form. Envisaged to become a true 'parkland', promoting green infrastructure through networks of open space and waterways and increasing the tree canopy. The City will also attract green economic opportunities in sustainable industries. In the development of Bradfield City Centre, the WPCA will aim to achieve Australia's first hydrogen ready and zero carbon city.



The Parkland City will be a globally and locally connected City supported by physical, digital and social infrastructure. The new 24/7 Western Sydney International Airport will be a major contributor to the City being one of the most connected places in Australia. The first and subsequent stages of the metro line, rapid bus corridors and more walkable neighbourhoods will allow for better access to jobs, services and amenities. The City will also be a model for digital equity, innovation and cyber security. It will be designed to respect and Connect with Country and our First Nations people and celebrate our cultural diversity.



The Parkland City will be a leader in the advanced manufacturing sector with advanced education and skills to match. The Parkland City will support the growth of clean, green and advanced industries. It will also grow our health and education precincts and leverage existing strengths in freight and logistics, construction and tourism. This will improve the diversity of local job opportunities, rebalancing job distribution and improving wage equity across Greater Sydney.



# BRADFIELD VISION: A CITY OF EXTRAORDINARY FUTURES



BRADFIELD CITY CENTRE IS A 24/7 ECOSYSTEM OF CULTURE, CREATIVITY AND INNOVATION IN A LIVING LANDSCAPE OF INSPIRATION AND EXPERIENCE.

HERE, AMBITION AND OPPORTUNITY COME TOGETHER IN NEW WAYS TO DREAM AND DELIVER AN EXTRAORDINARY FUTURE FOR THE PEOPLE OF WESTERN SYDNEY AND BEYOND.

A FUTURE DEFINED BY OUR RICH INDIGENOUS CULTURE AND SHARED AUSTRALIAN IDENTITY; BY PROUD STORYTELLING, RESPECTED HERITAGE AND CONNECTION TO COUNTRY.

A FUTURE OF BOLDER IDEAS AND INNOVATION FUELED BY FREE-FLOWING KNOWLEDGE AND COLLABORATION.

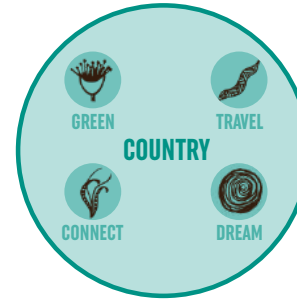
A FUTURE OF NET ZERO FOOTPRINTS AND SMARTER WAYS FOR PEOPLE, THE ENVIRONMENT, AND BUSINESS TO THRIVE TOGETHER.

UNDERPINNED BY IDEALS OF DIVERSITY AND INCLUSIVITY, PROGRESS AND REFLECTION, PROSPERITY AND SUSTAINABILITY, BRADFIELD CITY CENTRE IS A MILLION FUTURES WAITING TO BE WRITTEN.

*Artists impression of Bradfield City Centre, subject to detailed design. The Master Plan does not propose permanent development in the existing 60m wide Special Purposes 2 (SP2) Infrastructure Zone corridor. A decision regarding future rail infrastructure in the corridor is the subject of review by Government.*

# BRADFIELD KEY VALUES

FOUR KEY VALUES PROVIDE THE FOUNDATION FOR THE MASTER PLAN. ALL VALUES ARE SHAPED BY COUNTRY AND FIRST NATIONS CULTURAL VALUES.



## GREEN

### A PARKLAND CITY EXPERIENCE

Set on the water Country of Wianamatta-South Creek, Thompson's Creek and Moore Gully, Bradfield City Centre will set a new benchmark for Designing with Country, through the blue-green city with a network of parklands, leafy neighbourhoods, glistening waterways, water on the surface and within the streets to cool and enhance the City Centre experience.

Bradfield will embody the most aspirational greenery targets for the public domain, tree canopy and buildings and will feature a network of parklands, the Green Loop and leafy neighbourhoods.

The City's reputation as the most liveable, resilient, greenest and sustainable city will be unrivalled.

Key elements to consider include:

- Protect and restore ecologies - caring for Country;
- [REDACTED];
- Create complete ecologies integrating natural ecosystems;
- Connected ecosystems through blue-green infrastructure;
- Respecting natural water flows;
- Pedestrianised Green Loop to integrate and prioritise Country and First Nations culture in the city;
- People as a part of Country - consider all other living and non-living elements of this place;
- Green streets and places - green and permeable surfaces, tree canopy;
- Urban heat mitigation.



## TRAVEL

### A GLOBAL DESTINATION

Bradfield will be a global gateway via the Western Sydney International Airport and transit connections to Greater Sydney, will be the economic and employment heart of Western Sydney, and is envisaged to become a destination of choice for travellers and a location of choice for business due to its excellent connectivity.

Bradfield will also connect to First Nations cultural narratives and with the richness of the world's oldest living cultures expressed throughout the urban fabric of the city. Interwoven is a celebration of the diverse ethnicities that exist in Western Sydney to create a unique tapestry of culture.

Key elements to consider include:

- Spaces to acknowledge, respect, learn about and value Country;
- A unique Western Sydney experience and sense of place, character and identity;
- A city defined through travel and journey;
- A legible city with wayfinding connected to place;
- Critical mass to support Intensity and diversity of activity and uses for work, visit, study, live, and invest;
- Places for all regardless of age, gender, income, ability, culture or religion.



## CONNECT

### CONNECTED GLOBAL & LOCAL

Bradfield will be the most well connected city in Australia, centred on transit with future multiple rail lines and rapid bus connections, and with the most walkable and bikable urban design, and street network providing an equitable and efficient transport system.

Bradfield aims to be an exemplar model of an urban city with intricate connection to Country and local (Dharug) First Nations culture, knowledge and stories, as well as the most culturally diverse and welcoming global city.

Key elements to consider include:

- Dedicated First Nations cultural space;
- Easy, safe and equitable access by all modes;
- Inclusive and safe for all ages, genders, race and abilities;
- Streets as places;
- Fine grained cultural and economic exchange connected to place;
- An interconnected city - physically, visually, and culturally;
- Connecting to Sky Country;
- Buildings facilitate connection to Country;
- Arts and culture for storytelling;
- First Nations language embedded across the city in consultation with traditional custodians;
- Social and spiritual connectedness;
- Access to housing, employment, education, health, recreation and community facilities.



## DREAM

### INNOVATION & GROWTH

Lets dream and imagine for today, tomorrow and long into the future. Bradfield represents the future of city making, and the future of industry and employment in the Aerotropolis that is safe, innovative and sustainable.

Attracting innovation industries with centres of research and advanced manufacturing. The city will also foster partnerships between industry, universities, vocational education and training (VET) providers and STEM schools to align skills with employer needs and drive innovation.

The city will be a leader in sustainability including energy, water, waste and health throughout the public domain and buildings; embed smart technologies and infrastructure; and a highly walkable and transit-oriented city.

Key elements to consider include:

- Diverse employment and industry supporting collaboration, innovation, research, education;
- Working with Traditional Custodians to listen and respond to Country;
- Sustainability - water neutral, no waste to landfill, climate adaptation, land management, locally responsive;
- Knowledge sharing to integrate First Nations knowledge in innovation and science;
- Adaptive, flexible and multi-purpose spaces and buildings;
- Building for ecologies;
- Support and capacity building for First Nations communities and business enterprise;
- A city that cares for physical, mental, cultural and emotional health.

# MASTER PLAN OBJECTIVES

THE MASTER PLAN HAS 10 KEY OBJECTIVES FOR THE CITY TO ACHIEVE THE VISION AND EXPRESS THE VALUES



## CONNECTED TO COUNTRY

Bradfield will be shaped by Country from the preservation of the valued waterways, riparian zones, trees, vegetation and culturally significant sites; retention of views and connections from the ridges the creeks; and restorative planting to care for Country. There will be places to learn about Country, dedicated cultural spaces and a natural and cultural Green Loop weaving through the city. First Nations cultural values and stories will also guide planting, materials, art, lighting, signage and language. Bradfield will also accommodate infrastructure and facilities such as a First Nations cultural centre, specialised health and childcare services and access to education and housing.



## INNOVATION ECOSYSTEM

Bradfield is planned to be one of Australia's major innovation ecosystems that co-locates organisations, institutions and high technology industries to collaborate, innovate, research, and develop. Bradfield will be globally attractive to businesses and investment with its unique offering as a sustainable parkland city that is well connected locally and globally with extensive public transit to Greater Sydney and 3 minute access to the new Western Sydney International Airport. Bradfield will showcase innovation with smart city technologies and advanced building designs.



## CLIMATE RESILIENT

Designed with a landscape and place focus, Bradfield will be a cool and green city with innovative green corridors for people, plants, water and infrastructure that connect the entire city. There will be an intertwining network of diverse and vibrant public spaces that provide immersible and sensory experiences, achieving urban cooling through water sensitive design and over 40% tree canopy cover, supporting the health and well-being of all living organisms, including people, habitats, and pollinators. Buildings will feature greenery to help address urban heat in the city, and will meet high performance requirements across water, energy, waste, adaptability, health and innovation.



## 24/7 VIBRANCY

Bradfield will become a thriving 24/7 metropolis serving the curfew-free Western Sydney International Airport. It will offer major outdoor event spaces, indoor performance venues, cultural centres, public spaces with evening activation and creative lighting, hotels, restaurants, bars and more to attract workers, residents and visitors to enjoy the active city atmosphere throughout the week, weekends and evenings.



## WORLD CLASS PARKLANDS

Bradfield will deliver a large part of Thompsons Creek regional parklands which connects into the broader Wianamatta Creek system that spans Western Sydney. The parkland is a place for human recreation and experience, is culturally important and sensitive and is ecologically significant. The parklands will prioritise environmental regeneration, restore waterways and rebuild biodiversity while integrating water and landscape design to create a highly valued and unique place for the city. The parklands will also accommodate a regional swimming destination and a large scale performance/ events space, framed with a range of cultural, entertainment and recreation uses to create hubs of activity.



## A CENTRAL PARK

Located in the heart of Bradfield is the Central Park, an approximately 2ha city park intended to become the main civic and gathering place and the main arrival and welcoming place by transit. It is the place where people of all diversities come together, stay, exchange and where the city's life thrives. It is a place that welcomes all, provides a variety of adventures and activities and showcases a green, blue, multicultural city.



## GLOBAL CONNECTION

Bradfield will provide world-class, safe, and accessible public transport that provides a 3-minute journey to the Western Sydney International Airport and rapid connections to Greater Sydney. A major public transport interchange with rail and extensive bus network is located in the centre of the city fronting Central Park to provide a welcoming parkland experience on arrival. The interchange is supported with a transit boulevard that connects dedicated busways to destinations north and south of the city.



## STREETS FOR ALL PEOPLE

Bradfield is structured with a variety of streets that are safe and green to create a walking, cycling and micro-mobility paradise. Speeds will be limited to 40km/hr or less throughout the city, extensive greenery will be achieved with ambitious tree canopy targets and there will be a world-class network of separated bike lanes and safe cycling streets. From the larger transit boulevards, commercial high streets, and pedestrian malls, to the smaller city streets and fine-grain network of shared zones and pedestrian lanes, the street network will create a highly connected and accessible city for all and will support a vibrant, human scale and social urban fabric with diverse experiences.



## FINE GRAIN PLACES

Bradfield aims to create a vibrant, attractive and distinctive urban experience with active street frontages, a variety of street interface design, a network of fine-grain shared zones and pedestrian lanes and attention to the detail of the public domain with high quality materials, art, lighting, furniture and greenery.



## DESIGN EXCELLENCE

Bradfield will showcase design excellence in the buildings and public domain through high quality design controls and guidance supported by a design excellence process and commitments to 6-star Green Star ratings. Bradfield aims to raise the benchmark in design with Country, design for climate, innovation and sustainability, energy and water efficiency and harvesting, sustainable materials selection and provision of greenery on ground, walls and roofs.

An aerial architectural rendering of a residential development. The image shows a grid of streets with various building footprints, some with landscaping. A large, winding water feature or canal runs through the lower portion of the site. A prominent white number '05' is overlaid on the left side of the image. A thin white horizontal line is located at the bottom right of the page.

05

An aerial photograph of a residential development master plan. The plan shows a grid of streets, numerous rectangular building footprints, and landscaped areas with trees. A large, irregularly shaped pond is situated in the center-right, and a winding river or canal flows through the bottom portion of the site. The entire image is overlaid with a semi-transparent blue filter.

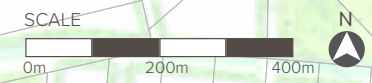
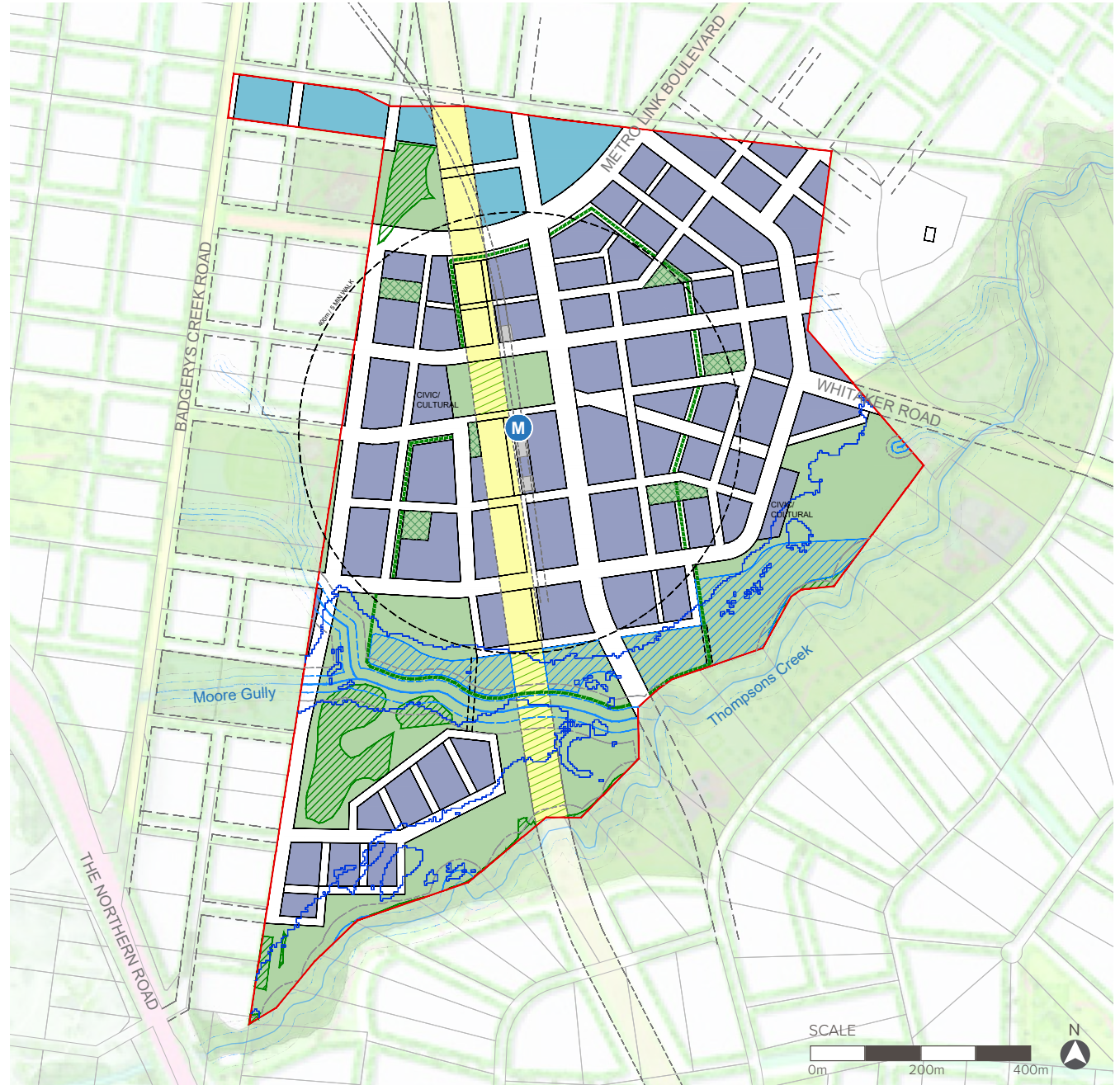
# MASTER PLAN OVERVIEW

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# BRADFIELD MASTER PLAN

- Master Plan Boundary
- Open Space (regional and district)
- Open Space (future ownership to be determined)
- Existing Native Vegetation (ENV) to be retained
- Mixed Use
- Enterprise
- Transport & Infrastructure (SP2)
- Interim/ Future Open Space
- M WSA Metro Station and Infrastructure
- Street Reserve
- Green Loop (future ownership to be determined)
- Pedestrian Bridge (indicative location)
- Creek Centreline
- Core Riparian Zone
- Vegetated Buffer
- Stormwater Management
- Probable Maximum Flood

The Master Plan does not propose permanent development in the existing 60m wide Special Purposes 2 (SP2) Infrastructure Zone corridor. A decision regarding future rail infrastructure in the corridor is the subject of review by Government.





# ILLUSTRATIVE MASTER PLAN

- 1 Ridge Park
- 2 Advanced manufacturing precinct
- 3 Central Park
- 4 Transport Infrastructure Corridor
- 5 Metro/ Rail Stations (existing and future)
- 6 City Walks
- 7 Green Loop
- 8 Moore Gully Swimming Pool
- 9 Major Events Space
- 10 Thompsons Creek Regional Parkland
- 11 Local Parks

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# KEY OUTCOMES

**31% OF THE SITE  
DEDICATED TO OPEN  
SPACE TO CREATE A  
TRULY PARKLAND CITY**



**4 NEW MAJOR CIVIC  
DESTINATIONS THAT  
ANCHOR THE CITY**

**(CENTRAL PARK, RIDGE PARK,  
MOORE GULLY SWIMMING  
POOL AND THOMPSONS  
CREEK EVENT SPACE)**



**A 2.2 KM GREEN  
LOOP PRIORITISING  
COUNTRY AND FIRST  
NATIONS CULTURE  
THROUGHOUT THE CITY**



**42% TREE CANOPY  
COVER FOR A GREEN,  
COOL CITY**



*Artists impressions only, subject to detailed design.*

**NEW CENTRES OF INNOVATION AND EDUCATION DRIVING NEW INDUSTRIES, JOBS AND SKILLS**



**STREETS DESIGNED FOR A SAFE, GREEN, ACTIVATED, AND PERMEABLE CITY**



**A TRANSIT ORIENTED CITY WITH METRO AND BUS NETWORK FOR SUSTAINABLE, CONVENIENT ACCESS**



**EXTENSIVE NETWORK OF DEDICATED BIKE LANES AND SAFE CYCLING STREETS TO PRIORITISE SAFE, HEALTHY ACTIVE TRAVEL**



*Artists impressions only, subject to detailed design.*

# EVOLUTION FROM THE PRECINCT PLAN

## OVERALL THE BRADFIELD CITY CENTRE MASTER PLAN IS CONSISTENT WITH THE PRECINCT PLAN PRINCIPLES AND GENERAL FRAMEWORK.

The Master Plan comprises a series of refinements and enhancements from the Precinct Plan resulting from more detailed review and development of the vision and place framework, the site analysis, technical studies and infrastructure requirements.

This section outlines the key elements of the Master Plan in comparison to the Precinct Plan with further detail on each topic provided in the subsequent chapters.

### PRECINCT PLAN



### BRADFIELD MASTER PLAN



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# A DIVERSE MIXED-USE CITY



## MASTER PLAN RESPONSE

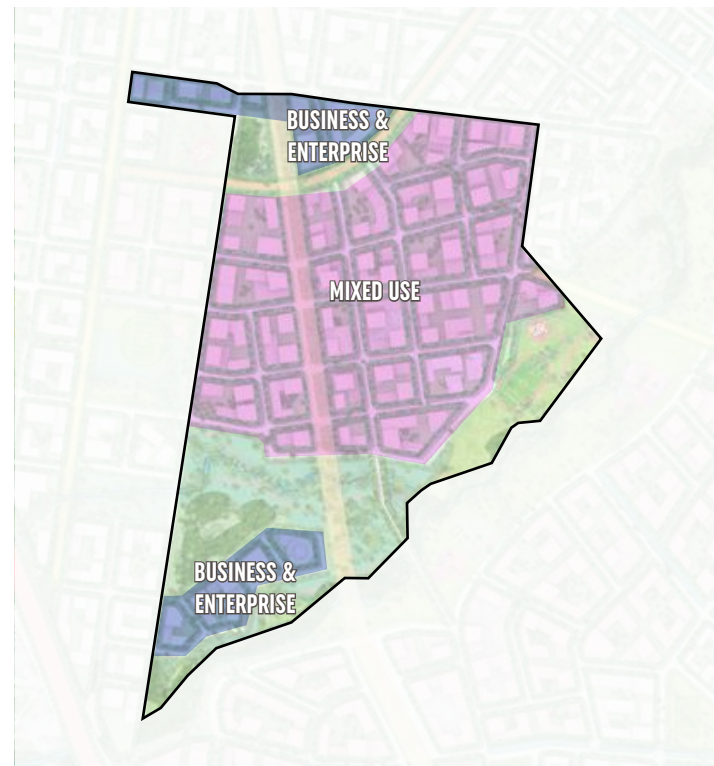
The Precinct Plan, given its scale, allocates two broad land use zones to the site and lacks the more nuanced character areas observed in great global cities.

The master plan has considered the city at a more granular level to create a variety of character areas and experiences to attract a diverse range of people and businesses. Enterprise, research and education will be clustered to drive innovation. The central core will have a strong civic focus. Cultural and entertainment uses will complement the regional parklands. District scale retail will be anchored between the major destinations. A more residential-focussed precinct will be located towards the south.

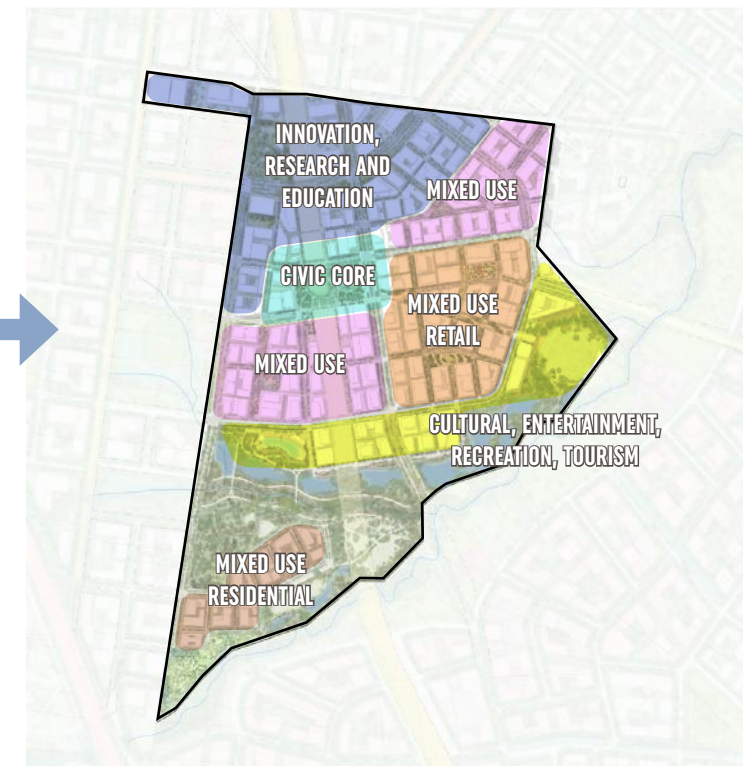
**✓ MORE PLACE SPECIFIC CHARACTER AREAS THAN THE PRECINCT PLAN**

*Note: no change is proposed to the land use zoning*

## PRECINCT PLAN



## BRADFIELD MASTER PLAN



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# GREEN AND BLUE GRID



**GREEN**  
A PARKLAND CITY EXPERIENCE

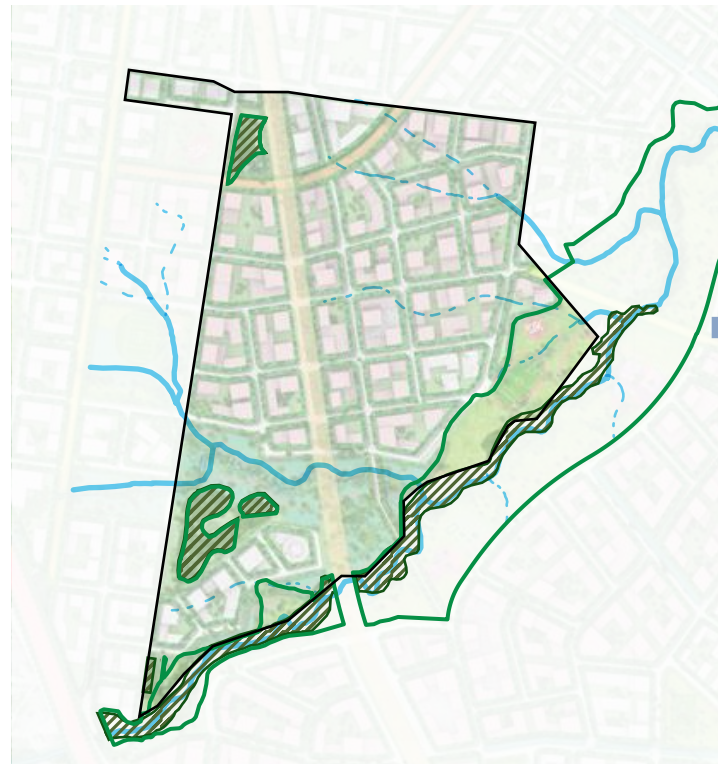
## MASTER PLAN RESPONSE

The Master Plan respects the Environment and Recreation Zone identified in the SEPP and the protected Existing Native Vegetation (ENV) identified in the Precinct Plan. Strahler Order 2 streams and above are retained/ restored in natural form, including the slightly realigned and restored Moore Gully. Strahler Order 1 streams will be integrated into the public domain/ streetscape and stormwater design in generally accordance with the Precinct Plan.

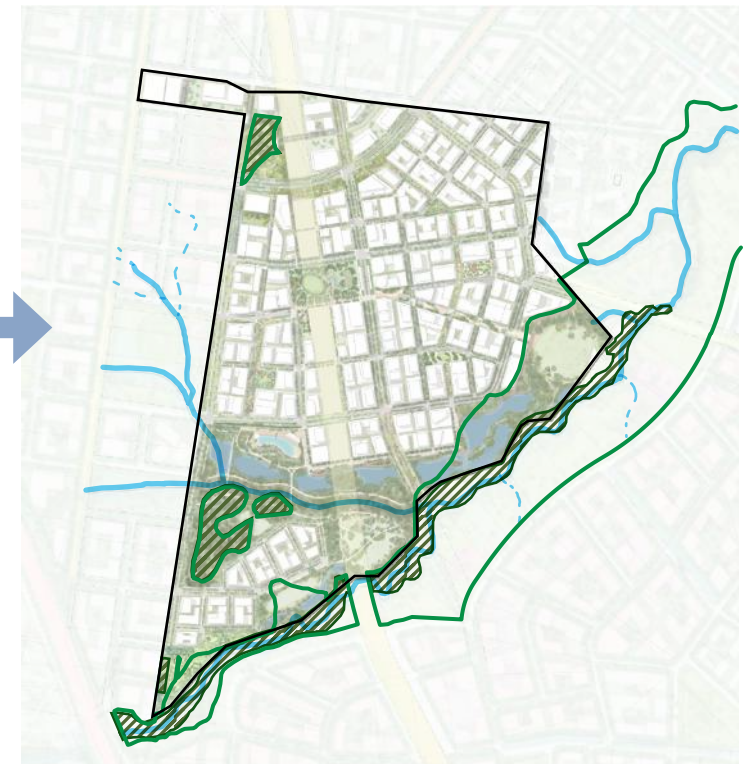


**CONSISTENT WITH  
PRECINCT PLAN**

### PRECINCT PLAN



### BRADFIELD MASTER PLAN



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-  EXISTING NATIVE VEGETATION (ENV) TO BE RETAINED
-  STRAHLER ORDER 1 WATERWAYS
-  ENVIRONMENT AND RECREATION ZONE
-  STRAHLER ORDER 2 AND ABOVE WATERWAYS

# A PARKLAND CITY



**GREEN**  
A PARKLAND CITY EXPERIENCE

## MASTER PLAN RESPONSE

The Thompsons Creek and Moore Gully parklands is well defined and respected for its importance in terms of ecology and water, First Nations cultural values, recreation and amenity. It is the City's greatest asset and a key defining element. Its protection as outlined in the Precinct Plan is respected in the Master Plan. Similarly the Ridge Park with ENV is retained consistent with the Precinct Plan.

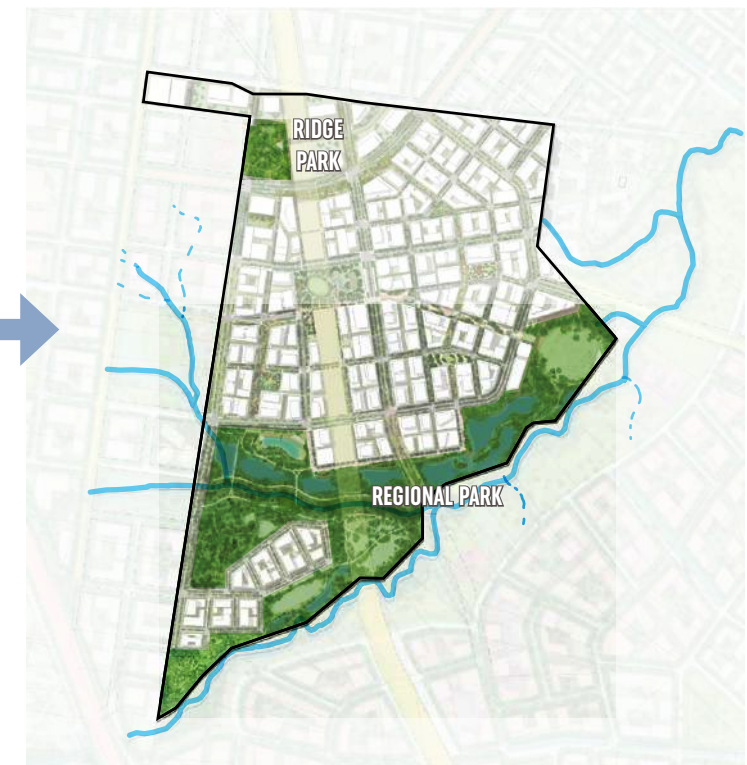


**CONSISTENT WITH  
PRECINCT PLAN**

## PRECINCT PLAN



## BRADFIELD MASTER PLAN



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# NEW CIVIC SPACES



## MASTER PLAN RESPONSE

The Precinct Plan depicts a city surrounded by parklands that focuses on ecological protection, water management and recreational locations.

While accommodating these fundamentals, the master plan takes a more city-shaping perspective with two new regional destinations: a naturally integrated regional swimming pool and a major events space for concerts and community events.

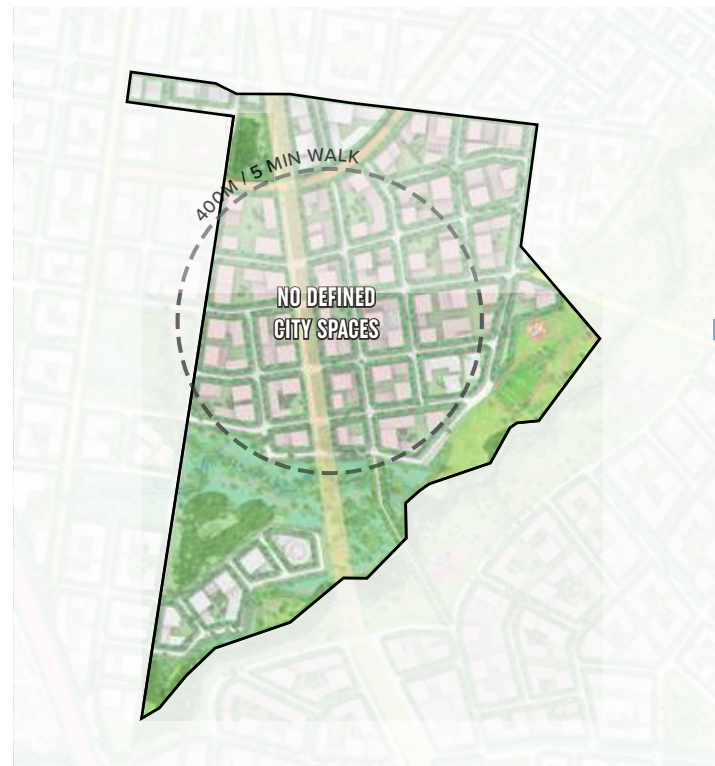
In addition, the Master Plan provides a city-scaled central park co-located with the rail/bus interchange, to create a welcoming green, cool, active gathering space for all.

These destinations will help to reinforce the Parkland City image on a national and international level and enhance the attraction of visitors and business investment.



**INCREASED OPEN SPACE FROM PRECINCT PLAN**

## PRECINCT PLAN



## BRADFIELD MASTER PLAN



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# CONNECTING MAJOR DESTINATIONS



**CONNECT**  
CONNECTED GLOBAL AND LOCAL

## MASTER PLAN RESPONSE

The Master Plan proposes well defined direct links between major destinations to provide a more convenient and legible structure with memorable, high amenity pedestrian focussed connections that prioritise the city for people and civic life.



**IMPROVED CONNECTIVITY  
+ LEGIBILITY FROM  
PRECINCT PLAN**

## PRECINCT PLAN



## BRADFIELD MASTER PLAN



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# A LEGIBLE TRANSPORT NETWORK



**CONNECT**  
CONNECTED GLOBAL AND LOCAL

## MASTER PLAN RESPONSE

Sydney Metro have defined the Western Sydney Airport Metro line alignment and station location and streets surrounding the Metro. The SEPP defines the 60m corridor to be protected for future rail lines.

The Precinct Plan sets out key street connections including:

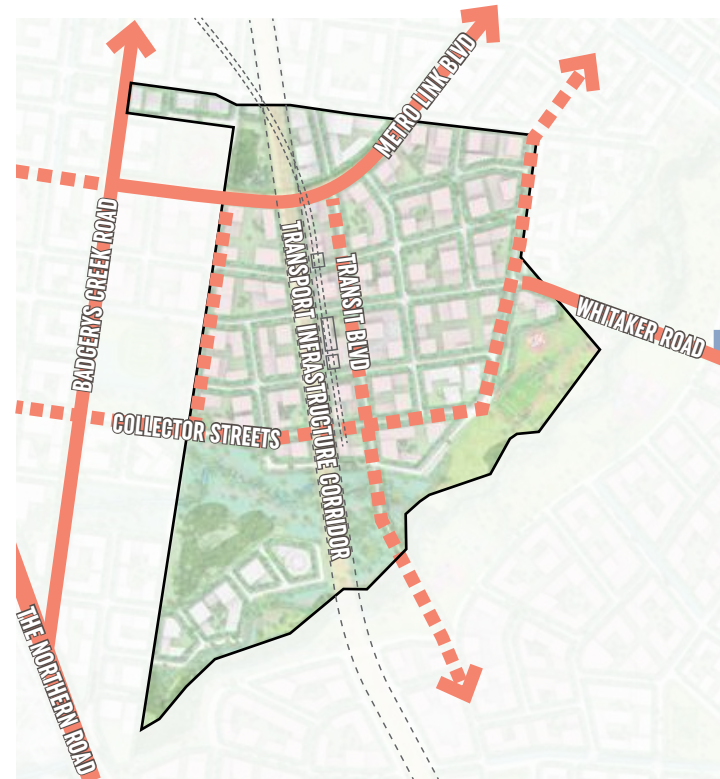
- Metro Link Boulevard, a rapid transit corridor connecting to Fifteenth Avenue;
- Badgerys Creek Road and Whitaker Road (sub-arterials);
- Collector streets.

The Master Plan respects all key transport connections and also enhances connectivity from Whitaker Road to Metro Link Boulevard.

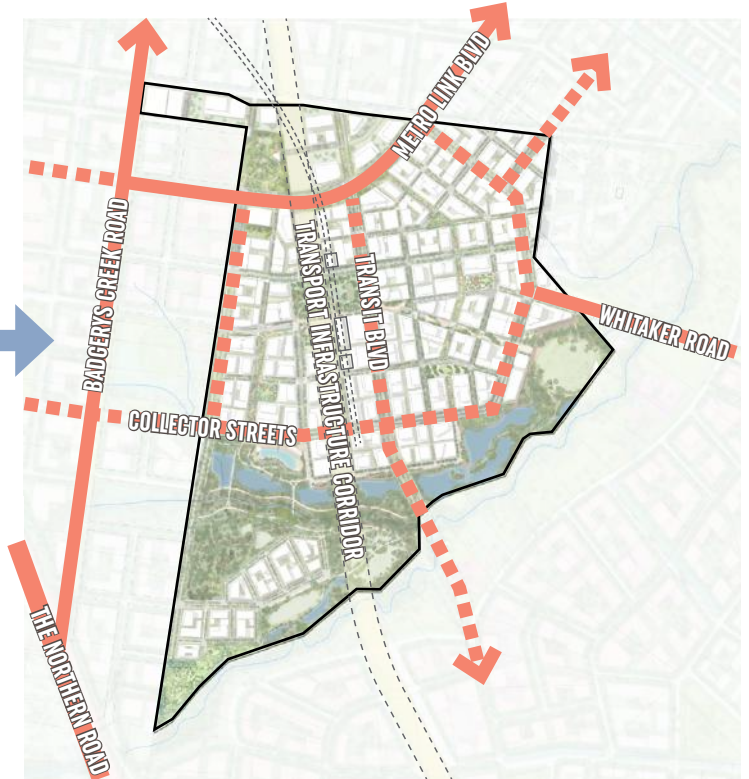


**CONSISTENT WITH  
PRECINCT PLAN**

### PRECINCT PLAN



### BRADFIELD MASTER PLAN



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# A FINE GRAIN WALKABLE CITY



**CONNECT**  
CONNECTED GLOBAL AND LOCAL

## MASTER PLAN RESPONSE

The Precinct Plan proposes a grid of general traffic streets framing each street block.

The Master Plan maintains this general approach and level of connectivity but proposes greater variety of street types with a finer grain structure and provides more shared zones, pedestrian lanes and green links to support a more walkable and car-light city that prioritises pedestrians, safety and amenity.

The Master Plan also includes changes required/agreed with TfNSW/ Sydney Metro:

- East-west street interfacing the WSA Metro station restricted to pedestrian and service/ emergency vehicles only.
- North-south street within infrastructure corridor removed (not permitted).

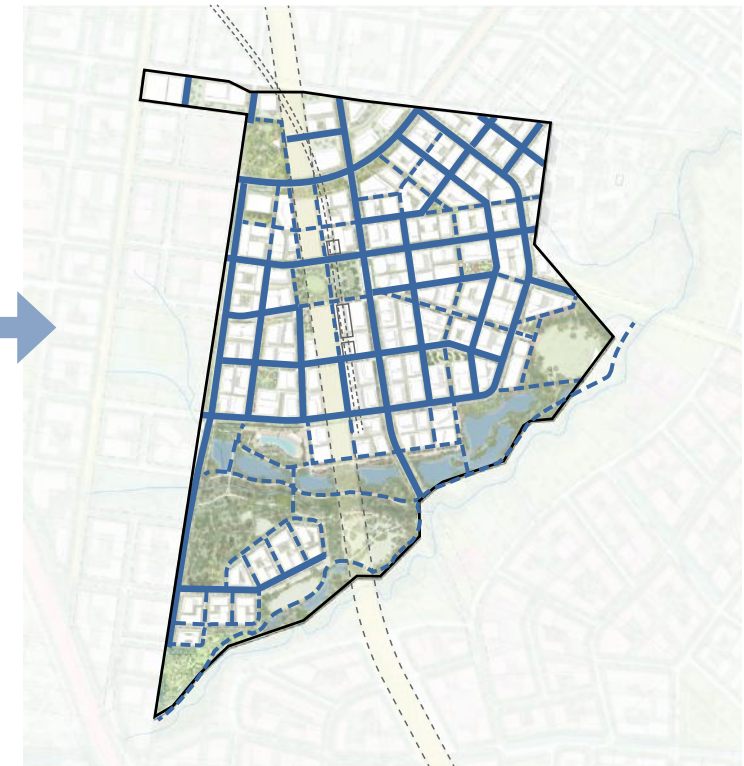


**IMPROVED MOBILITY,  
SAFETY AND AMENITY  
FROM PRECINCT PLAN**

## PRECINCT PLAN



## BRADFELD MASTER PLAN



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- GENERAL TRAFFIC STREETS
- - - SHARED ZONES AND PEDESTRIAN ONLY

# DISTINCT MICRO-NEIGHBOURHOODS



**CONNECT**  
CONNECTED GLOBAL AND LOCAL

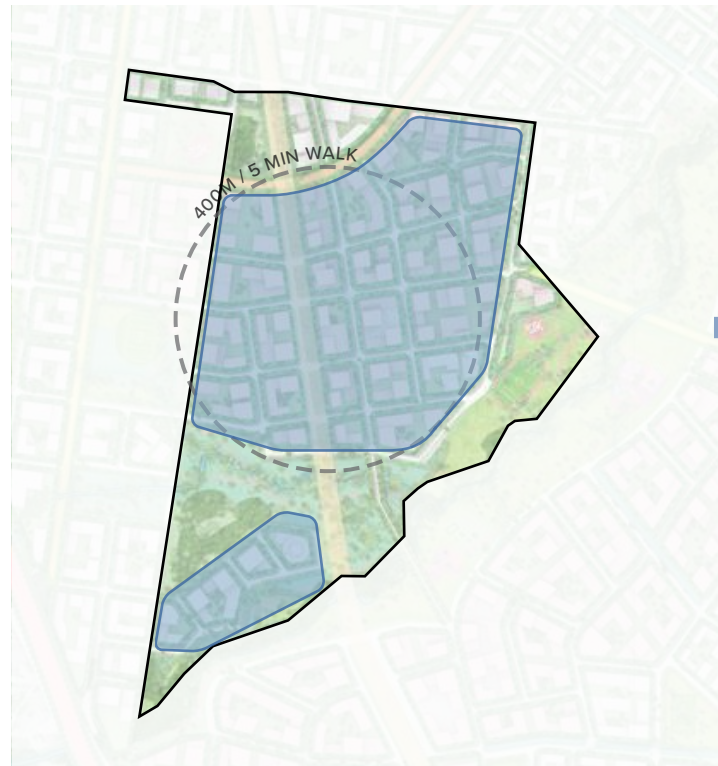
## MASTER PLAN RESPONSE

The Master Plan builds on the Precinct Plan by introducing a more granular neighbourhood structure to reflect the higher density of the city centre. A series of 'micro-neighbourhoods' are established, each with a local park to facilitate local community connection; the larger, busier city streets on the edges; and smaller more intimate streets within the neighbourhood to create a more walkable and social environment.

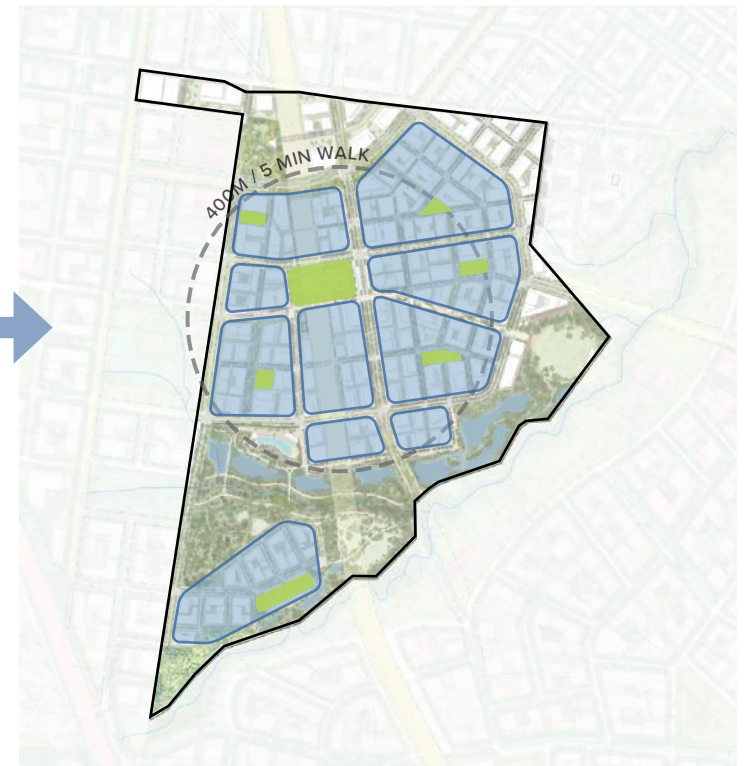


**IMPROVED NEIGHBOURHOOD  
STRUCTURE FROM PRECINCT  
PLAN**

## PRECINCT PLAN



## BRADFIELD MASTER PLAN



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# DESIGNING WITH COUNTRY



**GREEN**  
A PARKLAND CITY EXPERIENCE

## MASTER PLAN RESPONSE

The Precinct Plan is based on principles of connecting to Country and provides a broad landscape-led structure with strong blue and green grid. The Master Plan builds on this with additional layers of design with Country as detailed in the Design with Country section.

The Master Plan provides a Green Loop natural First Nations cultural trail weaving around the city that provides spaces to care for and connect with Country within the urban environment. The Master Plan also provides dedicated cultural spaces, [REDACTED] and provides of spaces to see and learn about Country



**ENHANCED CONNECTION  
TO COUNTRY FROM  
PRECINCT PLAN**

## PRECINCT PLAN



## BRADFIELD MASTER PLAN



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# VIEWS FROM RIDGE TO CREEK



**CONNECT**  
CONNECTED GLOBAL AND LOCAL

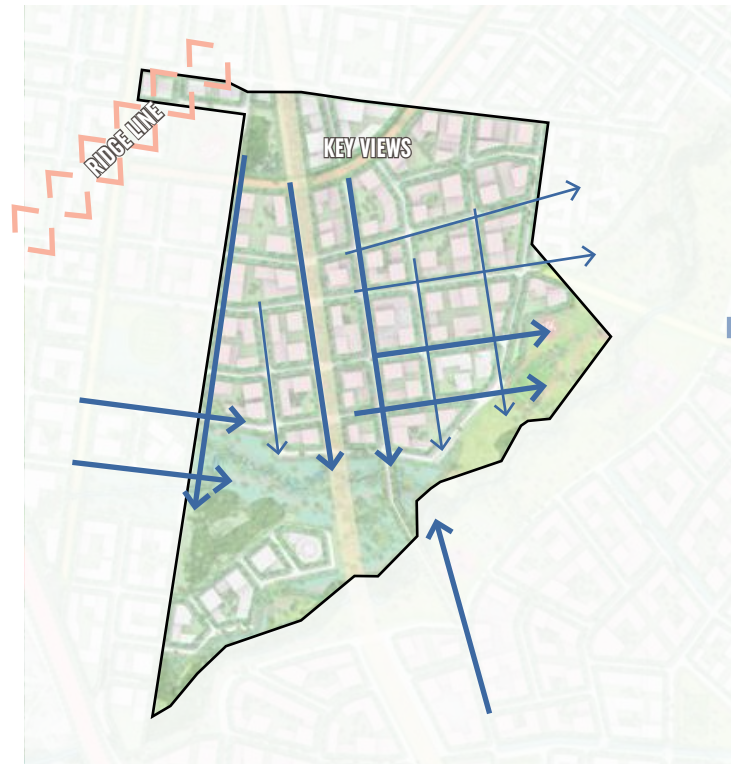
## MASTER PLAN RESPONSE

The Precinct Plan establishes a series of sightlines from the higher areas and main roads to Thompsons Creek and Moore Gully parklands.

The Master Plan builds on this foundation with additional views from the Metro station and Central Park to Ridge Park and the two parkland destinations as well as an additional view from Metro Link Boulevard to the parklands.

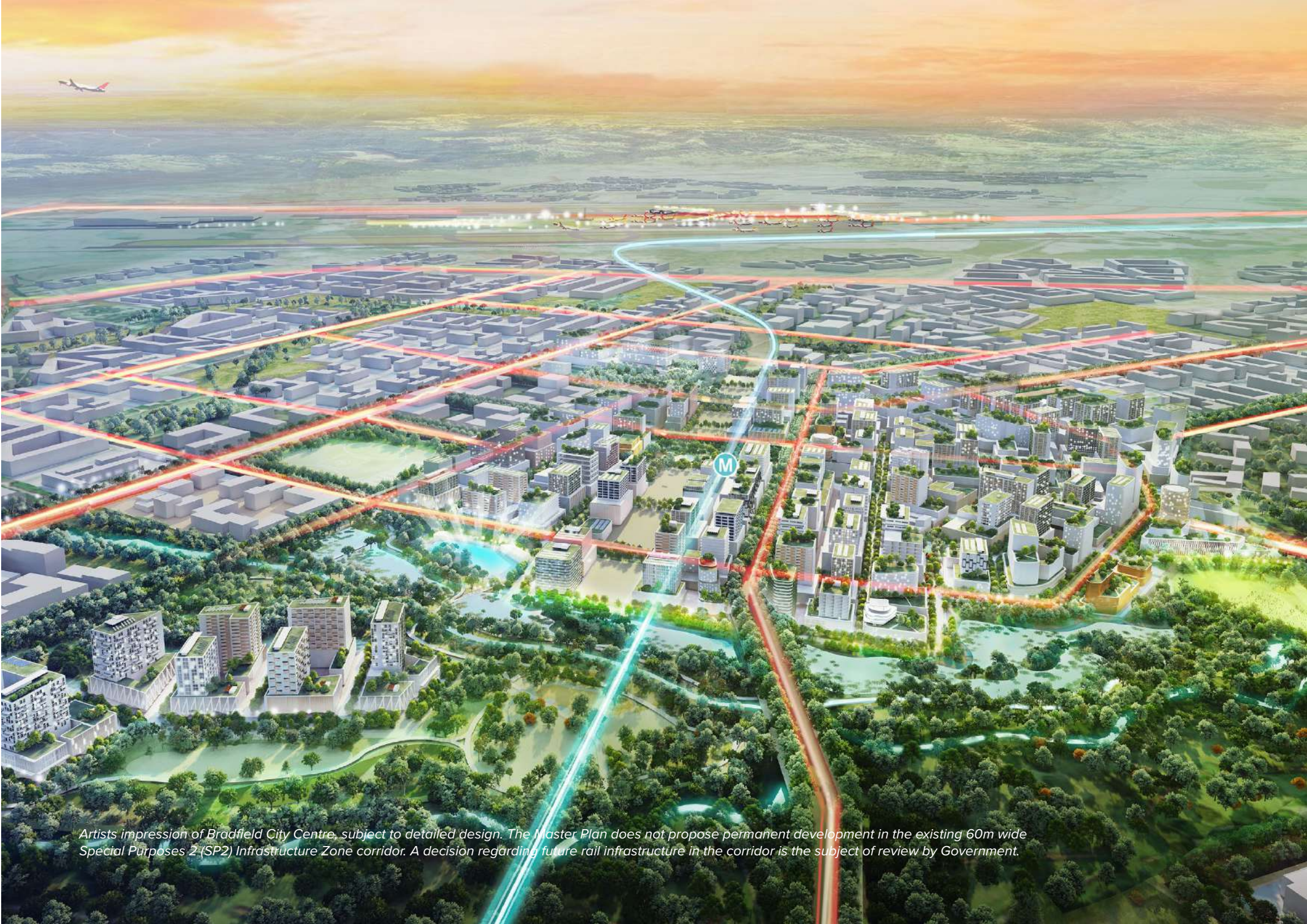
## BRADFIELD MASTER PLAN

## PRECINCT PLAN



**✓ IMPROVED VISUAL LEGIBILITY FROM PRECINCT PLAN**

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*Artists impression of Bradfield City Centre, subject to detailed design. The Master Plan does not propose permanent development in the existing 60m wide Special Purposes 2 (SP2) Infrastructure Zone corridor. A decision regarding future rail infrastructure in the corridor is the subject of review by Government.*

# TRANSPORT INFRASTRUCTURE CORRIDOR

**THE MASTER PLAN DOES NOT PROPOSE PERMANENT DEVELOPMENT IN THE EXISTING 60M WIDE SPECIAL PURPOSES 2 (SP2) INFRASTRUCTURE ZONE CORRIDOR. A DECISION REGARDING FUTURE RAIL INFRASTRUCTURE IN THE CORRIDOR IS THE SUBJECT OF REVIEW BY GOVERNMENT.**

The Sydney Metro Western Sydney Aerotropolis (SM-WSA) rail project was announced in 2018. The North South Rail Line and South West Rail Line Extension (SWRLE) corridors were subsequently gazetted by Government in 2020. The corridors enable future connections between Bradfield City Centre; St Marys; Leppington and Campbelltown-Macarthur. The Government also agreed to tunnel SM-WSA between Western Sydney International Airport (WSIA) and the Bradfield City Centre.

A future East West Rail Line (EWRL) Corridor connecting Bradfield to Parramatta is included in the Western Sydney Aerotropolis Precinct Plan and new State Environmental Planning Policy (SEPP). The existing 60m wide Special Purposes 2 (SP2) Infrastructure Corridor is to accommodate the EWRL. The future construction of rail infrastructure in the SP2 corridor is yet to be determined by Government. Both tunnel and surface options (predominantly viaduct) would be considered in a further business case review.

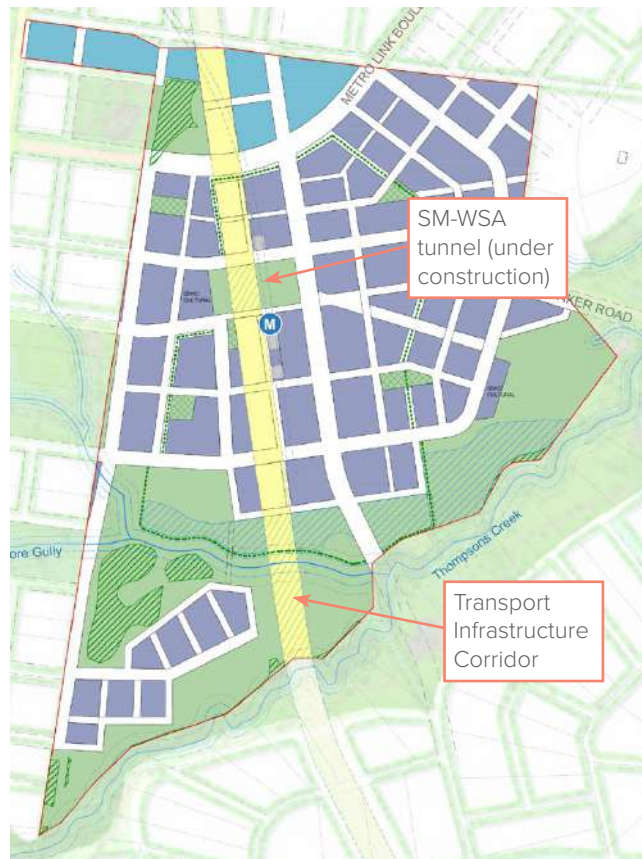
A decision of Government regarding the delivery of rail infrastructure within the corridor will inform future reviews of the Master Plan and potential land use outcomes. In the interim, the Master Plan does not include permanent development in the corridor and has only considered future land use outcomes to inform other urban design and infrastructure planning within the Master Planned area.

The plans opposite illustrate the proposed master plan and potential future land use arrangements for both tunnel and viaduct options.



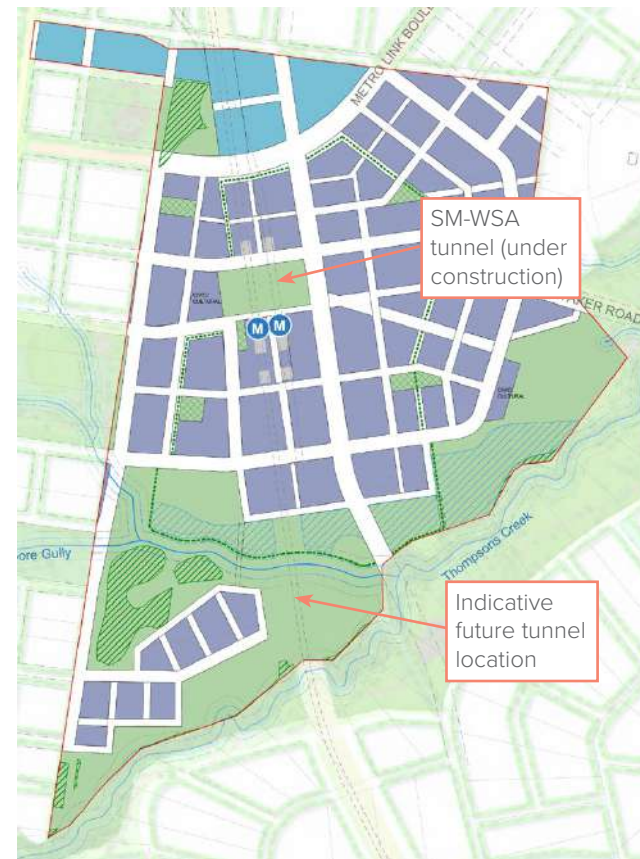
### PROPOSED MASTER PLAN WITH TRANSPORT INFRASTRUCTURE CORRIDOR SAFEGUARDED

No permanent development within corridor. Development adjoining corridor subject to corridor protection guidelines.



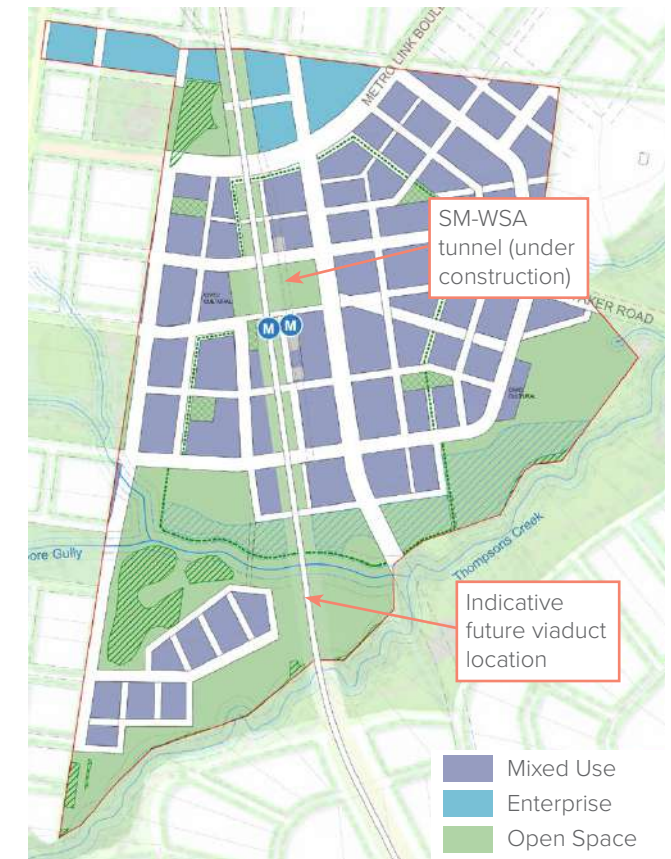
### POTENTIAL LAND USE ARRANGEMENT WITH FUTURE RAIL IN TUNNEL

Future development above tunnels subject to TfNSW/ Sydney Metro approval. Development adjoining tunnels subject to corridor protection guidelines.



### POTENTIAL LAND USE ARRANGEMENT WITH FUTURE RAIL IN VIADUCT

Viaduct extents and location within corridor, use of residual land within the corridor and setbacks to adjacent buildings subject to TfNSW/ Sydney Metro advice.



- Mixed Use
- Enterprise
- Open Space

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# 06





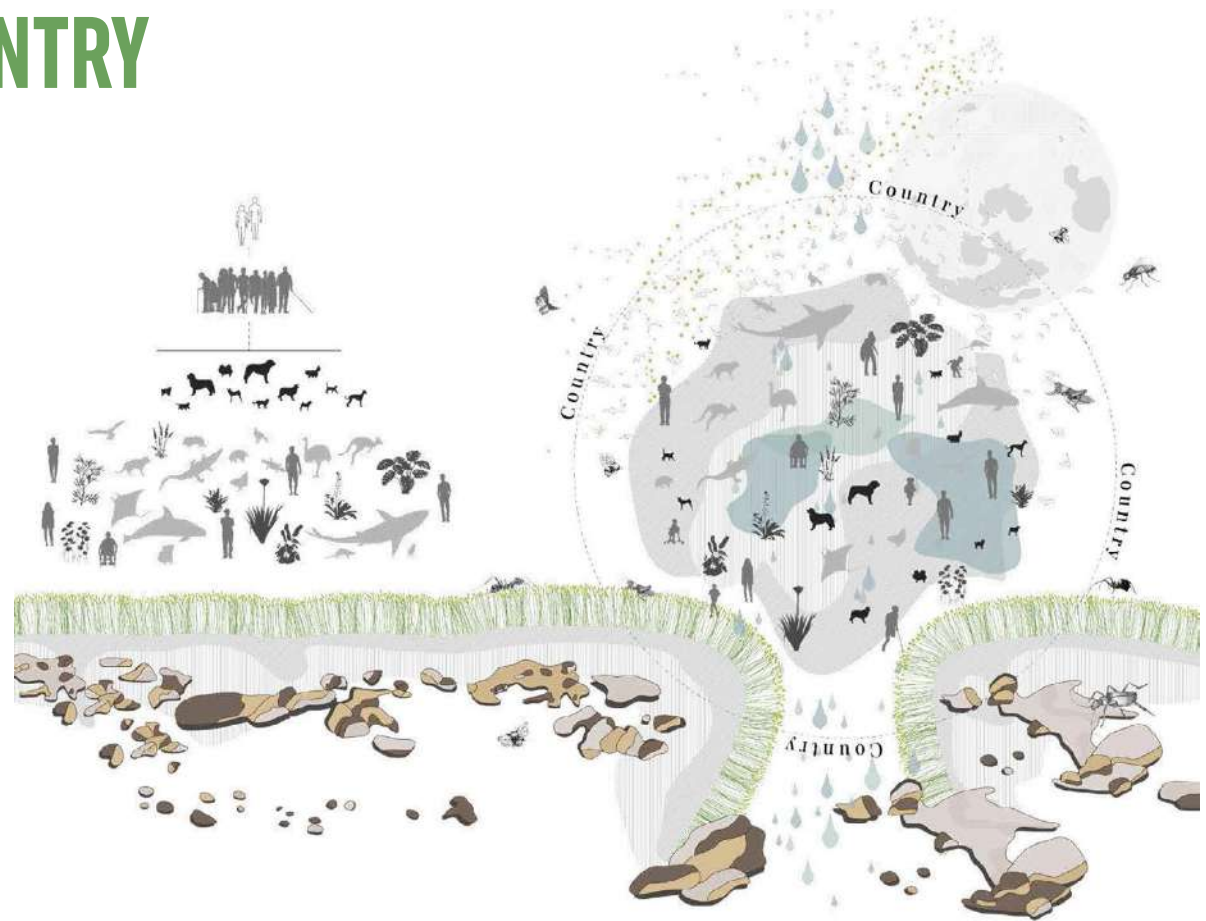
# DESIGNING WITH COUNTRY

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# CONNECTING WITH COUNTRY

**THE VISION AND MASTER PLAN FOR BRADFIELD IS FOUNDED ON A COMMITMENT TO RECOGNISING AND CARING FOR COUNTRY AND RESPECTING THE CONTINUING CONNECTION FIRST NATIONS PEOPLES HAVE WITH COUNTRY. THIS DOCUMENT OUTLINES HOW THE MASTER PLAN HAS APPROACHED AND RESPONDED TO COUNTRY.**

Information in this document relating to Country has been developed from multiple sources and is the result of input, advice and collaboration between WPCA, Hatch RobertsDay, Turf, Turner, Bangawarra, GHD, Zion and Traditional Custodians. We acknowledge all contributors to this collective work.

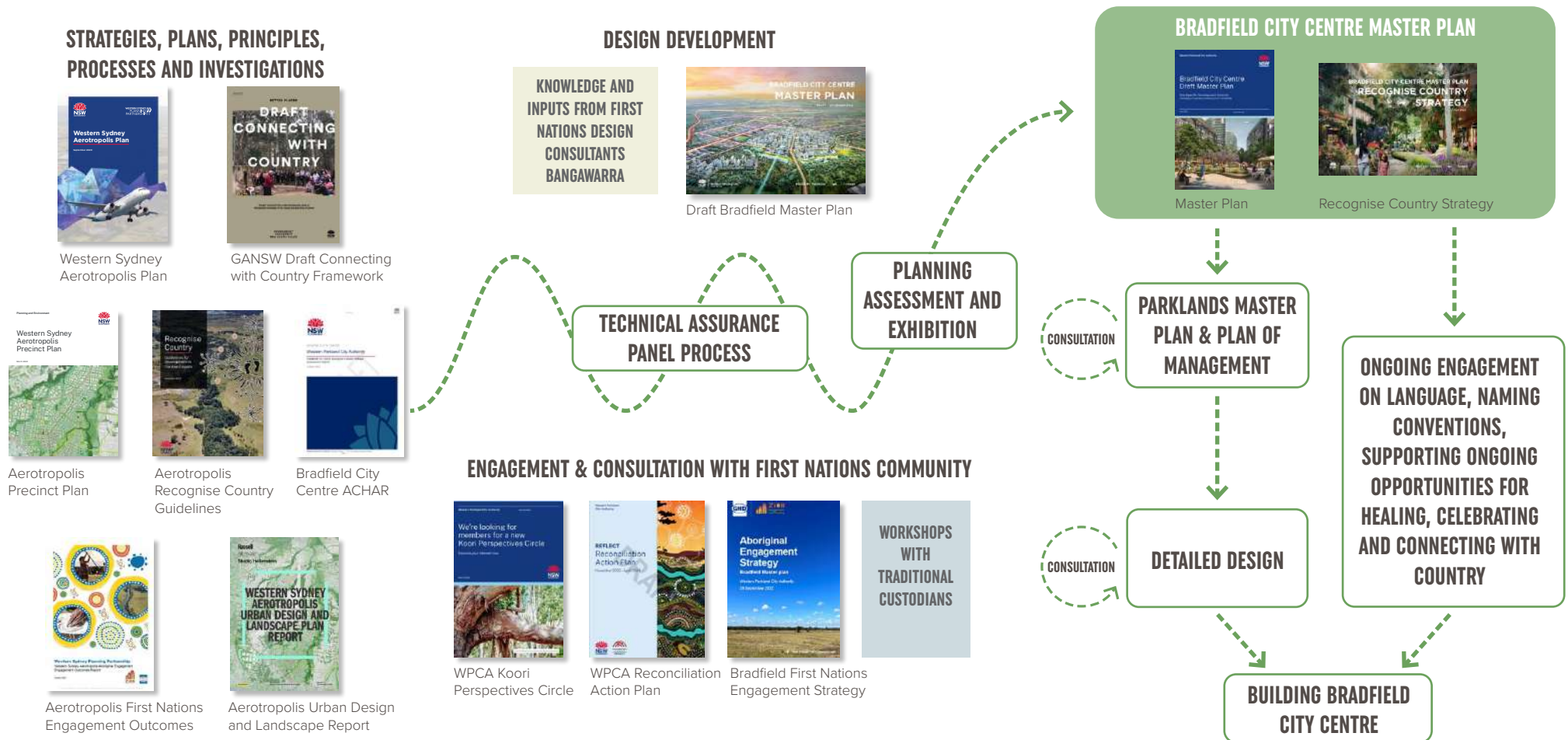


## SEEING, THINKING AND DESIGNING DIFFERENTLY

The conventional anthropocentric approach to design (left) compared to the non-hierarchical perspective guiding First Nations practices (right), which considers all of the entities of the land, soil, rocks, sky, water, plants, animals, stories, and people as independent and held in relation to one another.

# PROCESS OF DESIGN AND ENGAGEMENT

DESIGNING WITH COUNTRY IS A NON-LINEAR PROCESS OF SHARING, TESTING, LISTENING AND RESPONDING. THE DIAGRAM BELOW ILLUSTRATES THE PROCESS THAT HAS AND CONTINUES TO OCCUR.



# WESTERN SYDNEY AEROTROPOLIS FIRST NATIONS ENGAGEMENT OUTCOMES

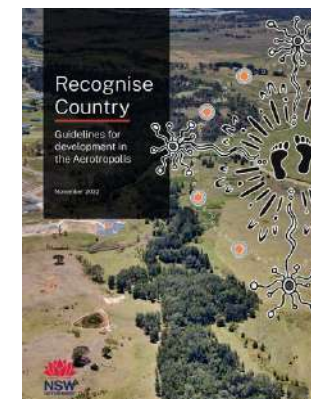
Theme	Opportunity	Master Plan Response
Cultural celebration	Place naming	Language and naming are being addressed in a separate parallel process.
	Artwork and installations	The Master Plan landscape concepts and Arts Strategy prioritise local (Dharug) First Nations public art and themes that foster connection to Country. Further consultation will be required for specific artworks and narratives/ stories.
	Cultural design	The Master Plan principles and concepts for all public spaces, the Green Loop and built form prioritise Country and First Nations stories and cultural values and the layout has been designed to connect key places of cultural value. The specific stories and themes to be referenced in detailed design will continue to be explored through the engagement process.
	First Nations place	The Master Plan concepts show dedicated gathering spaces for First Nations communities to gather and connect to culture and Country in Central Park, Ridge Park, the Green Loop, all local parks and the Moore Gully/ Thompsons Creek Parklands - all of which use a Country-first design approach.
Employment and procurement	Industries and future employment	Ongoing opportunities for First Nations employment and procurement will be managed by WPCA separately to the Master Plan design and approval.
	First Nations employment and procurement targets	
	Local jobs for local First Nations communities	
	Overcoming barriers	
Infrastructure and facilities	Service delivery	Delivery of services, cultural infrastructure and business employment hub will be managed by WPCA separately to the Master Plan design and approval. Indicative locations and provision has been made for cultural infrastructure in the Master Plan and Social Infrastructure Strategy, however the specific design, location and timing is subject to further engagement.
	Cultural infrastructure	
	Business/employment hub	
	Transport	As per TfNSW Future Transport Strategy there will be further rail connectivity complemented with rapid bus services north, south and east to Liverpool, as well as local bus services. Overall Bradfield will have an exceptional public transport connectivity to Greater Sydney.



Education	Post-school education pathways	Opportunities for improving First Nations education and training and integrating First Nations culture into education is subject to separate initiatives by WPCA, Education Department and tertiary education providers and is outside the scope of the Master Plan design and approval. The Master Plan makes provision for schools and infrastructure set within an urban environment that prioritises connection to Country in the design of public spaces and buildings.
	Cultural education	
	Work-readiness training	
	School	
Caring for Country	Land management and maintenance	Inclusion of First Nations peoples and knowledge in land management together with opportunities for employment and education are subject to ongoing initiatives by WPCA and relevant agencies throughout delivery, and are outside the scope of the Master Plan design and approval,
	Re-vegetation and planting	
	Employment	
	Education	
Health	Gaps in current health services	The Master Plan and Social Infrastructure Strategy identifies the type and indicative locations for First Nations health facilities and services, however the delivery of services and specific location and timing of facilities will be subject to the delivery program separate to the Master Plan design and approval.
	Combination of First Nations and non-First Nations health services	
	Cultural sensitivity	
	Access	
Housing	Affordable housing	The Master Plan provides a framework for a variety of apartment sizes to be provided in the city centre, however details around the quantity, distribution and design of affordable, extended living and temporary housing is a more detailed matter subject to ongoing management by WPCA.
	Opportunities for extended family living	
	Temporary accommodation	
Cultural tourism	Tours and information	Tourism, markets, arts, makers spaces, galleries and restaurants are all included in the Master Plan vision for a vibrant and culturally inclusive city centre. The detail around delivery, curation and management is subject to separate initiatives by WPCA throughout delivery, separate to the Master Plan design and approval.
	Arts and markets stalls	
	Restaurants and cafes	

# RECOGNISE COUNTRY GUIDELINES

Guidelines section	Master Plan Response
2.1.1 Cultural safety	All Master Plan principles and concepts for the city layout and the design of public spaces, natural areas and buildings prioritises Country and First Nations cultural values. The process started with Precinct Planning and early master planning, is continuing with current engagement and design evolution, and will continue to occur into the future with detailed design, delivery and management. In particular public space design including layouts, connections, planting, materials and artworks have been approached with the aim to provide comfortable, safe places to connect with Country and culture.
2.1.2 Meaningful engagement	Comprehensive engagement with First Nations peoples has occurred through Precinct Planning, early master planning and infrastructure planning (eg. Sydney Metro) and continues to occur presently to further listen and refine the design. Further engagement is planned throughout detailed design and delivery. Overall there is a genuine attempt to listen, learn and co-design with First Nations peoples to deliver a new benchmark for development.
2.1.3 Economic development opportunities	The Master Plan provides a high level framework to deliver a city centre that will create a range of high value jobs, business opportunities, creative sectors and education and training. Specific opportunities and initiatives for First Nations peoples will continue to be pursued and managed by WPCA separately to the Master Plan design and approval.
2.2.1 Cultural values and heritage	Cultural values have been identified through the Precinct Plan and master planning investigations and engagement including places of value (Thompsons Creek, Moore Gully ENV, Ridge Park ENV), connections between places of value and respect for water systems. Two locations of heritage value have been identified for archaeological protection along Moore Gully and Thompsons Creek with the landscape designed to avoid disturbance in these areas where possible.
2.2.2 Landscape	The Master Plan is landscape-led stemming from the Precinct Plan which established the blue-green network as a key structuring element. The Moore Gully / Thompsons Creek parkland is proposed to be significantly expanded to let Country regenerate and important area of high quality native vegetation are being protected and enhanced in Moore Gully and Ridge Park. Ecological links are proposed through a Green Loop weaving around the city and green streets with extensive planting for tree canopy as well as mid-low level vegetation. The links between ridge and creek are connected via the streets and the pedestrianised Green Loop with legible connections between key civic spaces. The landscape concepts prioritise local endemic species to honour the original landscape.



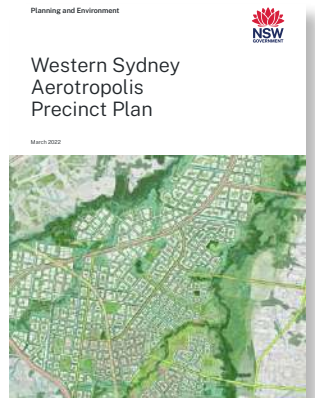


2.2.3 Water	The Master Plan is responsive to the water quality and management requirements and flood mapping set out in the Precinct Plan to protect Wianamatta. An integrated system of water detention, cleansing and recirculating is proposed to enable water to be used in the natural and urban systems, and maintain pre-development flows into the waterways. In doing so a natural wetland system is proposed in the wet areas of Moore Gully to regenerate biodiversity of the area. The master plan orients the city to the parklands and water systems with a public pedestrian promenade along this interface. Water is also proposed to be integrated into the parks and streets where possible (within the capacity of the water system) for example with fountains and shallow streams. A naturalised outdoor swimming area is proposed near Moore Gully in lieu of a conventional indoor aquatic facility to celebrate water in the landscape setting.
2.2.4 Parks and open space	A range of park types and sizes are proposed including: <ul style="list-style-type: none"> <li>- Central Park as a central welcoming gathering place for all and space for markets and small events;</li> <li>- Ridge Park with a focus on ecological protection, First Nations cultural education and seeing Country;</li> <li>- Moore Gully/ Thompsons Creek regional parklands for Country to regenerate, water to flow, passive walk trails, places of quiet respite, semi-private cultural spaces, plus nodes of activity, recreation and events nearer the city;</li> <li>- Local parks for more intimate gathering spaces.</li> </ul>
2.2.5 Caring for Country	The Master Plan preserves existing high quality ecologies in Ridge Park, Moore Gully and Thompsons Creek and proposes additional planting and revegetation with local endemic species to restore Country. The management of water has been considered in an integrated way to maintain and restore waterway health and increase biodiversity of riparian areas.
2.3.1 Culturally responsive design	The Master Plan sets out principles for landscape and built form design that prioritise local plants and materials, reference local (Dharug) narratives, integrate local (Dharug) art, and work with natural systems including ventilation, solar access and shade, views of Country, interaction with Country, and minimising waste and consumption of resources such as energy and water.
2.3.2 Culturally responsive social infrastructure	The Master Plan and Social Infrastructure Strategy identifies the types and indicative locations for First Nations cultural infrastructure including cultural centre, galleries, health facilities and child care. The delivery of services and specific location and timing of facilities will be subject to the delivery program separate to the Master Plan design and approval.
2.3.3 Culturally responsive public art	The Master Plan landscape concepts and Arts Strategy prioritise local (Dharug) First Nations public art and themes that foster connection to Country. Further consultation will be required for specific artworks and narratives/ stories.
2.4.1 Place naming	Language and naming are being addressed in a separate parallel process from Master Plan through engagement with Traditional Custodians.
2.4.2 Wayfinding and signage	The Master Plan landscape concepts and planting palettes identifies preliminary palettes to assist with natural wayfinding and suggests the use of art, signage, language, animal markings, paving, lighting, materials and views to provide more intuitive wayfinding around the city and to places of cultural value.

# PRECINCT PLAN - RECOGNISING COUNTRY

## Objectives

- Facilitate the conservation of First Nations heritage items and areas of cultural heritage significance in accordance with the requirements of the National Parks and Wildlife Act 1974.
- [REDACTED]
- Ensure development is designed to care for and connect to Country.



Requirements	Master Plan Response
Development applications are to retain access to and connect significant First Nations heritage and areas of cultural value, conservation corridors and other identified areas of significant First Nations heritage.	The Master Plan will enable Thompsons Creek, Moore Gully, the Ridge Park and connections between to become publicly accessible again.
Development applications that propose disturbance to the landscape in areas of [REDACTED] or include known First Nations cultural or archaeological sites, are required to include an assessment of impacts on archaeological and or cultural heritage values and significance. Where specific measures are required to mitigate or avoid impacts, applications are to include a cultural heritage management plan or conservation management plan prior to the issue of a construction certificate.	An archaeological and cultural heritage assessment has been undertaken for the Master Plan and has identified [REDACTED] for archaeological protection where possible in Moore Gully and Thompsons Creek. Further investigations and processes required at Development Application stage.
[REDACTED] and grinding grooves are to be protected and preserved in situ, and management plans are to be prepared to demonstrate how these items are to be retained and protected.	Culturally significant sites and trees are being protected in the Master Plan. A management plan is to be prepared for Thompsons Creek Parklands including these areas.
Interpretation and story-telling required to inform impact assessments, mitigation measures and management plans are to be undertaken in consultation with, and walking on Country with, the Traditional Custodians and Local First Nations Land Councils (LALCs).	Language and naming are being addressed in a separate parallel process from Master Plan.

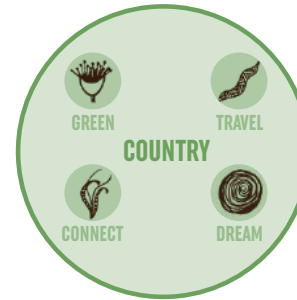
# BRADFIELD MASTER PLAN VALUES

FOUR KEY VALUES PROVIDE THE FOUNDATION FOR THE MASTER PLAN AND COLLECTIVELY FORM THE CONNECTING WITH COUNTRY FRAMEWORK TO ENSURE COUNTRY UNDERPINS ALL ASPECTS OF CITY MAKING.



# BRADFIELD KEY VALUES

FOUR KEY VALUES PROVIDE THE FOUNDATION FOR THE MASTER PLAN. ALL VALUES ARE SHAPED BY COUNTRY AND FIRST NATIONS CULTURAL VALUES.



## GREEN

### A PARKLAND CITY EXPERIENCE

Set on the water Country of Wianamatta-South Creek, Thompson's Creek and Moore Gully, Bradfield City Centre will set a new benchmark for Designing with Country, through the blue-green city with a network of parklands, leafy neighbourhoods, glistening waterways, water on the surface and within the streets to cool and enhance the City Centre experience.

Bradfield will embody the most aspirational greenery targets for the public domain, tree canopy and buildings and will feature a network of parklands, the Green Loop and leafy neighbourhoods.

The City's reputation as the most liveable, resilient, greenest and sustainable city will be unrivalled.

Key elements to consider include:

- Protect and restore ecologies - caring for Country;
- [REDACTED]
- Create complete ecologies integrating natural ecosystems;
- Connected ecosystems through blue-green infrastructure;
- Respecting natural water flows;
- Pedestrianised Green Loop to integrate and prioritise Country and First Nations culture in the city;
- People as a part of Country - consider all other living and non-living elements of this place;
- Green streets and places - green and permeable surfaces, tree canopy;
- Urban heat mitigation.



## TRAVEL

### A GLOBAL DESTINATION

Bradfield will be a global gateway via the Western Sydney International Airport and transit connections to Greater Sydney, will be the economic and employment heart of Western Sydney, and is envisaged to become a destination of choice for travellers and a location of choice for business due to its excellent connectivity.

Bradfield will also connect to First Nations cultural narratives and with the richness of the world's oldest living cultures expressed throughout the urban fabric of the city. Interwoven is a celebration of the diverse ethnicities that exist in Western Sydney to create a unique tapestry of culture.

Key elements to consider include:

- Spaces to acknowledge, respect, learn about and value Country;
- A unique Western Sydney experience and sense of place, character and identity;
- A city defined through travel and journey;
- A legible city with wayfinding connected to place;
- Critical mass to support Intensity and diversity of activity and uses for work, visit, study, live, and invest;
- Places for all regardless of age, gender, income, ability, culture or religion.



## CONNECT

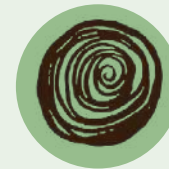
### CONNECTED GLOBAL & LOCAL

Bradfield will be the most well connected city in Australia, centred on transit with future multiple rail lines and rapid bus connections, and with the most walkable and bikable urban design, and street network providing an equitable and efficient transport system.

Bradfield aims to be an exemplar model of an urban city with intricate connection to Country and local (Dharug) First Nations culture, knowledge and stories, as well as the most culturally diverse and welcoming global city.

Key elements to consider include:

- Dedicated First Nations cultural space;
- Easy, safe and equitable access by all modes;
- Inclusive and safe for all ages, genders, race and abilities;
- Streets as places;
- Fine grained cultural and economic exchange connected to place;
- An interconnected city - physically, visually, and culturally;
- Connecting to Sky Country;
- Buildings facilitate connection to Country;
- Arts and culture for storytelling;
- First Nations language embedded across the city in consultation with traditional custodians;
- Social and spiritual connectedness;
- Access to housing, employment, education, health, recreation and community facilities.



## DREAM

### INNOVATION & GROWTH

Lets dream and imagine for today, tomorrow and long into the future. Bradfield represents the future of city making, and the future of industry and employment in the Aerotropolis that is safe, innovative and sustainable.

Attracting innovation industries with centres of research and advanced manufacturing. The city will also foster partnerships between industry, universities, vocational education and training (VET) providers and STEM schools to align skills with employer needs and drive innovation.

The city will be a leader in sustainability including energy, water, waste and health throughout the public domain and buildings; embed smart technologies and infrastructure; and a highly walkable and transit-oriented city.

Key elements to consider include:

- Diverse employment and industry supporting collaboration, innovation, research, education;
- Working with Traditional Custodians to listen and respond to Country;
- Sustainability - water neutral, no waste to landfill, climate adaptation, land management, locally responsive;
- Knowledge sharing to integrate First Nations knowledge in innovation and science;
- Adaptive, flexible and multi-purpose spaces and buildings;
- Building for ecologies;
- Support and capacity building for First Nations communities and business enterprise;
- A city that cares for physical, mental, cultural and emotional health.

# SUMMARY OF MASTER PLAN RESPONSE TO COUNTRY

- 1 **Central Park** — A key arrival point to the city that welcomes all and acknowledges and respects Dharug Country.
- 2 **Ridge Park** — A place that preserve ecologies with spaces and facilities to see and learn about Country.
- 3 **Moore Gully** — Preserving existing native vegetation and restoring the creek corridor and waterway health.
- 4 **Thompsons Creek** — A regional parkland that protects and restores ecologies, habitats and waterways and offers a range of active and passive opportunities to connect with Country.
- 5 **First Nations Cultural Space** — A dedicated space for First Nations cultural practices.
- 6 **Green Loop** — A pedestrianised ecological cultural link weaving through the city where Country and First Nations cultural values and stories are prioritised.
- 7 **Water Management** — An integrated system of natural wetlands that manage stormwater flows and quality and provide habitat for native species.
- 8 **Views** — Visual connections between key spaces and from the higher ridges to lower lying creeks and ecologies.

**Landscape and Ecology** — Use of local endemic species to support local ecologies, local materials and local art.

**Wayfinding** — Using Country and First Nations knowledge and values to provide intuitive wayfinding around the city and to key destinations.

**Responsive Buildings** — Responding to the local climate, materials and ecologies with thoughtful, innovative design and technologies.

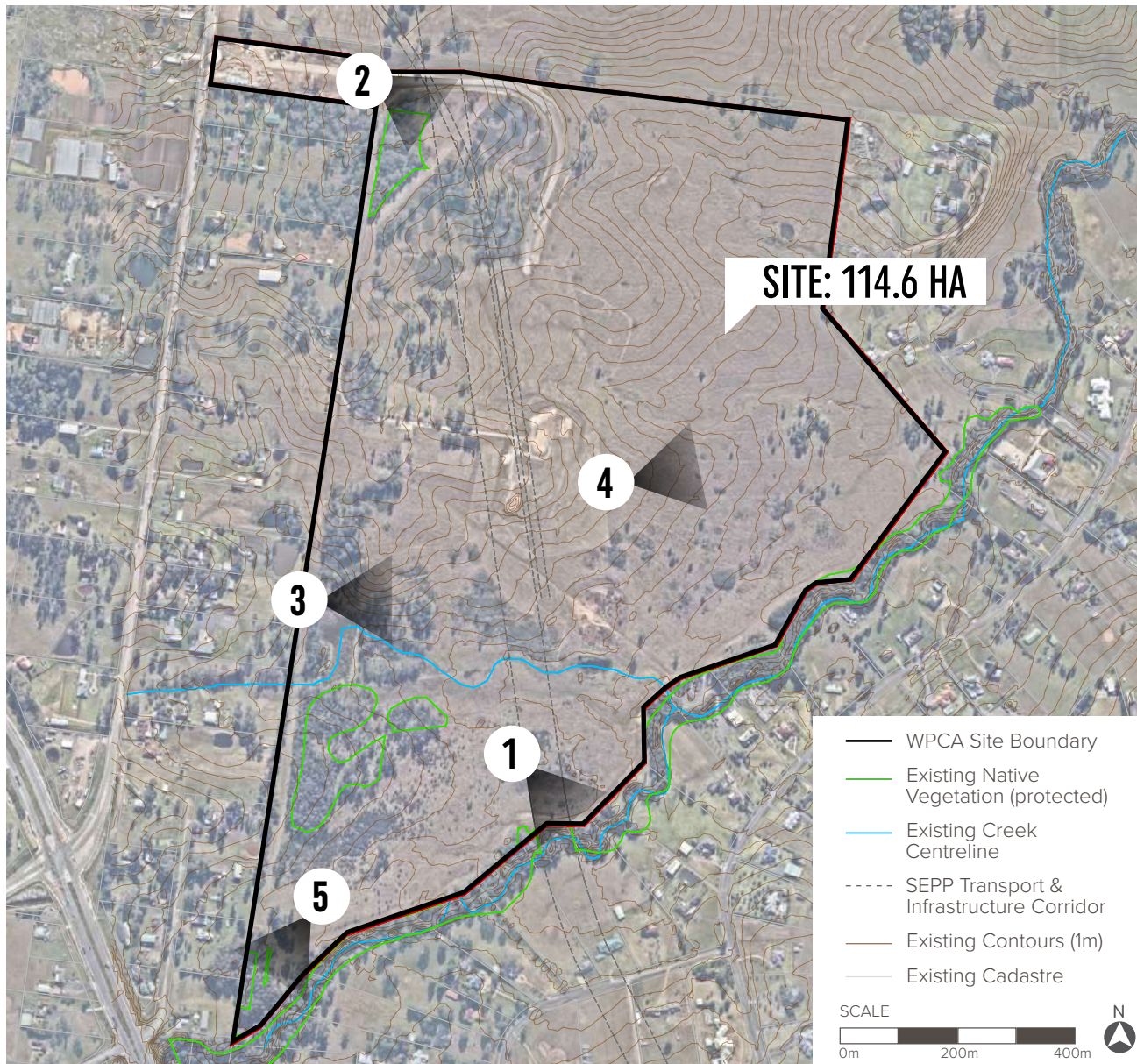


The Master Plan does not propose permanent development in the existing 60m wide Special Purposes 2 (SP2) Infrastructure Zone corridor. A decision regarding future rail infrastructure in the corridor is the subject of review by Government.



*Artists impression only, subject to detailed design.*

# STARTING WITH COUNTRY



**1 CREEK**

Dense, leafy riparian ecology along Thompsons Creek, which is currently inaccessible.



**2 RIDGE-LINE**

The highpoint of the site and main entry experience. Undulating land falls from west to east creating long views.



**3 WETLAND**

Area of wetlands/ ground water on the western edge of the site featuring two water bodies amongst the woodlands.



**4 GRASSLAND**

This broad and gently undulating area covers the central parts of the site featuring overgrown grassland.

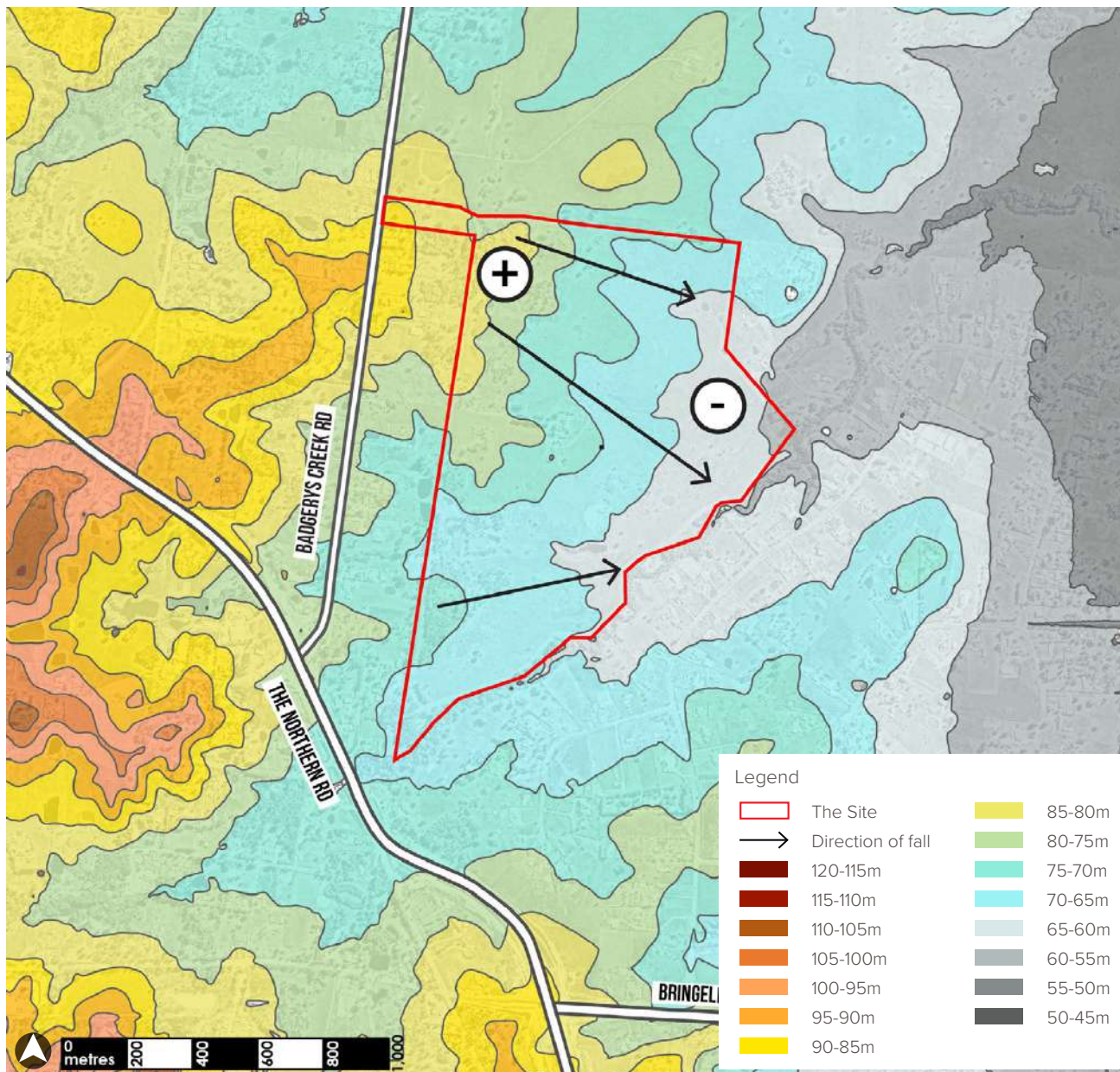


**5 WOODLAND**

Dense patches of Cumberland Plain and Alluvial Woodlands provide habitat areas in discrete locations across the site.



# TOPOGRAPHY



The topography of the site is characterised by a gentle slope falling towards Thompsons Creek in the south east, with a total fall of 25m creating approximately 1:40 gradient.

## Key Opportunities

- The slope towards Thompsons Creek establishes the framework for drainage and the blue grid;
- The high point to the north-west provides long vistas to the south-east across Thompsons Creek and beyond;
- Gentle downward slope towards creek provides natural wayfinding and attraction to the parklands.

## Master Plan Response

- Design with respect to the topographic landscape of the site;
- Establish a design framework that considers view corridors, water movement and people movement that respond to the natural topography.
- Consideration towards reducing 'cut and fill' where possible.

# VIEWLINES

1. View from the north-west ridge looking south-east



From the ridge there are long, wide views across the grassland landscape to the distant tree canopy lining Thompsons Creek.

### Key Opportunities

- The local high point to the north-west provides long vistas to the south-east across Thompsons Creek and beyond;
- Gentle downward slope towards creek provides natural wayfinding and attraction to the parklands.

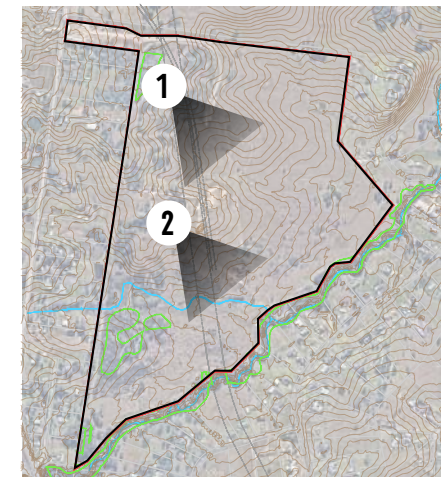
### Master Plan Response

- Establish a design framework that considers view corridors.
- Consider opportunities to create elevated views across Country on structures, roofs and podiums

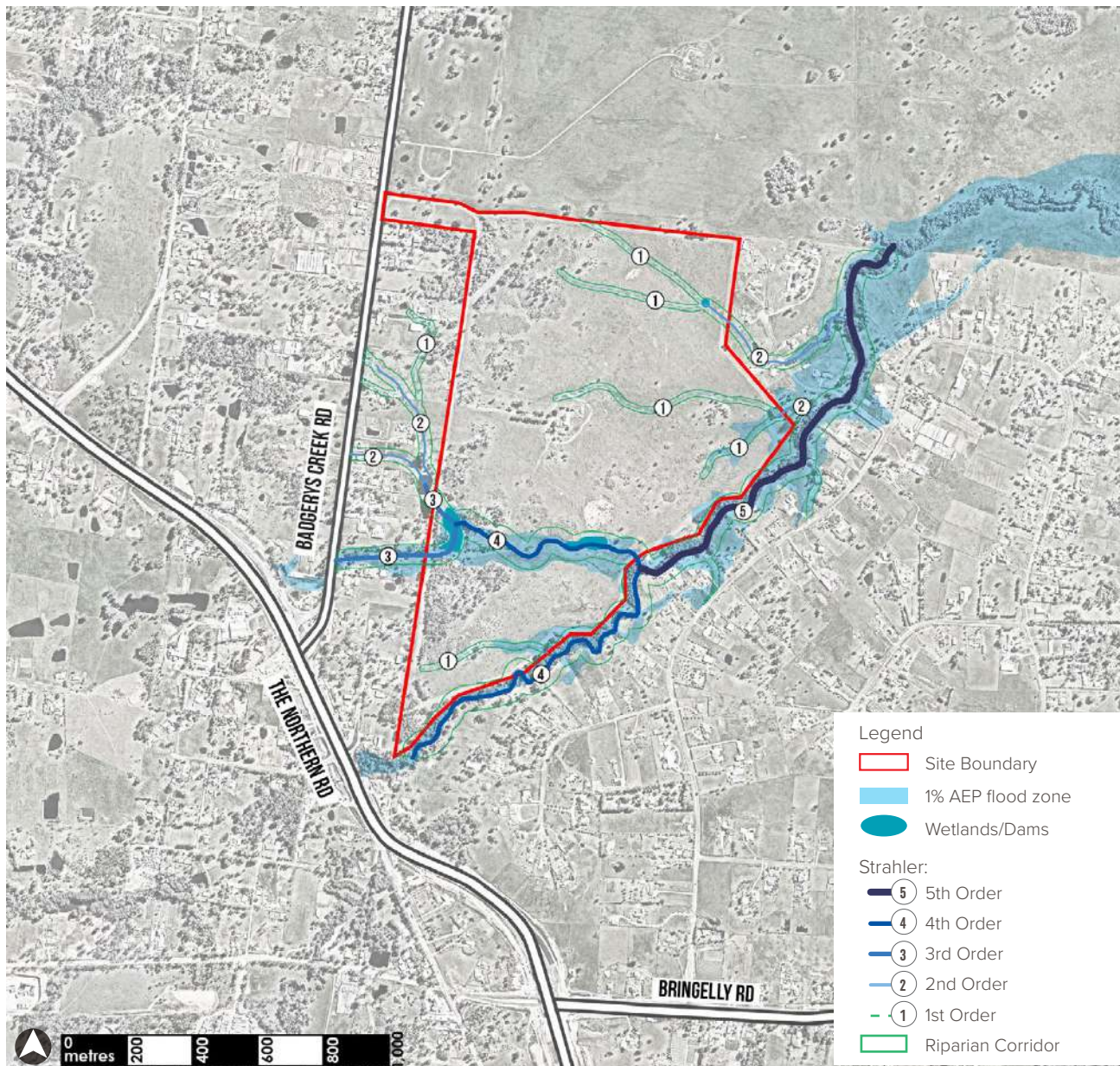
2. View from near the centre of site looking south-east



Location Plan



# HYDROLOGY



**Thompsons Creek and Moore Gully are the most prominent water features on the site and are a key influence on the master plan.**

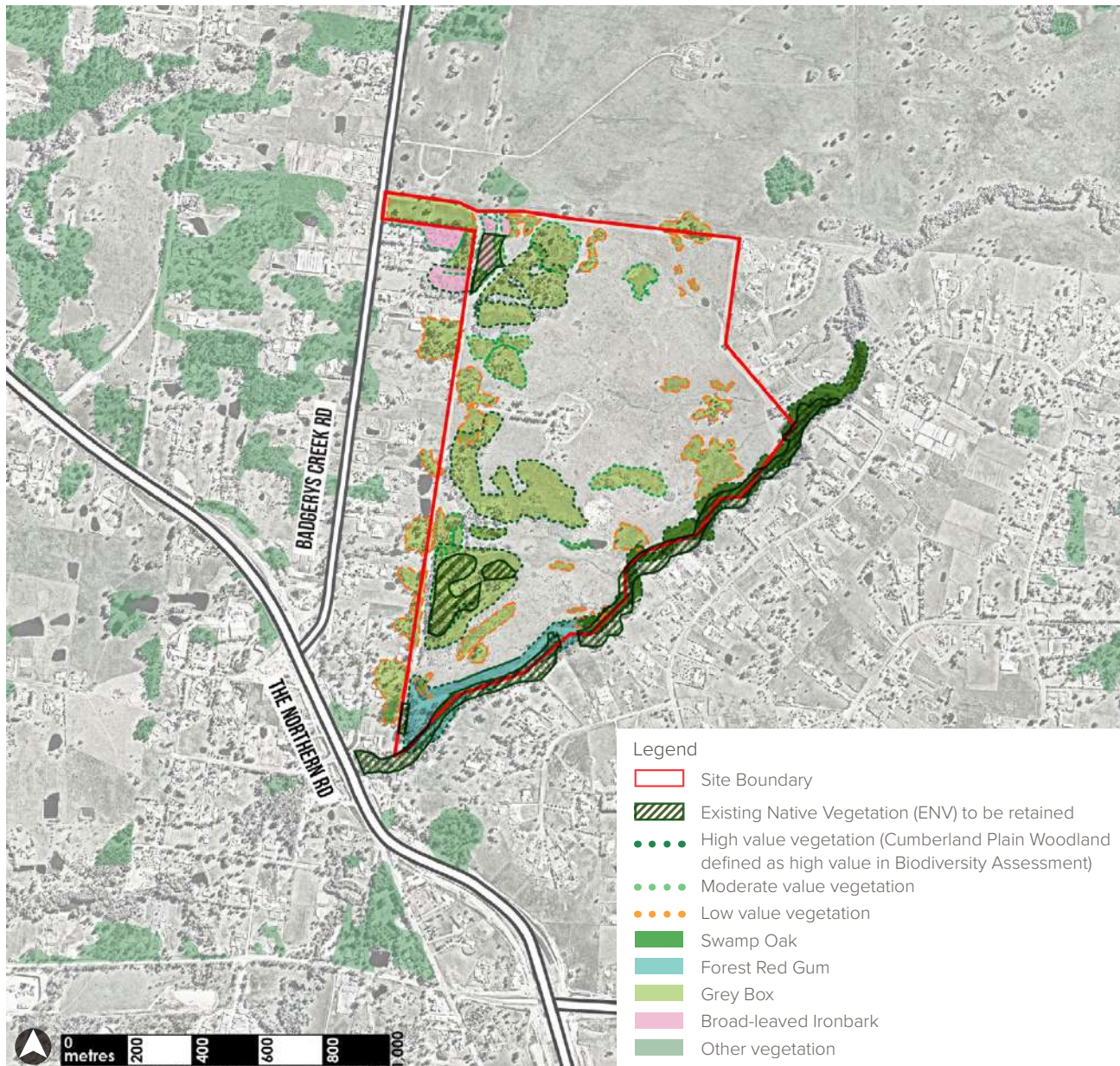
## Key Opportunities

- The waterways are valuable for their cultural significance, amenity, recreation and cooling of the future city;
- Thompsons Creek is to be protected in its natural form to form part of the green and blue corridor of Wianamatta South Creek;
- In its current state, Moore Gully is an opportunity to be rehabilitated and improved;
- Existing farm dams can potentially be utilised for public open space, recreation and irrigation.

## Master Plan Response

- Protect and restore Order 2 and above streams including Thompsons Creek and Moore Gully;
- Integrate Order 1 streams into the public domain and streetscape landscape design;
- Exclude development within the 1% AEP flood zone;
- Manage the risk of floods greater than 1 in 100 year in size.

# ECOLOGY



**A number of ecological communities are present on site including Wetlands, Cumberland Plains Woodland, Regenerative Shrub land, Alluvial Woodland and Endangered Species.**

## Key Opportunities

- Thompsons Creek provides the green and blue spines defining the south and eastern edge of the precinct;
- Significant tree groupings and greenery provide the opportunity to create unique places of natural beauty;
- The majority of mature trees are located in areas identified for protection including Thompsons Creek, Moore Gully and the northern ridge, and will provide amenity and ecological value in the future city;
- The majority of the site does not contain trees and is suitable for urban development.
- The intensification of tree canopy cover and landscaping can reduce ambient temperatures and urban heat island;
- High-quality vegetation on ridges can create an interconnected web of well-located open spaces connected through the Western Parkland City;
- High-quality active and passive open spaces could be created adjacent to riparian corridors which connect ridges to the Wianamatta-South Creek spine.

## Master Plan Response

- Retain Existing Native Vegetation (ENV) identified for protection;
- Retain as much high quality vegetation in other areas where possible or relocate as family groups to retain on-Country where possible.

# FIRST NATIONS CULTURAL VALUES



The Cumberland Plain contains First Nations cultural values in both physical and intangible form. Furthermore, waterways play an important role in First Nations culture for their connection to movement corridors, and cultural practices.

## Key Opportunities

- Embed First Nations cultural understanding and design approach in the master planning process;
- Protect and conserve Cumberland Plain landscape;
- Retention of waterways and trees identified as having cultural value in order to maintain connections and healthy ecosystems;
- Respect the significance of waterways for connection to movement corridors, resources and nutrition;
- Use sustainable materials (prioritise recycled materials from the area) and native endemic plants from the area;
- Use correct terminology, do not use the past tense and ensure that it is clear throughout the development that this is, always has been and always will be First Nations land.
- Where possible, impact should be avoided to the identified First Nations heritage sites recorded in the AHIMS database. An approved First Nations Heritage Impact Permit (AHIP) is required if impacts to sites cannot be avoided.

## Master Plan Response

- Respond to and be consistent with the Aerotropolis Recognise Country Guidelines, and the Bradfield First Nations Cultural Heritage Assessment Report;
- Protect and conserve areas of mapped ENV [REDACTED] Cumberland Plain woodland and Thompsons Creek.
- The 2x 50m archaeological protection zones should be protected from harm where possible, or if impacted a salvage excavation program would be required with an First Nations Heritage Impact Permit (AHIP).



# GREEN

## A PARKLAND CITY EXPERIENCE

Set on the water Country of Wianamatta-South Creek, Thompson's Creek and Moore Gully, Bradfield City Centre will set a new benchmark for Designing with Country, through the blue-green city with a network of parklands, leafy neighbourhoods, glistening waterways, water on the surface and within the streets to cool and enhance the City Centre experience.

Bradfield will embody the most aspirational greenery targets for the public domain, tree canopy and buildings and will feature a network of parklands, the Green Loop and leafy neighbourhoods.

The City's reputation as the most liveable, resilient, greenest and sustainable city will be unrivalled.

Key elements to consider include:

- Protect and restore ecologies - caring for Country;
- [REDACTED]
- Create complete ecologies integrating natural ecosystems;
- Connected ecosystems through blue-green infrastructure;
- Respecting natural water flows;
- Pedestrianised Green Loop to integrate and prioritise Country and First Nations culture in the city;
- People as a part of Country - consider all other living and non-living elements of this place;
- Green streets and places - green and permeable surfaces, tree canopy;
- Urban heat mitigation.

# PROTECT AND RESTORE ECOLOGIES

Bradfield City Centre provides an opportunity to protect, foster and design to care for Country. Across the precinct today, many ecologies thrive and call this place home. It is our role as designers to ensure that as this future city evolves, the ecologies are protected and connected to this Country.

## Master Plan Response::

- Protect and restore key existing ecologies across the precinct being Thompsons Creek riparian corridor and native vegetation in Moore Gully and Ridge Park. In these areas, existing vegetation will be retained and supplemented with appropriate endemic re-vegetation as required and earthworks, streets and drainage designed to have no negative impacts to these areas.
- Areas of protected ecologies to have low levels of lighting and the impacts of light spill to these areas is to be minimised.

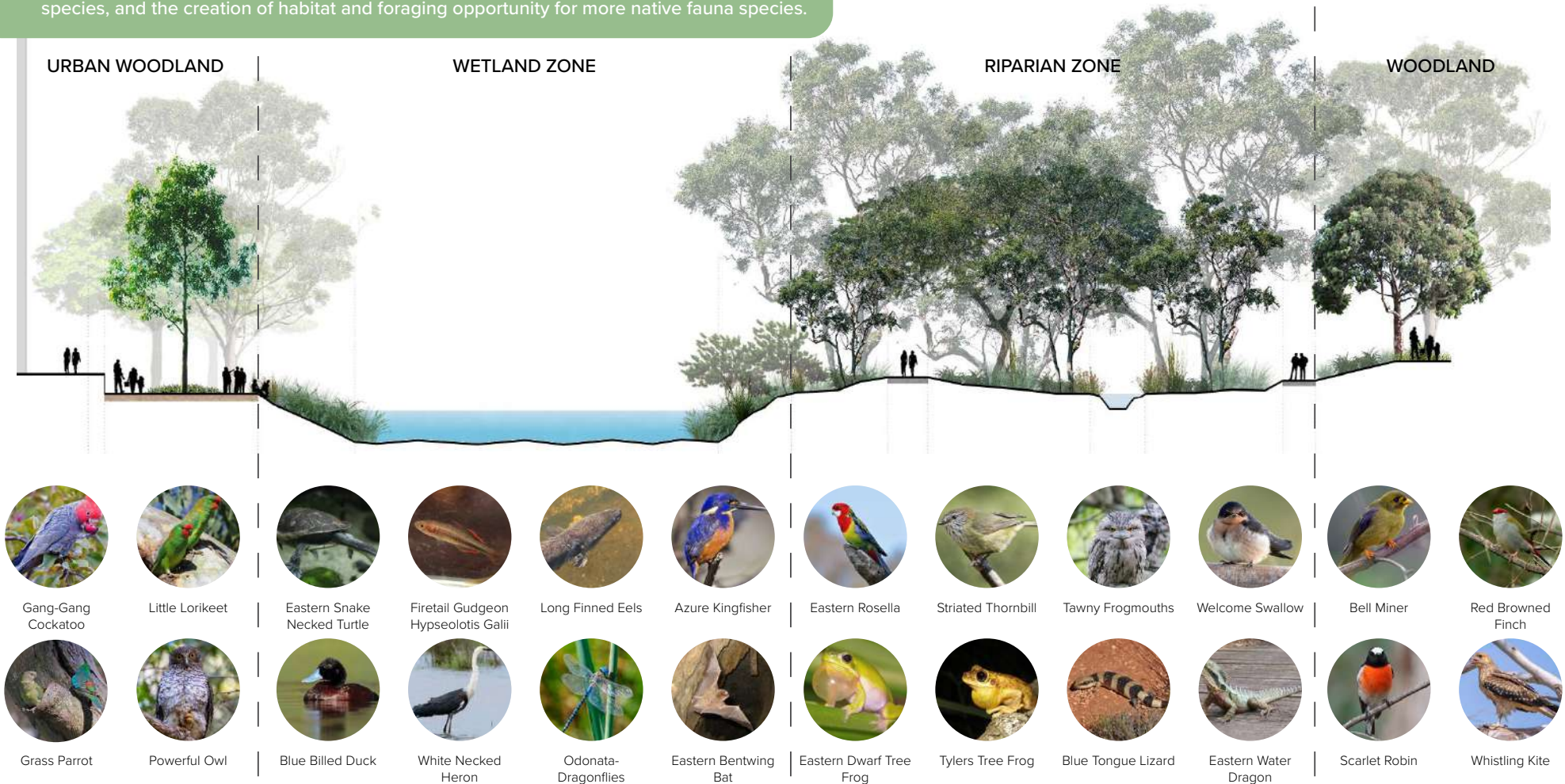
*The Master Plan does not propose permanent development in the existing 60m wide Special Purposes 2 (SP2) Infrastructure Zone corridor. A decision regarding future rail infrastructure in the corridor is the subject of review by Government.*



# CREATE COMPLETE ECOLOGIES

**Master Plan Response:**

- Landscaping throughout the city will use local endemic planting in line with the DCP plant species list, and will be tailored for individual spaces through further consultation with Traditional Custodians and botanists on a project basis.
- The restoration concept for Thompsons Creek Parkland presents an opportunity to increase biodiversity through additional planting, particularly of native and endemic species, and the creation of habitat and foraging opportunity for more native fauna species.





# CONNECTED ECOSYSTEMS

The relationship between the city and Country across Bradfield City Centre must be defined by connected ecosystems. The dense urban landscaping across the city must be supported by blue-green ecological networks, all of which opened up to wide expanses of Country beyond the boundaries of this precinct.

## Master Plan Response:

- Connect regional, district and local parks and ecologies via the Pedestrianised Green Loop to create safe corridors for fauna such as birds, bees, butterflies, possums and lizards.
- Consider fauna crossings over/under streets and through development sites to enable safe movement.
- Blue green infrastructure (landscaping, water and drainage infrastructure) designed independent from roadways to mitigate risk of pollution and integrated into the urban landscape, including restoration of wetlands in Moore Gully. Refer to the Water Balance diagram.

*The Master Plan does not propose permanent development in the existing 60m wide Special Purposes 2 (SP2) Infrastructure Zone corridor. A decision regarding future rail infrastructure in the corridor is the subject of review by Government.*















# CONNECTED ECOSYSTEMS

## Master Plan Response:

The Thompsons Creek/ Moore Gully Parkland is culturally and ecologically meaningful land that connects into the broader Wianamatta Creek. The parkland concept prioritises environmental regeneration while integrating water quality, water reuse and flood management requirements to create a highly valued and unique place for the city.

The blue green infrastructure manages frequent flows which are harvested, flows up to the 1% AEP\*\* which are detained and overflow to the creek and flows up to the PMF\*\*\* which bypass to the creek. Frequent flows through the water bodies are captured at the downstream end for reuse for irrigation and potential water features and recirculated to the upstream pond.

- |  |  |
|--|--|
|  Master Plan Boundary        |  Rail Corridor           |
|  40m Core Riparian Zone     |  Wetland                |
|  Creek                      |  Bio Retention Pond     |
|  Vegetation Buffer          |  Path                   |
|  Existing Dam               |  Environmental Planting |
|  Existing Native Vegetation |  Open Space             |



**NOTE:**

\*\*An 'Annual Exceedance Probability' (AEP) is the probability that a flood of a given (or larger) magnitude will occur within a period of one year. For example, a 1% AEP Flood means you have a 1-in-100 chance that a flood of that size (or larger) could occur in any one year.

\*\*\*Probable Maximum Flood (PMF) is the largest flood that could conceivably be expected to occur at a particular location, usually estimated from probable maximum precipitation. The PMF defines the maximum extent of flood prone land, that is, the floodplain.

\* Design based on indicative Top of Bank

SCALE



0 150 300m





*Artists impression of the Moore Gully natural-style swimming pool, planned as a major destination attraction for recreation to celebrate the convergence of water from the natural systems and the city and connect the City with its landscape, subject to detailed design.*

# PEDESTRIANISED GREEN LOOP

## Master Plan Response:

The Pedestrianised Green Loop is a defining urban experience of Country in Bradfield City Centre. It is more than just a green spine that links the city, ridges and the creek - it is a dedicated pedestrian and ecological boulevard defined by Country and the stories and art of local (Dharug) First Nations people. The Green Loop is clearly defined in the Master Plan and guidance provided for delivery.

- Dedicated pedestrian space and car-free zone. Green and well shaded with tree canopy cover.
- Use only local endemic planting of lower, middle and upper canopies with species responsive to the micro-climate (ie. low light planting integrated into very dense and overshadowed zones).
- Prioritise the use of natural materials such as stone, soil, sand and grass to create ephemeral experiences.
- Waterscapes may be integrated subtly but should avoid constantly running water sprayers or permanent pumping systems to avoid wasting water resources.
- Pedestrian priority/ signalised crossings at streets.
- Investigate wildlife crossings across streets such as rope crossings and vegetated bridges.
- Provide diverse and bespoke street furniture and public seating that integrates with landscaping and minimises hard edges.
- Art and sculpture must prioritise local (Dharug) First Nations art/making styles and other methods of visual storytelling and should avoid generic or imported styles.
- A mix of tree canopy, ground level setbacks, extendable awnings and limited portions of low impact awnings/ canopies can be used to provide intermittent weather cover but should be designed to maintain connections to sky Country. Continuous awnings / shelter is not required or desired. Shelter structures associated with buildings should not create a sense of privatisation.
- Building frontages should:
  - Create strong visual connections to Sky Country and [REDACTED] maintain sun exposure to upper canopy plants;
  - Provide level access to all frontages and entrances.
  - Articulate a human scale with the use of fine grained materials and avoid expansive glass shop fronts to lower storeys;
  - Balconies, windows, building forms and other spatial elements should respond to and interact with upper canopies and animal life
  - Lower level public atriums and voids within buildings should 'pull in' the natural elements of the Green Loop;
  - Minimise services and infrastructure on this frontage.
- Maximise active frontages that prioritise public and communal uses including:
  - Outdoor dining under canopy shade;
  - Bespoke and small scale retail and markets;
  - Cultural uses; and
  - Other informal performance and cultural practice.





Coffee.cc

SOCIA

Artists impression of the Green Loop, subject to detailed design.

# PEOPLE AS A PART OF COUNTRY

Public domain material selection should prioritise the following:

- Sustainable, renewable, low-carbon, recycled, and non-composite materials;
- Locally sourced and procured materials with priority for the local suppliers and First Nations owned and run businesses;
- High quality, durable and robust materials at a minimum comply with the relevant Australian Standard, provide a comfortable environment minimising the UHI effect;
- Site specific, cohesive and consistent;
- Reduce the use of virgin materials prioritizing materials with a high recycled content and design to reduce waste;
- Where temporary structures are being built, piloting new sustainable and durable materials should be considered.
- Materials that are low maintenance and flexible for diverse spaces ensures long term procurement and easy repairing to facilitate future city progress and transformation;

## DESIGN WITH COUNTRY

- Reinforce the distinct character of Green Loop by using fine grained material
- Minimise hard edges between buildings, footpaths, and landscaped interfaces across the Green Loop
- Reuse of materials on site during demolition and construction process to maximise sustainability and ensure they remain on Country - retain unique sense of place and reference local history
- Materials used from off-site to be considered for their relevance/ appropriateness to this Country
- Variations in pavement material, colour, and finish for stream interpretation, way-finding, added interest, and breakup of large monotonous spaces
- Reduce urban heat load by limiting thermal mass materials



Flora & Fauna



Geology & Riverbed



Low Carbon Concrete

Sandstone  
(from off-Country - consider if appropriate)

Timber Deck

Gravel



Walls

Boulders

Gabion walls

Mesh

# PEOPLE AS A PART OF COUNTRY

## START WITH COUNTRY FIRST

**ADAPTIVE AND FLEXIBLE FORMS THAT RESPONDS TO THE LOCATION, CLIMATE AND ENVIRONMENT. DESIGNED FOR A GLOBAL CITY BUT BALANCES LOCAL NEEDS AND TRADITIONS.**

- Provide a site specific and unique response to place
- Use recycled, natural and local materials, colours and landscape
- Design interfaces to the public domain that blur the boundary between green space and urban form
- Facade design that responds to Country through openness, natural ventilation, habitat creation, experiences and physical connections



## CONNECTED

**PROTECT AND RESPOND TO KEY VIEWS AND VISTAS TO REINFORCE THE CONNECTION TO COUNTRY**

- Link ridge to creek and everything in between by providing views and sight lines through buildings to key spaces and places
- Maintain views to the sky along key connections





# TRAVEL

## A GLOBAL DESTINATION

Bradfield will be a global gateway via the Western Sydney International Airport and transit connections to Greater Sydney, will be the economic and employment heart of Western Sydney, and is envisaged to become a destination of choice for travellers and a location of choice for business due to its excellent connectivity.

Bradfield will also connect to First Nations cultural narratives and with the richness of the world's oldest living cultures expressed throughout the urban fabric of the city. Interwoven is a celebration of the diverse ethnicities that exist in Western Sydney to create a unique tapestry of culture.

Key elements to consider include:

- Spaces to acknowledge, respect, learn about and value Country;
- A unique Western Sydney experience and sense of place, character and identity;
- A city defined through travel and journey;
- A legible city with wayfinding connected to place;
- Critical mass to support Intensity and diversity of activity and uses for work, visit, study, live, and invest;
- Places for all regardless of age, gender, income, ability, culture or religion.



# CULTURAL SPACES

Cultural practices of welcoming have always defined how people move through Country. Smoking ceremonies, dance and storytelling have always been ways local peoples welcome newcomers to Country. These cultural protocols must be translated into the built environment so that all people here develop a sense of connection and welcome to this Country.

## Master Plan Response:

- Create cultural spaces within:
  - a. The Pedestrianised Green Loop;
  - b. Central Park;
  - c. Ridge Park;
  - d. Moore Gully/ Thompsons Creek Parklands;
- Cultural spaces should provide opportunities to acknowledge, respect, learn and value Country through stories, art, wayfinding, ecology, soundscapes, geologies etc.



*Artists impression, subject to detailed design.*

Located in the heart of Bradfield is Central Park, the primary arrival and welcoming place for the city. It is a place that welcomes all with space for gathering, staying and connecting with Country.

# LEARNING ABOUT COUNTRY

**Master Plan Response:**

The concept for Ridge Park is based on preservation of existing ecologies and spaces/ facilities to learn about Country



- 1 **Community Facilities** — such as toilets, change rooms, barbeques and outdoor all-weather spaces.
- 2 **Meeting space** — with capability to accommodate groups for education/ events surrounded by dense screening vegetation for privacy.
- 3 **Viewing platform** — above tree tops with all abilities access to view sightlines, landmarks across Country and day and night sky with educational markers and wayfinding.
- 4 **Restoration and re-purposing** — of existing farm dams to promote ecology including the frog pond, wetland habitat and deck by the waters edge.
- 5 **Retaining existing ecologies** — Greybox Woodland with low shrub/ woodland up to 10m
- 6 **Retaining existing ecologies** — Melaleuca Forest with mature canopy 10-25m.
- 7 **Supporting ecologies** — remove the temporary stage 1 access road and re-vegetate to connect ecologies, and provide plants for cultural practice.
- 8 **Loop pathways** — around and through the existing trees to facilitate active and passive pedestrian movement and activities.
- 9 **Sensitive interfaces** - generous setbacks, public shared paths, minimise overshadowing, high quality building frontages responsive to Country and minimise light spill to ecological areas.



# LEGIBLE WAYFINDING CONNECTED TO COUNTRY

Wayfinding and public transport across Bradfield City Centre offer the opportunity to connect to and learn from Country for all people. As points of decision, pause and reflection both can be activated by the knowledges, artwork and cultural practices of Country.

## Master Plan Response:

- Use of elements such as art, signage, language, plants, animal markings, paving, materials, creative lighting and sounds and views to provide education and wayfinding connected to Country - to be designed in consultation with Traditional Custodians
- The Green Loop provides a legible pedestrian loop around the city that is connected to Country





# CONNECT

CONNECTED LOCAL AND GLOBAL

Bradfield will be the most well connected city in Australia, centred on transit with future multiple rail lines and rapid bus connections, and with the most walkable and bikable urban design, and street network providing an equitable and efficient transport system.

Bradfield aims to be an exemplar model of an urban city with intricate connection to Country and local (Dharug) First Nations culture, knowledge and stories, as well as the most culturally diverse and welcoming global city.

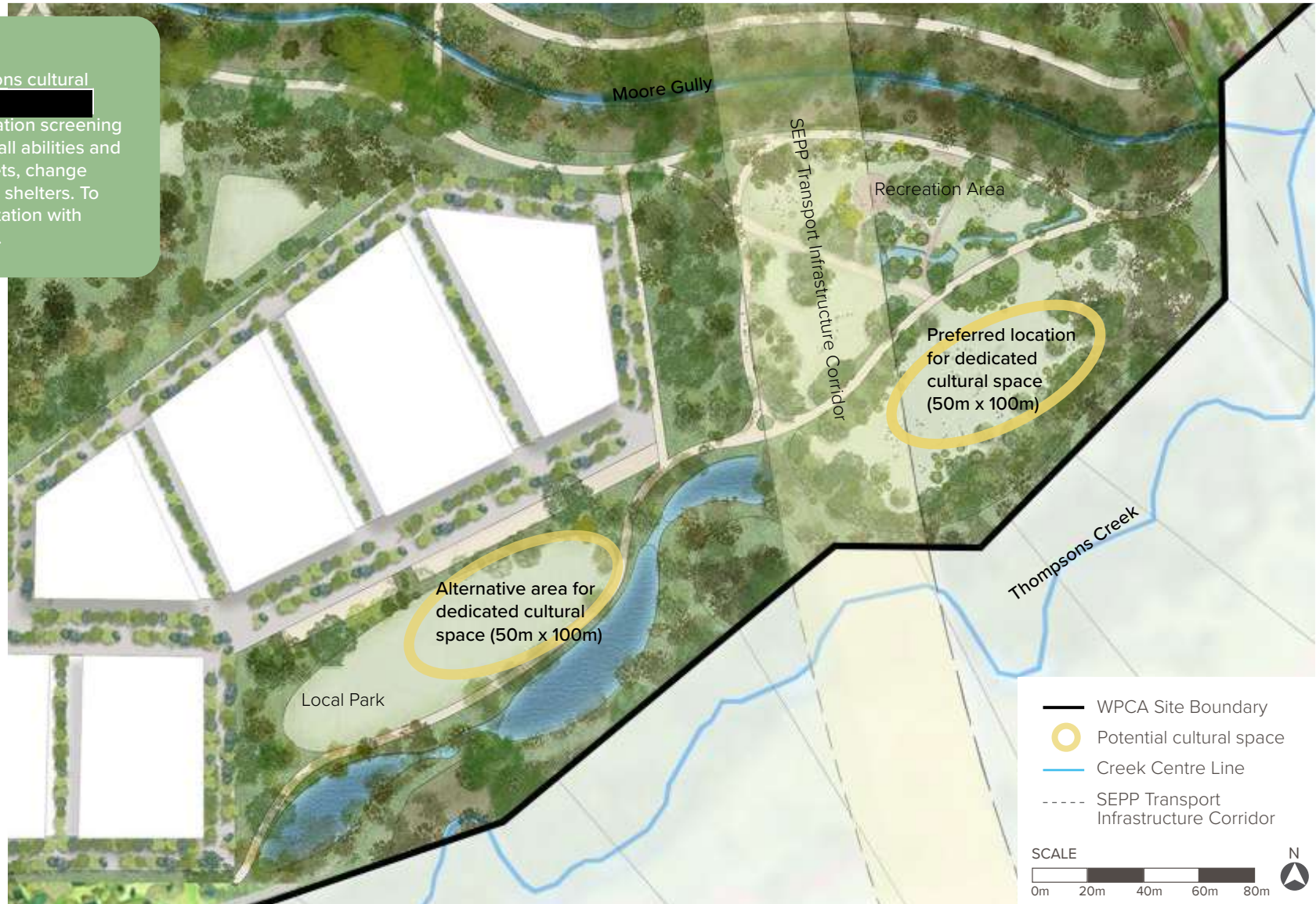
Key elements to consider include:

- Dedicated First Nations cultural space;
- Easy, safe and equitable access by all modes;
- Inclusive and safe for all ages, genders, race and abilities;
- Streets as places;
- Fine grained cultural and economic exchange connected to place;
- An interconnected city - physically, visually, and culturally;
- Connecting to Sky Country;
- Buildings facilitate connection to Country;
- Arts and culture for storytelling;
- First Nations language embedded across the city in consultation with traditional custodians;
- Social and spiritual connectedness;
- Access to housing, employment, education, health, recreation and community facilities.

# A DEDICATED FIRST NATIONS CULTURAL SPACE

**Master Plan Response:**

- A dedicated First Nations cultural space [redacted] with dense vegetation screening for privacy, access for all abilities and amenities such as toilets, change rooms, barbeques and shelters. To be designed in consultation with Traditional Custodians.



Location Plan



*Indicative landscape concept subject to consultation with Traditional Custodians, relevant government agencies and further approvals.*

# AN INTERCONNECTED CITY

Designing with Country must be understood as interconnected, overarching and defining principles of all design across Bradfield City Centre. Across every level of the precinct people, plants, animals, terrain, water, weather, landscaping, the urban realm and architecture must come together, so that Country can continue to be protected, sustained and enjoyed.

## Master Plan Response:

- The Master Plan incorporates sightlines to maintain visual connection to Country. Several long corridors provide distant glimpses from the local ridge to creek (approx 1km apart) as well as clear legible views between key civic spaces and the Moore Gully/ Thompsons Creek parkland.
- Opportunities to elevate/ highlight views with viewing platforms.
- Long views of Country are encouraged with accessible rooftop gardens and restaurants/ bars.
- The Master Plan includes principles and design concepts that promote connection to Country through storytelling, art and ecology in public spaces, streets and the Green Loop.
- The Master Plan proposes a Pedestrianised Green Loop that intersects and connect all areas of the city centre to Country and encourages people to explore the urban fabric safely.



The Master Plan does not propose permanent development in the existing 60m wide Special Purposes 2 (SP2) Infrastructure Zone corridor. A decision regarding future rail infrastructure in the corridor is the subject of review by Government.

1. VIEW SOUTH



2. VIEW EAST



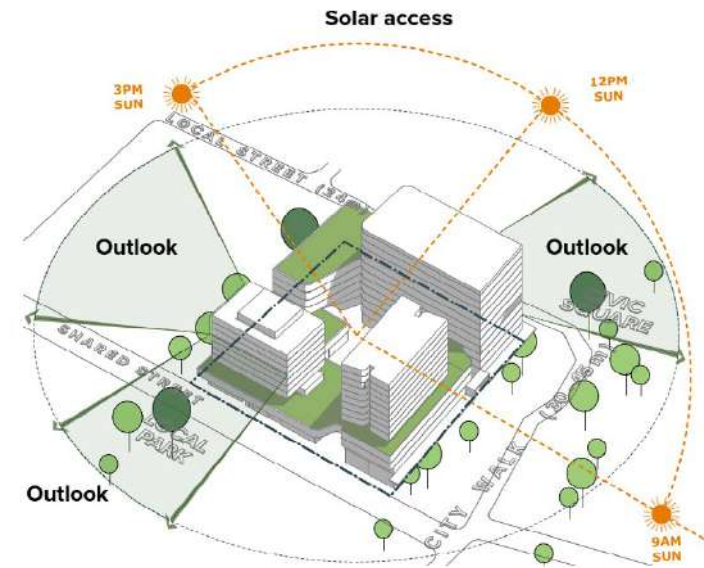
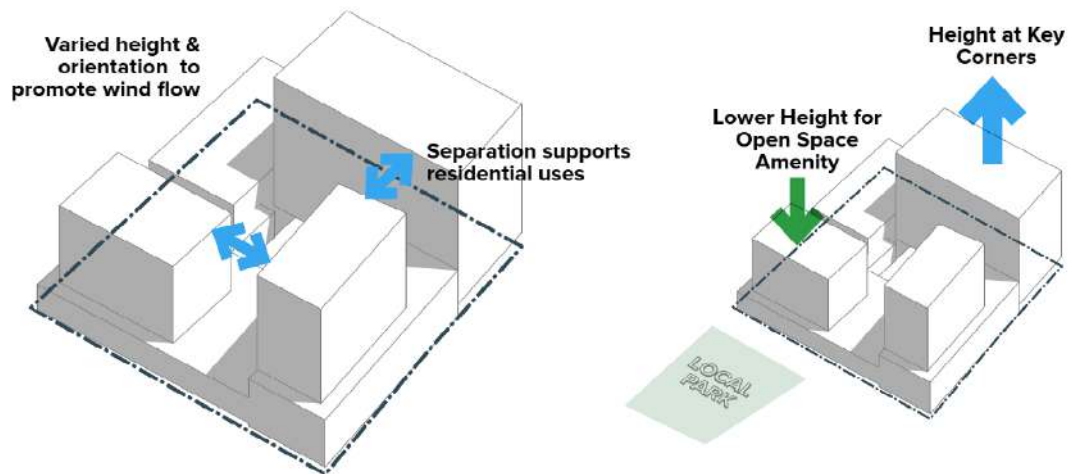
Artists impression only, subject to detailed design.

# CONNECTING TO SKY COUNTRY

For millennia local First Nations peoples have used the skies to navigate Country. Across Bradfield City Centre sky Country must be celebrated and protected to foster experiences of sky Country.

## Master Plan Response:

- The Master Plan built form principles and Design Guide include requirements to break up building masses, create setbacks for towers, limit building heights to provide solar access to public spaces, and encourage useable rooftop gardens and restaurants - all of which contribute to more connections to Sky Country.





**Master Plan Response:**

- The master plan proposes a distribution of open spaces to ensure there are significant opportunities where the city form opens up to connect to sky Country. This includes Central Park on the frontage of the rail and bus stations to create an open sky view on arrival, numerous local parks throughout the neighbourhoods and the southern promenade frontage of the city to the large Moore Gully/ Thompsons Creek parkland.
- Two new major outdoor civic spaces (Moore Gully Swimming Hole and the Thompsons Creek Event Space) promote cultural and recreational activity with connection to sky Country
- Open space concept designs include open spaces for sky view and soft surfaces/ furniture comfortable for lounging and 'sky gazing'.



# FINE GRAINED CULTURAL AND ECONOMIC EXCHANGE

This Country has always been connected, locally and globally. Reinforced by the development of a new international airport, the enduring spirit of Country must continue to inform the stories of this place. Across Bradfield City Centre, urban design must reflect fine grained cultural and economic exchanges between all peoples.

## Master Plan Response:

- The Master Plan embeds the principle of fine-grained active ground floor tenancies throughout the city, including along the Green Loop, which would be suitable for local First Nations businesses, start-ups, retail, creative spaces to encourage local cultural and economic exchange.



# BUILDINGS RESPONSIVE TO COUNTRY

To connect and design with Country at Bradfield City Centre, architectural and building design must be as receptive and responsive to Country and embedded with architectural and urban design principles. Through architectural responses to Country, it is possible to ensure that all people can feel safe, welcomed and connected on this Country.

## Master Plan Response:

- Built form responsive and integrated with key vistas of Country (from both ground level public domain and roof gardens), ecological systems and the movement of sun and wind
- Promote passive heating/ cooling strategies such as natural ventilation from prevailing winds, evaporative cooling from water, shading, orientation for winter solar access, insulation, materials and colours that reflect heat
- Minimise glare/ reflection/ urban heat in the public domain from building facades with shade elements and greenery
- Lighting of parks, streets and buildings to consider safety and activation together with mitigating light impacts to Sky Country and key ecological areas
- Fine grained ground floor interfaces and linkages for public movement as opposed to large controlled/ privatised entries
- Balconies, atriums and voids to provide air flow and opportunities for Country within and through buildings



# ARTS AND CULTURE FOR STORYTELLING

All artworks here should reflect local Dharug culture, symbology, art and making styles that prioritise this Country and local ways of storytelling.

### Master Plan Response:

- The Master Plan landscape principles promote local (Dharug) First Nations art in all public spaces throughout the city centre
- The Master Plan Arts Strategy prioritises 'First Nations First' across the city centre and Connection to Country is the primary theme guiding artistic narrative.



### 6.1. KEY ARTS AND CULTURAL PROJECTS

- Four cultural spaces: Makers Spaces, First Nations Contemporary Art Centre, Civic and Cultural Centre and Indoor/Outdoor Flexible Space.
- Four initial cultural programs to support programming and partnerships for the launch of Stage 1.
- Seven public art works, including 3 major artworks and projects that will respond to the cultural significance of the City Centre.
- Temporary activation programmes for the early establishment of the site during construction.



All projects and project locations are indicative and they are subject to funding, further consultation and detailed studies.

PROJECT	INDICATIVE LOCATION	DELIVERY
A Makers Spaces	Civic and Cultural Centre	2026–2036
B First Nations Contemporary Art Centre	Waterfront Promenade Connected to Aboriginal Cultural Centre	2026–2030
C Civic and Cultural Centre	Mixed Use Linked to Library, Community Centre or Daycare Facilities	+2031
D Indoor/Outdoor Flexible Space	Major Event Space	+2028
E Welcome to Country	Throughout the site, Green Loop, Bradfield Metro and other Primary Arrivals	+2026
F Storytelling	Ridge Park	+2026
G City Walk	City Walk East City Walk West	+2028
H Innovative and Iconic	Central Park	2025–2027
I Idea Space	Central Park	+2026
J Urban World Play	Waterfront Promenade AMRF Precinct	+2028 2026
K Weaving Community and Country	City Parklands West	+2028
M Temporary Activation Precinct	North of Central Park	2026

LOCATIONS	
1 Ridge Park	5 Major Event Space
2 AMRF Precinct	6 Waterfront Promenade
3 Central Park	7 City Parklands West
4 Sportsground	8 City Parklands East



# DREAM

## INNOVATION AND GROWTH

Lets dream and imagine for today, tomorrow and long into the future. Bradfield represents the future of city making, and the future of industry and employment in the Aerotropolis that is safe, innovative and sustainable.

Attracting innovation industries with centres of research and advanced manufacturing. The city will also foster partnerships between industry, universities, vocational education and training (VET) providers and STEM schools to align skills with employer needs and drive innovation.

The city will be a leader in sustainability including energy, water, waste and health throughout the public domain and buildings; embed smart technologies and infrastructure; and a highly walkable and transit-oriented city.

Key elements to consider include:

- Diverse employment and industry supporting collaboration, innovation, research, education;
- Working with Traditional Custodians to listen and respond to Country;
- Sustainability - water neutral, no waste to landfill, climate adaptation, land management, locally responsive;
- Knowledge sharing to integrate First Nations knowledge in innovation and science;
- Adaptive, flexible and multi-purpose spaces and buildings;
- Building for ecologies;
- Support and capacity building for First Nations communities and business enterprise;
- A city that cares for physical, mental, cultural and emotional health.

# LISTENING AND RESPONDING TO COUNTRY

Listening to Country has helped guide, navigate, sustain and care for the people here. Across Bradfield City Centre, it is possible to create opportunities for all people to listen and learn from Country. To listen to Country, spatially, we must first design to allow Country to breathe and give her and ourselves the space to properly listen and be heard.

## The Master Plan is responsive to Country:

- Preserves waterways, high value vegetation, and proposes to enhance natural ecologies and integrate ecology into the urban form
- High Country (Ridge Park): the landscape design is more open to sky and offers spaces for viewing and education
- Low Country (Thompsons Creek and Moore Gully): the master plan provides views from high to low Country and connects high to low via Green Loop for people and animals, and provides opportunities for cultural spaces
- Water and Dry Country: the master plan and landscape approach protects/ maintains wet and dry areas and their ecologies, provides intimate spaces, protects waterways from pollution with natural cleansing, and avoids industrial uses near waterways. Denser vegetation and canopy in water areas to protect a variety of bird species
- Buildings and spaces designed for the local climate and seasons



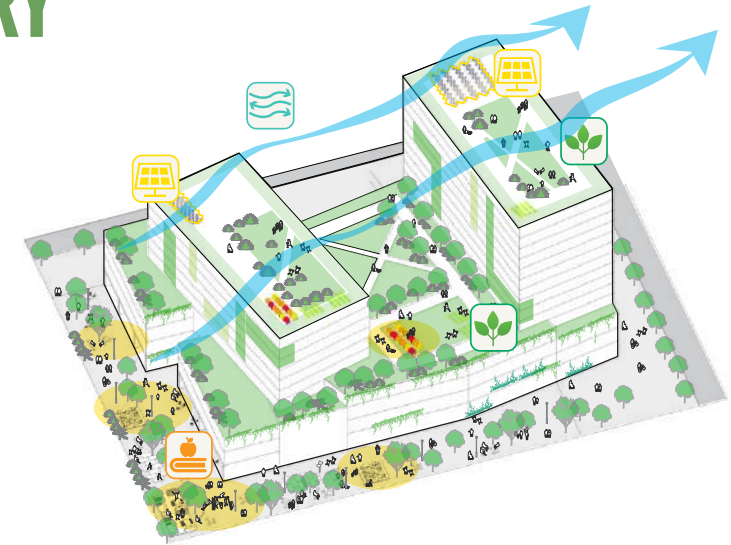
Artists impression of Bradfield City Centre, subject to detailed design. The Master Plan does not propose permanent development in the existing 60m wide Special Purposes 2 (SP2) Infrastructure Zone corridor. A decision regarding future rail infrastructure in the corridor is the subject of review by Government.

# SUSTAINABILITY IS CARING FOR COUNTRY

Sustainability is at the heart of caring for Country. Local First Nations knowledges of Country dictate that you never take more from Country than you need, and you live responsively with the climatic, ecological and seasonal cycles to ensure that future generations of plants and animals can continue to reproduce and survive. We must ensure that we design in ways that not only act 'neutrally' on the environment, but rather sustain and protect this place for us and our future generations.

## Master Plan Response:

- Landscape and built form principles respond to the six seasonal variations of sun, wind, rain and temperature in terms of shade, sky view, weather and wind protection and local planting palette.
- Landscape and built form principles focus on sustainability in terms of energy, water, waste and materials.
- Landscape design creates associations between upper canopy and middle and lower canopies. eg. planting types not singular trees and garden beds and planter boxes must provide space for debris to fall and land on soils;
- Land zoning and landscape design to protect waterways and Country from erosion and pollution and preserve/ restore habitat.



## WATER

- Green infrastructure to provide water treatment, urban cooling, ecosystem services and amenity is integrated into built environment;
- Rainwater captured at lot and building scale;
- Vegetation/trees in the public and private domain supported by soil volumes;
- Development that protects, maintains, or restores waterway health and the community's environmental values;
- Stormwater run-off targets (infiltration and harvesting) are applied at the lot and building scale;
- Retreat - Adapt – Defend options for flood management;
- Smart city data monitoring of potable and non-potable water demand, harvesting, storage and production.

## WASTE

- Avoid First, then Reduce, Reuse, Recycle in material choices and construction methods;
- Buildings with prefabricated/modular, long life and loose fit, flexible and adaptable solutions;
- Adaptable and reusable infrastructure - temporary facilities that can be modified as Bradfield City Centre grows/changes;
- Waste minimisation in building design;
- Buildings designed for end-of-life disassembly and recovery;
- Use of recycled and renewable materials;
- Support innovative construction approaches;
- Building envelopes that support collaborative housing models that reduce waste/ encourage sharing economy;
- Smart city data monitoring of waste volumes and contamination rates, illegal dumping incidents.

## ENERGY

- Adaptable infrastructure for Charging stations that support public and private charging;
- Roof space designed for energy generation, open space and amenity, gardens, food production, water harvesting and urban cooling;
- Provide space for local food production and distribution / retail / sharing (markets, community gardens on public land and private spaces);
- Smart city data monitoring of energy demand, production, storage and peak loads.

## HEAT

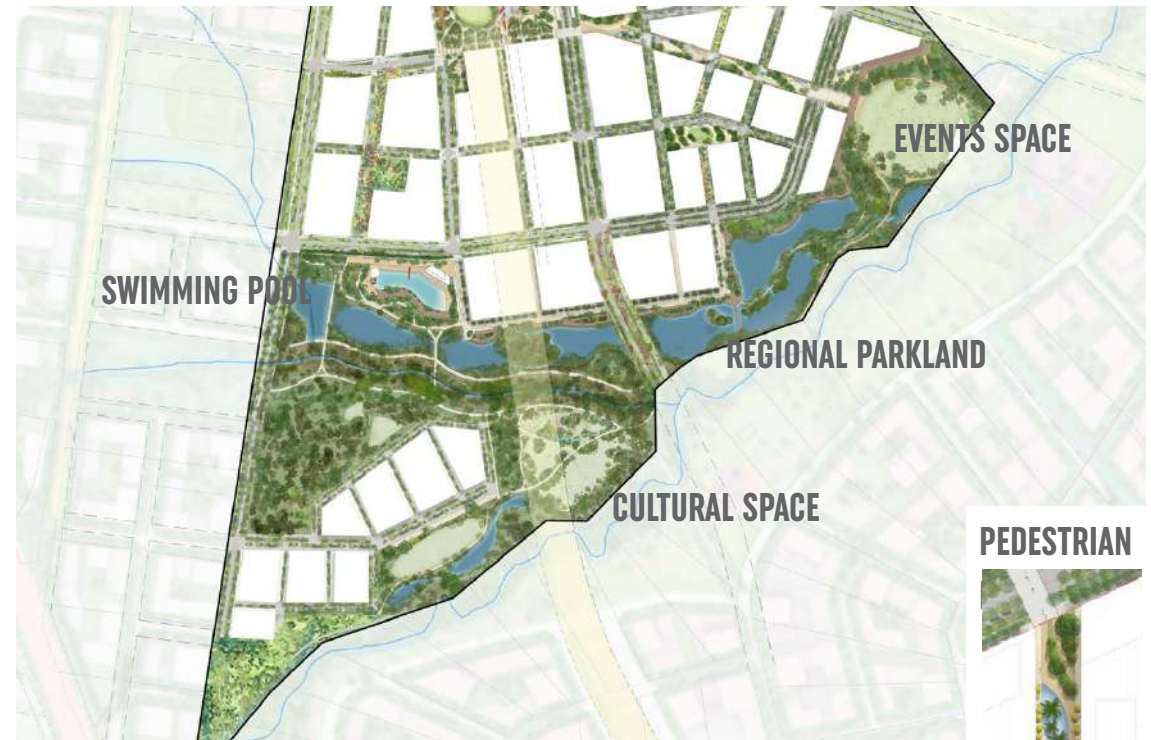
- Places designed to provide air flow, green open space, and appropriate building forms so that the cooling from green space can be harnessed;
- High albedo building materials to reflect light and heat;
- Building envelopes with articulation zones that support shade through eaves and overhangs, awnings;
- Permeable pavements;
- Provide space for adequate vegetation around the buildings;
- Natural ventilation.
- Smart city data monitoring of

# ADAPTIVE FLEXIBLE SPACE

Public spaces must be designed to be adaptive to different needs and modes across the day, night season and year. Through adaptive public spaces, Bradfield City Centre's urban identity can be uniquely defined through social and commercial opportunities that leverage an urban realm that is diverse and activated by Country.

## Master Plan Response

- The Master Plan concepts for Central Park, Ridge Park, Thompsons Creek Regional Parkland and the Green Loop all embody adaptability and flexibility at their core with opportunities for gathering, events, education, cultural practice, performance, recreation, play, markets, resting and connecting - all at different scales.
- All spaces provide balanced opportunities for connection to Country and respite from the city, as well as connection to urban life and engaging Country into the city.



**RIDGE PARK EDUCATION SPACE**



**CENTRAL PARK ARRIVAL SPACE**



**LOCAL PARKS GATHERING SPACE**



**PEDESTRIAN**





# BUILDING FOR ECOLOGIES

To dream the future, we must ensure that the present is sustained for all living and non-living elements of Country. Across Bradfield City Centre urban planning must begin to integrate design solutions so that people and ecologies can live safely together.

## Master Plan Response:

- The Master Plan preserves and enhances significant areas of waterways and existing vegetation to support local ecologies into the future
- The Master Plan built form principles and Design Guidance includes integration with natural systems, greenery for habitat, roof gardens and use of natural materials in buildings and public domain
- The Master Plan has a minimum target of 40% tree canopy to mitigate urban heat island effect and provide habitat (double typical canopy cover in urban environments)
- Master Plan layout and built form Design Guidance promotes Integration of buildings with ecology with direct frontages, balconies and ground floor spill out and engagement with the Green Loop, Moore Gully/ Thompsons Creek and local parks so people can see, hear, feel and smell plants, flowers, birds, insects, water, sky etc
- Landscape palette predominantly endemic species for local ecologies.



# 07





# PUBLIC DOMAIN AND LANDSCAPE

# POLICY ALIGNMENT

## THE PUBLIC DOMAIN AND LANDSCAPE APPROACH RESPONDS TO KEY STATE-LEVEL POLICY OBJECTIVES AND REQUIREMENTS

### GREENER PLACES DESIGN GUIDE

The 'Greener Places' Policy articulates the importance of integrating green and urban infrastructure to deliver a healthier and more sustainable environment for future users. The four design principles of Greener Places are:

- **Integration**, including combining Green Infrastructure with urban development and grey infrastructure;
- **Connectivity**, including creating an interconnected network of open space;
- **Multi-functionality**, including delivering multiple ecosystem services simultaneously;
- **Participation**, including involving stakeholders in development and implementation.

#### PUBLIC DOMAIN RESPONSE

- Integrated green and grey infrastructure: capturing water run-off, central metro station, walkable city, gully detention;
- A walkable city with prioritised pedestrian connectivity, green links and a pedestrianised Green Loop;
- Delivering multifunctional spaces for young and older generations, play spaces, intimate gardens, connection to nature, sports, education;
- Ongoing input / workshops with local First Nations leaders, Sydney Water and important infrastructure organisations etc.

### BETTER PLACED

The Government Architects 'NSW Better Placed' manual establishes a policy and practice framework to achieve design excellence in the built environment.

The core values include:

- Better fit: **contextual**, local and of its place;
- Better **performance**: sustainable, adaptable and durable;
- Better for **community**: inclusive, connected and diverse;
- Better for **people**: safe, comfortable and liveable;
- Better **working**: functional, efficient and fit for purpose;
- Better **value**: creating and adding value;
- Better **look and feel**: engaging, inviting and attractive.

#### PUBLIC DOMAIN RESPONSE

- Consideration of project context: From Ridge Park, the highest point on site, the slope naturally falls to Moore Gully which captures water runoff;
- Sustainable approaches: capturing and treating water run-off, maximising canopy cover, public transport focus;
- Achieve a comprehensive understanding of the community (local residents, First Nations elders, workers) to produce a safe, inclusive, liveable environment;
- A textured city. Earthy, connection to nature, diversity of surfaces, planting palettes, economic activity.

### DRAFT CONNECTING WITH COUNTRY

The Government Architects 'Draft Connecting with Country' Framework provides a set of principles that aim to guide design teams in how to approach Connecting with Country. The key strategies for connecting with Country include:

- Cultural awareness: learning from first languages and place names, develop mutually beneficial relationships, reawakening memories of cultural landscapes, and finding common ground;
- Considering project life cycles with a First Nations perspective: start with Country, listen to Country, design with Country, and caring for Country.

#### PUBLIC DOMAIN RESPONSE

- Learning and understanding Country through ongoing collaboration with First Nations peoples;
- The Bradfield Master Plan implements a holistic approach to Connecting with Country throughout the Master Plan, with focus on the four key Connecting with Country values (Green, Connected, Travel, Dream);
- Implement indigenous naming;
- Opportunity for indigenous art;
- Design places for welcome to Country and smoking ceremonies;
- Strong environmental approach reflects caring for Country.

## SYDNEY GREEN GRID

The Sydney Green Grid identifies a network of high-quality green spaces that connects town centers, public transport hubs, and major residential areas. It promotes the creation of a network of high quality open spaces that supports recreation, biodiversity and waterway health.

The Sydney Green Grid is a network that combines:

- The Recreational Grid;
- The Ecological Grid;
- The Hydrological Grid;
- The Agricultural Grid.

### PUBLIC DOMAIN RESPONSE

- Create connected ecosystems through blue-green infrastructure with continuous canopy and green corridors;
- Create a network of open space to enhance biodiversity, encourage healthy living, ensure ecological resilience and reduce urban heat island effect;
- Maximise canopy coverage and softscape areas to reduce heat and increase permeability;
- Implement the strategies of Sydney Green Grid;
- Improve pedestrian connectivity to key city spaces.

## A METROPOLIS OF THREE CITIES

A Metropolis of Three Cities is built on a visions of three cities where most residents live within 30 minutes of their jobs, education, health facilities, services and great places. It seeks to transform Greater Sydney into a metropolis of three cities, including the Western Sydney Parkland City, the Central River City, and the Eastern Harbour City .

The key 10 direction for a Greater Sydney include:

- A city supported by infrastructure; a collaborative city; a city for people; housing the city; a city of great places; a well-connected city; job and skills for the city; a city in its landscape; an efficient city; and a resilient city.

### PUBLIC DOMAIN RESPONSE

- Public transport connections to the 3 cities. Sydney City, Parramatta City and Western Sydney Airport;
- Promoting active transport;
- Create a well-connected social infrastructure network to achieve a 30-minute city with a dense, walkable city centre focusing on access to and variety of open green space;
- Implement the framework of infrastructure and collaboration, liveability, productivity, and sustainability to guide the delivery of the vision.

## WESTERN SYDNEY DISTRICT PLAN

Western Sydney District Plan is a guide for implementing The Greater Sydney Region Plan (A Metropolis of Three Cities) at a district level. It aims to enhance Greater Sydney's livability, productivity and sustainability into the future.

The Western Sydney District Plan:

- Informs local strategic planning statements and local environmental plans;
- Informs the assessment of planning proposals , community strategic plans and policies;
- Assists councils to plan for and support growth and change, and align their local planning strategies to place-based outcomes;
- Guide the decisions of State agencies;
- Informs the private sector and the wider community of approaches to manage growth and change.

### PUBLIC DOMAIN RESPONSE

- Facilitate to create the opportunity for a Western Economic Corridor;
- Identify Planning Priorities for metro access, green space, density, shading, economic hub, to achieve a liveable, productive and sustainable future for the district;
- Implement relevant objectives, strategies and actions from the 20-year plan to achieve the 40-year vision.

# POLICY ALIGNMENT

## THE PUBLIC DOMAIN AND LANDSCAPE APPROACH RESPONDS TO KEY AEROTROPOLIS POLICY OBJECTIVES AND REQUIREMENTS

### WESTERN SYDNEY AEROTROPOLIS PLAN 2020

The Western Sydney Aerotropolis Plan is the main strategic planning document governing the Aerotropolis and includes visions, overarching planning principles, distribution of land uses, the phasing of precincts and identification of high-level transport framework, blue-green infrastructure and other key infrastructure.

Purpose of this plan:

- Recognise Country;
- Embrace the transformational potential of the Aerotropolis and airport;
- Reinforce landscape-led approach;
- Establish visions, objectives and principles for each of the 10 precincts;
- Connect to the broader context and transform the Aerotropolis into a contemporary metropolitan city;
- Introduce statutory mechanisms to implement the visions and principles.

#### PUBLIC DOMAIN RESPONSE

- Create a connected-network to achieve the vision of a 30-minute city;
- Adopt the core principles of Western Sydney Aerotropolis Plan, include productivity, sustainability, infrastructure and collaboration, and liveability.

### SEPP (PRECINCTS-WESTERN PARKLAND CITY) 2021

The State Environmental Planning Policy (SEPP) establishes boundaries, applies zoning to the initial precincts, provides performance criteria for master plans and describes a framework for planning pathways.

The aims of SEPP include:

- Facilitate development in the Western Sydney Aerotropolis;
- Promote sustainable, orderly and transformational development in the Western Sydney Aerotropolis;
- Ensure development is compatible with the long-term growth and development of the Western Sydney Airport and other critical transport infrastructure;
- Promote employment and world-class innovation;
- Recognise the physical and cultural connection of the local First Nations community;
- Preserve land for future infrastructure development;
- Protect, maintain and enhance biodiversity;
- Recognise and protect the ecological and cultural value of Wianamatta–South Creek.

#### PUBLIC DOMAIN RESPONSE

- This Master Plan is developed under the SEPP to provide more detailed outcome for Aerotropolis Core Precinct.

### AEROTROPOLIS PRECINCT PLAN 2022

The Aerotropolis Precinct Plan' illustrates the performance criteria and vision, including objectives and requirements for the ecological, economic, social and cultural success of Master Plans. It is developed under the Aerotropolis SEPP to provide the place-based objectives and requirements to guide development in the Aerotropolis in a consistent sustainable manner over time.

The Precinct Plan focuses on:

- Precinct vision and objectives;
- Infrastructure and development staging;
- Urban structure;
- Movement framework;
- Land use and built form;

#### PUBLIC DOMAIN RESPONSE

- Ensure the Master Plan is consistent with the requirements in this precinct plan;
- Objectives and requirements set for Aerotropolis core in this precinct plan are considered;
- Reference to the performance criteria, and align with the WSAP and Aerotropolis SEPP.

## DEVELOPMENT CONTROL PLAN 2022 (DCP)

The DCP responds and reinforces the key drivers of the 'Aerotropolis Precinct Plan' providing guidelines to all Master Plans and DA's across the Aerotropolis.

Aims of the DCP are to achieve:

- Connectivity;
- Liveability;
- Productivity;
- Sustainability.

### PUBLIC DOMAIN RESPONSE

- Comply with the guidelines and standards set in the DCP;
- Reference to the objectives, performance outcomes, and benchmark solutions provided in the DCP;
- Recognise and reinforce the distinctive characteristics of the Western Parkland City;
- Support the implementation of the DCP;
- Protect and enhance green and blue infrastructure;
- Design the city in accordance with the principles of Water Sensitive Urban Design;
- Encourage sustainable development and reduce the impact on environment.

## RECOGNISE COUNTRY GUIDELINES 2022

The 'Recognise Country' Draft Guidelines for development in the Aerotropolis provides support in placing recognition of Country at the forefront of strategic planning. It offers guidance through outlining resources, requirements and examples of successful approaches.

This supports the overarching objective from the 'Western Sydney Aerotropolis Plan' to:

- Recognise Country - Acknowledge Traditional Custodians;
- Provide opportunities to Connect with Country;
- Design for Country;
- Care for Country in the Aerotropolis.

### PUBLIC DOMAIN RESPONSE

- Starting with Country focusing on cultural safety, meaningful engagement, and provide economic opportunities for First Nations people;
- Adopt a landscape-led approach, protect and restore cultural values, create landscape with cultural significance;
- Recognise the cultural significance of water with a focus on water management and public engagement;
- Provide outdoor spaces for meaningful connections, such as welcome to Country and smoking ceremonies;
- Implement indigenous naming to create a unique place grounded in local cultural values and respect.

## WESTERN SYDNEY STREET DESIGN GUIDELINES 2020

The Western Sydney Street Design Guidelines seek to create streets with improved environmental, social and health outcomes for all street users. The guidelines respond to the Net Zero vision, place-based planning, and targets to increase tree canopy and permeable surfaces. The Western Sydney Street Design Guidelines outline 8 design objectives, include:

- Streets encourage social activation through their design; Streets are self-explaining slow environments that are safe and comfortable for all users; Streets are inclusive with footpaths on both sides; Streets are safe for cycling, with separate bicycle facilities on busy streets; Continuous canopy cover is achieved on both sides of every street; Water Sensitive Urban Design (WSUD) is integrated into every street; Design carriageway widths to maximise space for alternate uses and users; Ensure future transport solutions maximise place outcomes for streets.

### PUBLIC DOMAIN RESPONSE

- Adopt the key design objectives set in the Western Sydney Street Design Guidelines;
- Consider design requirements and guidance in the document to achieve greener, cooler, and safer streets in Bradfield City Centre;
- Design a connected-city by prioritising pedestrian and cycling, minimising vehicular traffic, and creating green links and shared streets through the city.

# STRATEGIC ALIGNMENT

## CPTED

Applying CPTED principles to preventing criminal activity through environmental design and place management strategies. The approach is framed around four key principles : surveillance; access control; territorial reinforcement; and space management.

### PUBLIC DOMAIN RESPONSE

- Ensure buildings and frontages (50% visually transparent), overlook streets and public space to increase visibility and maximise passive surveillance;
- Create accessible and secure environments through transport corridors that are well lit with clear sight-lines, minimal entrapment spots and CCTV surveillance where necessary;
- Ensure transport infrastructure and car parks incorporate CCTV, clear access points, active uses, and façade systems that promote passive surveillance to and from the public domain;
- Promote safety through appropriate lighting in dark areas, public spaces and concealed corners (lit to a minimum of AS 1158), but minimise lighting spillage onto neighbouring properties (in accordance with AS 4282);
- Clearly delineate between public and private space: through public realm design, built form and landscaping;
- Utilise durable and vandalism resistant building materials.

## SMART PLACE DESIGN

Smart Places use technology-enabled solutions to actively respond to the issues and opportunities of the public realm and the quality of life for its citizens. The approach involves the implementation of connected and interoperable smart technology tools or platforms across varied infrastructure assets, services and sectors.

- Connected, open data digital city in accordance with NSW Smart Places Strategy and Smart Western City Program;
- Embrace new emerging technologies;
- Reinforce environmental resilience and sustainability through technology management tools;
- Support smart streets that collect data and inform community insights;
- Promote community events and initiatives in line with the Australian Digital Inclusion Index.

### PUBLIC DOMAIN RESPONSE

- Implement multi-function Smart Poles which accommodate several street services (e.g.. lighting, telecoms, CCTV);
- Utilise pit and pipe infrastructure in line with Digital Infrastructure Technical Report;
- Install smart monitoring and self-regulating equipment;
- Design with flexibility for implementation of future technologies.

## COOL SUBURBS TOOL

Cool Suburbs is a rating and assessment tool for urban planning and development that outlines criteria for designing livable, cool and resilient suburbs. Metrics from elements of the Urban Design, Cool Streets and Cool Parks credit criteria are to be considered in the design and development of the Bradfield Master Plan.

### PUBLIC DOMAIN RESPONSE

- UD4 Green and Blue Open Space: The development comprises at least 40% pervious surfaces and at least 50% of pervious surfaces provided are soft (green);
- UD5 Retention of existing tree canopy: Maximise retention of the existing tree canopy cover;
- UD6 Water Sensitive Urban Design: The development adopts and implements a distributed "at-source" WSUD;
- CS1 Shade: At least 75% of the development's streets must have greater than 30% tree canopy coverage;
- CS3 Cool and/or porous pavements: The development incorporates cool pavement solutions across at least 75% of street carriageways and footpaths;
- CP1 Shade: The development's communal open space must have at least 40% tree canopy cover;
- CP3 Cool and/or porous pavements: At least 75% of the park's hardstand/path areas use cool pavement materials.





*Artists impression only, subject to detailed design.*

# INSPIRATION

A SELECTION OF THE 60+ CASE STUDIES UNDERTAKEN FOR THE MASTER PLAN THAT HAVE INFLUENCED THE APPROACH TO PUBLIC DOMAIN AND LANDSCAPE

## DESIGN WITH COUNTRY

LEAGUES CLUB PARK, GOSFORD, AUS



- Collaboration with the Darkinjung Local Aboriginal Land Council to embed local First Nations culture into the park;
- A series of 'tidal terraces' that bring tidal waters from the bay into the new parklands immersive playspace;
- A living, breathing ecosystem that encourages immersive nature play and creates a green heaven in the heart of Gosford.

## CITY-SHAPING SPACES

BRYANT PARK, NEW YORK, USA



- Flexible open space for pop-up activities to serve a dynamic city;
- Gathering spaces for large groups;
- Services to support/enable a variety of activities.

## PEDESTRIAN AVENUES

LAS RAMBLAS, BARCELONA, SPAIN



- A tree-lined pedestrian street;
- A journey connecting two key city spaces with a diverse ground plane mix;
- Active frontages - promote social connection and support economy.

## METRO/CITY CENTER PARK ELIZABETH QUAY, PERTH, AUS



- Water as the centrepiece of the city;
- Paving as a way to represent story on the ground plane;
- Creating cool cities.

## SWIMMABLE WATER BODIES BARTON SPRINGS, TEXAS, USA



- Connection to nature and cooling;
- Recreational offerings for locals to gather;
- A place to showcase environmental, social and infrastructural achievements;
- A break in the dense urban fabric of the living city;
- A healthy environment.

## GREENERY BOURKE STREET, SYDNEY, AUS



- Prioritise pedestrian and cycling, and minimise vehicular traffic;
- Vegetation zones divide the road corridor providing high amenity and reduced heat;
- Continuous green corridor with avenue planting to increase urban canopy and support fauna movement.

# PUBLIC DOMAIN PRINCIPLES



## PRINCIPLES

### DESIGN WITH COUNTRY

- Provide gathering spaces throughout Bradfield City Centre for meaningful connection and cultural learning;
- Opportunities for First Nations art;
- Design places that acknowledge Country and cultural practice;
- Learn and care for Country;
- [REDACTED]
- Country as a meeting place and people as a part of Country;
- Inclusive and safe for all cultures, genders and abilities.

### RE-IMAGINING AND ENHANCING WATER

- Connected ecosystems through blue-green infrastructure;
- Promote water interaction sensitively as an opportunity to learn about this limited resource through experience;
- Water as art, wayfinding and storytelling;
- Make water visible and interactive;
- Protect and maintain existing, and create new, detention basins and wetlands to protect dry Country;
- Revitalise and foster freshwater ecologies of Thompson Creek;
- Maintain the existing wetlands and Moore Gully;
- Integrate water sensitive urban design in public domain;
- Use the cooling properties of water to increase amenity and liveability.

### A COOL, GREEN AND LIVABLE CITY

- Create a parkland city experience;
- Link ridge to creek and everything between through City Walks;
- Create an integrated experience through a pedestrianised Green Loop;
- Provide flexible green spaces and events and activation;
- Maintain connections to Sky Country in parks and large open public spaces;
- Promote social connection by curating a diverse ground plane mix;
- Design a playful city by including play elements in public spaces;
- Public domain and civic places are designed in accordance with CPTED principles.

### AN INTERCONNECTED, INNOVATIVE AND SUSTAINABLE CITY

- Prioritise pedestrian and cycling, and minimise vehicular traffic by creating green links and shared streets through the city;
- A legible connected city by all modes, and all speeds of movement are designed through Country;
- Design public domain spaces that promote collaboration and build networks;
- Integrate smart city technology and responsive smart furniture for safety, equity and connectivity;
- Create a 24/7 city which supports economy and social life;
- Support food production, vertical farming and rooftop gardens;
- Ridge to creek connection.



*Artists impression only, subject to detailed design.*

# KEY CITY SPACES

## A SERIES OF DISTINCT SPACES

The city is structured on a number of key civic places to service the range of needs of residents, workers and visitors. The key civic places comprise of the following:

1. **Central Park** — the front door to the city, the meeting place and the Green heart of the city. It acknowledges Country and welcomes all. It is a place for meeting, socialising and collaborating, recreating and celebrates and ‘makes visible’ innovation, endeavour and achievement.
2. **Ridge Park** — a high amenity space for ecological protection and seeing and learning about Country.
3. **City Walk East** — a green corridor which connects people from metro station to the parkland and Thompsons Creek.
4. **Green Loop** — a cool, green ecological corridor that prioritises Country and First Nations cultural values and connects people, flora and fauna through the city.
5. **Local Parks** — a meeting place for social gathering, local play and Country to breathe amongst a diverse natural environment
6. **City Parkland West** — a swimming pool integrated in the landscape with vegetated edges and nature walks for active recreation and social gathering.
7. **City Parkland East** — a large gathering space for city scale events and outdoor recreation in a natural setting.
8. **Waterfront Promenade** — the signature leisure and amenity focus for the city with water recreation, dining, retail, hotels and programming for events day and night year round.

### CENTRAL PARK



### RIDGE PARK



### CITY WALK EAST



### GREEN LOOP



### LOCAL PARK



### CITY PARKLANDS WEST



### CITY PARKLANDS EAST



### WATERFRONT PROMENADE



# LANDSCAPE MASTER PLAN



*The Master Plan does not propose permanent development in the existing 60m wide Special Purposes 2 (SP2) Infrastructure Zone corridor. A decision regarding future rail infrastructure in the corridor is the subject of review by Government. Indicative landscape concepts subject to consultation with relevant government agencies and further approvals.*

# OPEN SPACE REQUIREMENTS

## PRECINCT PLAN OPEN SPACE REQUIREMENTS

The blue-green infrastructure framework is the network of green spaces, natural systems, and semi-natural systems that support sustainable communities and includes waterways; bushland; tree canopy and green ground cover; parks; and open spaces that are strategically planned, designed and managed to support a good quality of life in an urban environment (Greener Place 2020, GANSW).

Integrating blue and green systems into the new urban environment will help mitigate urban heat island effect, improve the amenity of urban environments, create an integrated and connected network of green infrastructure, create more shade and cleaner air, improve water quality management, improve biodiversity, and create healthy open spaces for recreation.

Bradfield City Centre will contribute to the establishment of the blue-green infrastructure framework for the wider Aerotropolis region. Thompson’s Creek is the natural spine of the blue and green infrastructure system to the south of the Bradfield City Centre.

- Regional Parks

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- District Parks

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- Existing Native Vegetation (ENV)

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- WSUD and detention basin footprints (indicative only)

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- Watercourses

**Total Open Space**      30.2ha (26.3% of site)



## BRADFIELD SOCIAL INFRASTRUCTURE STRATEGY

The table below sets out the Social Infrastructure Strategy recommendations for open space and outdoor recreation at Bradfield based on the needs and demand generated by Bradfield City Centre and the wider Aerotropolis and Western Parkland City.

	Recommended Infrastructure	Map reference
Parks and open space	Minimum 6 x Local parks	1
	2 x District parks	2
	1 x Regional park	3
Sport and recreation facilities	2 x Playing fields (i.e. hockey and athletics)	Located outside site as per Precinct Plan
	1 x District sports field 2 x rectangles and 1 x oval	
	1 x Youth focused outdoor recreation facility	4



# OPEN SPACE PROVISION

The Master Plan provides more open space than the Precinct Plan and reflects the needs assessment in the Bradfield Social Infrastructure Strategy. Key elements include:

- Environment and Recreation Zone (ENZ), Existing Native Vegetation (ENV), Thompsons Creek riparian corridor and Ridge Park are provided as identified in the Precinct Plan;
- A new Central Park is proposed in the heart of the city;
- Moore Gully, which has no defined channel or bank is proposed to be realigned slightly to the south to provide adequate space for stormwater basins (multi-use wetlands) and usable recreation areas;
- District and local parks are provided in line with the Social Infrastructure Strategy recommendations.

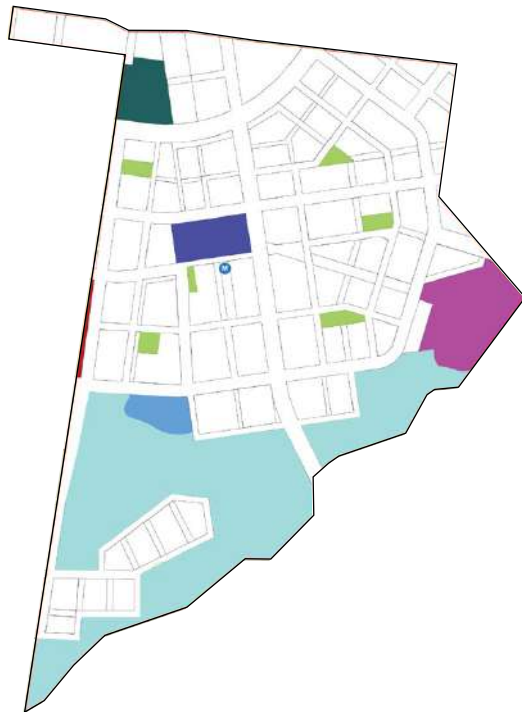
- 1 6x Local parks
- 2 2 x District parks
- 3 1 x Regional park
- 4 1 x Youth focused outdoor recreation facility

— Master Plan Area	114.9ha
Retained Existing Native Vegetation (ENV)	3.6ha
Vegetated Riparian Corridor (excludes areas within retained ENV)	5.3ha
Stormwater basins and bio-retention ponds (excludes areas within riparian corridor)	7.0ha
Usable Open Space (areas outside ENV, riparian and stormwater)	19.9ha (17% of site)
Interim/ Future Open Space	
<b>Total Open Space</b>	<b>35.8ha (31% of site)</b>



# TREE CANOPY AND PERVIOUSNESS

**THE MASTER PLAN ACHIEVES THE 40% TARGETS FOR TREE CANOPY COVER AND PERVIOUSNESS AS SET OUT IN THE PRECINCT PLAN, ENSURING BRADFIELD WILL BE A COOL, GREEN, RESILIENT CITY.**



	Aerotropolis Precinct Plan / DCP / Urban Design Report			Bradfield City Centre Master Plan		
	Proportion of site area	Tree canopy	Perviousness	Proportion of site area	Tree canopy	Perviousness
Streets	35%	65%	35%	29%	65%	25%
Open Space	15%	45%	90%	31%	57%	84%
Lots	50%	25-35%	30%	40%	15%	16%
<b>Total</b>		<b>40%</b>	<b>40%</b>		<b>42%</b>	<b>40%</b>

Park name	Park area	Perviousness (%)	Canopy (%)
Central Park	1.77 ha	40	45
Ridge Park	1.77 ha	89	45
Pocket Parks	1.46 ha	48	60
City Parklands West	1.47 ha	33	46
City Parklands East	4.97 ha	83	51
The Parklands	24.19 ha	93	61
Sports field	0.2 ha	100	96
<b>Total parks</b>	<b>35.86 ha</b>	<b>84%</b>	<b>57%</b>

*The edge of the sports field lies within the master plan boundary. The canopy coverage percentage is indicative of the edge condition not the whole sports area. Metrics calculated are approximate based on indicative concept designs.*

# TREE RETENTION

The Bradfield City Centre Master Plan aims to maximise existing tree retention, prioritising the areas of existing High Value Vegetation that serve as habitat for local fauna communities. Supplementary planting strategies set out in the landscape concepts will maximise biodiversity to create resilient ecosystems.



# CENTRAL PARK

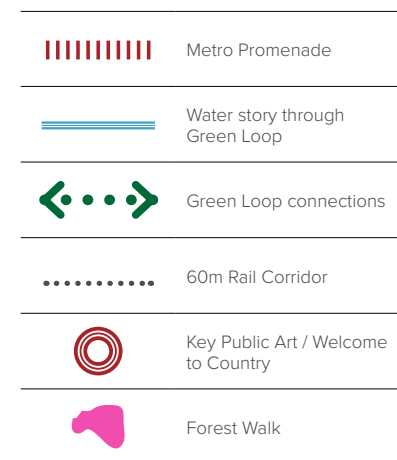
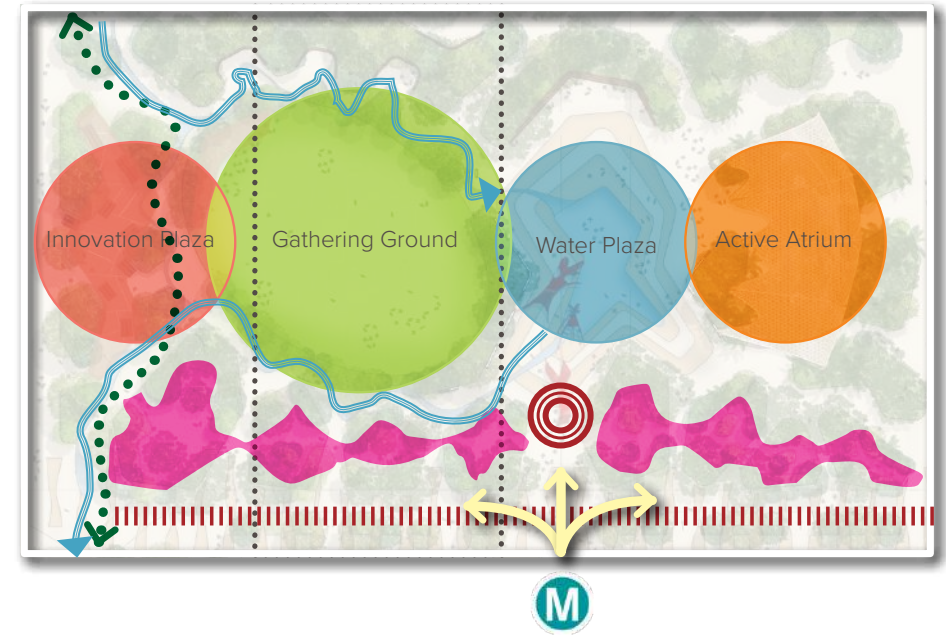
**CENTRAL PARK IS A STATE OF THE ART PUBLIC SPACE AT THE CORE OF BRADFIELD CITY CENTRE, SHOWCASING INNOVATION, CELEBRATING COUNTRY AND ENGAGING COMMUNITY - LOCAL AND ABROAD.**

## CONNECTING WITH COUNTRY

- Creating a place for users to navigate and **explore Country** through their senses, soundscapes and into the built environment;
- Collaboration with **local artists** and designers to integrate storytelling through various expressive mediums;
- Bringing **landscape** from the streets into the park, softening the urban fabric and increasing diversity.

## DESIGN APPROACH

- A place with high pedestrian amenity and a variety of programming and uses;
- A strong identity that recognises Country and local Dharug culture;
- Facilitate an environment with play for all ages and abilities, integrating nature and a iconic atrium structure;
- Provide shelter and refuge from the sun and rain through both tree canopy coverage and built structures;
- An active and connected 24/7 public domain that also provides spaces of quiet reflection and retreat;
- An outdoor environment that connects with Smart City technology and facilitates innovation and collaboration within the public realm;
- Connects to the City Walk networks and key stage 1 buildings.
- Minimum Tree Canopy: 45%
- Minimum Perviousness: 40%



## CONSIDERATIONS

- Stage 1 Metro rail corridor (underground);
- Future Metro rail easement that runs north-south through park (60m wide);
- Emergency/ maintenance access to Metro station;
- Water quality and treatment;
- Hostile Vehicle Mitigation approaches.

## CONCEPT PLAN (APPROX. 2HA)

- 1 **Water Plaza** — Integration of water to activate, cool, clean and engage. On axis with the WSA Metro entry. Zero depth to be used for the open plaza.
- 2 **Gathering Ground** — A sunny central gathering space for community markets, pop-up events and festivals for up to 2000 people.
- 3 **Active Atrium & Play space** — With play for all abilities. A multi-level adventure play space nestled in a deep green palm forest.
- 4 **Innovation Plaza** — Facilitates outdoor learning and collaboration to complement the surrounding research and education centres with fixed shade structures and canopy.
- 5 **Forest Walk** — Promotes outdoor collaboration, education and learning, shelter and shade 'rooms'.
- 6 **Metro Promenade** — A key pedestrian spine in front of the Metro Station, also designed for emergency and service vehicles.
- 7 **Metro Plaza** - A meeting, waiting and wayfinding space for Metro/ rail passengers arriving and departing Bradfield, with adjoining taxi and kiss and ride spaces.
- 8 **Public Art** — Providing a visual attractor from the WSA Metro Station arrival point that creates a local landmark and meeting point.

*Indicative landscape concepts subject to consultation with relevant government agencies and further approvals.*



# CENTRAL PARK

## PRECINCT CHARACTER

### EMBRYO OF THE FUTURE CITY

- A 24/7 centre for people;
- Core of Aerotropolis Stage 1;
- First impression & Destination.

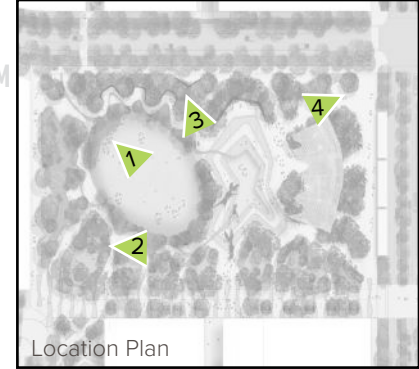
### DIVERSE PEOPLE – DIVERSE PLACES

- Daytime workers;
- Families;
- Domestic visitors;
- International tourists;
- Local residents.

### INGREDIENTS TO SUCCESS

- Water to cool, to clean, to engage;
- Central gathering space;
- Shelter from sun and rain;
- Intimate places;
- Natural and playful elements;
- Space for both celebration and quiet retreat;
- Smart technology.





## ARTIST IMPRESSIONS

*Subject to detailed design, consultation with relevant government agencies and further approvals.*



1. Gathering Ground



2. Forest Walk



3. Water Plaza



4. Sculptural Entry

# RIDGE PARK

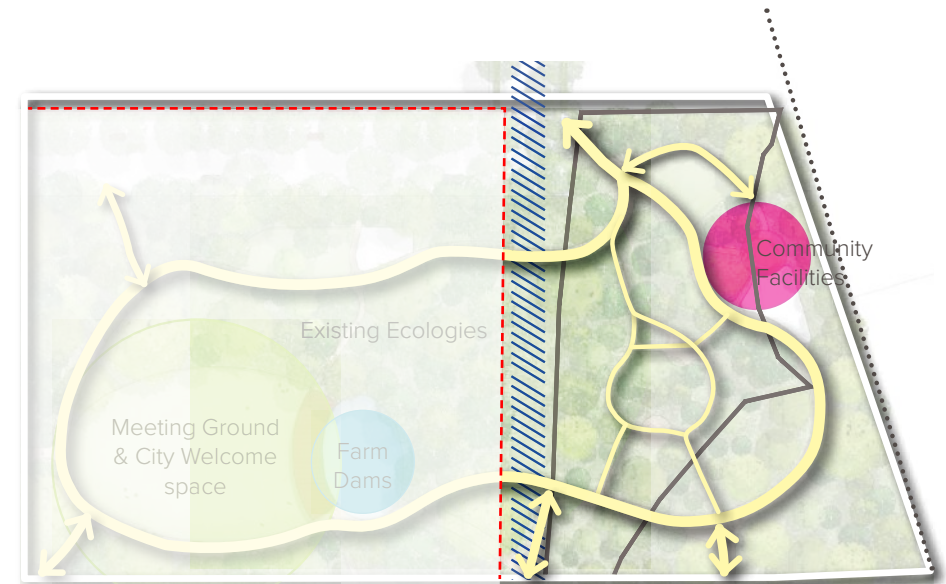
**RIDGE PARK CELEBRATES THE UNIQUE NATURAL LANDSCAPE OF THE SOUTH CREEK CATCHMENT, DESIGNED TO PRESERVE EXISTING VEGETATION COMMUNITIES. RIDGE PARK IS A SPACE FOR RENEWAL AND LEARNING, ENCOURAGING ENVIRONMENTAL EDUCATION AND FIRST NATIONS UNDERSTANDING AMONGST A CELEBRATED NATURAL ENVIRONMENT.**

## CONNECTING WITH COUNTRY

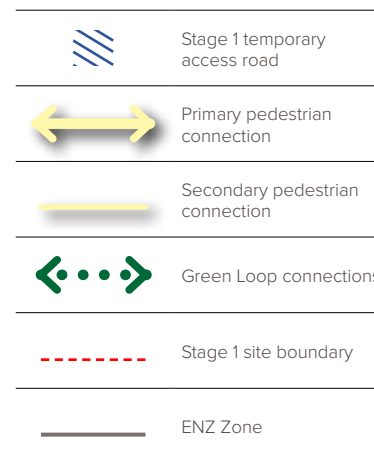
- Opportunity to celebrate the natural landscape of the South Creek Catchment through preservation and revitalisation of the existing vegetation communities in an unaltered state;
- Use diverse, natural ground treatments representing local landscapes to enable tactile opportunities to connect with Country — earth to sky;
- Opportunity for a designated welcome to Country space at the main entry to the park, inviting users to be immediately connected with the site’s history and culture.

## DESIGN APPROACH

- Protecting all existing high value ecologies through retention, enhancement and celebration of the existing Grey Box and Melaleuca forest. Exclusively endemic vegetation;
- Ridge Park to be an adaptive public space that facilitates education, engagement with nature, active lifestyles and passive nodes for relaxation and reflection at multiple scales;
- Celebrate, restore and re purpose the existing dams on the site;
- Exploring knowledge of Country through landscape creating a place for ceremonies for First Nations in a natural environment;
- Opportunities for exercise loops;
- Connects to the City Walk networks and key stage 1 buildings.
- Minimum Tree Canopy: 44%
- Minimum Perviousness: 89%



*\*Note: Concept Plan extends outside WPCA site boundary to show the connections between the site and its context.*



## CONSIDERATIONS

- Two existing dams to be integrated and re-purposed;
- Two high value vegetation communities, Melaleuca forest and a Grey Box grove which should be retained;
- ENZ zone for vegetation retention;
- Stage 1 temporary access road through the site, which may impact trees requires consideration.



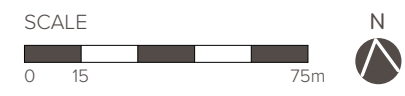


## CONCEPT PLAN (3.9HA TOTAL / 1.8HA WPCA)

- 1 **Community Facilitates** — such as toilets, change rooms, barbeques and outdoor all-weather spaces.
- 2 **Meeting Space** — with capability to accommodate groups for education/ events surrounded by dense screening vegetation for privacy.
- 3 **Viewing platform**— above tree tops with all abilities access to view sightlines, landmarks across Country and day and night sky with educational markers and wayfinding.
- 4 **Restoration and re-purposing** — of existing farm dams to promote ecology including the frog pond, wetland habitat and deck by the waters edge.
- 5 **Retaining existing ecologies** — Greybox Woodland with low shrub/woodland up to 10m.
- 6 **Retaining existing ecologies** — Melaleuca Forest with mature canopy 10-25m.
- 7 **Supporting ecologies** — remove the temporary stage 1 access road and re-vegetate to connect ecologies, and provide plants for cultural practice.
- 8 **Loop pathways** — around and through the existing trees to facilitate active and passive pedestrian movement and activities.
- 9 **Sensitive interfaces** — generous setbacks, public shared paths, minimise overshadowing, high quality building frontages responsive to Country and minimise light spill to ecological areas.



*Indicative landscape concept subject to consultation with relevant government agencies and further approvals. Concept Plan extends outside WPCA site boundary to show the connections between the site and its context.*



# RIDGE PARK

## PRECINCT CHARACTER

### PROTECTING ALL ECOLOGIES

- Retention of existing high value vegetation;
- Enhanced biodiversity through rewilding and regeneration of native and endemic communities;
- Retention of existing dams and celebration of water.



### SPATIAL KNOWLEDGE OF COUNTRY

- Encouraging outdoor learning and education on Country for all;
- Creating spaces for reflection and connection.



### ADAPTIVE PUBLIC SPACE

- Flexible open space to host small to large scale gatherings;
- Meandering pathways and informal connections between spaces.





# CITY WALK EAST

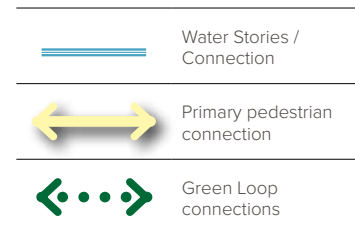
**A PEDESTRIAN-ONLY GREEN STREET CONNECTING CENTRAL PARK TO THOMPSON'S CREEK EVENT ZONE. CREATING A VARIETY OF PLACES TO PROVIDE AMENITIES, DIVERSE EXPERIENCE, AND TRANSITION FROM URBAN CORE TO NATURAL ENVIRONMENT.**

## CONNECTING WITH COUNTRY

- Integration of native planting into the landscape to create a green, liveable, resilient and sustainable neighbourhood;
- A linear park linking central park to creek and opens up to Sky Country while maintaining visual connections to Thompson's Creek waterfront;
- Recognise the value of water and propose water features for stream interpretation.

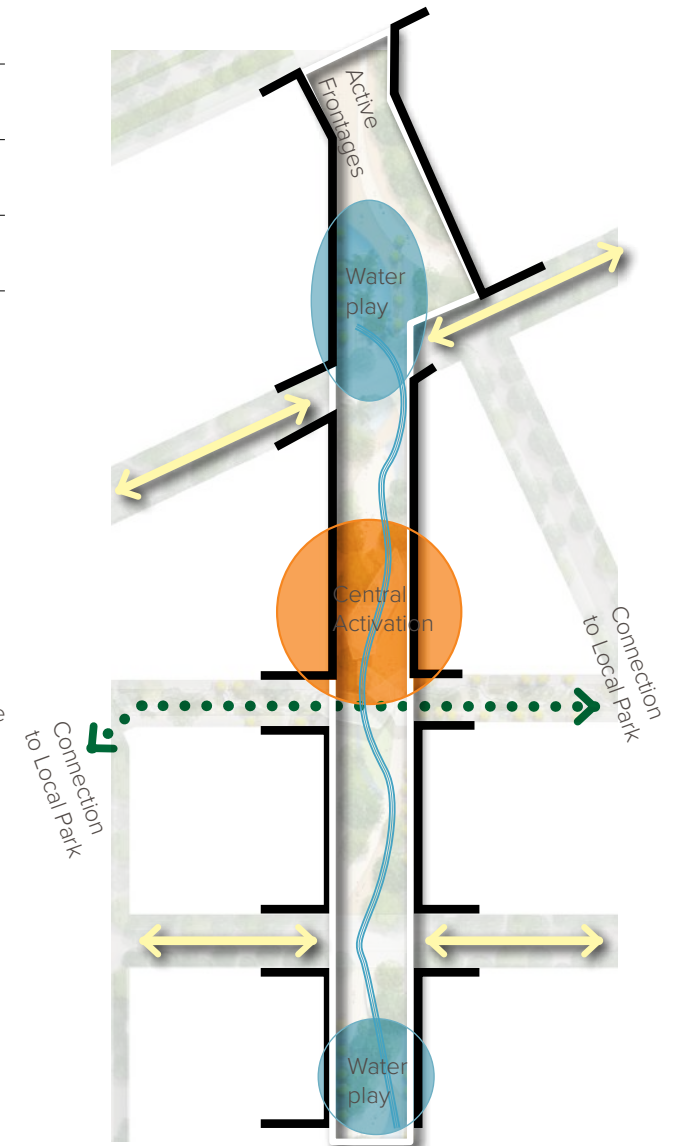
## DESIGN APPROACH

- A pedestrian only street connecting Central Park to City Parkland East event zone with pockets of green along the route;
- A central spine with active frontages, providing opportunities for outdoor dining for the surrounding residential neighbourhood;
- Creating a series of spaces along the route accommodating different uses with the consideration of social infrastructure plan;
- The walk will promote healthy living with direct commute to and from main activation and transport hubs;
- The city walk will provide shade and shelter with the consideration of solar access and pedestrian movement;
- Opportunity for public art and meaningful cultural connection where city walk meets the Green Loop.



## CONSIDERATIONS

- Through site pedestrian connections and hierarchy;
- Water quality and treatment;
- Ensure a strong Green Loop connection through the park;
- All waterplay is be less than 300mm in depth;
- Diversity and flexibility of space in accordance with the social infrastructure plan and active frontage allocation;
- Permeable surfaces primarily.



## CONCEPT PLAN (0.9 HA)

- 1 **Embedded Water story** - Interpretation of the creek line with integrated water play, water sensitive urban design to create visual interest and wayfinding opportunity.
- 2 **Shade** - Providing shade structure through the city walk for Central Activation at the intersection of the Green Loop.
- 3 **Gathering Space** - Create small intimate gathering spaces and provide variety of settings (sheltered, exposed, paved, and softscape)
- 4 **Pockets of Green** - Creating a parkland city experience with a continuous walk, open lawns, and plazas along the route
- 5 **Active Frontage** - Creating distinct and diverse character through providing space for local and community business and outdoor dining, these will inhabit and spill out into the space
- 6 **Public Cultural Centre** - At the intersection of the Green Loop containing a library, community centre or daycare facilities.

*Indicative landscape concepts subject to consultation with relevant government agencies and further approvals.*



# CITY WALK EAST

## PRECINCT CHARACTER

### TRANSITION FROM URBAN TO PARKLAND

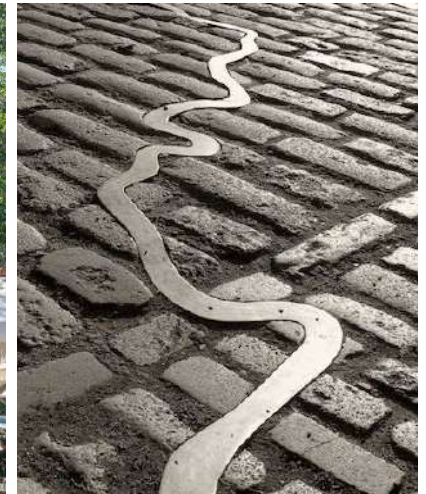
- Creating a parkland city experience by designing flexible green spaces and providing lush green;
- Connecting to nature by bringing water to the surface, make it visible and interactive;
- Dense canopy to soften architecture.

### BUILDING THE VISUAL CONNECTION

- Maintain connections to Thompson's Creek waterfront and Sky Country;
- Linear park with pockets of green;
- Water as an opportunity for wayfinding and creating visual interests.

### DIVERSE ACTIVE FRONTAGES

- A high activated city centre with diverse activities and business;
- Create a 24/7 city which supports economy and social life;
- Blur the boundary between hardscape and softscape;
- Inviting indoor activities out, and outdoor activities in.





## ARTIST IMPRESSIONS

*Subject to detailed design, consultation with relevant government agencies and further approvals.*



# GREEN LOOP

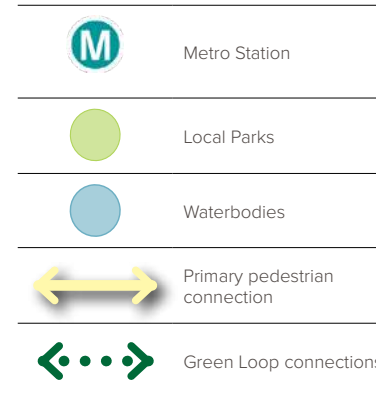
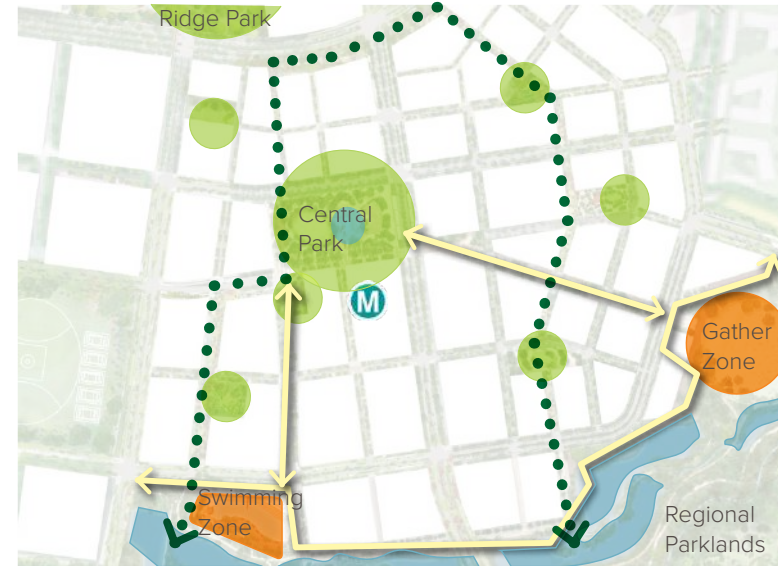
**A CONTINUOUS GREEN CIRCUIT LINKING LOCAL PARKS, NATURAL SYSTEMS AND PEDESTRIAN MOVEMENT THROUGH THE CITY IN A SETTING THAT CONNECT USERS PHYSICALLY, VISUALLY AND CULTURALLY WITH COUNTRY, CREATING INTIMATE MOMENTS OF DWELLING AMONGST COMPLEX BIODIVERSITY.**

## CONNECTING WITH COUNTRY

- Opportunity for nuanced spatial design that integrates endemic species with fine grain activation at building interfaces to create a meaningful expression of Country from the Ridgetop to the parklands;
- Continuous interlocking canopy with designated openings for connection with 'Sky Country', softening the hard edges of the built form and providing protection when walking;
- Species selection that responds to the local existing environment, encouraging new growth and ecological communities.

## DESIGN APPROACH

- Dedicated pedestrian street that prioritises pedestrian movement at crossings;
- Cultural importance of linking the Ridge to Creek and expression of this story;
- Minimal hard edges and blurred lines between building, sidewalk and landscape interfaces across the pedestrianised Green Loop;
- The use of fine grained material, formal and other spatial responses to the pedestrianised Green Loop that articulate a human scale and avoid expanses of glass shop fronts to the lower storeys. Reflect the materials, colours, lines and experiences of Country;
- Building interfaces open onto diverse public spaces: dining, retail, performance, art, ceremony;
- Exclusively endemic planting & integrated water systems, creating ecosystems that bridge movement between larger public spaces;
- Continuous canopy to provide ecological corridor for birds.



## CONSIDERATIONS

- Avoid constantly running water sprayers or permanent pumping systems for water;
- Avoid using straight lines and hard edges;
- When encountering service-ways, laneways and local roads the Green Loop must prioritise pedestrians with safe, level pedestrian crossings;
- The Green Loop should feature local Dharug art and stories;
- The Green Loop prioritises direct interfaces with building & public parks.



## CONCEPT PLAN

- 1 Local Parks** - More intimate gathering spaces for community and opportunity for Blak Markets
- 2 City Threshold** - Green spaces to communicate a place for welcome and entry point into the city.
- 3 Waterfront Promenade** - connects people to the waters edge with highly activated retail frontages.

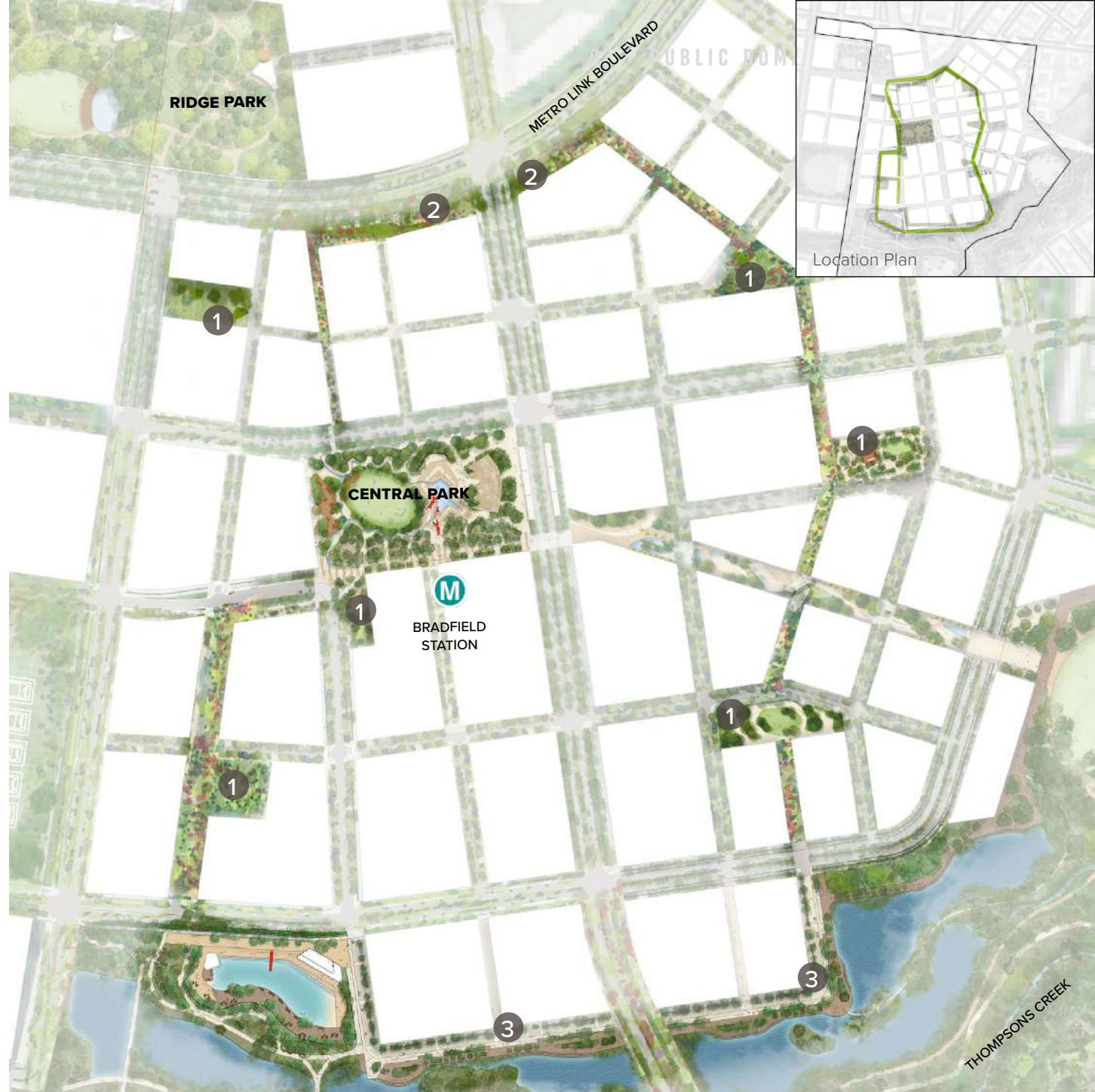
**Endemic** and lush planting in corridors for continuous canopy and habitat.

**Art and sculpture** to privilege local Dharug art and storytelling.

**Seating** nodes embedded within landscaping.

**Waterscapes** that reflect a care for a precious resource may be integrated subtly across the pedestrianised Green Loop.

*Indicative landscape concepts subject to consultation with relevant government agencies and further approvals.*



# GREEN LOOP

## PRECINCT CHARACTER

### FIRST NATIONS CULTURAL GREEN LOOP THROUGH THE CITY

- Creating an integrated experience;
- Blur the boundaries between built and nature;
- An independent street typology for human and small ecological movement interface;
- Connecting with Country in public space at all scales, it brings all things together.

### ENHANCING AND CONNECTING TO WATERWAYS

- Protecting all ecologies;
- Water integrated city;
- Adaptive public space;
- Connected up ecosystems.

### PEDESTRIAN LINKS CONNECTING CIVIC PLACES

- Green streets and places;
- A city planned through travel and journeys;
- Local and wider travel lines made possible through vistas and connections to Sky Country and buildings;
- Inviting indoor activities out, and outdoor activities in.





## ARTIST IMPRESSION

*Subject to detailed design, consultation with relevant government agencies and further approvals.*



# LOCAL PARKS

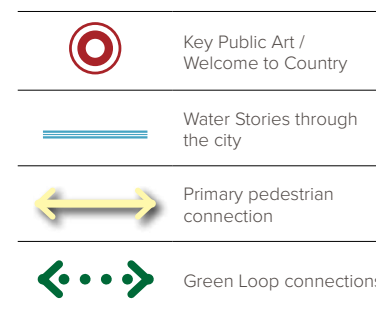
**A NETWORK OF GREEN PUBLIC OPEN SPACE EXTENDS OFF THE GREEN LOOP, OFFERING RETREAT AMONGST THE BUILT FORM. THE PARKS BECOME MEETING PLACES FOR SOCIAL GATHERING, LOCAL PLAY AND COUNTRY TO BREATHE AMONGST A DIVERSE NATURAL ENVIRONMENT.**

## CONNECTING WITH COUNTRY

- Spatial relief from within the dense urban neighbourhood, creating openings to Sky Country;
- Yarning circle for local community gathering, cultural learning, and meaningful connection;
- A balance of diverse elements and provision of multi-functional spaces for adaptable uses and small community gatherings.

## DESIGN APPROACH

- Creating diverse and adaptive public space for both groups and individuals for intimate interaction;
- Creating a cultural connection with Country through materiality, tree planting, flowing design geometries that are meaningfully integrated into the landscape and the greater Green Loop;
- Creating a strong indoor and outdoor relationship;
- Ensuring that the public art is both local and global creating a rich cultural story for the park. Strong sense of place enhanced by art;
- Portrays a softer, less urban palette of furniture and hardstand to express a more local feel and maximise permeability.
- Minimum Tree Canopy: 60%
- Minimum Perviousness: 48%



## CONSIDERATIONS

- Ensure a strong Green Loop connection through the park;
- All waterplay to be less than 300mm in depth, quality and treatment managed;
- Hostile Vehicle Management through buffer planting to sides adjoining share streets;
- Maximise opportunity for deep soil.



## CONCEPT PLAN (SIZE VARIES)

- 1 **Gathering Space** - Create a series of flexible spaces for the community to engage and socially interact, allowing for local markets and community events.
- 2 **Playground** - Provide opportunities for neighbourhood play. This should be a combination of structure and wild/nature play to connect with the school precinct on the northern side.
- 3 **Yarning Circle** - A place for meaningful connection and provide opportunities to learn and care for Country. A place to talk through community issues.
- 4 **Water Play** - Promote water play and interaction, and consider water play as an opportunity to learn, touch, tell stories and guide pathways.
- 5 **Public art** - meaningfully integrated into the landscape, acknowledgement of Country, connected to the larger Green Loop and celebrate local culture.



*Indicative landscape concepts subject to consultation with relevant government agencies and further approvals.*

SCALE



# LOCAL PARKS

## PRECINCT CHARACTER

### ADAPTIVE PUBLIC SPACES

- Passive and active recreation;
- Diverse and accessible amenity;
- Open spaces that adapt to multiple uses;
- Connecting with Country in public spaces at all scales through materiality, planting palettes, and art (pocket parks grounded in meaningful connections with Country);
- Integrated local and global art and storytelling.

### BRINGING THE INSIDE, OUTDOORS

- Flexible buildings edges with active frontages;
- Inviting indoor activities out, and outdoor activities in;
- A city planned through travel and journeys;
- Preferring businesses that open up to public space, and connected to pedestrian areas.

### DIVERSITY AND WILDPLAY

- Creating diverse typologies of public, private, commercial and residential spaces that respond to demographic needs;
- Fine grain cultural + economic exchange;
- Social and cultural diversity;
- A variety of distinct civic places.





*Artists impression only, subject to detailed design.*

# THE PARKLANDS

**A SERIES OF CONNECTED PARKLAND SPACES PROVIDE A RANGE OF DIVERSITY THAT ACCOMMODATE BOTH A CITY AND PARKLAND CONTEXT. WATER IS THE CENTRAL THEME, CONNECTING USERS WITH THE CREEK, WETLANDS AND LOCAL VEGETATION COMMUNITIES.**

## CONNECTING WITH COUNTRY

- Celebrating the district's natural character of Country through revitalising the creek and providing access to a world class parkland environment;
- Protecting water is protecting Country;
- Restoration and conservation of endemic vegetation to provide habitat for native wildlife;
- Maintain visual connections to Moore Gully and Thompsons Creek by providing access and viewing points;
- Retain and revitalise existing wetlands and dams where possible.
- Minimum Tree Canopy: 61%
- Minimum Perviousness: 93%



Southbank Beach, Brisbane

## CITY PARKLANDS WEST

- Extensive green space;
- Natural swimming & water cleansing;
- Habitat for local fauna.



The Domain, Sydney

## CITY PARKLANDS EAST

- Event spaces;
- Water filtration;
- Revitalisation of the riparian zone;
- Ecological corridor supporting wildlife;
- Nature walks etc.

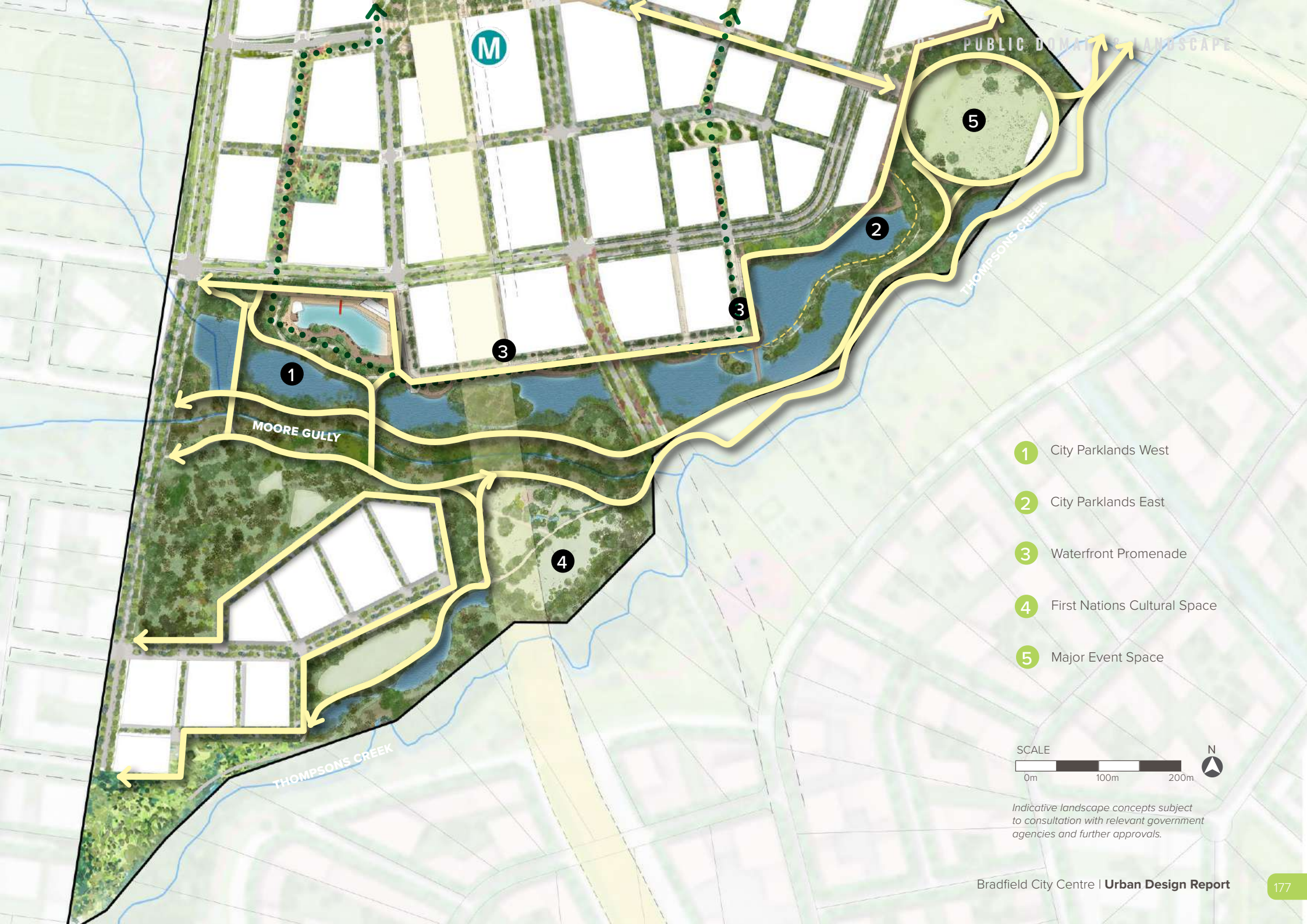


Avon River Park Terraces, New Zealand

## PEDESTRIAN LINKS CONNECTING CIVIC PLACES

- Contrasting urban and natural thresholds;
- Active river banks;
- Educational walks;
- Formalised and casual tracks with a hierarchy of scales relevant to their function.





M

PUBLIC DOMAIN LANDSCAPE

THOMPSONS CREEK

MOORE GULLY

1

3

3

2

5

4

- 1 City Parklands West
- 2 City Parklands East
- 3 Waterfront Promenade
- 4 First Nations Cultural Space
- 5 Major Event Space

SCALE  
 0m 100m 200m

N

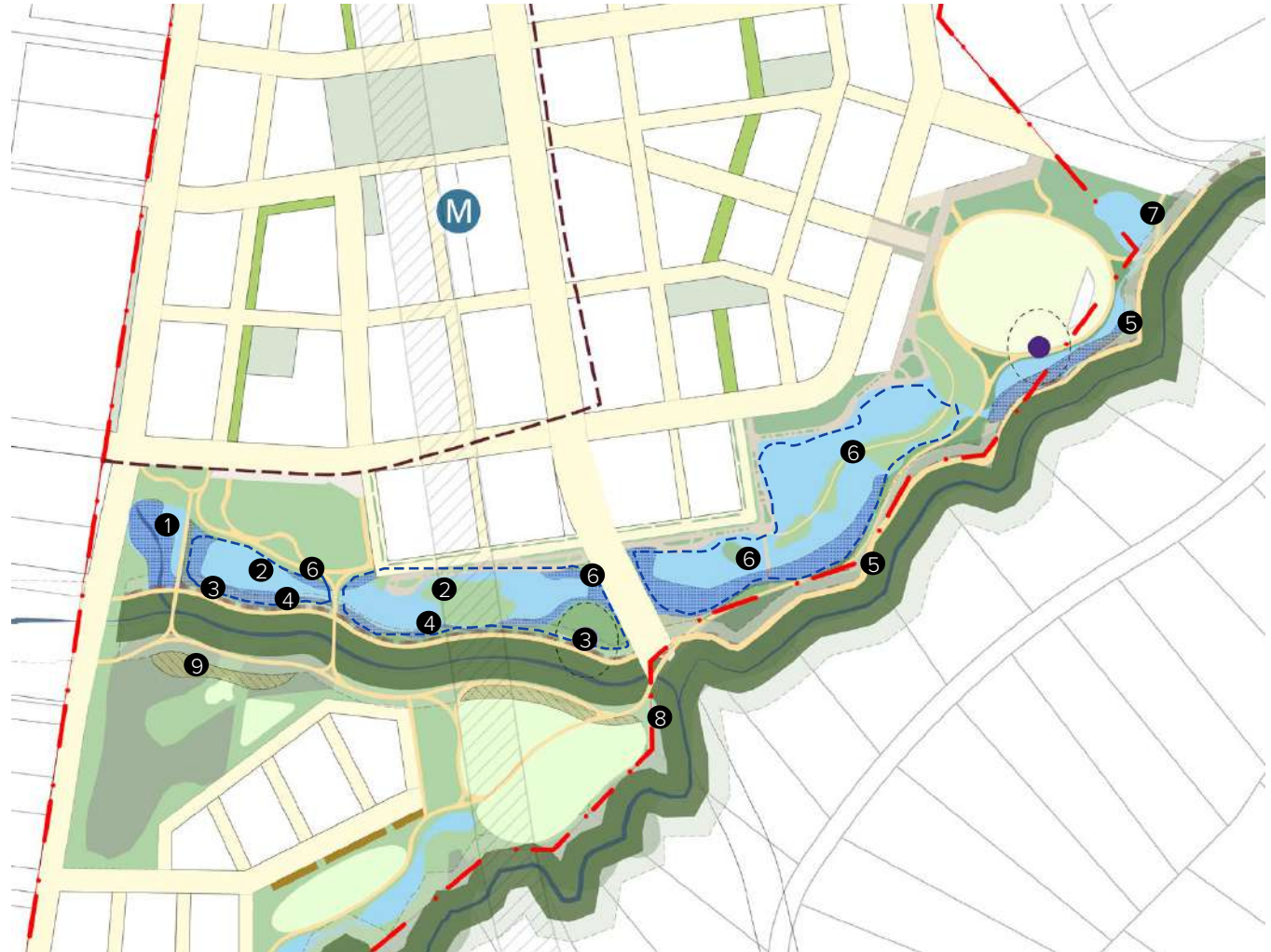
*Indicative landscape concepts subject to consultation with relevant government agencies and further approvals.*

# INTEGRATED WATER MANAGEMENT

The design integrates the key water management requirements including riparian corridors for a fourth order stream and an integrated design approach to water quality, water reuse and flood detention requirements. Key features include:

- Moore Gully realigned slightly south to provide open space along city edge;
- Sydney Water basins moved to north side of creek to service upstream catchment and integrate with overall water scheme;
- Provide a series of connected water bodies to manage quality and quantity;
- Tiered urban promenade between city and water;
- Park activation between creek lines;
- Water bodies shifted to city edge with more direct relationship to waterfront promenade.

- 1 3rd Order Stream - 30m Riparian Zone
- 2 Combined Wetland with on-site stormwater detention (OSD)
- 3 1% AEP Berms & Paths
- 4 Integrated Wetland Zone within vegetated buffer (VB)
- 5 Bioretention Treatment
- 6 On-site stormwater detention above Water Body
- 7 Open Water Storage
- 8 Minor Encroachment into vegetated buffer (VB)
- 9 Offset of Encroachment into vegetated buffer (VB)



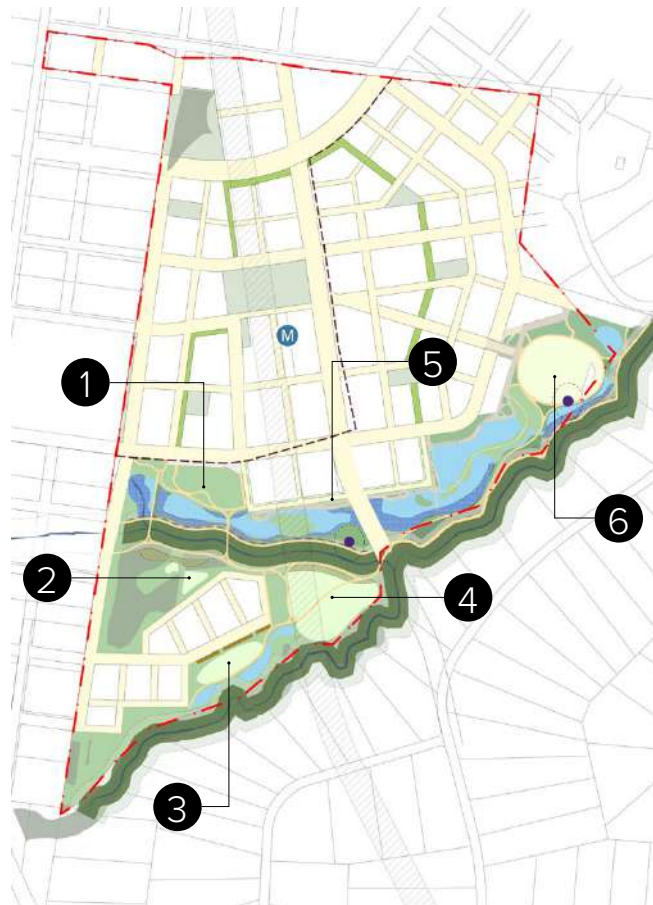
SCALE



0 150 300m

# RECREATION

Thompsons Creek has a defined bed and bank with riparian vegetation dominated by casuarinas. The adjacent riparian lands fall gently towards the creek line



**1 SWIMMING HOLE**



Bondi Icebergs Club, Sydney

**2 PASSIVE RECREATION SPACE**



Lizard Log, Sydney

**3 CREEKSIDE LOCAL PARK**



Tom Groggin Campground, Murray Gorge

**4 REGIONAL RECREATION/PLAYGROUND**



Boulognerskogen, Swedish

**5 PARKLAND PROMENADE**



Avon River Park Terraces, New Zealand

**6 THE 'GATHERING GROUND' MAJOR EVENT SPACE**

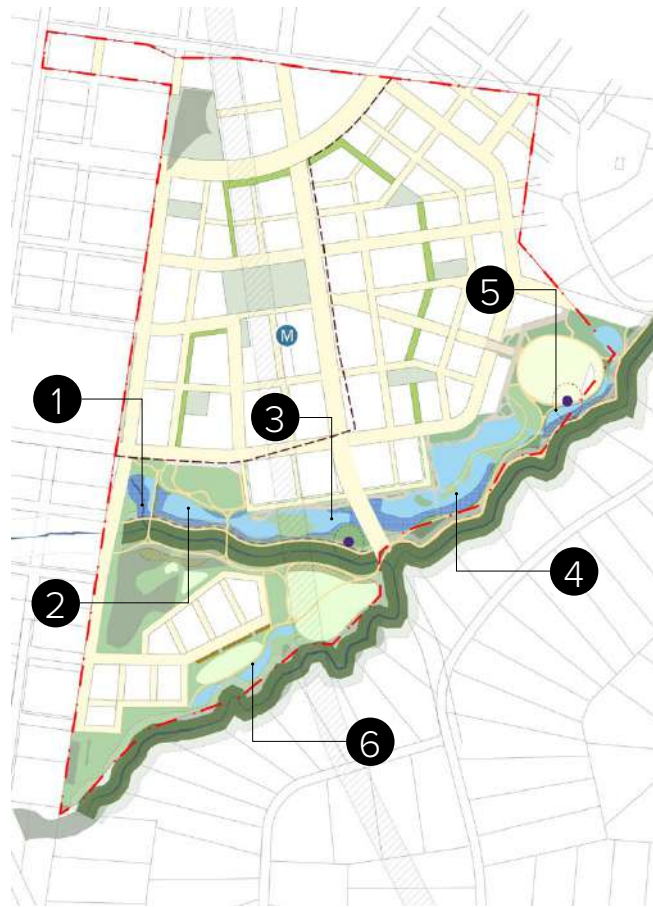


Sidney Myer Music Bowl, Melbourne



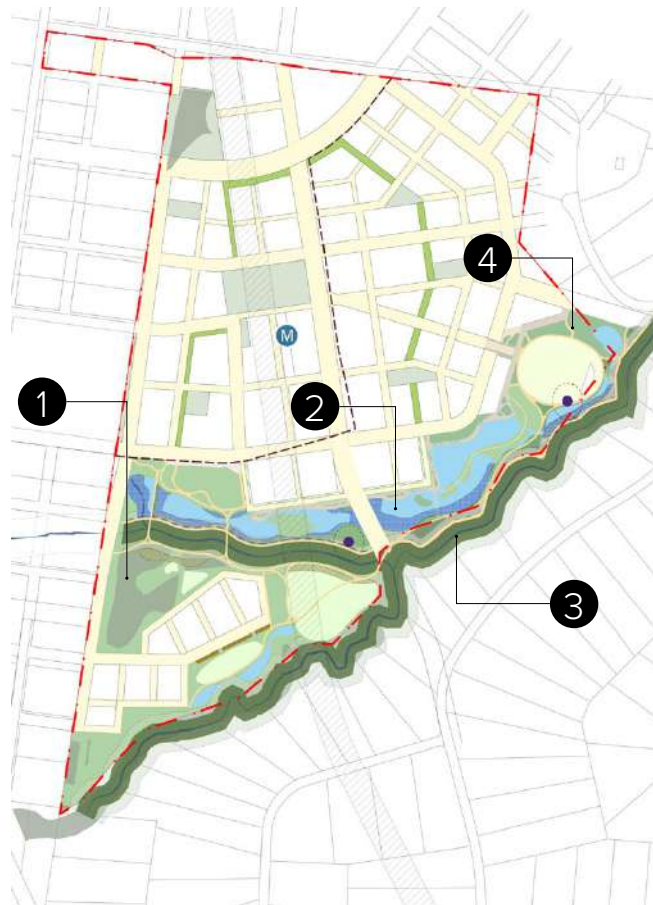
# WATER

An interconnected wetland and pond system that celebrates freshwater Country and manages stormwater.



# BIODIVERSITY STRATEGY

The extensive greenspace and waterbodies in Bradfield Parklands enhances the biodiversity, and support native fauna by encouraging foraging and diverse habitat.



## 1 WOODLAND



Vaired Sitella



Crimson Rosella

## 2 WETLAND ZONE



Australian Smelt  
Retropinna Semoni



Little Pied Cormorant

## 3 RIPARIAN ZONE



Dark Flecked Garden  
Sunskink



Common Eastern  
Froglet

## 4 URBAN WOODLAND



Gang Gang Cockatoo



Powerful Owl

\* Refer to Appendix C - Urban Habitat for detail species list

# CITY PARKLAND WEST



*Artists impression only, subject to detailed design.*

# CITY PARKLAND EAST



*Artists impression only, subject to detailed design.*

# CITY PARKLAND WEST

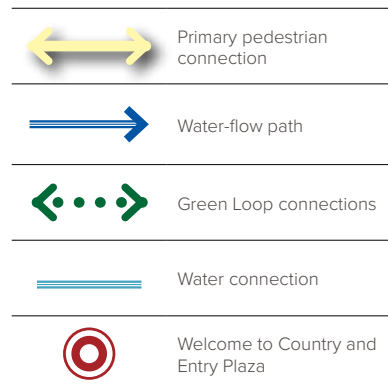
THE CITY PARKLANDS WEST IS THE MAJOR ARRIVAL POINT FOR USERS TRAVELING THROUGH THE CITY WALK WEST. AT ITS HEART, A SWIMMING HOLE, PROMOTING ACTIVE RECREATION AND SOCIAL GATHERING. THE SPACE CELEBRATES A TIERED LANDSCAPE, TRANSITIONING FROM A STRONG URBAN EDGE INTO AN IMMERSIVE NATURAL ENVIRONMENT.

## CONNECTING WITH COUNTRY

- Recognise the value [redacted] and create a complete ecology around it with a diverse mix of endemic understorey species;
- Allow sufficient space between boardwalk and trees with cultural significance and respect for major trees;
- Enhancing natural ecological system of existing wetlands and strengthen its economic and tourism potential.

## DESIGN APPROACH

- Cultural importance of linking the Ridge to Creek and expression of this story;
- Implement flooding and storm water management to protect the natural and built environment;
- Create the city waterfront;
- Connect with Bradfield's nature ecosystems and ecology;
- Connect with Country through the waterstory;
- Utilise level change to create unique vistas and aid natural filtration/ run off water systems for flood mitigation and water maximisation.
- Minimum Tree Canopy: 46%
- Minimum Perviousness: 33%



## CONSIDERATIONS

- Continuing strong green connections from the Green Loop through site;
- Water quality and treatment from WSUD systems and City Walk West;
- Swimmable waterbody located in the outer 50% of existing riparian zone. Altered riparian zones will result from adopting the best practice water integration approach;
- Flood extents;
- High value vegetation South side of creek;
- Sydney Water Basin constraints.



## CONCEPT PLAN (1.5 HA)

- 1 **Swimming** - opportunity at the entry to the Parklands for city cooling, major public attraction and development outside the riparian extents. A beach in Western Sydney.
- 2 **Public Pavilion** - connects to the waterbodies for opportunity to dine or showcase.
- 3 **Upper Urban Promenade** - runs around the perimeter of the space, creating a distinct urban edge with the Parklands and protecting Riparian ecologies from urban stresses. It flows from the City walks and commercial frontages.
- 4 **Promontory Lookout** - utilises level change to create a space to observe water systems and protected ecologies within the riparian zone.
- 5 **Breakout Lawn** - provides a soft space for recreation away from the swimming development. It connects the Green Loop with the Parklands and continues it's soft material language.
- 6 **Timber Deck** - wraps around the pool and introduces a softer material language to the Parklands interface.
- 7 **Wetland System** - utilises WSUD approaches and natural filtration from riparian ecologies to mitigate flood impacts, cool the city and provide visual attraction.

*Indicative landscape concepts subject to consultation with relevant government agencies and further approvals.*



# CITY PARKLAND WEST

## PRECINCT CHARACTER

### SWIMMABLE

- An active public swimming pool;
- Visual and physical connection to water;
- Create a cooled environment during warm summer months;
- Emphasising the presence of the wetlands as the integral water element.



Barton Springs Municipal Pool, Austin

### MULTILEVEL EXPERIENCE

- Split level access from Urban promenade against the built form;
- View lines from within the city centre;
- Opportunity for cafe breakout spaces and planted landscape;
- Highlighting main view corridors from the streets towards Thompson Creek, with opportunity for pedestrian crossing.



Avon River Park Terraces, New Zealand



Coombabah Lakelands Conservation Area, Gold Coast



LTH Campus Park, Sweden



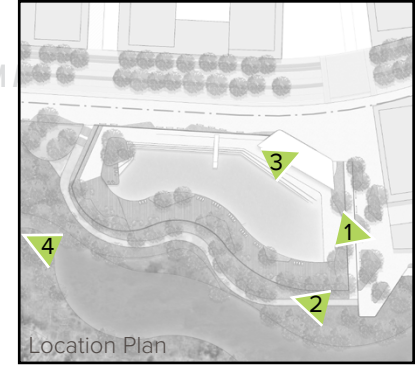
Vistula Boulevard, Poland



Southbank Beach, Brisbane

### PARKLANDS PROMENADE

- Urban edge transitions into lower parkland;
- Extension of the Green Loop through the lower wetland ecology;
- Passive nature walks;
- Re-vegetating endemic ecologies to support the creek line;
- Significant tree canopy.



## ARTIST IMPRESSION

*Subject to detailed design, consultation with relevant government agencies and further approvals.*



1. Swimming hole



2. Waterfront promenade and green loop walk



3. View from Moore Gully pavilion



4. Aerial view

# CITY PARKLAND EAST

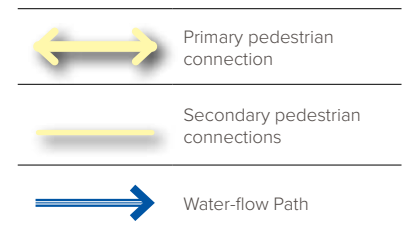
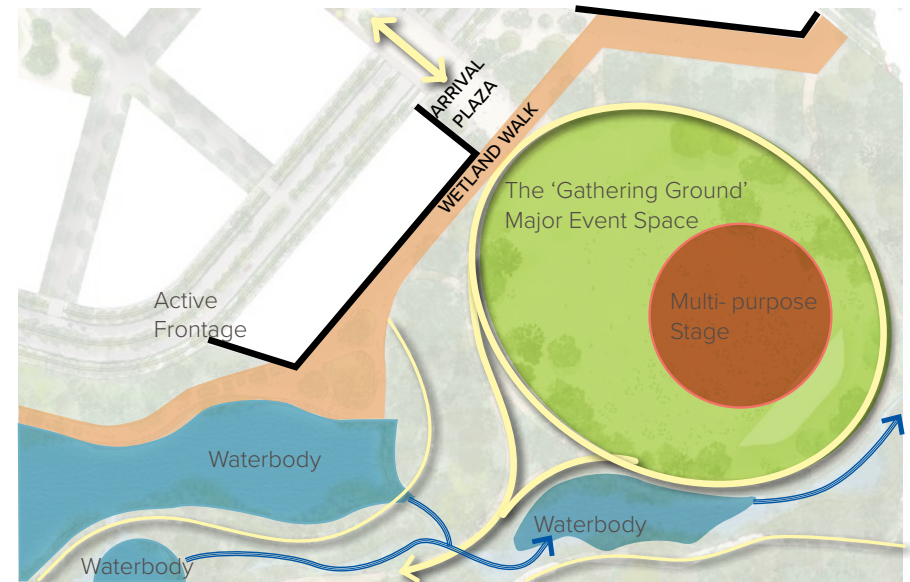
**THE EASTERN PARKLANDS CELEBRATES THE SURROUNDING LOCAL ECOLOGY, WORKING TO PROTECT AND ENHANCE THE EXISTING HIGH VALUED VEGETATION. AT ITS CENTRE, IT HOSTS A LARGE GATHERING SPACE, FLEXIBLE FOR CITY SCALE EVENTS AND OUTDOOR ACTIVATION AMONGST A PARKLAND ECOSYSTEM.**

## CONNECTING WITH COUNTRY

- Mixed use public spaces that are flexible for various occasions;
- Interconnectedness of public spaces amongst diversity of local ecology, people and animals;
- Connecting city parklands east to Green Loop with dedicated pedestrian pathways.

## DESIGN APPROACH

- Express the story of Ridge to Creek and reinforcing the Cultural importance;
- A new domain for the city that is centred around culture and Country. The event space is shared with native grass meadows creating space to celebrate and immerse;
- Biodiverse palette, building off existing significant ecologies for habitat, cool cities and resilient ecosystems;
- Providing spaces that are flexible and adaptable to future needs;
- Rooms within a park to accommodate varying scales of activity and interaction.
- Minimum Tree Canopy: 51%
- Minimum Perviousness: 83%



## CONSIDERATIONS

- Re-routing a strahler order 4 & 5 stream into South Creek;
- Areas of existing significant vegetation along South Creek to be retained and enhanced with supplementary endemic vegetation;
- Much of the open space located within the flood extents. Impacts on materiality, function and planting to be considered.

## CONCEPT PLAN (5 HA)

- 1 The 'Gathering Ground' Major Event Space** - opening off City Walk East, a direct link to the metro city centre, has opportunity to host large events and showcase Bradfield as a parkland city. Encircled in trees, the open space hosts a diverse palette of native meadow grasses.
- 2 Stage** - is the centrepiece of the events lawn with flexible functionality for performance and the ability to adapt to future needs.
- 3 Wetland Walk** - an extension of Green Loop, providing opportunity to walk and wander at the border of city parkland, connecting parkland west to parkland east and providing opportunity for artwork to symbolise parkland entry/welcome.
- 4 Multi-purpose Space** - opportunity for additional water detention, markets, temporary exhibitions and installations.
- 5 Exploratory Walk** - meandering through riparian communities, allows an intimate interaction with the creek. It adopts a soft palette to preserve existing habitats and respond to the materials, colours and shapes of Country.
- 6 Water Systems** - retain existing significant creeklines but interoperate higher order ones into the public domain. Potential additional detention.

*Indicative landscape concepts subject to consultation with relevant government agencies and further approvals.*



# CITY PARKLAND EAST

## PRECINCT CHARACTER

### CITY CELEBRATION AND EVENT SPACE

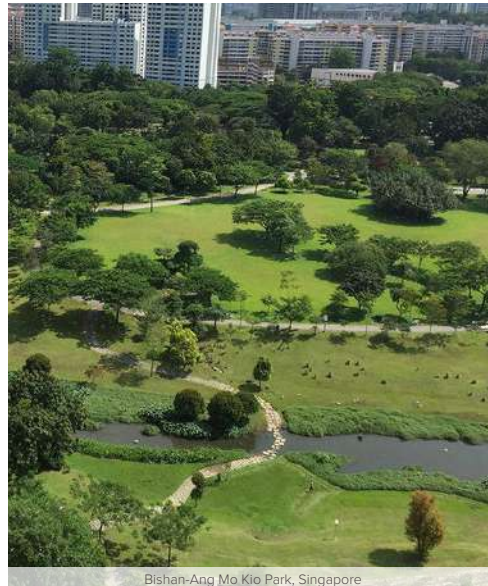
- Event lawn;
- Civic/cultural building;
- Performance and gathering.

### MULTIPURPOSE OUTDOOR SPACE

- Doorstop parkland experience;
- Sports fields can become spaces for cultural practices and cultivation when sport is not in season.

### CONNECTED WATER SYSTEM

- Extension of the Green Loop and local ecologies;
- Visual and physical connections with Thompson Creek;
- Interconnected wetland system supporting habitat and environment;
- Protection of existing water system and revitalisation of riparian zones.



Bishan-Ang Mo Kio Park, Singapore



The Domain, Sydney



Riverstage, Brisbane



Parramatta Park, Sydney



Tumbalong Park, Darling Harbour, Sydney



Canal Corridor, London



Sørenga Central Park, Norway



Bryant Park, New York



Sidney Myer Music Bowl, Melbourne



Canal Corridor, London



Parc André-Citroën, Paris

# WETLAND WALK

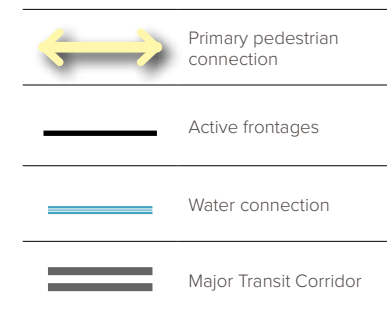
**THE DUAL LEVEL PROMENADE INTERFACES URBAN BUILT FORM AND NATURAL PARKLANDS. THIS ALLOWS FOR A DISTINCT EDGE THAT PROTECTS CREEKLAND/GULLY ECOLOGIES AND PROVIDES UNIQUE VANTAGE OPPORTUNITIES TO THE RIPARIAN SYSTEM. THE PROMENADE IS AN EXTENSION OF THE CITY WALKS AND COMMERCIAL FRONTAGES, BLURRING THE BOUNDARIES OF INSIDE AND OUTSIDE.**

## CONNECTING WITH COUNTRY

- Mixed use public spaces that are flexible for various occasions;
- Interconnectedness of public spaces amongst diversity of local ecology, people and animals;
- Connecting city parklands east to Green Loop with dedicated pedestrian pathways.

## DESIGN APPROACH

- A pedestrian focused corridor connecting users from the city centre to the parklands;
- The promenade maximises the sites level change, creating opportunity for active façades, seating nooks and lookouts across the parklands;
- Promotes equal access, bringing users down to the water's edge whilst still protecting the local ecologies and riparian systems;
- Merging the palettes of the built form and public domain to blur the boundaries of indoors and outdoors;
- Bridging ecologies from the city into the Parklands, extending habitat into the city.



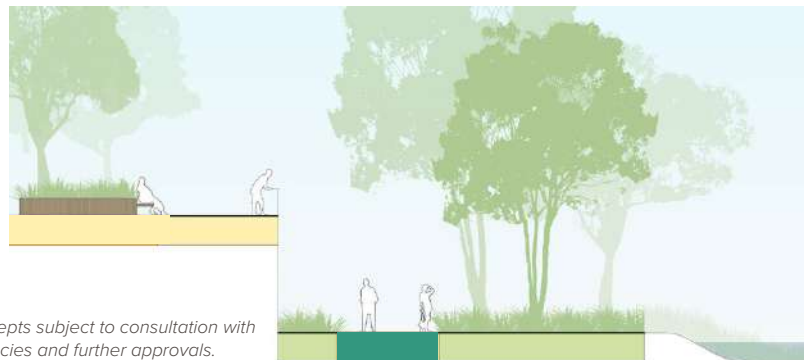
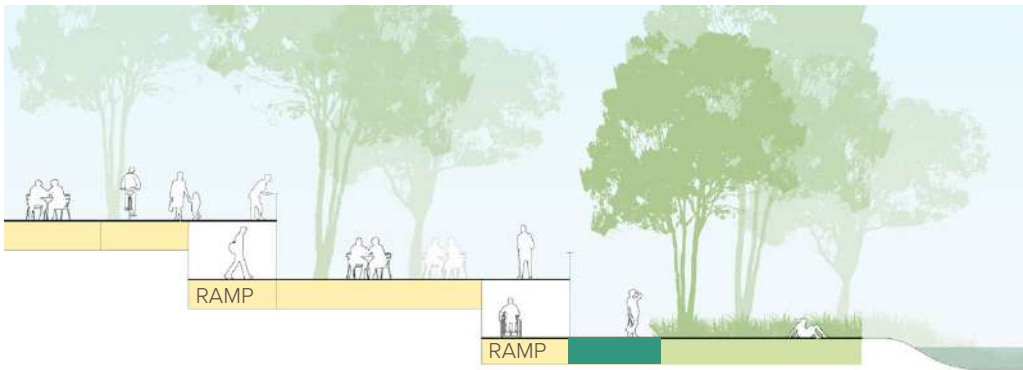
## CONSIDERATIONS

- Flood extents;
- Additional detention basins will alter riparian zones if adopting the best practice water integration approach;
- Regional Park requirements for Parklands East;
- Connections to Green Loop;
- Connections across waterways to South.





Avon River Park Terraces, New Zealand



*Indicative landscape concepts subject to consultation with relevant government agencies and further approvals.*

Indicative Interfaces



View from Wetland walk



08

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# MOVEMENT

# POLICY ALIGNMENT

## THE APPROACH TO MOVEMENT AND ACCESS IN THE CITY RESPONDS TO KEY POLICY OBJECTIVES AND REQUIREMENTS

### FUTURE TRANSPORT STRATEGY

The Future Transport Strategy sets the strategic directions for Transport for NSW to achieve world-leading mobility for customers, communities, businesses and our people. The Strategy aims to deliver three high level outcomes:

#### 1. Connecting our customers' whole lives

- Connectivity is improved across NSW
- Multi-modal mobility supports end to-end journey
- Equitable, accessible and secure transport for all
- Our transport networks are safe

#### 2. Successful places for communities

- Supporting growth through smarter planning
- Infrastructure makes a tangible improvement to places
- Transition to net zero greenhouse gas emissions
- Transport minimises environmental impacts
- Resilient and adaptable to shocks and stresses

#### 3. Enabling economic activity

- Freight networks and supply chains are efficient and reliable
- Existing infrastructure is optimised
- Transport supports the visitor economy
- The transport system is financially sustainable
- Leverage our procurement power for better outcomes

The Master Plan has implemented these objectives into the planning and design for movement at Bradfield.

### MOVEMENT AND PLACE FRAMEWORK

Movement and Place is a cross-government framework for planning, designing and managing our transport networks to maximise benefits for the people and places they serve. The approach looks beyond functional requirements of all transport modes, and uses a 'place-based' approach to design and plan places that generate social, environmental and economic values for the city and the communities within.

Under the approach, street design adjusts to suit the context and priorities for the area. For example a transport corridor between centres is designed more for movement, whereas a commercial street within a centre is designed to suit a range of place functions such as social life, landscape and high pedestrian activity.

The Master Plan has used this approach in refining the design of street types through Bradfield city centre.



### MOVEMENT GUIDES

TfNSW has developed a series of guides to inform the design and planning of streets and transport systems including:

- Walking Space Guide;
- Cycleway Design Toolkit;
- Bus Priority Infrastructure Planning Toolbox;
- Last Mile Freight Toolkit;
- Great Public Spaces Toolkit;
- Safe Systems Assessment Framework;
- Beyond the Pavement;
- Road User Space Allocation Policy.

These guides have been considered in the Master Plan movement principles and street designs.



## AEROTROPOLIS PRECINCT PLAN

The Aerotropolis Precinct Plan sets out the planned rail alignments, transport networks and hierarchy for all modes across the precinct and future mode share targets for the region. The Plan also sets out principles for block structure and urban typologies as well as a range of street typologies from arterials through to local streets.

The master plan has respected this guidance and integrates with the Precinct Plan seamlessly, and also proposes minor refinements to the network and introduces additional street types to create the fine grain walkable urbanity desired and achieve the sustainable travel behaviour desired in the Precinct Plan.

## WSA DEVELOPMENT CONTROL PLAN

The Western Sydney Aerotropolis Development Control Plan (DCP) contains a number of elements that influence transport planning in the city centre including:

- water sensitive urban design and perviousness;
- tree canopy and street tree planting;
- landscape species;
- street network design;
- street typology and street design;
- travel demand management;
- parking and servicing;
- design for safe places;
- smart cities;
- services and utilities.

The objectives and performance outcomes in the DCP have been addressed in the Master Plan movement principles, street network planning, street design, and transit interchange design.

In response to the specific needs of Bradfield City Centre including the master plan layout and the transit interchange design, the master plan proposes refinements the street sections in the DCP and also proposes additional street types.

## WESTERN SYDNEY STREET DESIGN GUIDE

The Western Sydney Street Design Guide is a comprehensive design guide that seeks to optimise outcomes in Western Sydney with a focus on place quality, pedestrian amenity, sustainability, landscape and urban heat.

The principles, information and guidance contained in the Guide has been incorporated throughout the transport, street and landscape design of the master plan.

In response to the specific needs of Bradfield City Centre including the master plan layout and the transit interchange design, the master plan proposes refinements the street sections in the Guide and the DCP and also proposes additional street types.

# INSPIRATION

## A SELECTION OF THE 60+ CASE STUDIES UNDERTAKEN FOR THE MASTER PLAN THAT HAVE INFLUENCED THE APPROACH TO MOVEMENT

### LOWER SPEED LIMITS



Pedestrians and cyclists have less than 10% risk of death in a road traffic collision at 30km/hr, but this increases to 90% at 50km/hr. Low speed streets are key to achieving Australia's commitment to Vision Zero, eliminating death and serious injury from road collisions (Transport for NSW Centre for Road Safety). Low speed streets make active travel safer, tackle car dependency and obesity and reduce climate impacts while having minimal impact on congestion or travel times.

Cities around the world are adopting 30km/hr as the default speed limit including Paris, Munich, Madrid, Oslo, Helsinki and Brussels, and also at a national level for example Wales, Scotland, Spain and Germany. In 2020 the UN General Assembly endorsed its global safety campaign Streets For Life that advocates a default 30km/hr speed limit in cities.

Locally, the 2023 NSW Speed Zoning Standard now includes specific provision for 30km/hr speeds on high pedestrian activity streets with vehicle through-movement. The Master Plan and street network has been designed for slow, safe streets throughout the city centre.

### MICROMOBILITY



The use of micromobility (e-bikes, e-scooters) is growing exponentially in Australia and around the world with both shared services and personal ownership. Research shows it appeals to a broader audience than conventional cycling and greatly increases the acceptable travel distance due to its ease of use and ability to combat topography, and is recognised as a key mode in the shift to reduced car use. With retail prices for e-bikes and scooters decreasing and with increasing fuel prices there are significant economic advantages over driving, which compound further if households can eliminate a second car.

A key barrier for micromobility is the lack of a connected network of safe streets and routes. Dedicated bike lanes are proven to decrease accidents and increase usage, and leading cities are investing heavily in this infrastructure, most notably Paris has announced 180km of new bike lanes over the next 4 years.

The Master Plan proposes separated bike lanes on all major streets and slow, safe cycling streets within neighbourhoods.

### WOVEN CITY, JAPAN



Toyota is building an urban incubator called Woven City to accelerate the transformation and advance all aspects of mobility and beyond. Envisioned as a living laboratory to test and advance personal mobility, autonomy, mobility as a service, connectivity, hydrogen-powered infrastructure and industry collaboration, Toyota Woven City aims to bring people and communities together.

The project aims to create a new equality amongst vehicles, alternate forms of movement, people and nature to create connected, clean and shared mobility.

In Woven City, the typical road is split into three: a Street optimized for vehicular traffic with logistical traffic underneath, a Promenade for micro-mobility such as bikes, scooters, and personal mobility, and finally a Linear Park for pedestrians, flora, and fauna. These three strands form the DNA of the city, which are woven together to create a 3x3 city block module.

## TIMELESS GREAT STREETS



As well as looking to the future, we can also learn from the past. In Sydney, and many cities around the world, some of the best streets are found in pre-war inner suburbs.

Throughout Surry Hills, Paddington and the Inner West the streets are high quality with established tree canopy and are highly desirable for walking, cycling, working, living and visiting.

These streets are typically 14-20m wide, averaging 16m, are human scale and naturally traffic calmed with narrow travel lanes and a high density of intersections. In some instances the larger street types have been retrofitted with bike lanes, whereas the smaller streets are typically safe for on-street cycling.

Their modest, yet timeless character holds important lessons for city making, which is often forgotten in contemporary development.

## SYDNEY + PARRAMATTA CAR-LIGHT NEIGHBOURHOODS

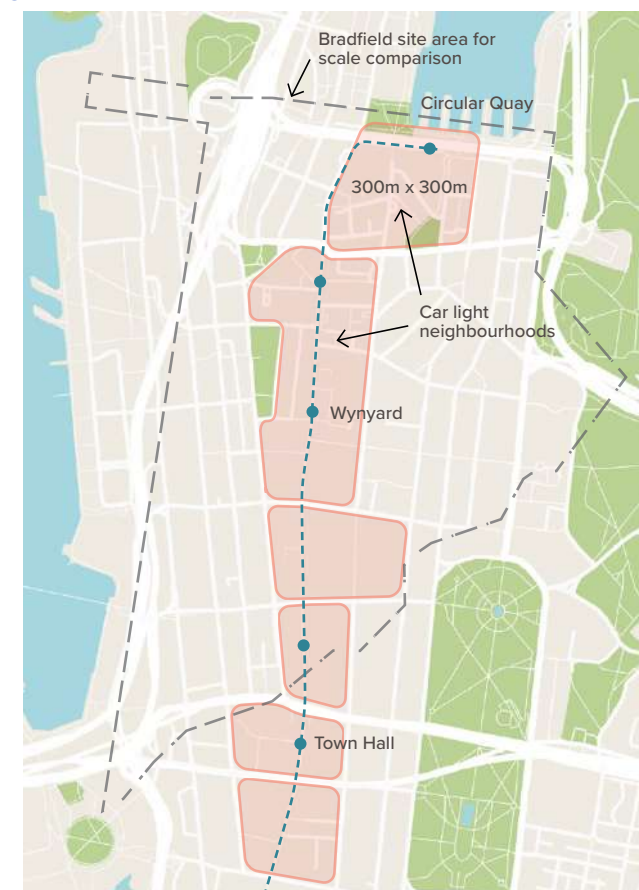


Sydney's George Street light rail and closure of selective areas to vehicles has effectively created large car-light neighbourhoods that prioritise pedestrians, remove through-traffic and restrict vehicle access to the edges, making it more convenient to walk and promotes sustainable travel.

A similar pattern is occurring in Parramatta with the creation of car-light neighbourhoods around Parramatta Square and along the Church Street light rail route.

The car-light pattern emerging in these cities, and others around the world, is representative of the movement away from the conventional grid of vehicular streets towards car-light neighbourhoods with distinct local character that prioritise people and place and restrict traffic to the edges.

We have promoted this approach to Sydney's third city centre at Bradfield.



Car-light neighbourhoods emerging in Sydney city centre.

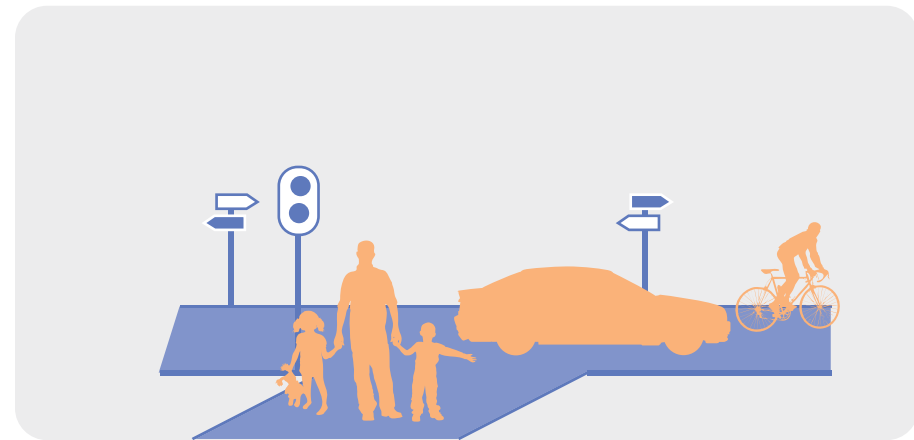
# MOVEMENT PRINCIPLES

## 1. PRIORITISE WALKING AND CYCLING



- Design the city spaces and connections firstly for pedestrians, wheelchairs and prams, followed by cyclists and micro mobility. This includes considerations for the safety, convenience and quality of paths, traffic calming, speed limits, crossings, intersections, path interruptions, shade, landscape, building frontages and amenity;
- The second priority is users of trains and buses - convenience, safety and quality of access to and from transit;
- The third priority is commercial/ service vehicles to ensure that businesses and residents are serviced efficiently;
- The next in priority is taxis and car share;
- The last priority for transport planning is private cars, which are the least efficient and most impactful on the place quality. This includes strategies to reduce through-traffic in the city centre and reduce parking.

## 2. A LEGIBLE, PERMEABLE STREET NETWORK



- Design the layout of streets to create a legible and permeable movement network for the modal priority listed in Principle 1;
- Use view corridors and direct connections between key destinations to improve legibility and convenience of movement;
- Use landmarks such as key public spaces and landmark buildings to frame or terminate connections to create a legible network;
- Use open air pedestrian/cycle-only connections throughout the city to maximise permeability for active transport.



### 3. STREET AS PLACES



- Consider all streets within the city centre as public spaces with high place value;
- Consider all movement and place elements of the street together, not independently. This includes the traffic and bus lanes, parking, medians, tree and landscape zones, shade and permeability, deep soil zones, footpaths, bikeways, furniture zones, outdoor dining, paving, lighting, intersections, weather protection, ground floor frontages, setbacks, street wall, signage and public art;
- Utilise appropriate street typologies to respond to the movement and place functions and character areas of the city, from larger transit boulevards, to collectors, local shared zones, pedestrian lanes and green links.

### 4. TRANSPORT INTERCHANGES AS PLACES



- Interchange between public transport modes and to/from destinations to be safe, convenient, equitable and intuitive;
- Interchange precincts to be welcoming, human scale, designed with high quality and ample public space and highly legible;
- Interchange precincts to be seamlessly integrated into the city fabric - the streets, public spaces and buildings - and are to service the city, not dominate it. In this regard the design should prioritise the broader city place outcomes and balance transport place requirements while achieving the functional requirements of the interchange and passenger needs.

# WALKABLE NEIGHBOURHOODS

The Master Plan respects all key transport connections set out in the Precinct Plan including the WSA Metro alignment, the 60m Transport Infrastructure Corridor for future rail lines, Badgerys Creek Road and Whitaker Road (sub-arterials), Metro Link Boulevard rapid transit corridor and the Collector streets. The master plan also enhances connectivity from Whitaker Road to Metro Link Boulevard.

The Master Plan maintains the general grid structure set out in the Precinct Plan but proposes a greater variety of street types with a finer grain structure and provides more shared zones, pedestrian lanes and green links to support a more walkable and car-light city that prioritises pedestrians, safety and amenity.

The Master Plan builds on the Precinct Plan by introducing a more granular neighbourhood structure to reflect the higher density of the city centre. A series of 'micro-neighbourhoods' are established, each with a local park to facilitate local community connection; the larger, busier high streets and boulevards on the edges; and finer grain streets and lanes within the neighbourhood to create a more walkable and social environment.



*The Master Plan does not propose permanent development in the existing 60m wide Special Purposes 2 (SP2) Infrastructure Zone corridor. A decision regarding future rail infrastructure in the corridor is the subject of review by Government.*



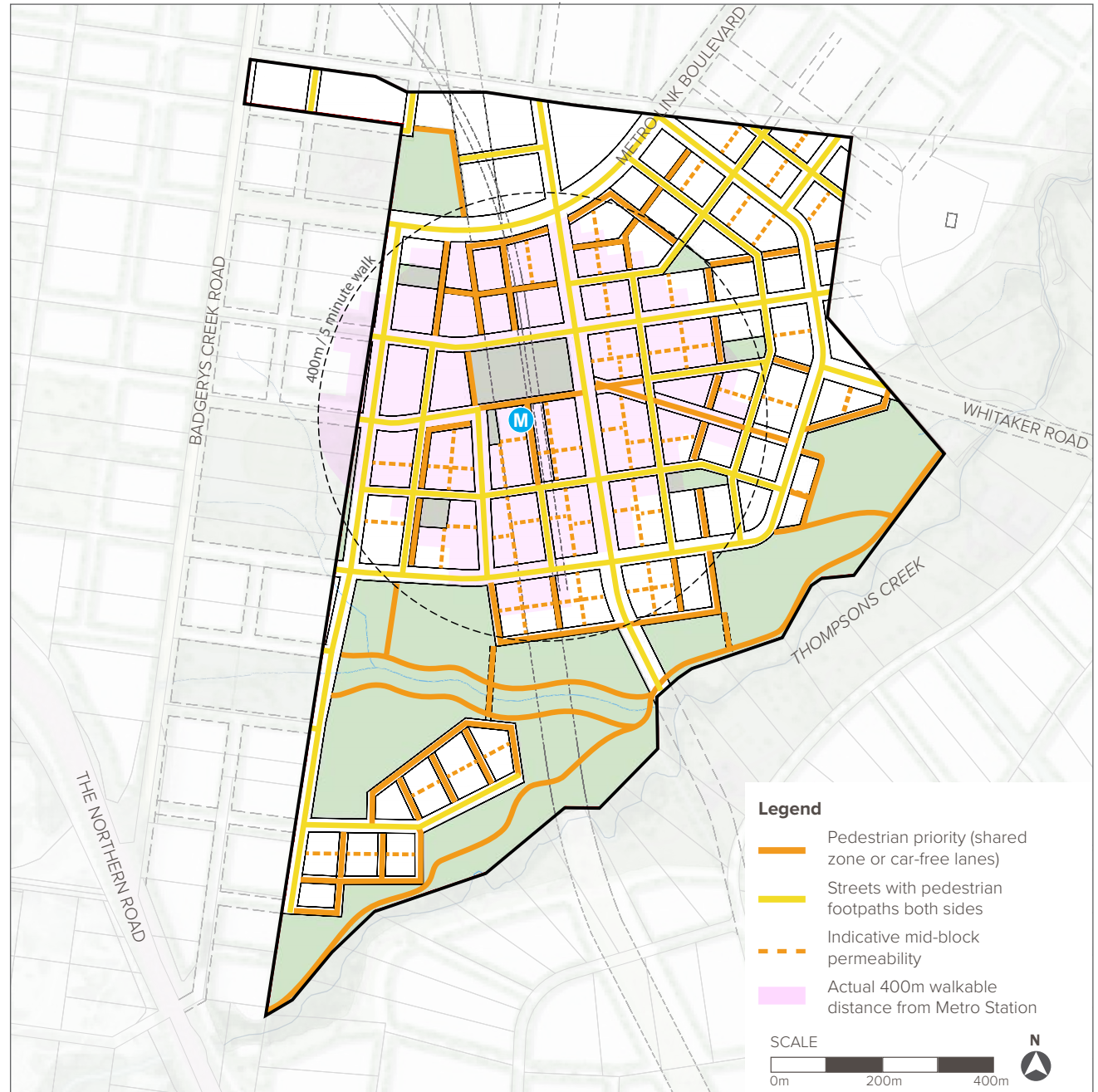
*Artists impression of the typical 17m city street within neighbourhoods, subject to detailed design*

# PEDESTRIAN NETWORK

Bradfield prioritises pedestrian movement with continuous pedestrian paths along all major corridors and a highly permeable network of streets and pedestrian connections.

The quality of pedestrian network will be extremely high with safe and convenient walking routes, continuous awnings for weather protection, extensive tree canopy cover throughout the public domain and high quality public realm materials, furniture and lighting.

The pedestrian network will continue along Moore Gully / Thompsons Creek to the broader Wianamatta South-Creek corridor and will also provide strategic connections to the surrounding urban areas.



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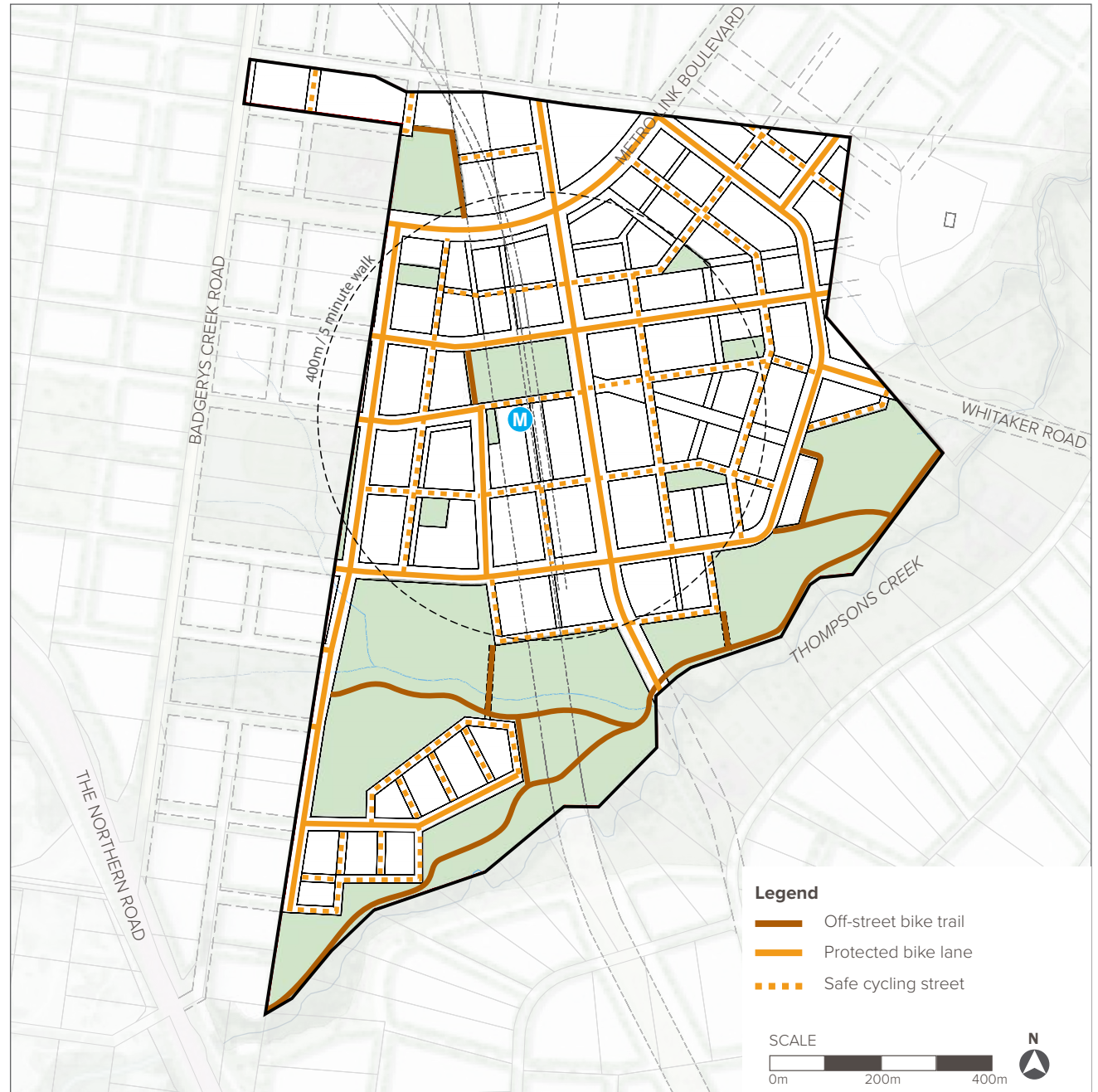
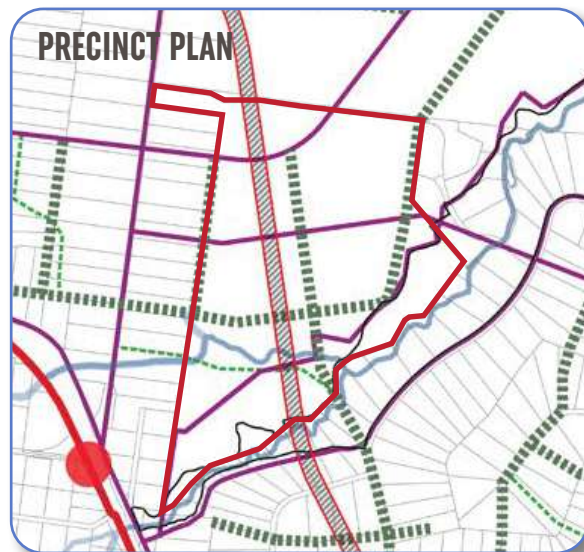
*Artists impression of the pedestrian lanes, subject to detailed design.*

# CYCLING NETWORK

Bradfield will be a bike friendly city that maximises safety and convenience and connects to the broader active transport network set out in the Precinct Plan.

A combination of off-street bike trails, separated bike lanes on major streets and slow, safe cycling streets within neighbourhoods are proposed to collectively create a cycling network rivaling global leaders.

The city will also provide ample provision of facilities such as bike parking, charging stations, tyre pumps and end of trip facilities to further encourage and support cycling.



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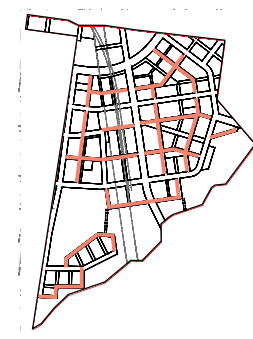
## PROTECTED BIKE LANES

KEY MOVEMENT CORRIDORS WITH HIGHER VOLUMES OF TRAFFIC AND HIGH ACTIVITY



## SAFE ON-STREET CYCLING

LOCAL ACCESS STREETS WITH LOWER VOLUMES, SLOWER SPEEDS AND MODERATE ACTIVITY



Commercial High Street - 30m



City Street - 17m



Comparable precedent - Exhibition St, Melbourne - 30m

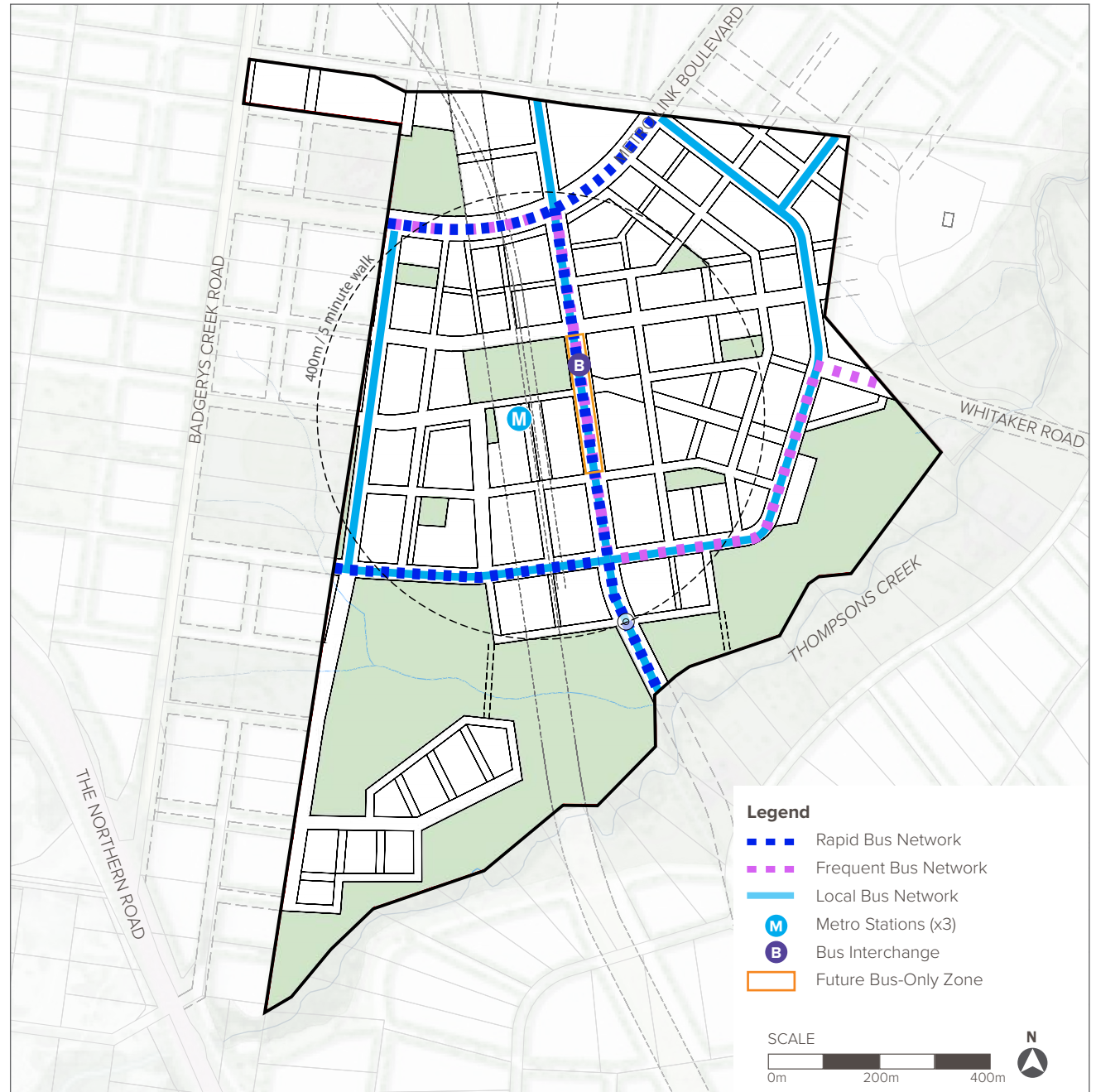
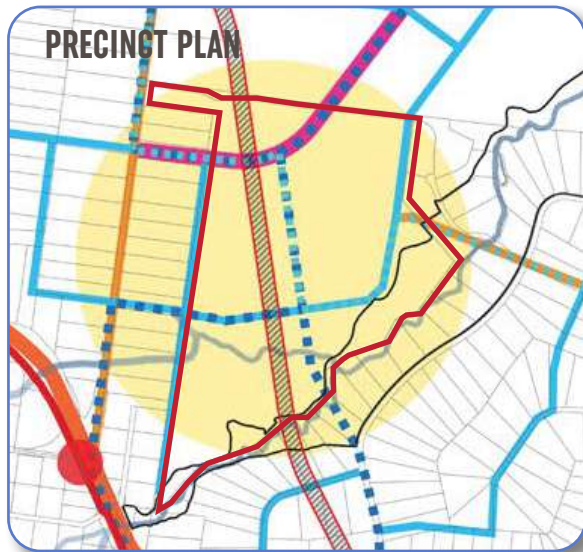


Comparable precedent - Buckingham St/ Rutland St, Surry Hills - 14m



# PUBLIC TRANSPORT NETWORK

With a major interchange fronting the Central Park, ultimately comprising multiple future rail lines and major bus routes, Bradfield will be a truly transit-oriented city that provides convenient, safe and high quality access via public transport.



Bus network to be confirmed by TfNSW. The Master Plan does not propose permanent development in the existing 60m wide Special Purposes 2 (SP2) Infrastructure Zone corridor. A decision regarding future rail infrastructure in the corridor is the subject of review by Government.

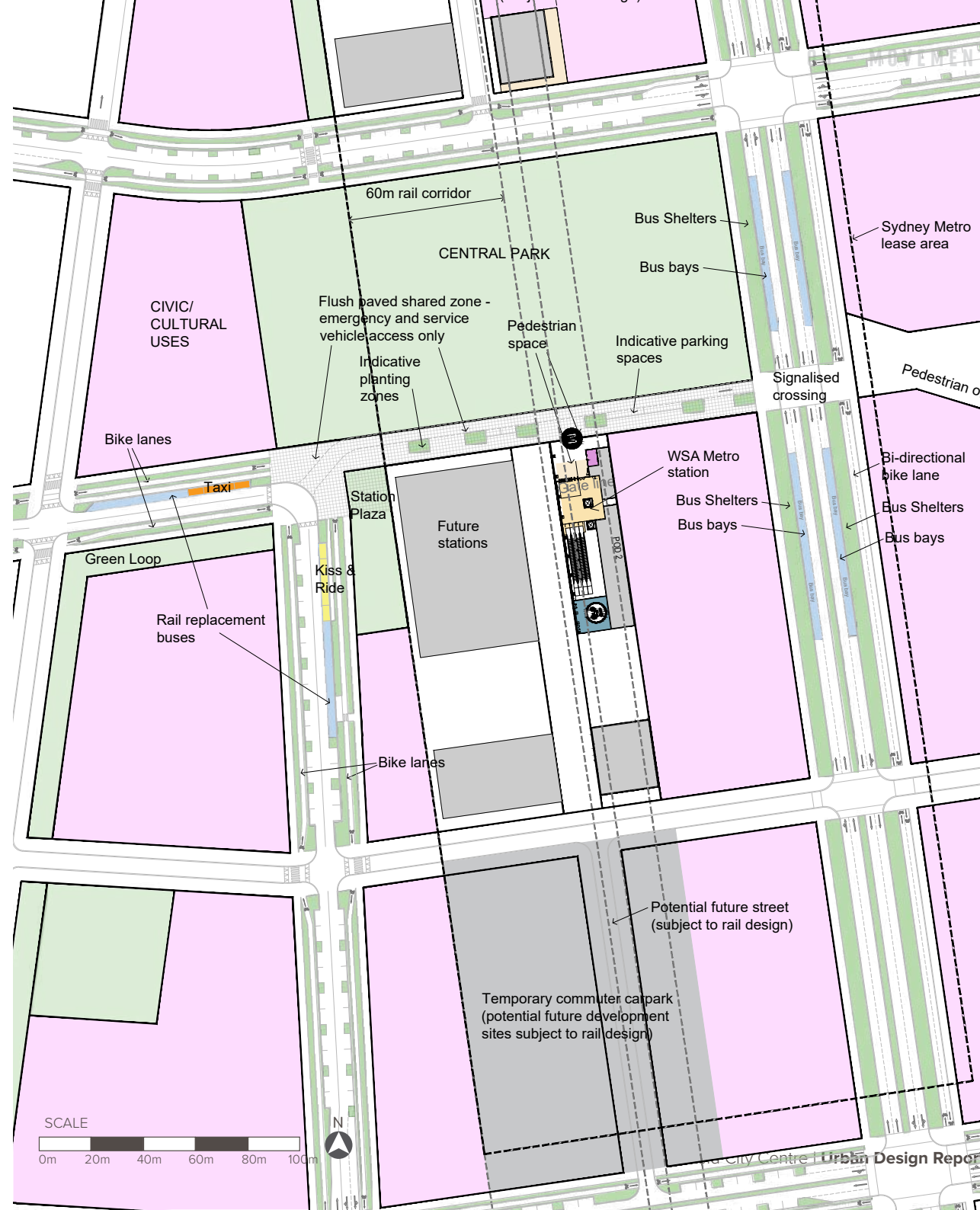
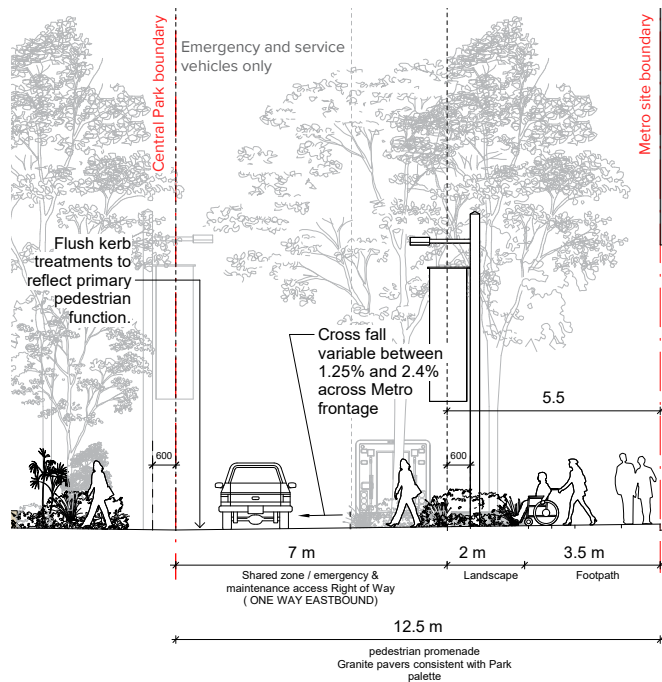


# INTERCHANGE LAYOUT

The proposed interchange layout provides for legible direct accessible paths to and between Metro, future rail, bus, taxi, and kiss n ride, framed around Central Park.

Emergency and service vehicles are accommodated in a shared zone promenade designed seamlessly into the park and shared zones provide service vehicle access to the infrastructure pods north and south of the station box.

Continuous weather shelter to be provided for people accessing, waiting and interchanging between modes.

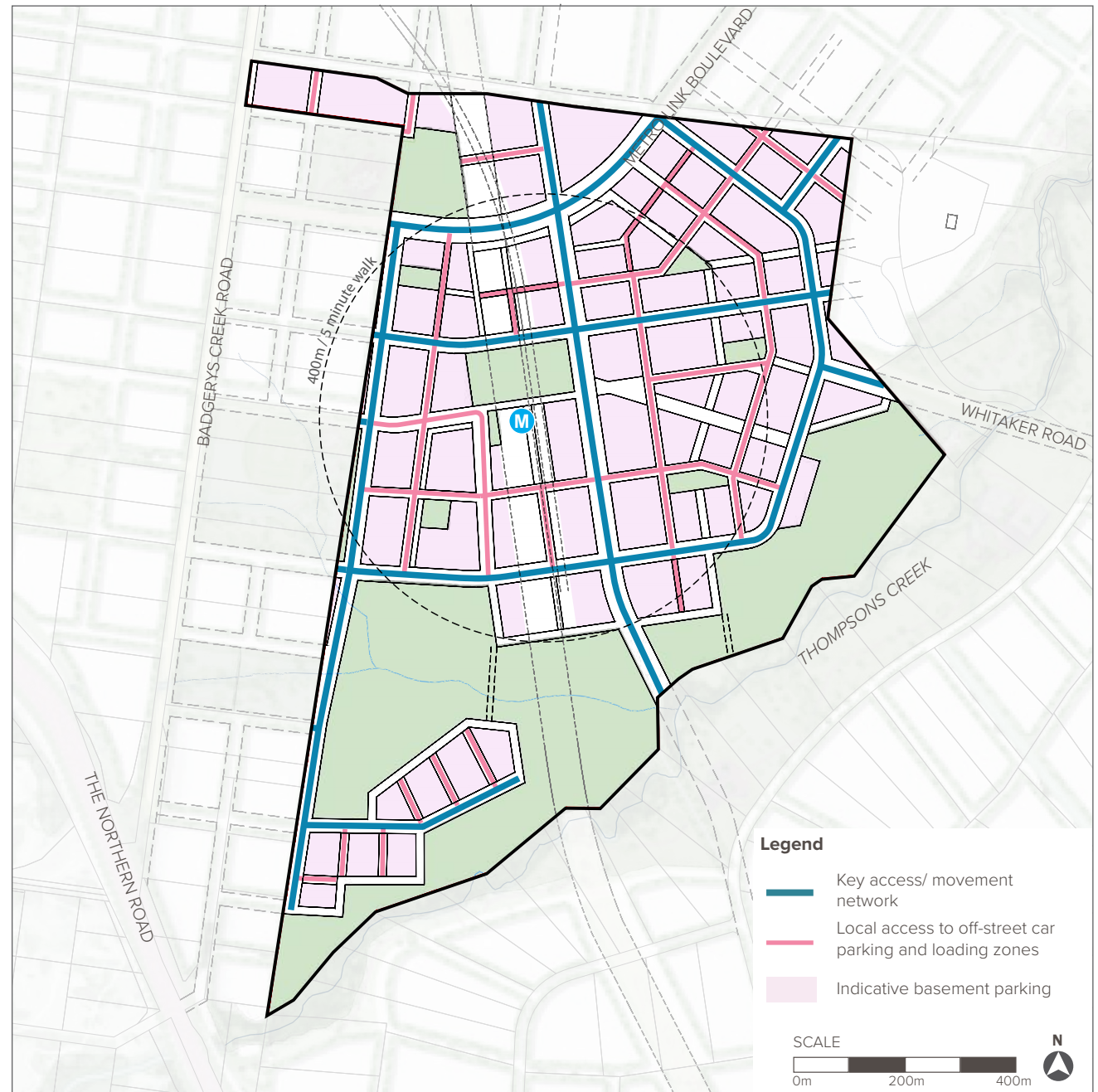


# PARKING, LOADING AND ACCESS

The plan opposite identifies the key streets for providing access into and around the city; the streets for local access to off-street car parking and loading zones; and indicative areas for basement parking (subject to achieving deep soil, tree canopy and perviousness requirements).

The following principles have been established for parking:

- Use consolidated vehicle access points to minimise interruption to pedestrians and bike lanes;
- Promote shared car parking independent of land use to consolidate location and manage traffic, including shared commercial loading areas;
- Car parking to be in basements where appropriate and not permitted to front onto streets/ public domain;
- First/ last mile freight facility to be provided to reduce heavy vehicles in the city;
- All on-street car parking for drop off/pick up (for ride services and future autonomous vehicles), short term bays for last mile deliveries and disabled parking;
- Minimum 30% off-street car parking provided with electric vehicle charging (both residential and commercial);
- Generally no on-street electric vehicle charging due to obstructions, trip hazards, and not suited to long term parking.



The Master Plan does not propose permanent development in the existing 60m wide Special Purposes 2 (SP2) Infrastructure Zone corridor. A decision regarding future rail infrastructure in the corridor is the subject of review by Government.

# FUTURE MOBILITY

## ELECTRIC VEHICLES

With the expected rapid uptake of electric vehicles (EV) over the next decade, Bradfield proposes at least 30% of all off-street parking (commercial and residential) to have EV charging to ensure adequate infrastructure is in place to support a low carbon future.

## AUTONOMOUS VEHICLES

Bradfield is designed to future-proof the city for autonomous vehicles (AV), particularly ride services and mini buses, with ample kerbside space for convenient and high quality pick up and drop-off areas on all streets.



## LAST MILE FREIGHT

Last mile freight will be implemented in the Master Plan to reduce heavy vehicles moving around the city centre. Urban consolidation centres are planned to be provided at edges of the city for large trucks to transfer to smaller electric vans and micro-mobility for distribution throughout the city. The provision of short term street parking for deliveries, shared loading docks and a network of safe protected bike lanes will support the smaller modes of delivery in the city.

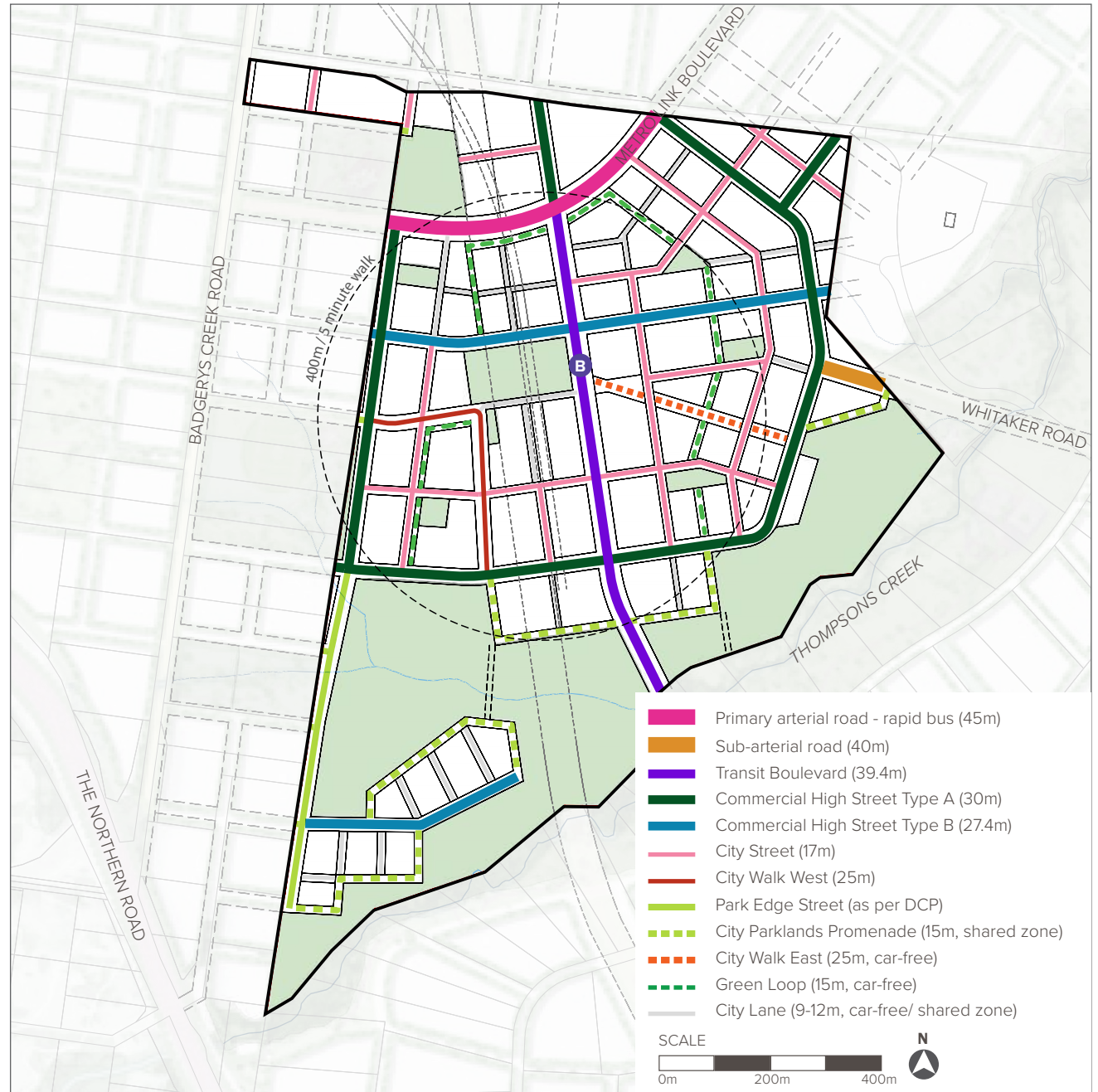


## DELIVERY ROBOTS

Bradfield will be ready for delivery robots, which are growing in use internationally and have been trialled in Australia, with adequate footpath widths to reduce potential conflict with pedestrians and street activities.

# STREET TYPES

The Master Plan is generally consistent with the street network and hierarchy proposed in the Precinct Plan, however a number of street sections have been further refined and additional street types provided to offer greater diversity and achieve the vision for a pedestrian-focussed, safe and sustainable movement network within the Bradfield City Centre.



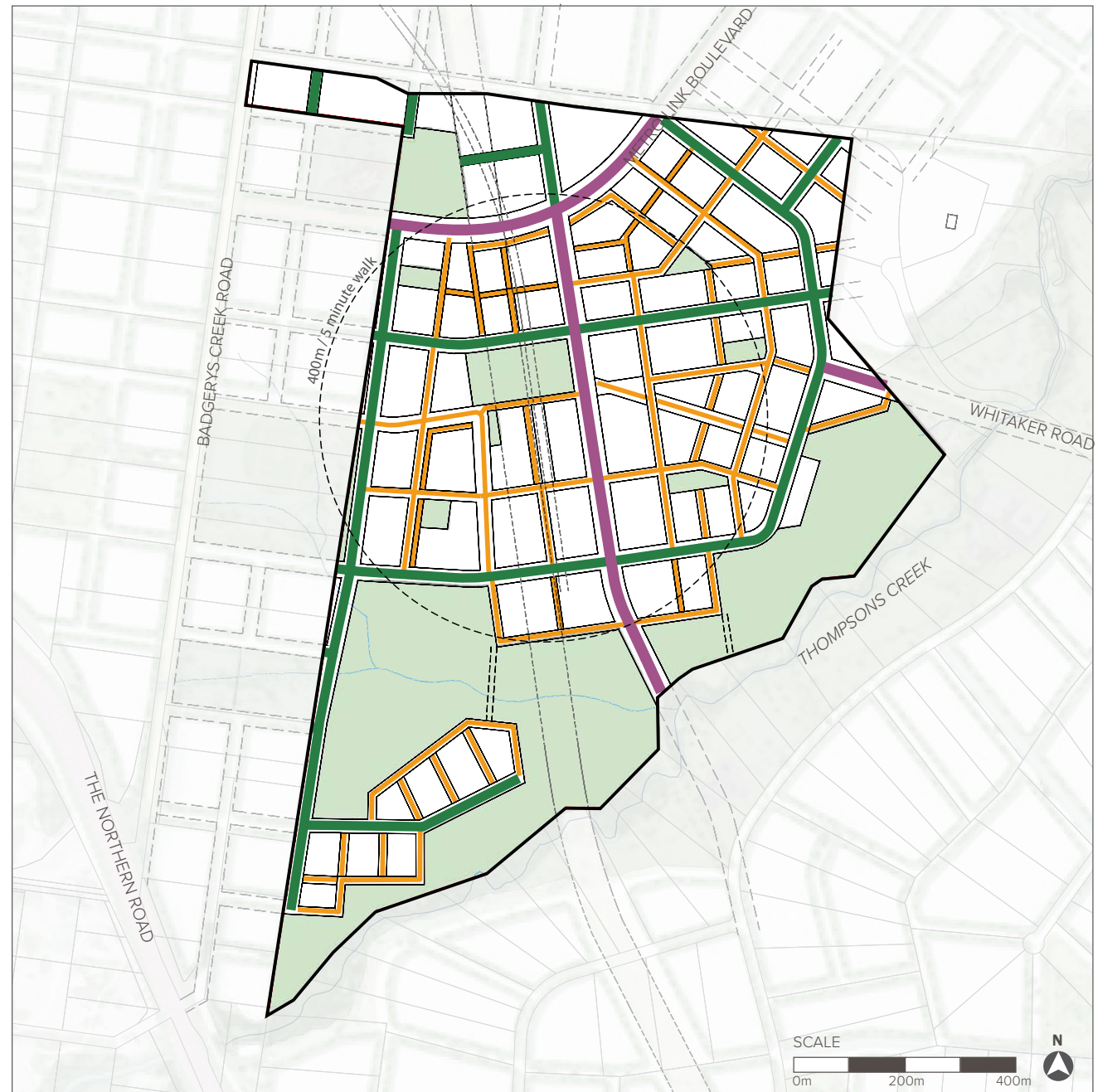
The Master Plan does not propose permanent development in the existing 60m wide Special Purposes 2 (SP2) Infrastructure Zone corridor. A decision regarding future rail infrastructure in the corridor is the subject of review by Government.

# MOVEMENT AND PLACE

The Movement and Place framework defines four broad classifications for streets (Civic Spaces, Local Streets, Main Streets and Main Roads) to provides an understanding of the function and form of the road corridors where movement and place interact.

The Movement and Place assessment for Bradfield considered the street network and street typologies by overlaying the proposed land uses and applying best practice planning principles.

In line with best practice the city centre is comprised of Civic Spaces and Local Streets to cater for vibrant street life and high pedestrian activity, with Main Streets and Main Roads kept to the periphery.





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# TREE CANOPY AND PERVIOUSNESS

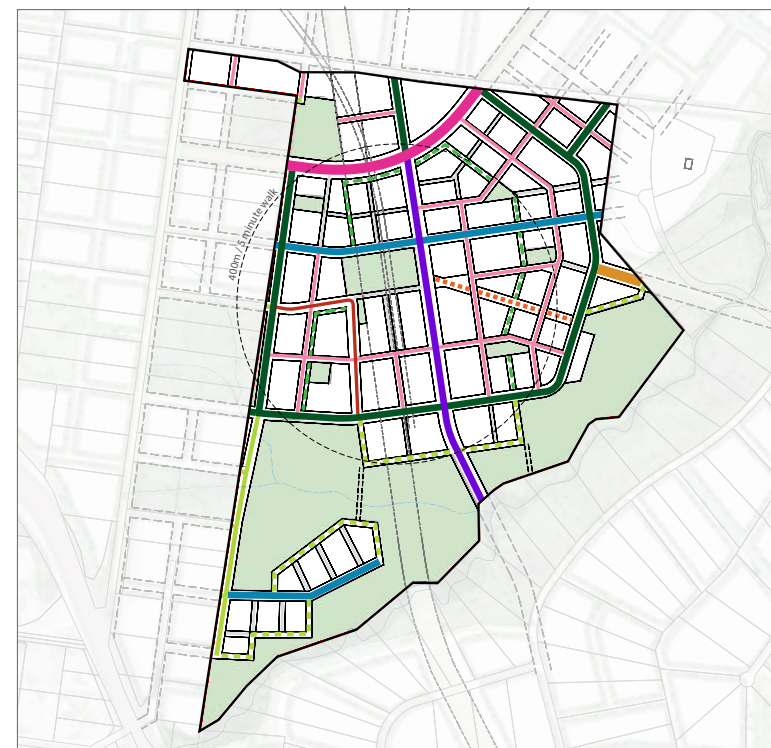
**THE MASTER PLAN ACHIEVES THE 40% TARGETS FOR TREE CANOPY COVER AND PERVIOUSNESS AS SET OUT IN THE PRECINCT PLAN, ENSURING BRADFIELD WILL BE A COOL, GREEN, RESILIENT CITY**



	Aerotropolis Precinct Plan / DCP / Urban Design Report			Bradfield City Centre Master Plan		
	Proportion of site area	Tree canopy	Perviousness	Proportion of site area	Tree canopy	Perviousness
Streets	35%	65%	35%	29%	65%	25%
Open Space	15%	45%	90%	31%	57%	84%
Lots	50%	25-35%	30%	40%	15%	16%
<b>Total</b>		<b>40%</b>	<b>40%</b>		<b>42%</b>	<b>40%</b>

Street type	Width	Total area	Permeability (%)	Canopy (%)
 Primary arterial road (rapid bus)	45m	2.52 ha	30	36
 Sub-arterial road	40m	0.46 ha	45	54
 Transit Boulevard (bus zone)	39.4m	1.77 ha	35	42
 Transit Boulevard (outside bus zone)	39.4m	1.70 ha	29	77
 Commercial High Street Type A	30m	8.14 ha	19	86
 Commercial High Street Type B	27.4m	3.90 ha	23	76
 City Street	17m	5.86 ha	16	71
 City Walk West	27-30m	1.33 ha	23	57
 City Walk East	25m	0.88 ha	30	23
 Parklands Promenade	15m	2.24 ha	7	38
 Green Loop	15m	1.59 ha	53	50
 City Lane	9-12m	2.61 ha	44	52
<b>Total Streets</b>		<b>33.01 ha</b>	<b>25%</b>	<b>65%</b>

Metrics calculated using a 1000m<sup>2</sup> sample size area for each street typology.

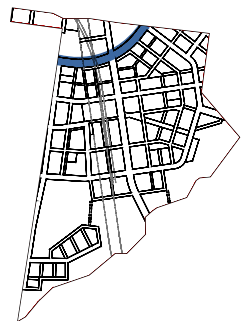


# METRO LINK BOULEVARD

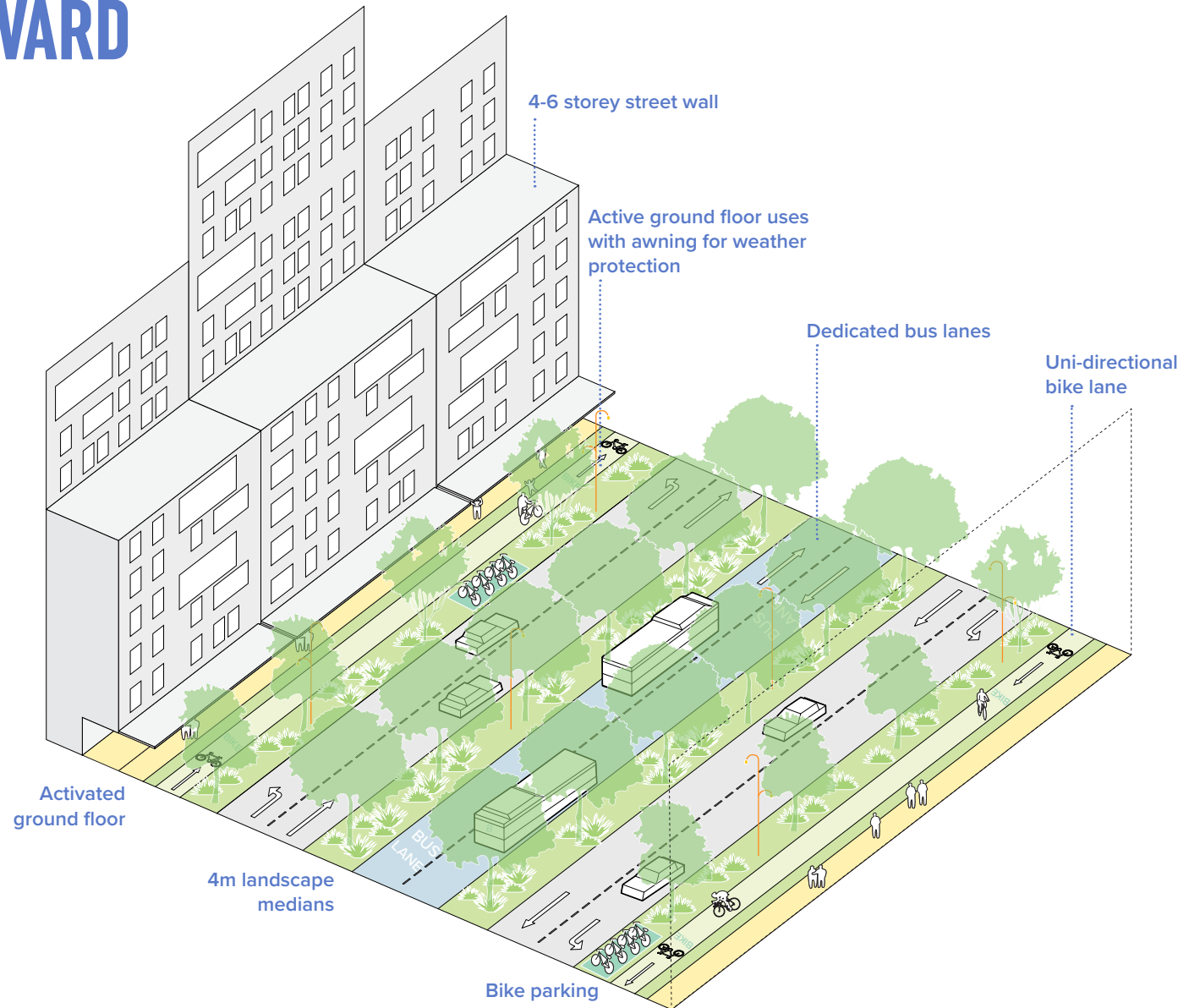
Metro Link Boulevard will be the key transit and movement corridor delivering high quality public transport between Liverpool CBD, Western Sydney International Airport, and the Bradfield City Centre. It will also become a key gateway for visitors to Bradfield City Centre showcasing the unique parkland experience in Western Sydney.

The corridor will reinforce the city's commitment to effective public and active transport. Vegetated zones divide the road corridor providing high amenity, reduced heat, water management and enhance the overall parkland identity with greenery.

The proposed cross section builds on the DCP cross section for the Rapid Bus Corridor with a turn lane each direction given the relative proximity of intersections, footpaths moved to the edge of the reserve to abut buildings for a more urban interface, and slightly increased width of landscape zones.

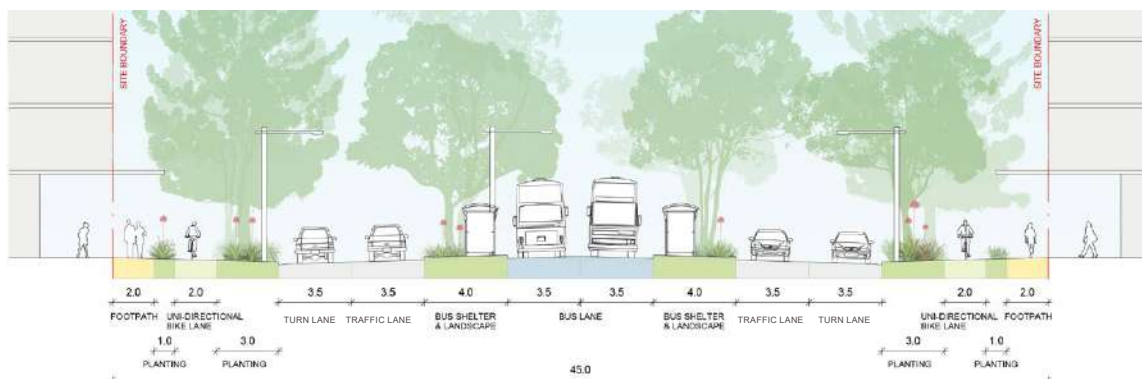
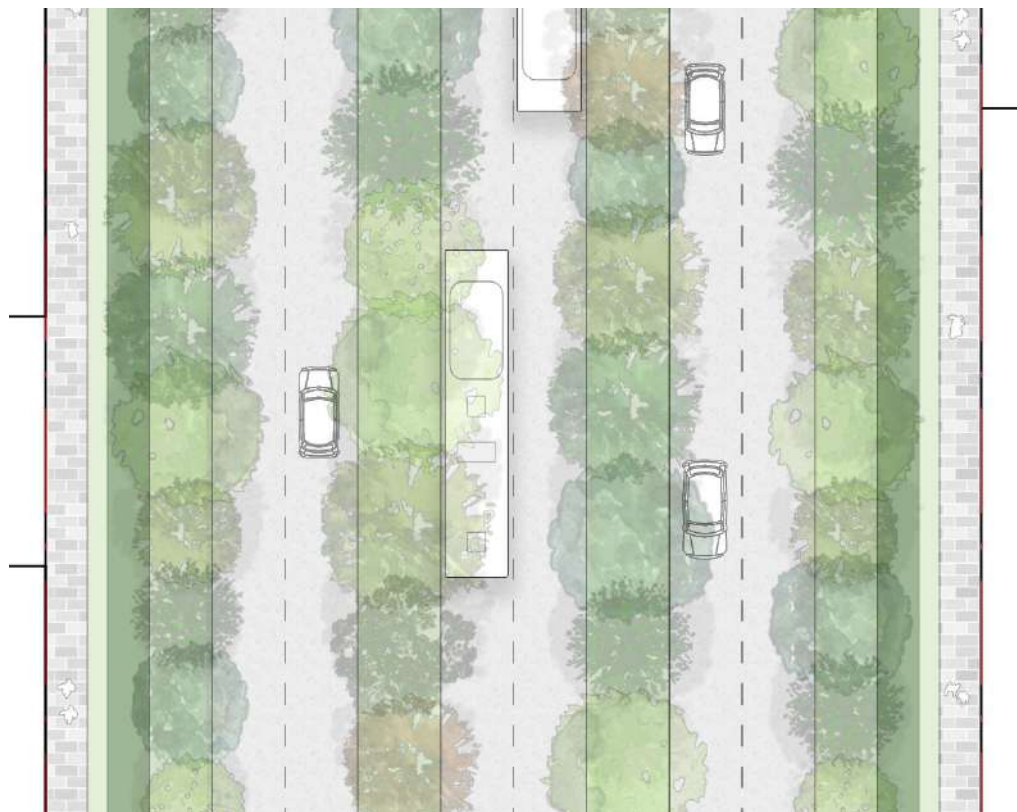


- Footpath
- Bike Path
- Planting
- Vehicle lane
- Bus lane





METRO LINK BOULEVARD TYPICAL PLAN AND SECTION



Indicative section subject to detailed design.

MOVEMENT AND PLACE

Main Street (Transit Boulevard)

MOVEMENT

- Prioritises and encourages public transport flow and accessibility;
- All pedestrian/cycle crossings signalled;
- Crossings are to be located in relation to public transport hubs, providing a short and safe route to the city centre.

LANDSCAPE

- Planting zones function as traffic calming measures; consisting of small trees to larger canopies;
- Canopy size is to be considered to maximise mitigation of urban heat island effect;
- Max height 600mm for understorey planting to maintain sight lines;
- Variation in tree species to avoid monoculture planting and form Interlocking canopies.

PERVIOUSNESS 30%

TREE CANOPY COVER 36%

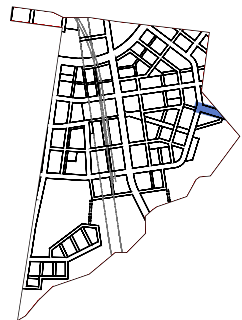


# SUB-ARTERIAL

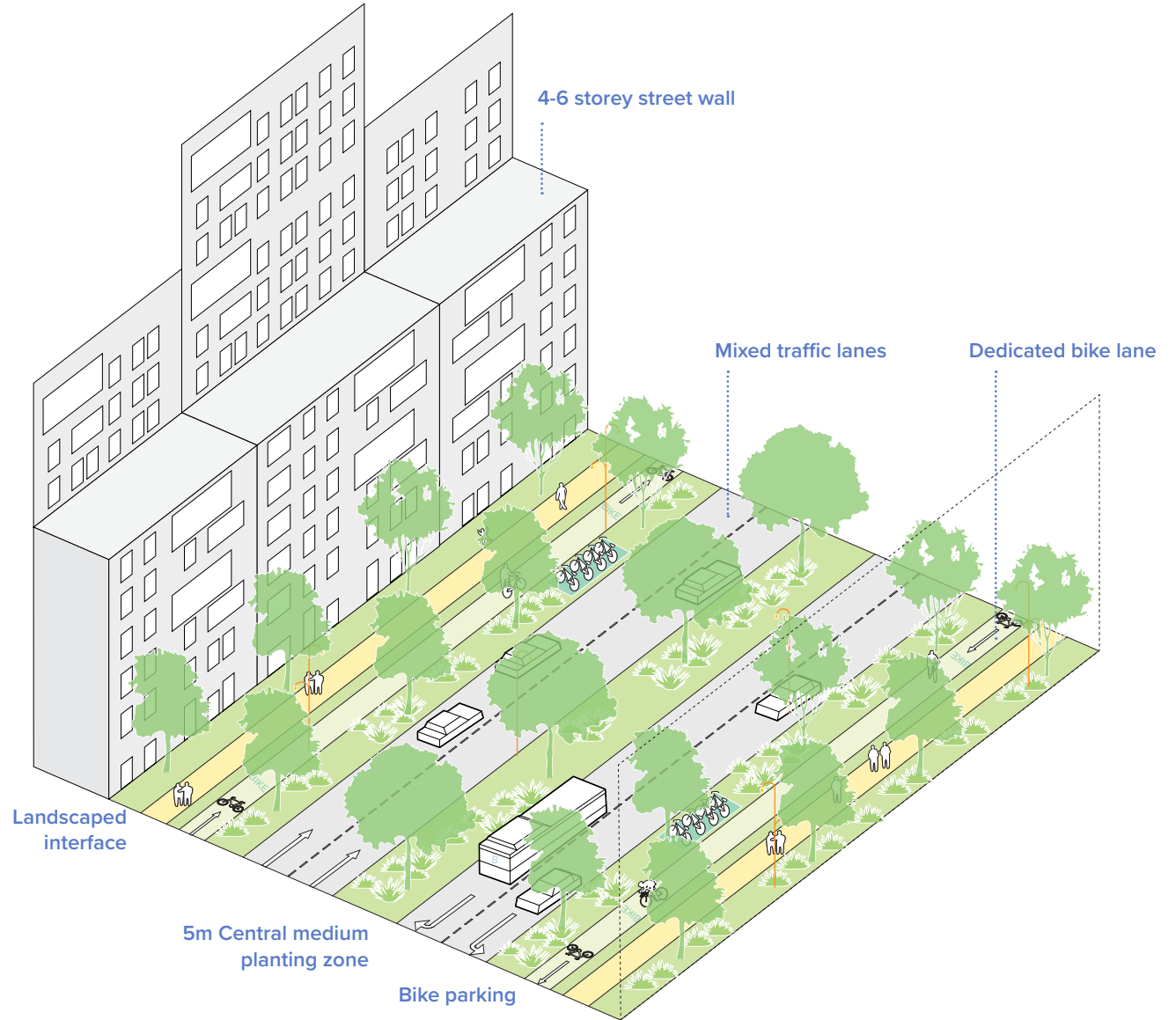
Whitaker Road is a sub-arterial that provides an important connection for all modes between Bradfield and Bradfield South and beyond, and is a key crossing over the City Parklands and Thompsons Creek.

It will be a tree lined urban boulevard characterised by loose fit, mixed native planting, blending with the adjoining Parklands.

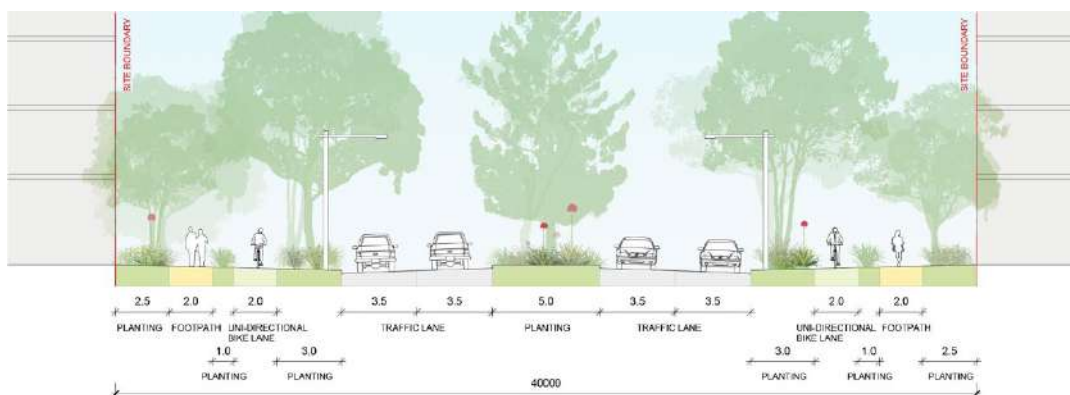
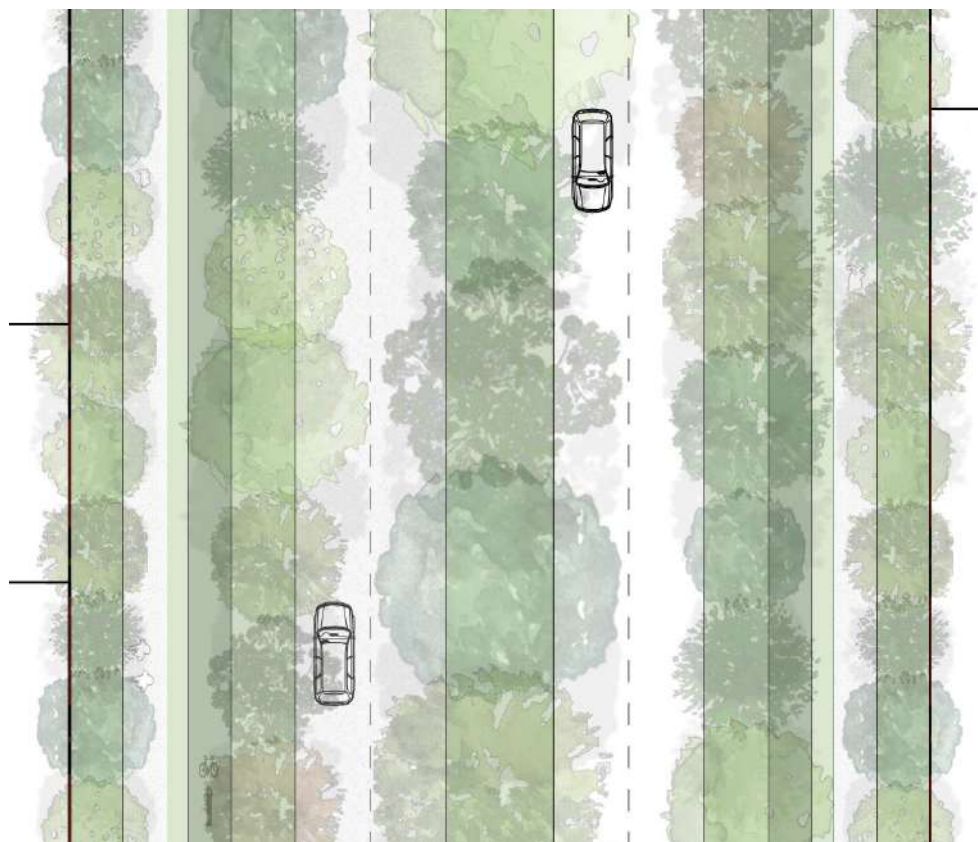
The cross section is consistent with the DCP.



- Footpath
- Bike Path
- Planting
- Vehicle lane



SUB-ARTERIAL TYPICAL PLAN AND SECTION



Indicative section subject to detailed design.

MOVEMENT AND PLACE

Main Street (Connector Avenue)

MOVEMENT

- Prioritise movement of pedestrians, cyclists, public transport and vehicles between centres;
- Increases opportunities for walking and cycling by integrating connections to city centre and regional networks;
- All pedestrian/cycle crossings signalised.

LANDSCAPE

- Significant canopy coverage a priority to mitigate the impacts of urban heat;
- Water sensitive urban design utilised in planting verges where possible through passive irrigation;
- Max height 600mm for understorey planting to maintain sight lines;
- Variation in tree species to avoid monoculture planting and form Interlocking canopies.

PERVIOUSNESS: 45%

TREE CANOPY COVER: 54%

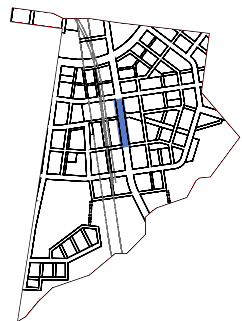


# TRANSIT BOULEVARD (BUS ZONE)

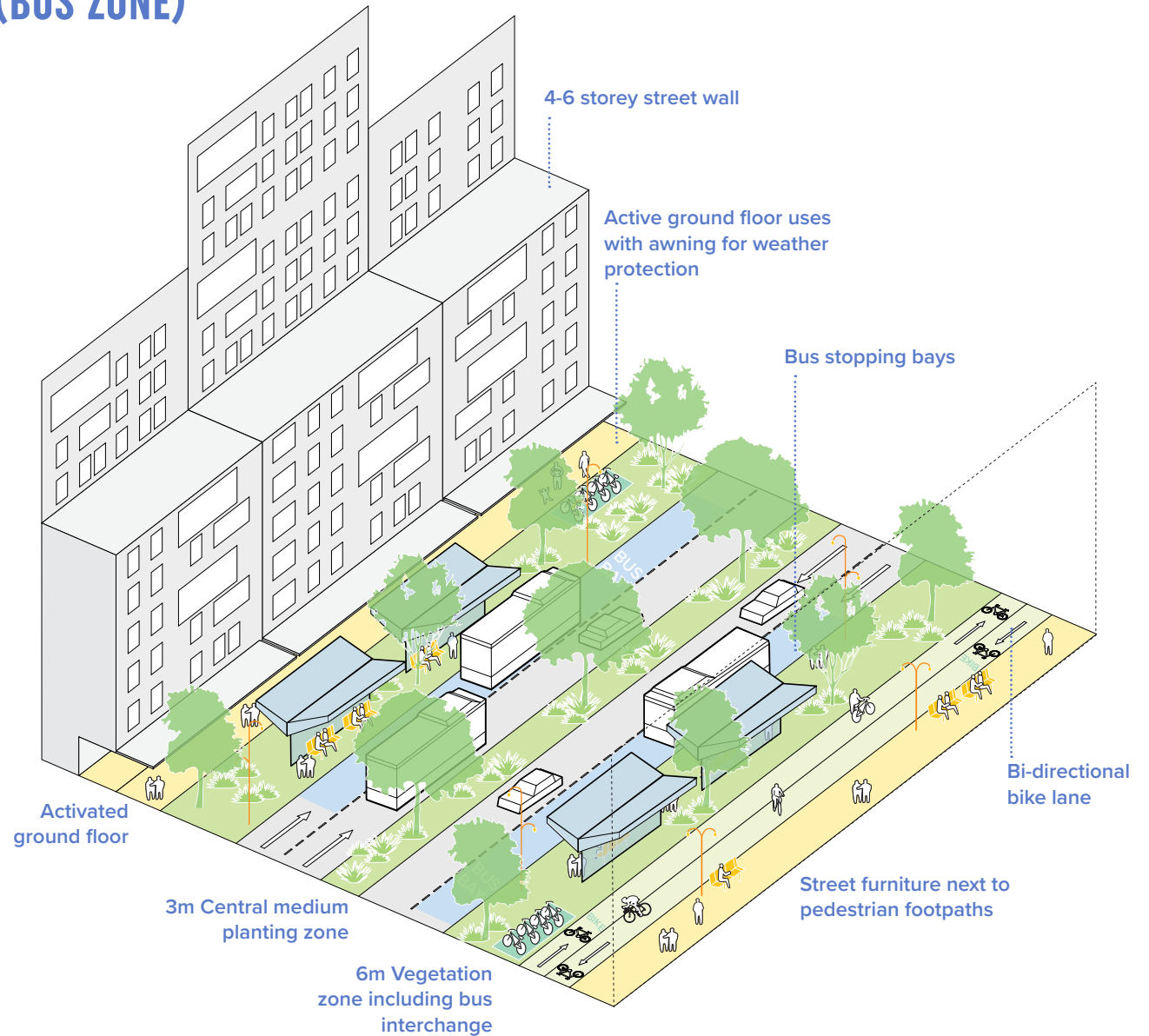
The Transit Boulevard is a premier street of the city centre running from the Metro Link Boulevard in the north, south to the Metro public transport interchange and across the City Parklands to Bradfield South. It is a tree lined urban boulevard framed with commercial, retail, hospitality and residential uses. It is more urban and slower than the Rapid Bus Corridor with bus stops and high pedestrian activity on the edges and is larger than High Streets in order to accommodate the required transit infrastructure.

The DCP provides a 25m wide Rapid Bus High Street, however this has been modified to meet the various objectives for rapid bus operations, greenery and landscape, active transport and urban activity.

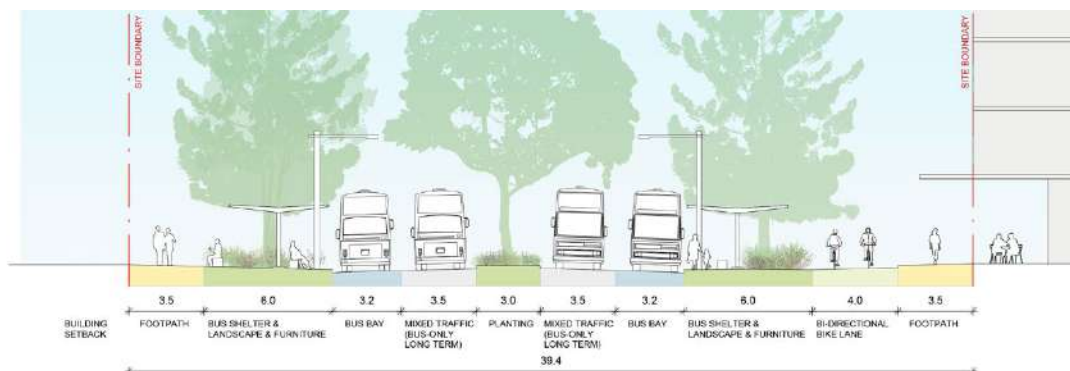
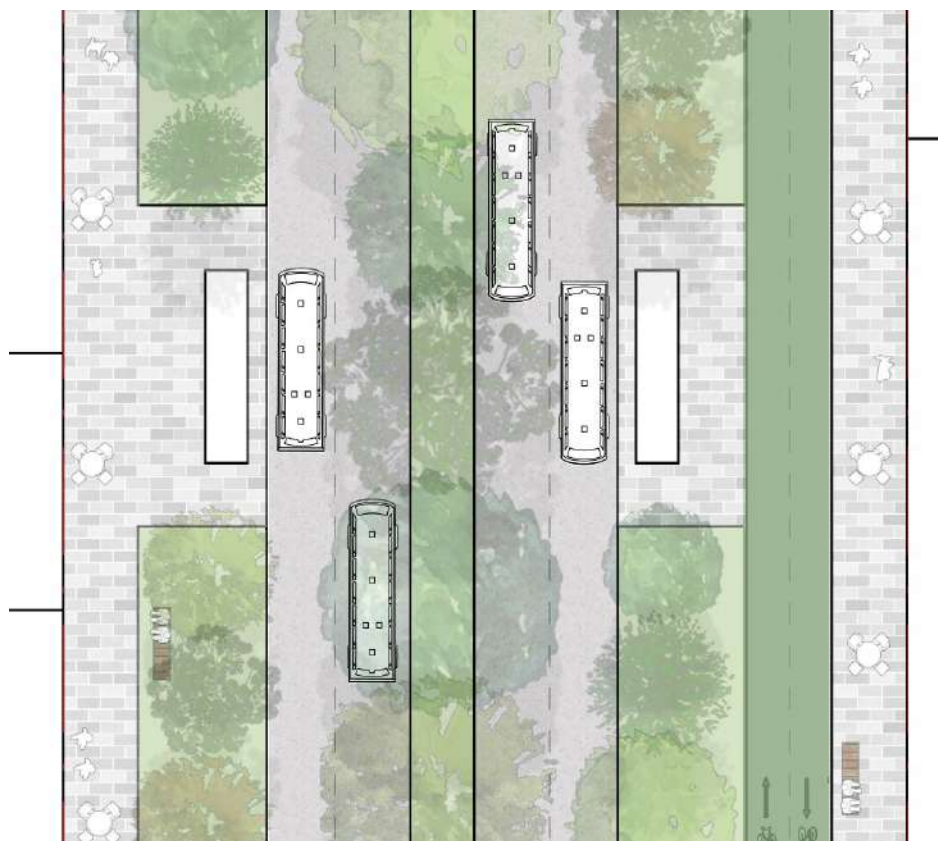
The street has two cross sections: one in the bus stop zone to accommodate wide bus shelters, and the another section outside the bus stop zones that reallocates this space to city functions.



- Footpath
- Bike Path
- Planting
- Vehicle lane
- Bus Stop Bays



TRANSIT BOULEVARD (BUS ZONE) TYPICAL PLAN AND SECTION



Indicative section subject to detailed design.

MOVEMENT AND PLACE

Main Street (Transit Street)

MOVEMENT

- Mixed traffic lane initially with potential to convert to bus-only in future if required;
- Wide bus shelters for high forecast patronage;
- All pedestrian/cycle crossings signalised;
- The only street with bi-directional bike lane in order to minimise pedestrian-cycle conflicts between bus and Metro

LANDSCAPE

- Tree canopy to provide shade for people waiting for bus and also avoid interference with buses;
- Water sensitive urban design utilised in planting verges where possible through passive irrigation;
- Planting zones function as traffic calming measure, whilst maximising canopy coverage for mitigation of urban heat island effect;
- Max height 600mm for understorey planting to maintain sight lines.

PERVIOUSNESS: 35%

TREE CANOPY COVER: 42%

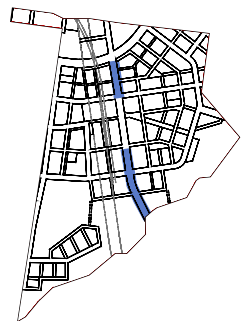


# TRANSIT BOULEVARD (OUTSIDE BUS ZONE)

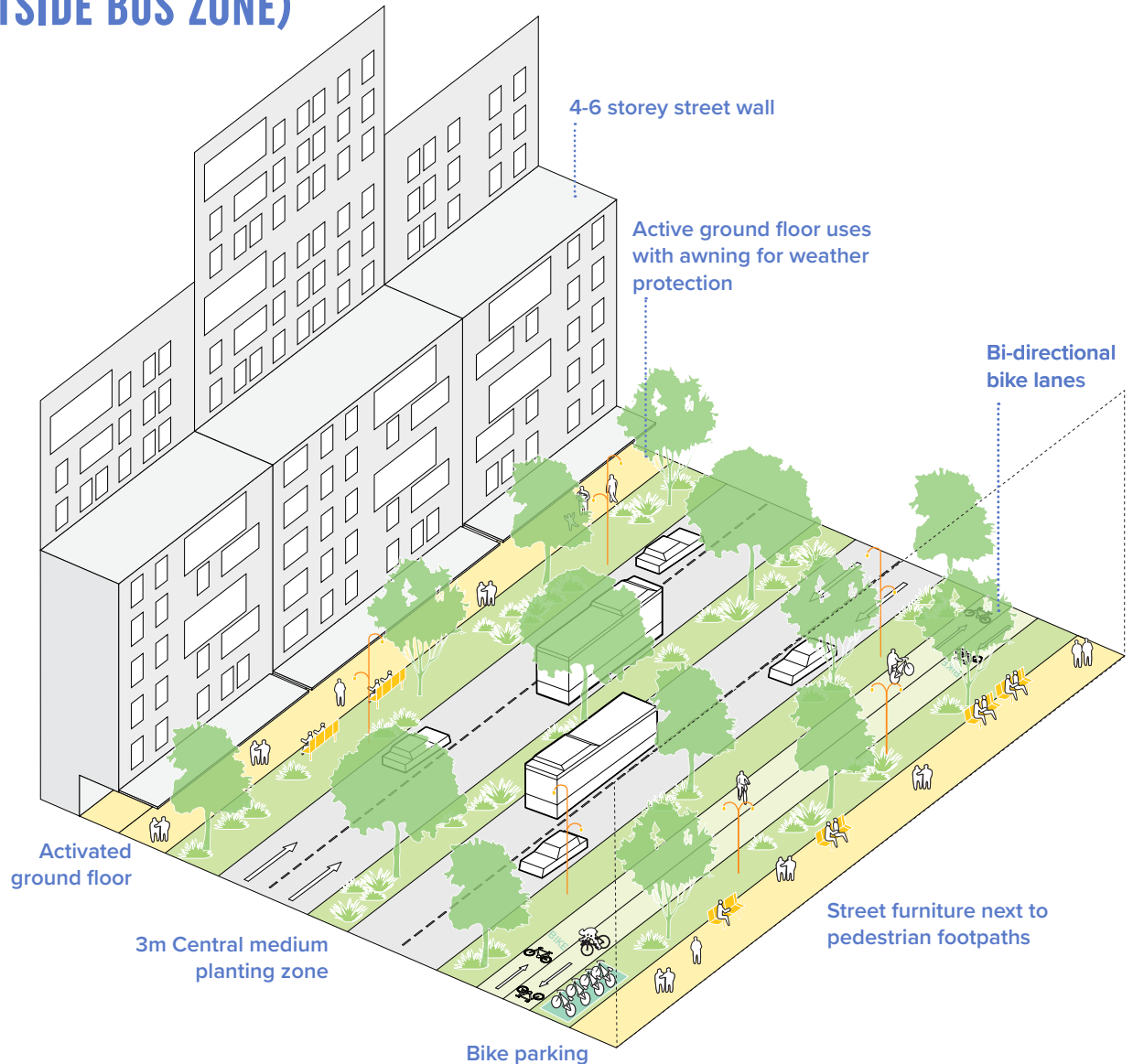
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The DCP provides a 25m wide Rapid Bus High Street, however this has been modified to meet the various objectives for rapid bus operations, greenery and landscape, active transport and urban activity.

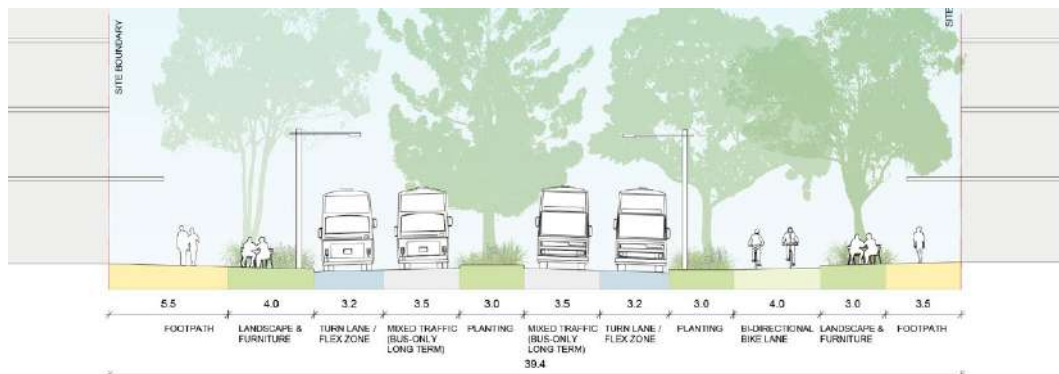
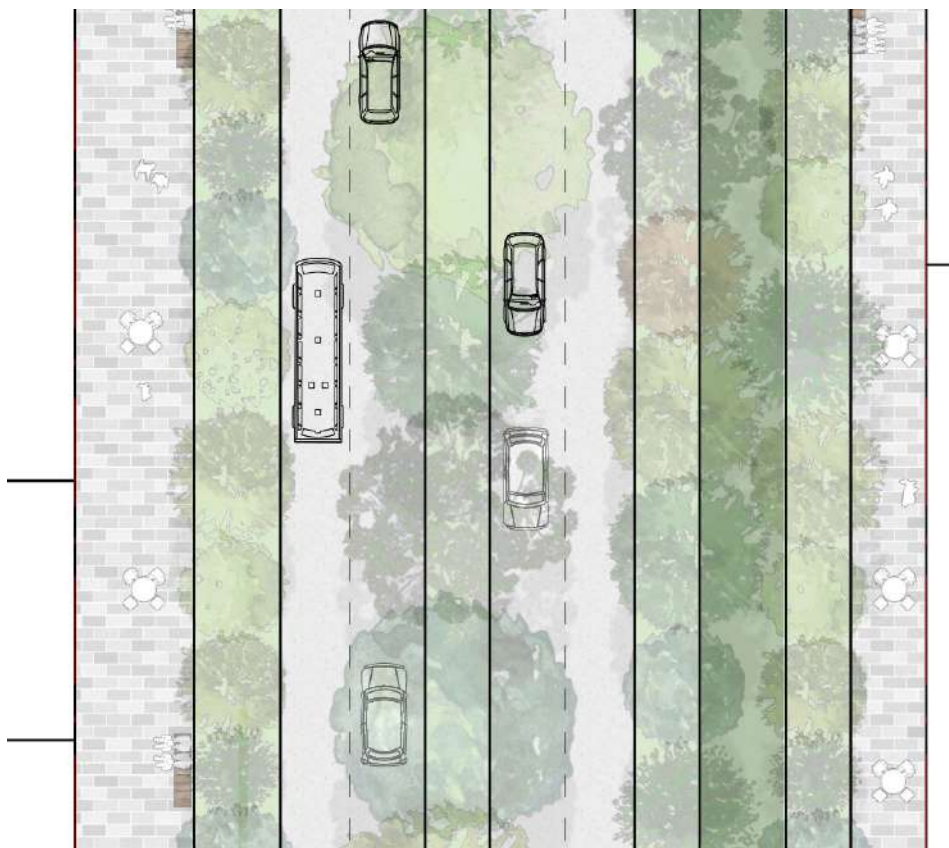
The street has two cross sections: one in the bus stop zone to accommodate wide bus shelters, and the another section outside the bus stop zones that reallocates this space to city functions.



- Footpath
- Bike Path
- Planting
- Vehicle lane



TRANSIT BOULEVARD (OUTSIDE BUS ZONE) TYPICAL PLAN AND SECTION



Indicative section subject to detailed design.

MOVEMENT AND PLACE

Main Street (Transit Street)

MOVEMENT

- Mixed traffic lane initially with potential to convert to bus-only in future if required;
- All pedestrian/cycle crossings signalised.
- The only street with bi-directional bike lane in order to minimise pedestrian-cycle conflicts between bus and Metro

LANDSCAPE

- Tree canopy to provide shade but avoid interference with buses;
- Water sensitive urban design utilised in planting verges where possible through passive irrigation;
- Planting zones function as traffic calming measure; whilst maximising canopy coverage for mitigation of urban heat island effect;
- Max height 600mm for understorey planting to maintain sight lines.

PERVIOUSNESS: 29%

TREE CANOPY COVER: 77%

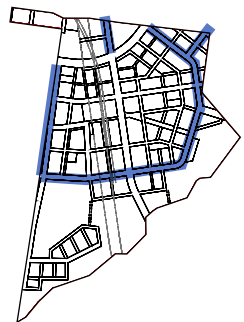


# COMMERCIAL HIGH STREET TYPE A

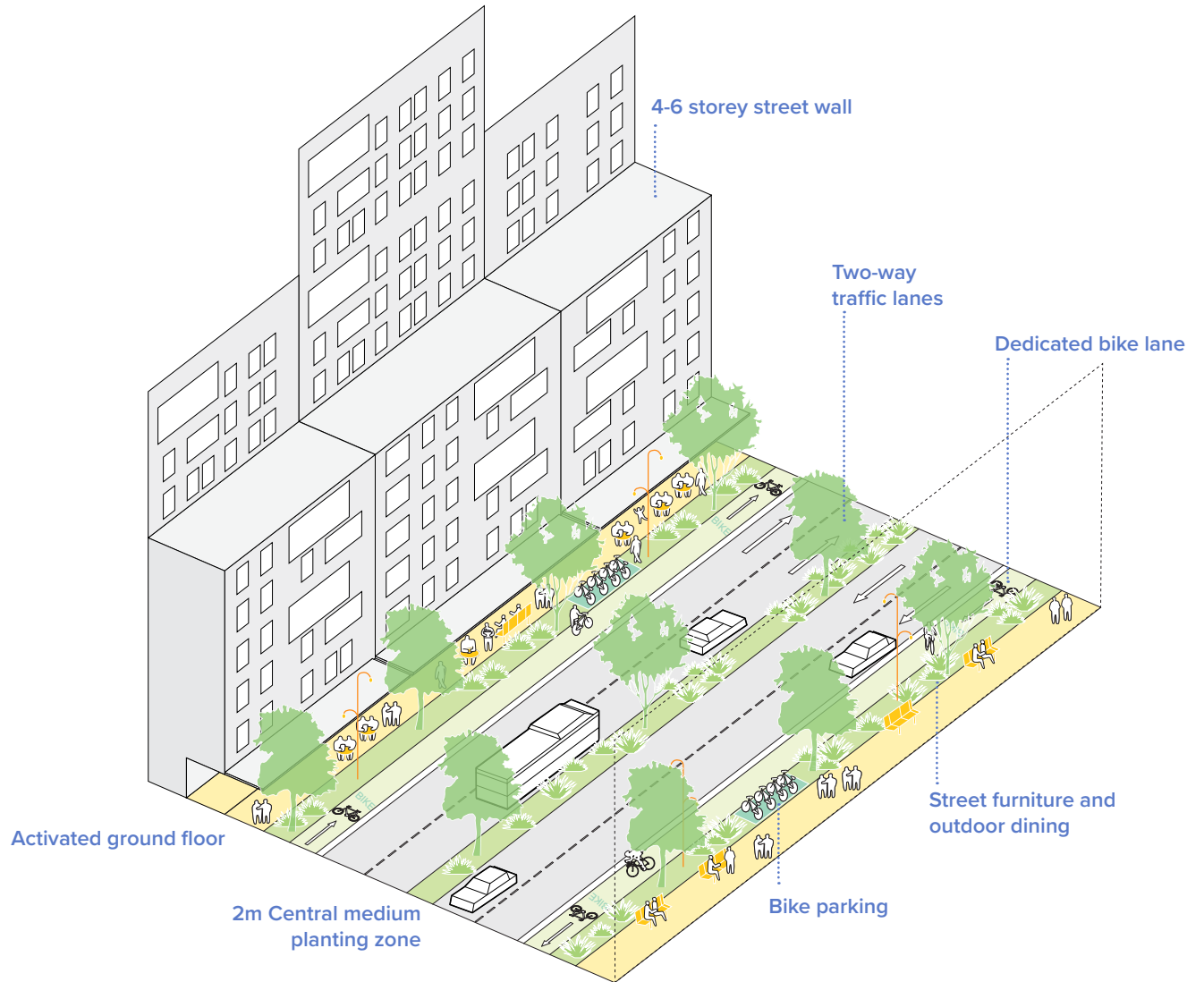
A 30 metre wide city street typology, with three rows of trees, dedicated cycleways on each side and wide footpaths that can accommodate outdoor dining, street furniture and gardens.

The street section is unique from the high-street typologies in the DCP because it is designed for potential future conversion to 2 travel lanes each direction without changes to kerbs and poles. A central median is provided to ensure that if this future conversion occurs there will be sufficient tree canopy cover to mitigate urban heat effects.

A mix of native trees and extensive understorey planting will create opportunities to improve biodiversity values in the city centre.

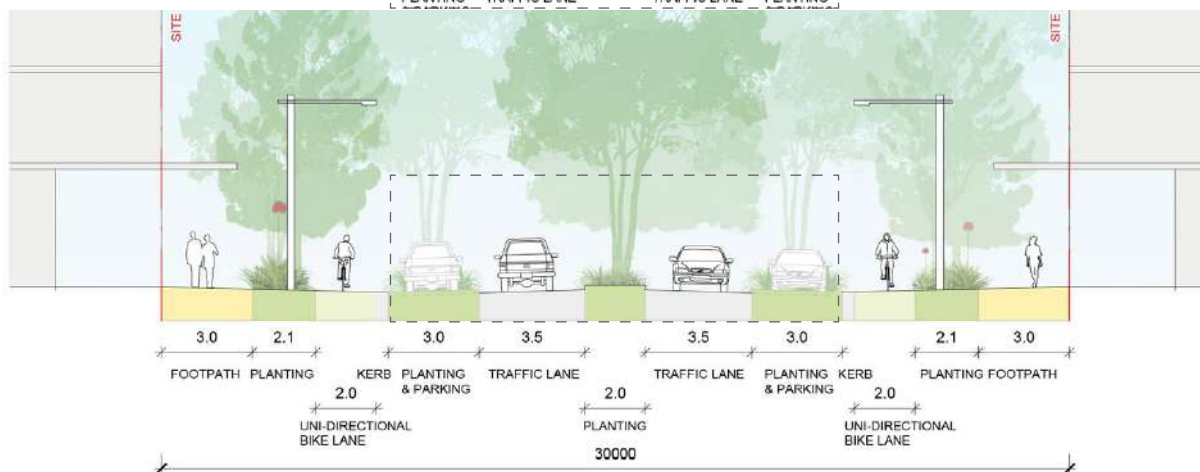
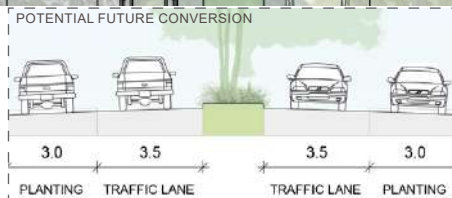


- Footpath
- Bike Path
- Planting
- Vehicle lane





COMMERCIAL HIGH STREET TYPE A TYPICAL PLAN AND SECTION



Indicative section subject to detailed design.

MOVEMENT AND PLACE

Local Street (Connector Street)

MOVEMENT

- Caters for all modes and active street life;
- Tighter corner radii, raised zebra crossings and raised thresholds to side streets for a more urban condition that supports pedestrians;
- Potential to be converted to provide an additional travel lane for vehicles or a specific mode such as buses or autonomous vehicles. Note zebra crossings would require conversion to signals if extra lane is added.

LANDSCAPE

- Maximise canopy coverage for urban heat island mitigation.
- Paving and furniture responsive to the colour and experience of Country.

PERVIOUSNESS: 19%

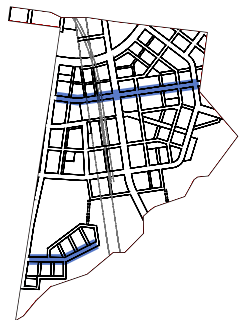
TREE CANOPY COVER: 86%



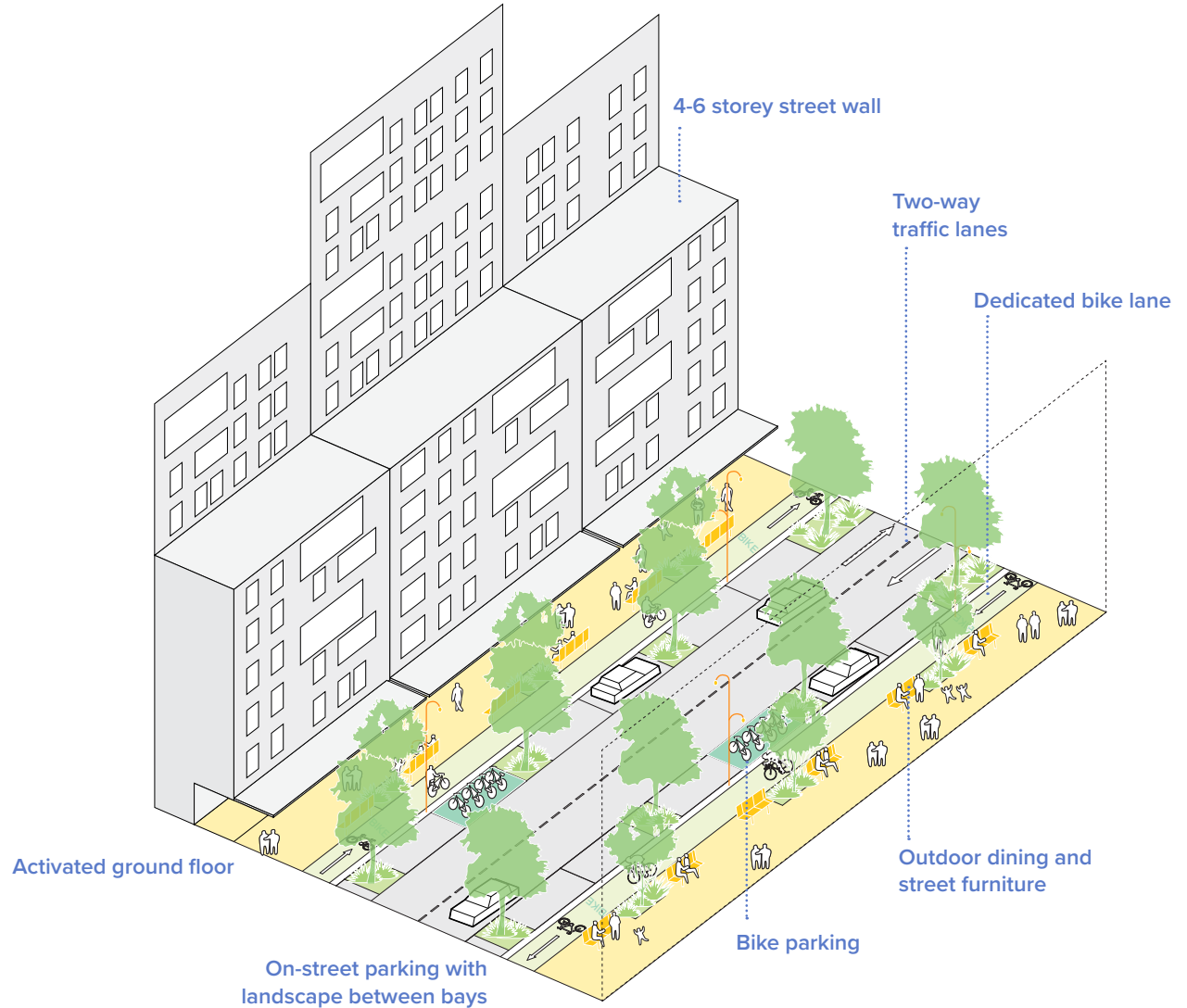
# COMMERCIAL HIGH STREET TYPE B

A traditional high street with dedicated cycleways, wide footpaths, spaces for outdoor dining area and street furniture, tree pits between on-street parking bays.

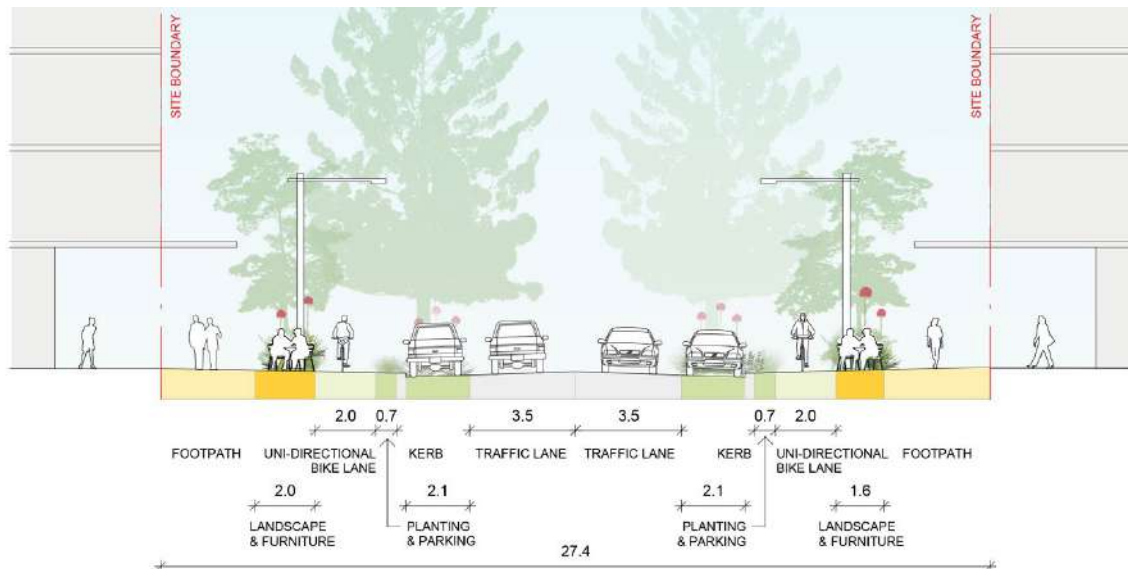
The street section is based on the '25m high street with cycle paths' typology in the DCP, however adds slightly more width to each of the zones to achieve better outcomes.



- Footpath
- Bike Path
- Planting
- Vehicle lane



COMMERCIAL HIGH STREET TYPE B TYPICAL PLAN AND SECTION



Indicative section subject to detailed design.

MOVEMENT AND PLACE

Local Street (Connector Street)

MOVEMENT

- Caters for all modes as well as active street life;
- Tighter corner radii, raised zebra crossings and raised thresholds to side streets for a more urban condition that supports pedestrians.

LANDSCAPE

- Water sensitive urban design utilised in planting verges where possible through passive irrigation;
- Planting zones function as traffic calming measure; whilst maximising canopy coverage for mitigation of urban heat island effect;
- Paving and furniture responsive to the colour and experience of Country.

PERVIOUSNESS: 23%

TREE CANOPY COVER: 76%

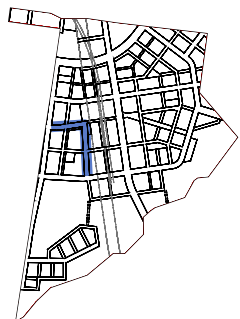


# CITY WALK WEST

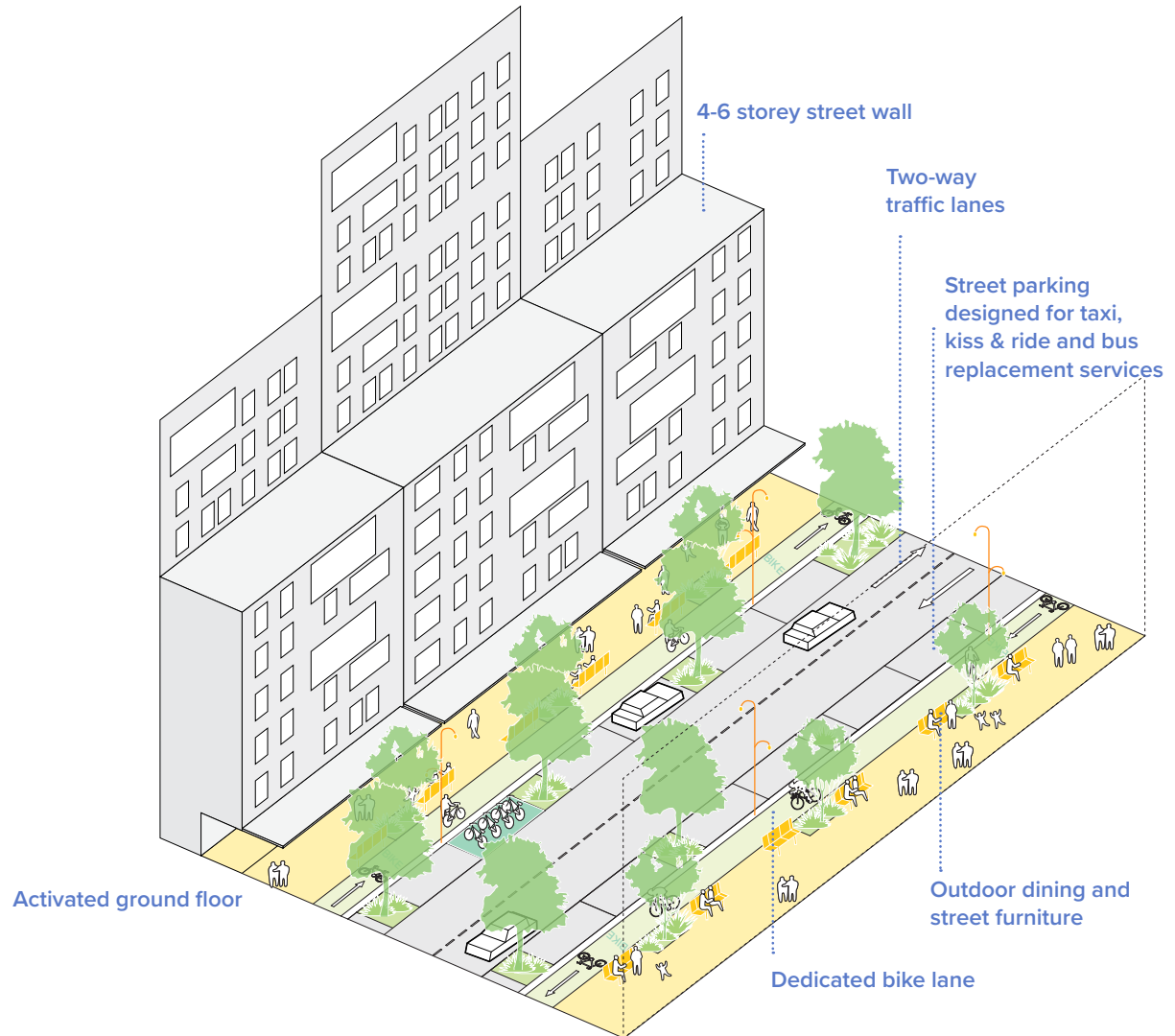
A primary pedestrian link between the Metro Interchange and Central Park, south to the City Parklands and Moore Gully. The street also provides interchange functions for taxi, kiss n ride and rail replacement buses.

The design is based on Commercial High Street Type B, with widening near the Metro station to provide 3m wide car bays for accessible parking and bus replacement services, and additional kerbside space to these bays to avoid conflict with the bike paths.

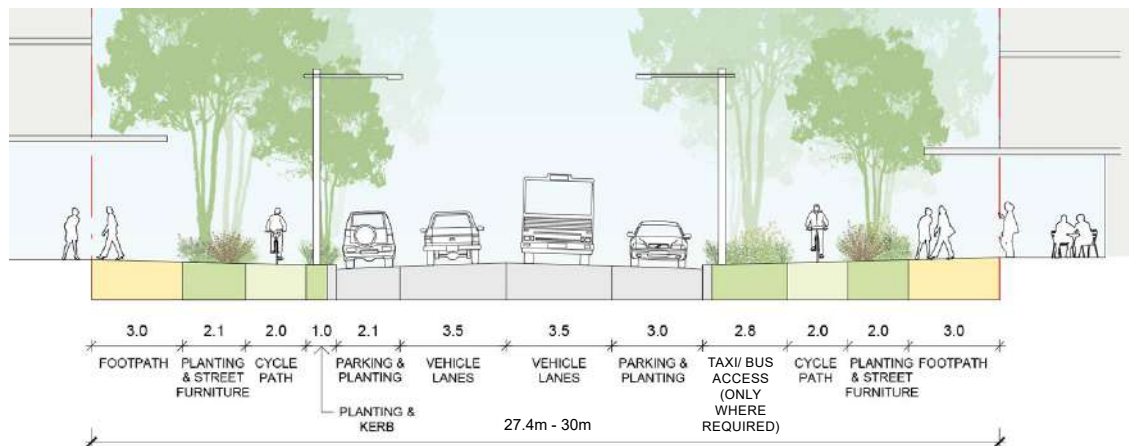
Traffic calming with raised threshold at the elbow adjoining the stations to create a slower speed environment.



- Footpath
- Bike Path
- Planting
- Vehicle lane



CITY WALK WEST STREET TYPICAL PLAN AND SECTION



Indicative section subject to detailed design.

MOVEMENT AND PLACE

Civic Space (Destination High Street)

MOVEMENT

- Separated bike paths providing cycle access to transit interchange;
- Dedicated spaces for kiss n ride, taxi, rail replacement buses and provides emergency and service access to the Metro station;
- Raised threshold at the elbow to the transit interchange.

LANDSCAPE

- Informal mixed native tree plantings with significant understorey vegetation.

PERVIOUSNESS: 23%

TREE CANOPY COVER: 57%

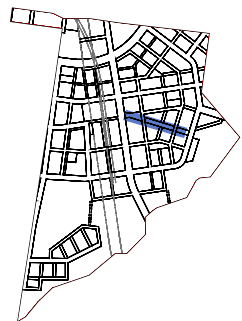


# CITY WALK EAST

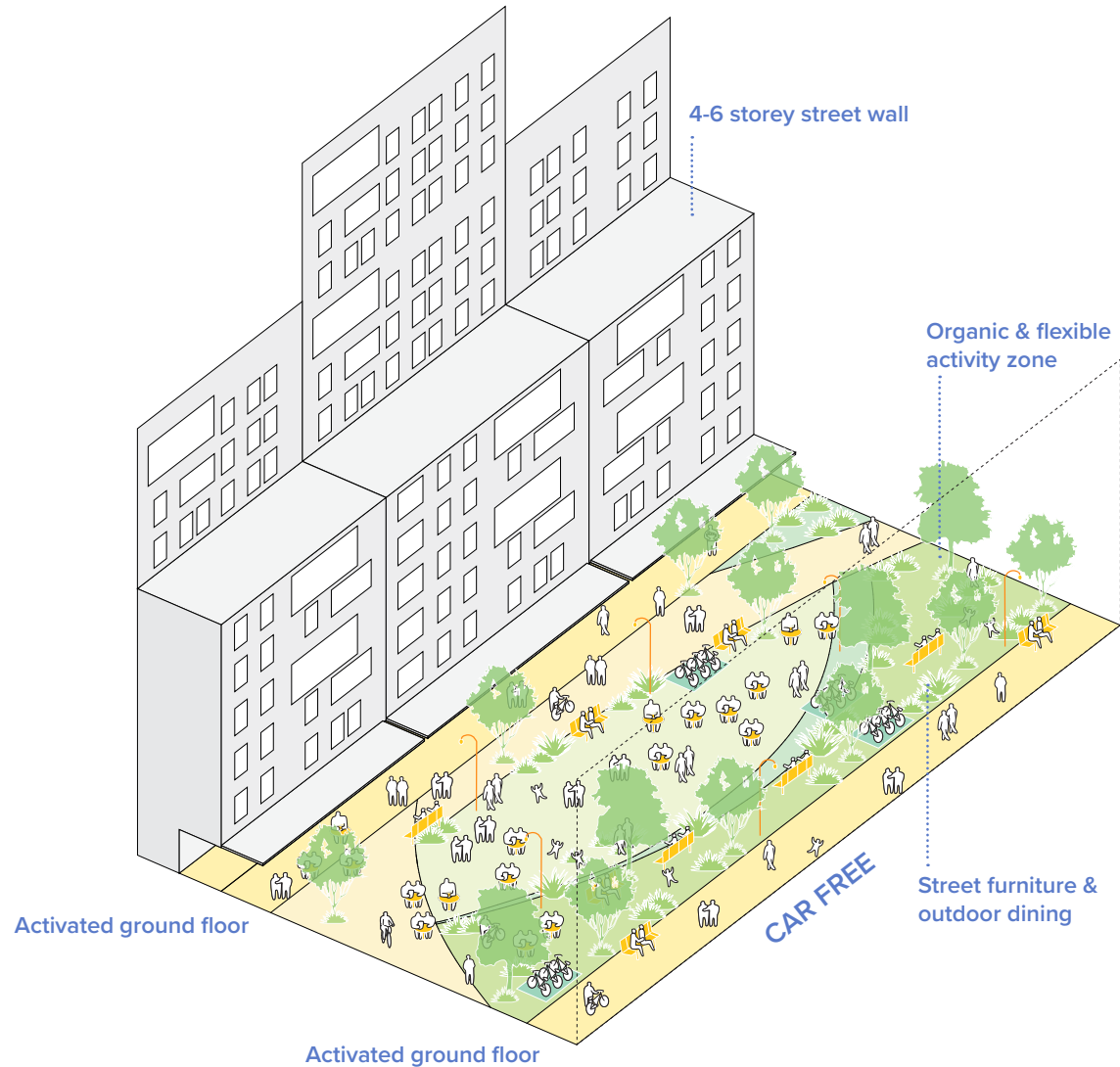
A primary pedestrian link between the Metro Interchange and Central Park, southeast to the City Parklands and major events space and a key north-south movement corridor through the city.

Characterised by extensive informal native plantings and unique high quality public space lined with cafés and restaurants.

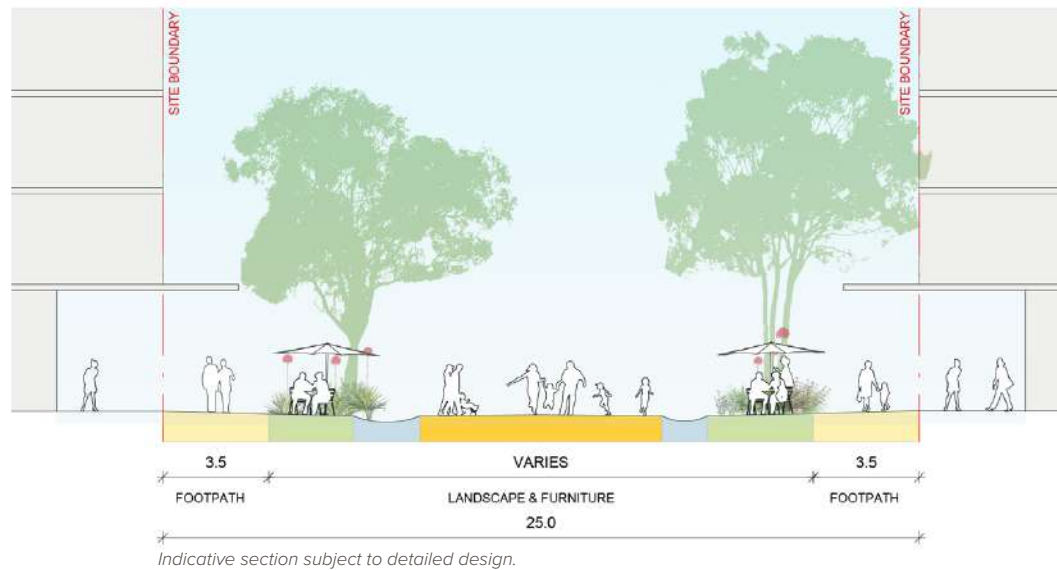
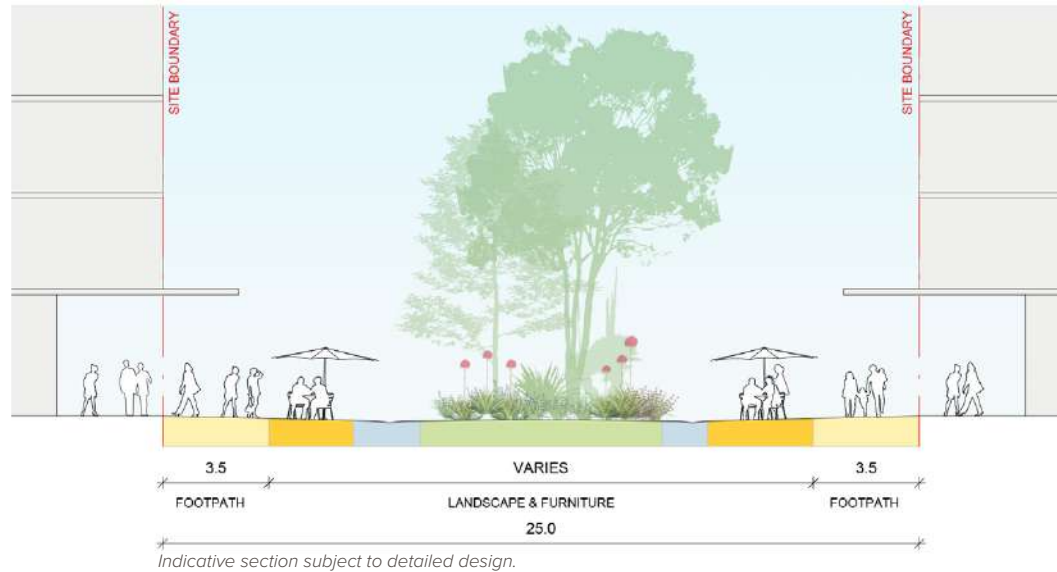
Pedestrian-only streets are not included in either the DCP or the Western Sydney Street Design Guide for design guidance.



- Footpath
- Bike Path
- Planting
- Vehicle lane



## CITY WALK EAST TYPICAL PLAN AND SECTION



## MOVEMENT AND PLACE

Civic Space (Mall)

## MOVEMENT

- High quality pedestrian space featuring public seating, outdoor dining, play areas, lighting and smart city wayfinding.

## PLANTING

- Informal mixed native tree plantings with significant understorey vegetation.

PERVIOUSNESS: 30%

TREE CANOPY COVER: 23%

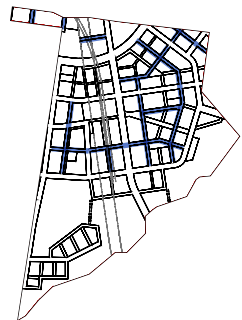


# CITY STREETS

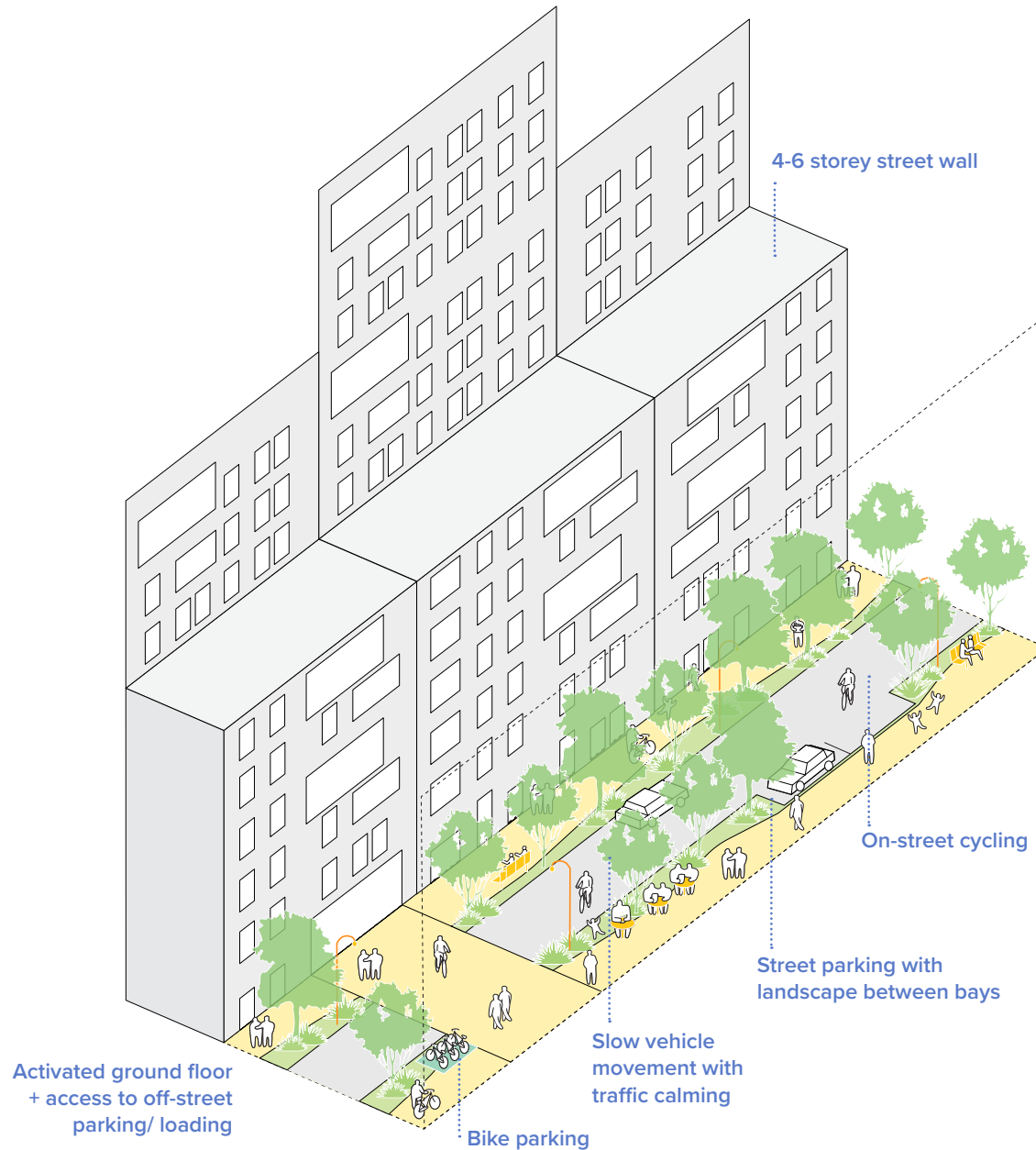
The city streets provide local access to all development sites and respective parking and loading docks and are designed for lower volume local traffic only, not through-movement. These streets promote people-oriented public space with a slow speed and moderate activity street environment which is also safe for on-street cycling.

The street design is inspired by the predominant street type found in the inner ring suburbs of Sydney such as Surry Hills, and the Inner West, which has proven to create a highly walkable and leafy character.

The DCP doesn't include a smaller local street in the commercial areas as a reference design, however this street is consistent with the guidance set out for Local Street Type 4A in the Western Sydney Street Design Guide.

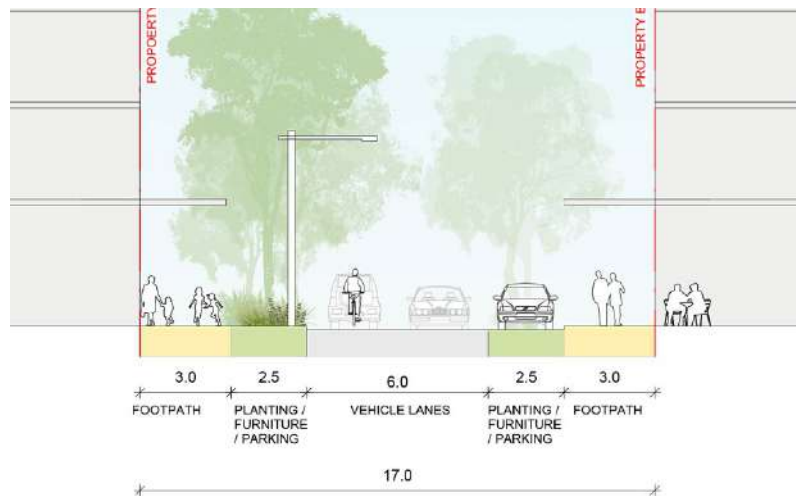
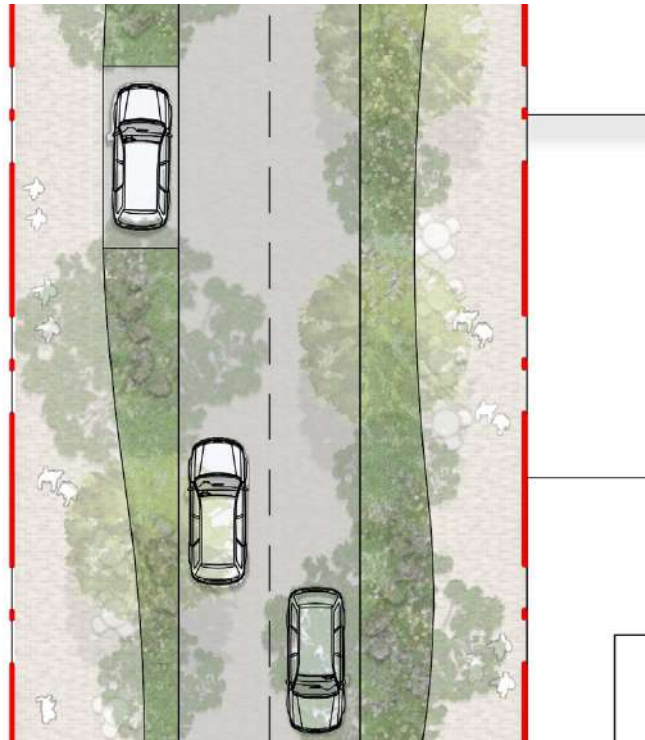


- Footpath
- Planting
- Vehicle lane





CITY STREET TYPICAL PLAN AND SECTION



Indicative section subject to detailed design.

**MOVEMENT AND PLACE**

Civic Space (Civic Lane)

**MOVEMENT**

- Slow speeds and lower volume safe for on-street cycling;
- Access to off-street parking and loading areas;

**LANDSCAPE**

- Passive irrigation to planters achieved through water sensitive urban design;
- Endemic planting palette with a variety of tree species to create shaded areas.

**PERVIOUSNESS: 16%**

**TREE CANOPY COVER: 71%**



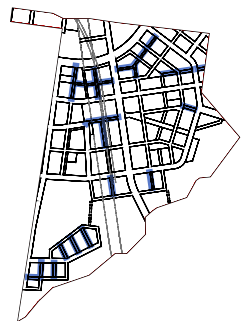
# CITY LANES

The city lanes offer a green yet highly urban fine grain network bustling with street life creating safe and highly desirable spaces to walk around the city, discover and linger.

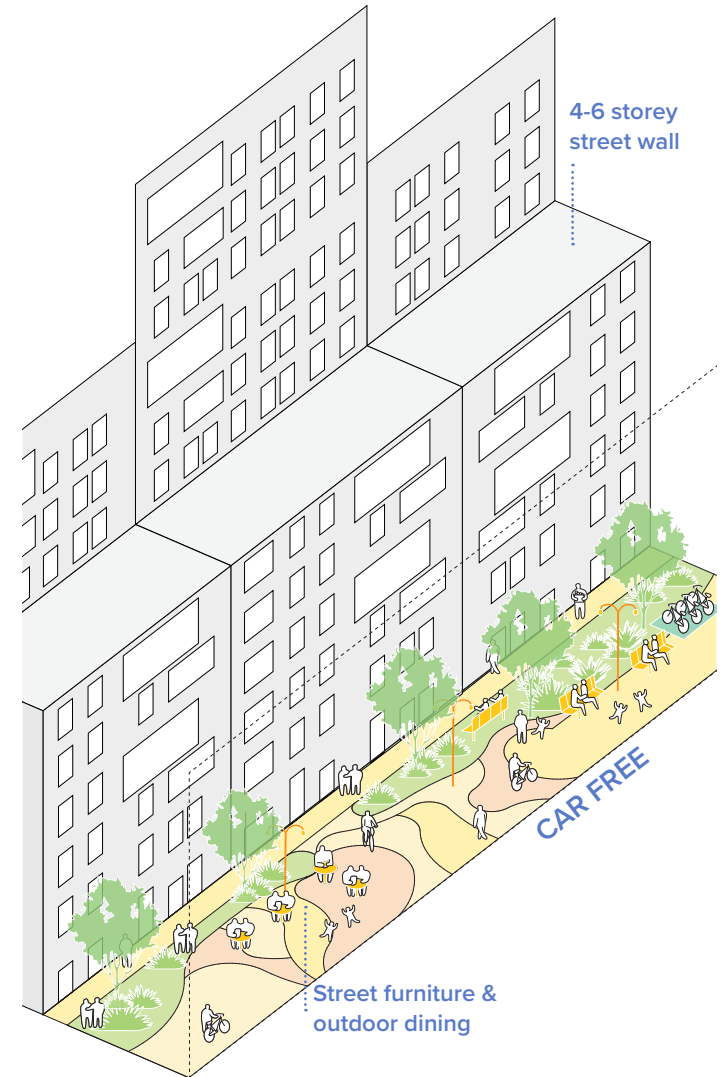
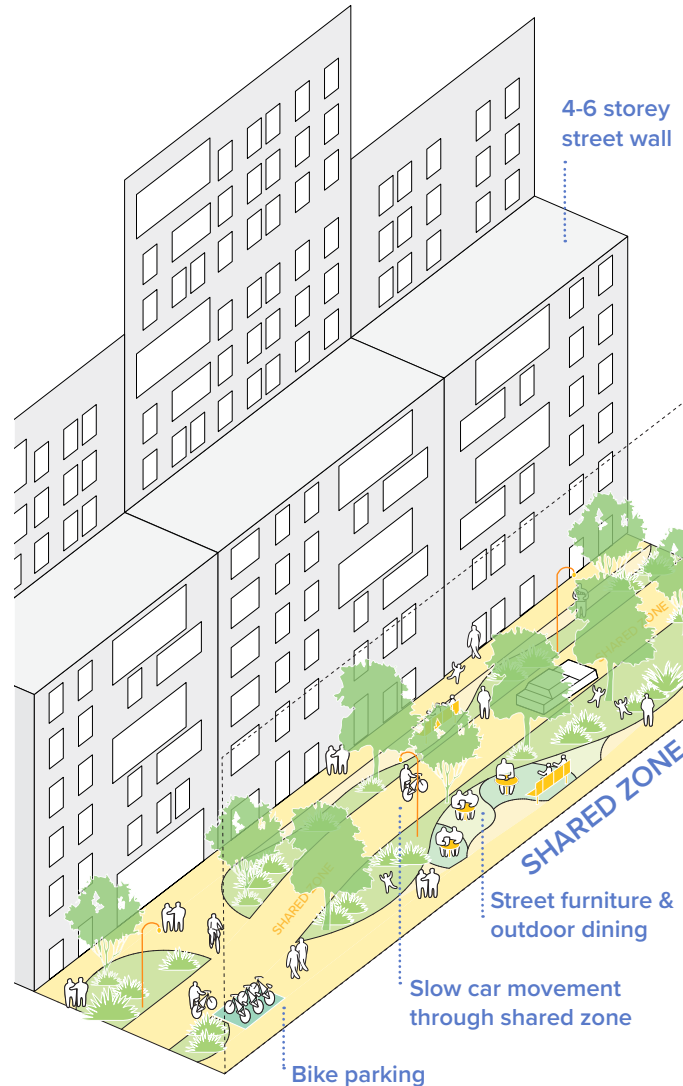
Some city lanes will be slow speed shared zones to accommodate access to lots, others will be pedestrian-only to provide permeability for people. Both will be flush paved to a high standard, with shared zones featuring a vehicle lane with horizontal offsets for traffic calming and intermittent street parking, while accommodating sufficient manoeuvring space for service vehicles.

The bespoke design of each lane can tell the stories of Country, reflected through interpretation in materials and increased pockets of endemic planting. High quality paving, attention to details, provision of weather cover, greenery, art and inviting lighting are all important in these spaces.

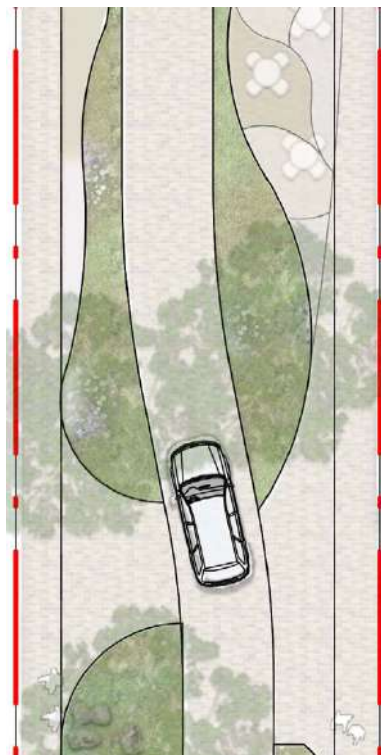
Pedestrian lanes are not included in either the DCP or the Western Sydney Street Design Guide for design guidance.



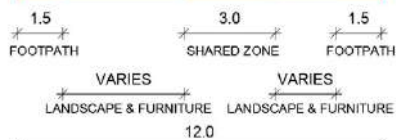
- Footpath
- Planting
- Feature Paving



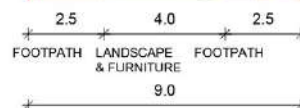
**CITY LANE - SHARED ZONE**  
TYPICAL PLAN AND SECTION



**CITY LANE - PEDESTRIAN ONLY**  
TYPICAL PLAN AND SECTION



*Indicative section subject to detailed design.*



*Indicative section subject to detailed design.*

**MOVEMENT AND PLACE**

Civic Space (Civic Lane)

**MOVEMENT**

- Car-free or shared zone;
- Flexible movement zone either side of the vehicle lane to accommodate pedestrian activity and street life;
- Flush paving across the entire street reserve with varying tones and patterns of paving to reflect changed traffic conditions.

**LANDSCAPE**

- Passive irrigation to planters achieved through water sensitive urban design;
- Endemic planting palette with a variety of tree species to create shaded areas.

**PERVIOUSNESS: 44%**

**TREE CANOPY COVER: 52%**

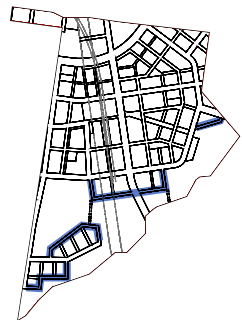


# PARKLANDS PROMENADE

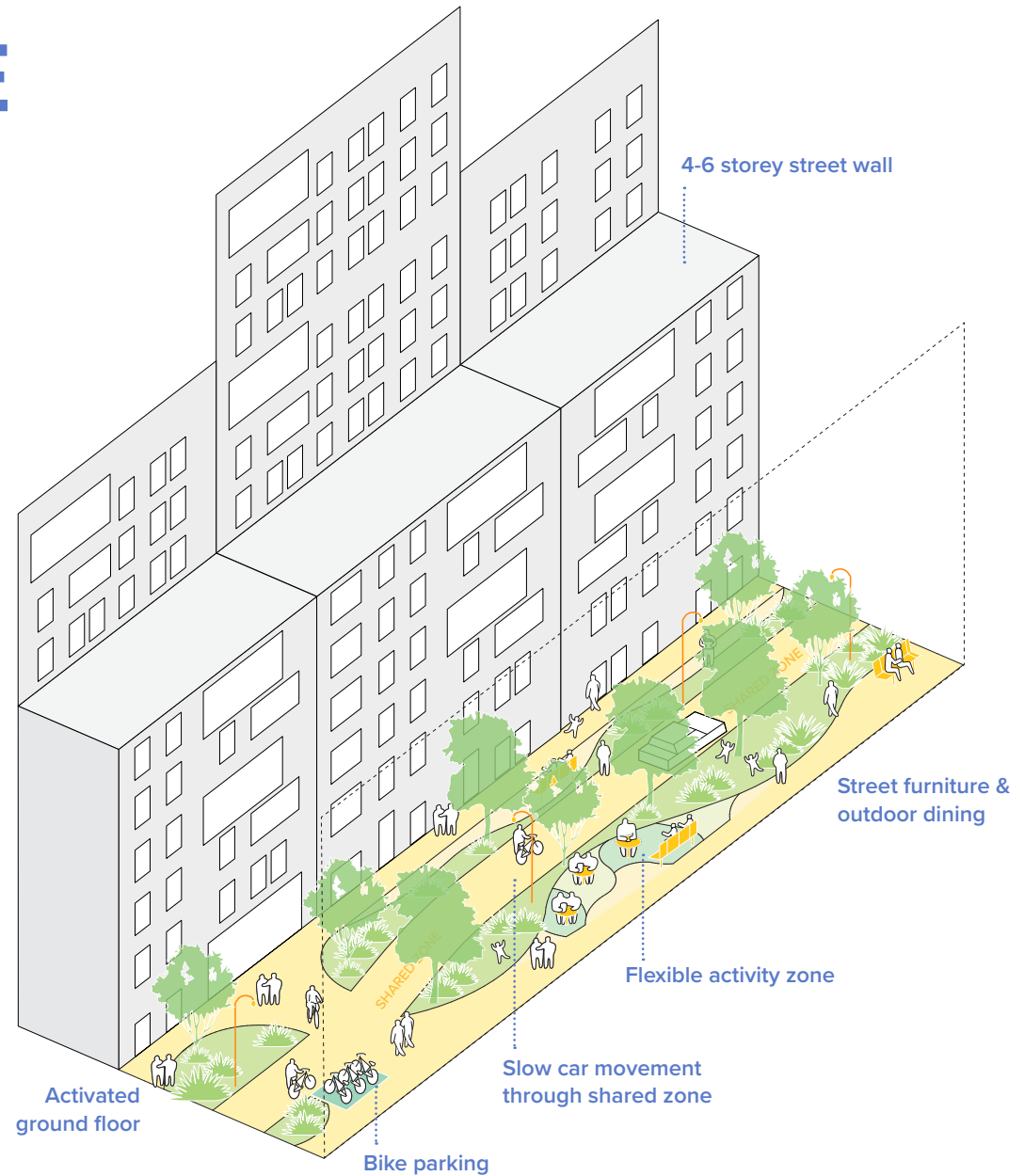
A memorable activated frontage to the Thompsons Creek regional parklands and wetlands with cultural, entertainment and tourism related uses. Designed as a shared zone to prioritise the space for people and provide the opportunity for the street to be converted to pedestrian-only for events.

The DCP doesn't include shared zones for a reference design, however this street is consistent with the guidance set out for Local Street Type 1 shared zone in the Western Sydney Street Design Guide.

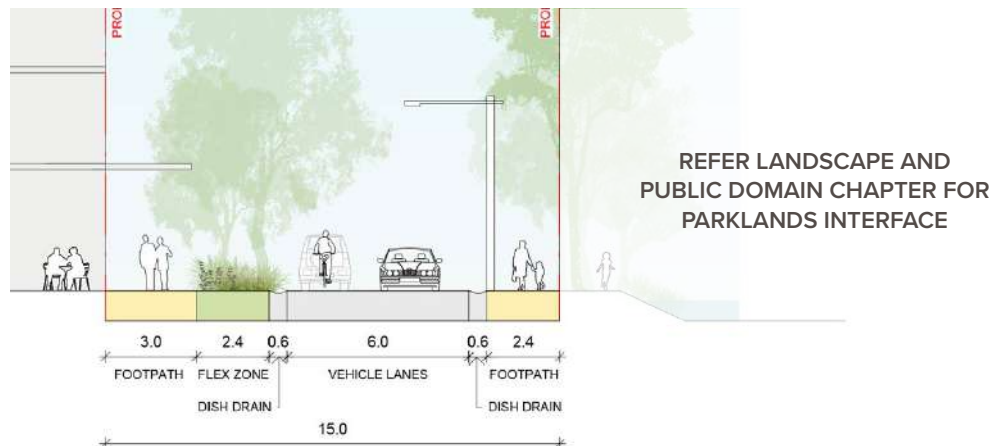
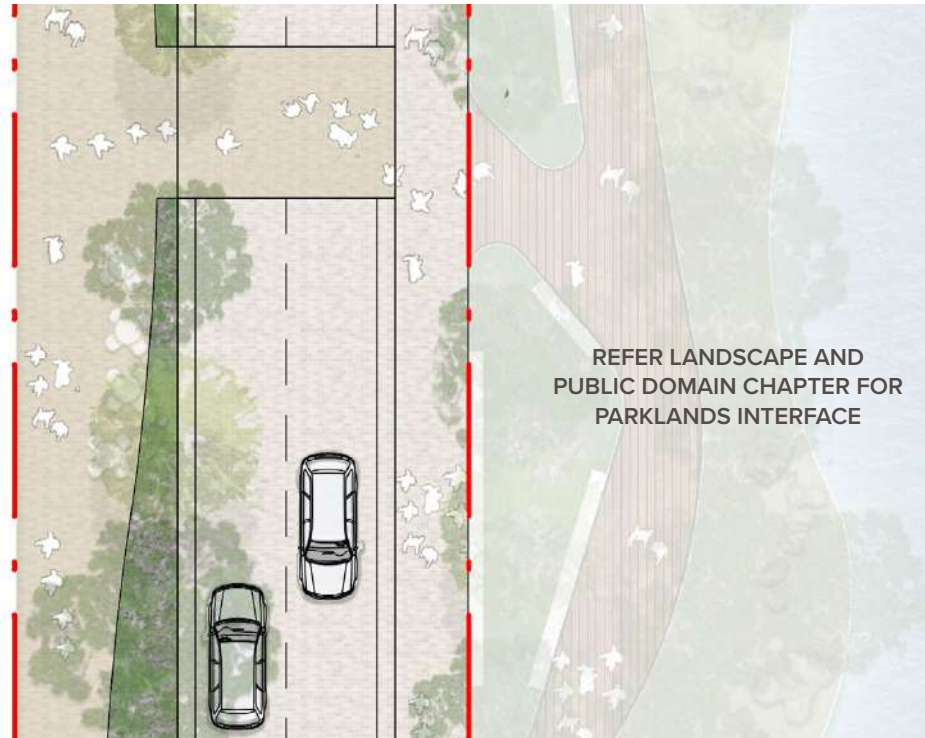
Refer to landscape chapter for further design guidance on the interface to the parklands.



- Paving
- Planting



**PARKLANDS PROMENADE STREET TYPICAL PLAN AND SECTION**



*Indicative section subject to detailed design.*

**MOVEMENT AND PLACE**

Civic Space (Civic Lane)

**MOVEMENT**

- Car-free or shared zone;
- Flexible movement zone either side of the vehicle lane to accommodate pedestrian activity and street life;
- Flush paving across the entire street reserve with varying tones and patterns of paving to reflect changed traffic conditions.

**LANDSCAPE**

- Passive irrigation to planters achieved through water sensitive urban design;
- Endemic planting palette with a variety of tree species to create shaded areas.

**PERVIOUSNESS: 7%**

**TREE CANOPY COVER: 38%**



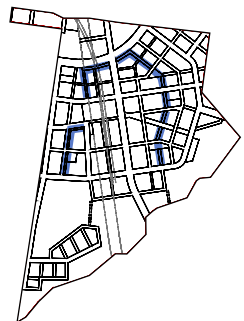
# GREEN LOOP

The Green loop is a pedestrian only network weaving around the city with the primary goal of caring for and connecting to Country.

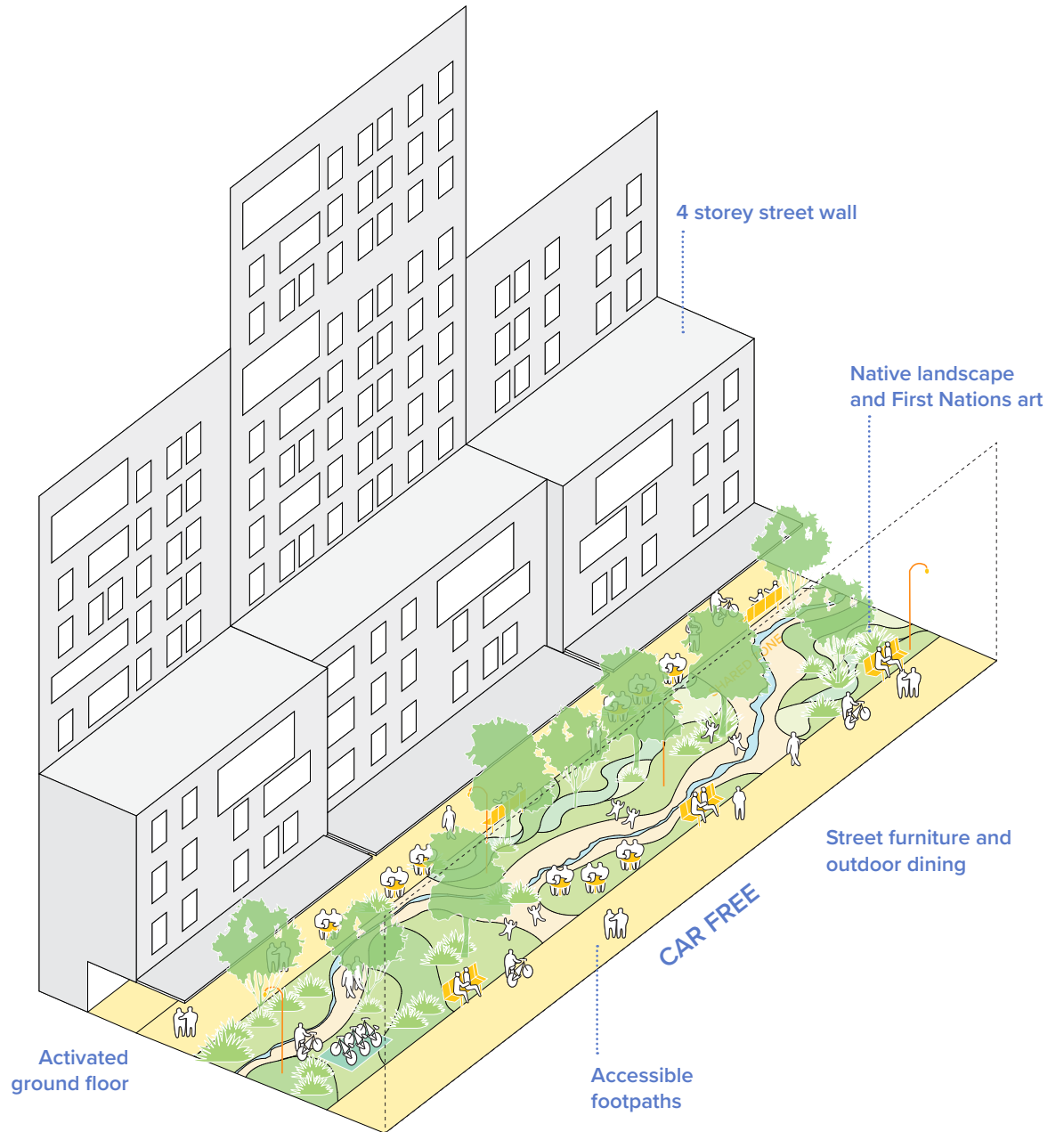
The loop will feature a distinct indigenous landscape and character featuring native plants, locally appropriate natural materials and local First Nations art and story telling.

This typology is unique to Bradfield and pedestrian streets are not included in either the DCP or the Western Sydney Street Design Guide for design guidance.

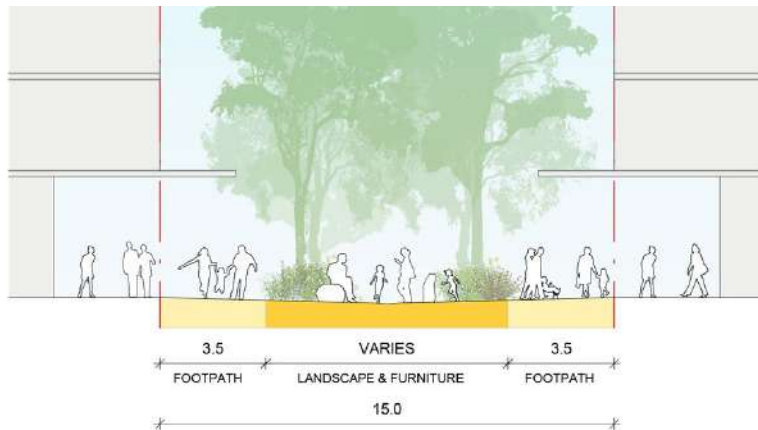
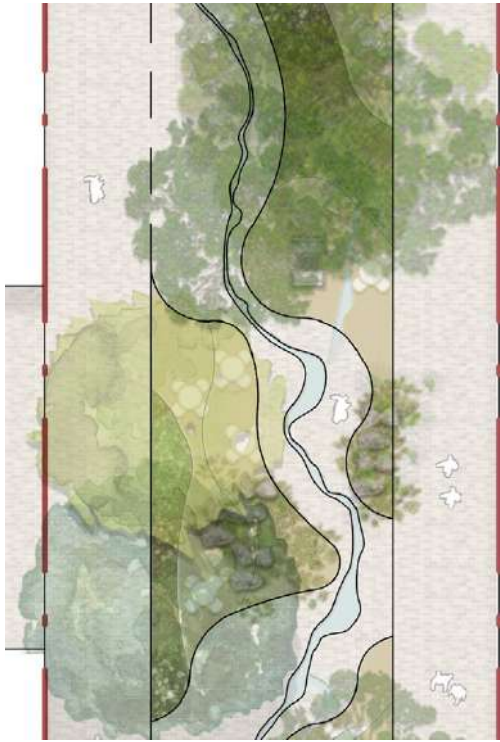
Refer to landscape chapter for further design guidance.



- Paving
- Planting



## GREEN LOOP TYPICAL PLAN AND SECTION



*Indicative section subject to detailed design.*

## MOVEMENT AND PLACE

Civic Space (Civic Lane)

## MOVEMENT

- Pedestrian-only;
- Prioritises space for native landscape and local First Nations art while providing high levels of pedestrian movement including fully accessible movement paths and intermittent spaces for outdoor dining and public seating;
- Intersections with streets require either signalised crossings or as a minimum raised zebra crossings to prioritise pedestrian movement.

## LANDSCAPE

- A connected ecosystem of endemic planting for habitat, pedestrian priority and Connection with Country. This is achieved through continuous corridors of canopy, water sensitive urban design and spaces to gather, connect and learn;
- Consideration seasonal interaction with some endemic species.

**PERVIOUSNESS: 53%**

**TREE CANOPY COVER: 50%**



09





RING

# LAND USE



# POLICY ALIGNMENT

## THE LAND USE STRATEGY FOR THE MASTER PLAN RESPONDS TO KEY POLICY OBJECTIVES AND REQUIREMENTS

### WESTERN SYDNEY AEROTROPOLIS PLAN 2020

The WSAP sets out the high level vision for the Aerotropolis Core to become a sustainable global airport city with a major metropolitan 24-hour, vibrant, global centre and robust local economy built around professional services, high technology advanced manufacturing, aerospace and defence industries, research, training and education.

The precinct will be centred around a new Sydney Metro station and supported by retail, creative industries, civic and cultural facilities, entertainment quarter, public and private medical services, tourism and conference facilities and world-class public open spaces to attract businesses, residents and visitors. Medium to high density residential and other noise sensitive land uses will be located outside the ANEC/ANEF 20 and above contours and within 800 metres or a 10-minute walk of the Metro station.

The Plan notes that land uses and urban forms will evolve as the Aerotropolis changes over several decades and recommends the use of flexible land use zoning. While the precinct will transition over time, the Plan states that compact, walkable precincts should be planned for and developed upfront to meet the sustainability, liveability and connectivity objectives of the Region Plan, and be designed to allow for future land use intensification.

The Bradfield City Centre Master Plan is consistent with the vision and objectives set out in WSAP and provides the framework and additional level of design development necessary to deliver the vision.

### STATE ENVIRONMENTAL PLANNING POLICY (PRECINCTS—WESTERN PARKLAND CITY) 2021

The SEPP defines the land uses applicable to the Aerotropolis by way of zoning table and zoning maps. Only four zones are applied to the Aerotropolis Core being Enterprise, Mixed Use, SP2 Infrastructure and Environment and Recreation.

The SEPP also sets out the provisions/ requirements for airport safeguards, general development controls, design excellence, exempt and complying development and Precinct Plans and Master Plans.

The Bradfield City Centre Master Plan is consistent with the provisions of the SEPP and does not propose any variations to land uses or other provisions.

### WESTERN SYDNEY AEROTROPOLIS PRECINCT PLAN

The Precinct Plan provides the spatial design and infrastructure framework to deliver the vision and strategic objectives set out in WSAP and the SEPP.

The land use map is broadly consistent with the WSAP and SEPP, and the Plan also provides additional guidance for the 'Metropolitan Centre' within the Aerotropolis Core, with the typical uses comprising: commercial office development; employment hubs; multiple supermarkets and department stores; higher order services; social infrastructure, including health and education services; creative and cultural uses; and residential development that ensures capacity for employment.

The Bradfield City Centre Master Plan is broadly consistent with the land use, infrastructure and spatial framework set out in the Precinct Plan, with minor refinements to the design and character areas and additional levels of detail necessary to deliver the city successfully.

# FLOORSPACE, JOBS AND POPULATION

## BRADFIELD HAS SIGNIFICANT CAPACITY FOR FLOORSPACE AND POPULATION TO CREATE A MAJOR HUB FOR RESIDENTIAL, EMPLOYMENT AND ACTIVITY IN WESTERN SYDNEY

It is forecast that by 2056 Bradfield City Centre could deliver approximately 1.2 million sqm of floorspace, with provision for approximately 20,000 - 24,000 jobs and approximately 15,000 residents. The high level forecast by land use is provided below, which has been used as the basis for technical studies.

Indicative Timeframe		Estimated Employment	Estimated Residential Population	Estimated Gross Floor Area (cumulative)
Immediate	2026	1,000 - 2,000 jobs	0 residents	48,500 sqm
Medium-term	2036	8,000 - 8,300 jobs	3,000 - 3,100 residents	341,000 sqm
Long-term	2056	20,000 - 24,000 jobs	15,000 - 15,200 residents	1,258,000 sqm

*Note: The table above is an estimate of the population and employment forecast used for the purposes of modelling only.*

*The master plan has the capacity to accommodate ~ 10,000 residential dwellings. In accordance with NSW Government policy a proportion of the residential dwellings will be affordable housing. The timing and delivery of residential dwellings will be subject to market demand and future master plan reviews that consider the impact of additional population on the scope and timing of social and physical infrastructure.*

# CHARACTER AREAS

The majority of developable area in Bradfield is zoned Mixed Use, allowing for a wide range of commercial, civic and residential uses that make up a thriving city centre.

Within the mixed use zone the master plan identifies different character areas that have emerged in response to the amenity, attraction, access and value of each area and provide guidance on land use and development decisions.

The northern portion of the site north of Metro Link Boulevard is zoned Enterprise which allows for commercial and light industrial uses, but not residential. This is part of a larger Enterprise zone around the Aerotropolis intended to safeguard the strategic employment and industry development aspirations for the region.

## INNOVATION RESEARCH AND EDUCATION

Characterised by commercial, office, research, education, advanced industries, defence and aerospace uses that support innovation sectors with high value employment.

## CIVIC CORE

Characterised by a mix of community, cultural, civic and commercial uses with highly active ground floors framing Central Park and the central Metro - transit interchange.

## MIXED USE - BALANCED

Characterised by a balanced mix of retail, commercial, office, recreational, community, high tech industry and residential uses, with active uses at street level.

## MIXED USE - RETAIL FOCUS

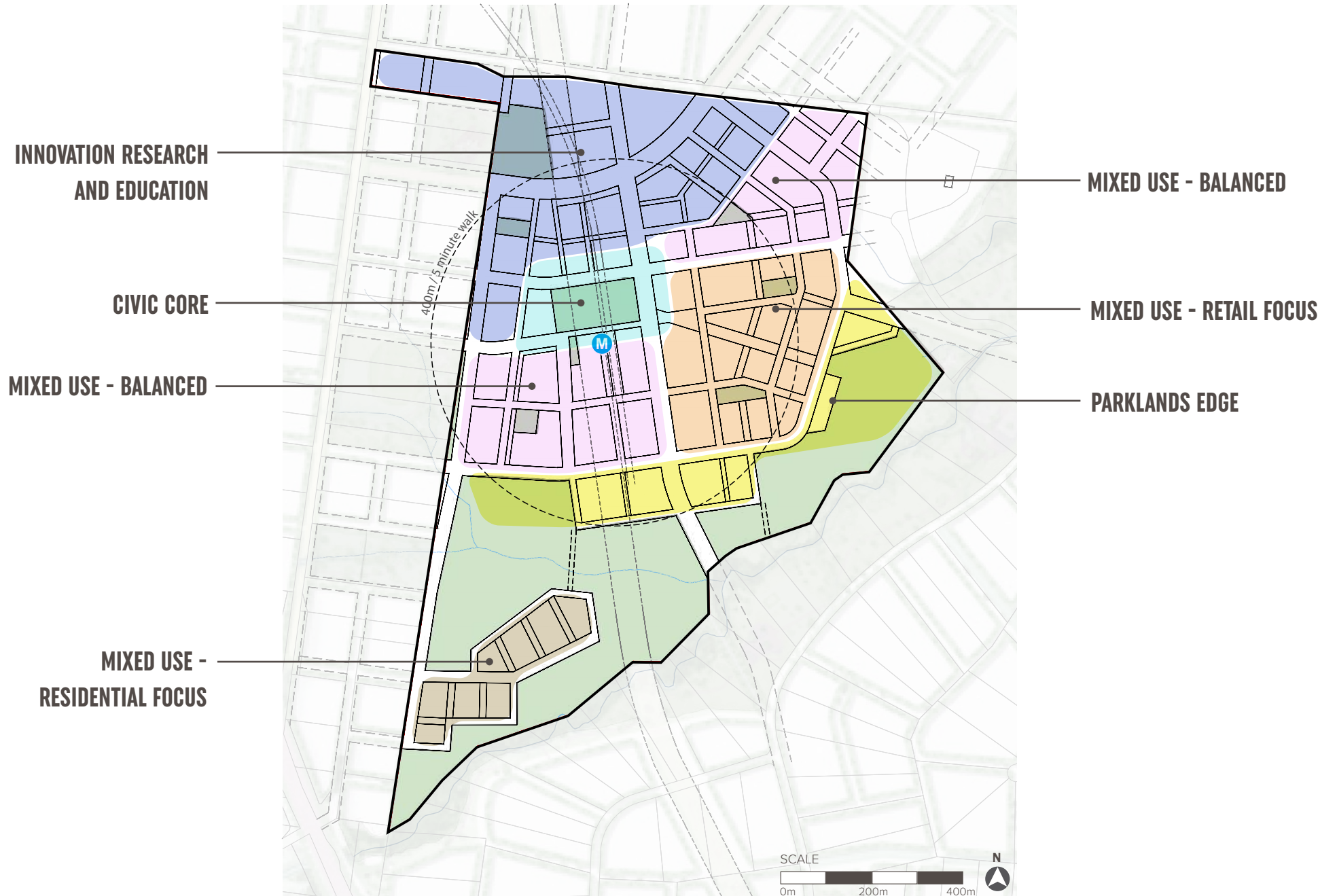
Characterised by a mix of retail, commercial, office, recreational, community and residential uses, with a higher concentration of retail floorspace to create a district level shopping area.

## MIXED USE - RESIDENTIAL FOCUS

Characterised by predominantly residential uses with some commercial, retail and community uses to support the residential community.

## PARKLANDS EDGE

Characterised by a focus on cultural and civic uses, leisure and entertainment, plus hotel and residential with active interfaces at street level, outdoor dining and street trading for day and night activation along the promenade and the two key activity nodes (event space and swimming pool).

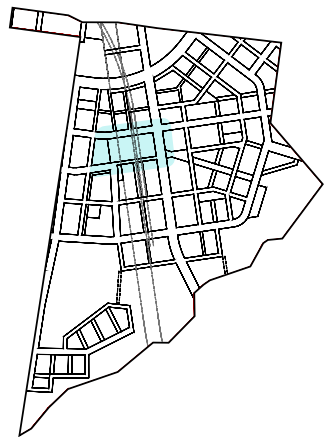


The Master Plan does not propose permanent development in the existing 60m wide Special Purposes 2 (SP2) Infrastructure Zone corridor. A decision regarding future rail infrastructure in the corridor is the subject of review by Government.

# CIVIC CORE

## THE CIVIC HEART OF THE CITY

Characterised by landmark buildings with a mix of that includes community, cultural, civic and commercial uses with highly active ground floors framing Central Park and the central Metro - transit interchange to create activity day and night.



# CITY CORE CHARACTER



Diversity of built form height, typologies and architectural expression



Publicly accessible courtyards and green rooftops for open space diversity



Green strategies provide a comfortable micro climate to street level



Mix of complementary uses in hybrid buildings for 24/7 activation



Day / Night activation to public domain - retail, eat streets, entertainment



4 to 6 storey streetwalls for a defined and human scaled public domain



Active uses and frontages to site links and courtyards extend the public domain



Responsive, sustainable and innovative materials and construction like CLT

# CITY CORE CHARACTER



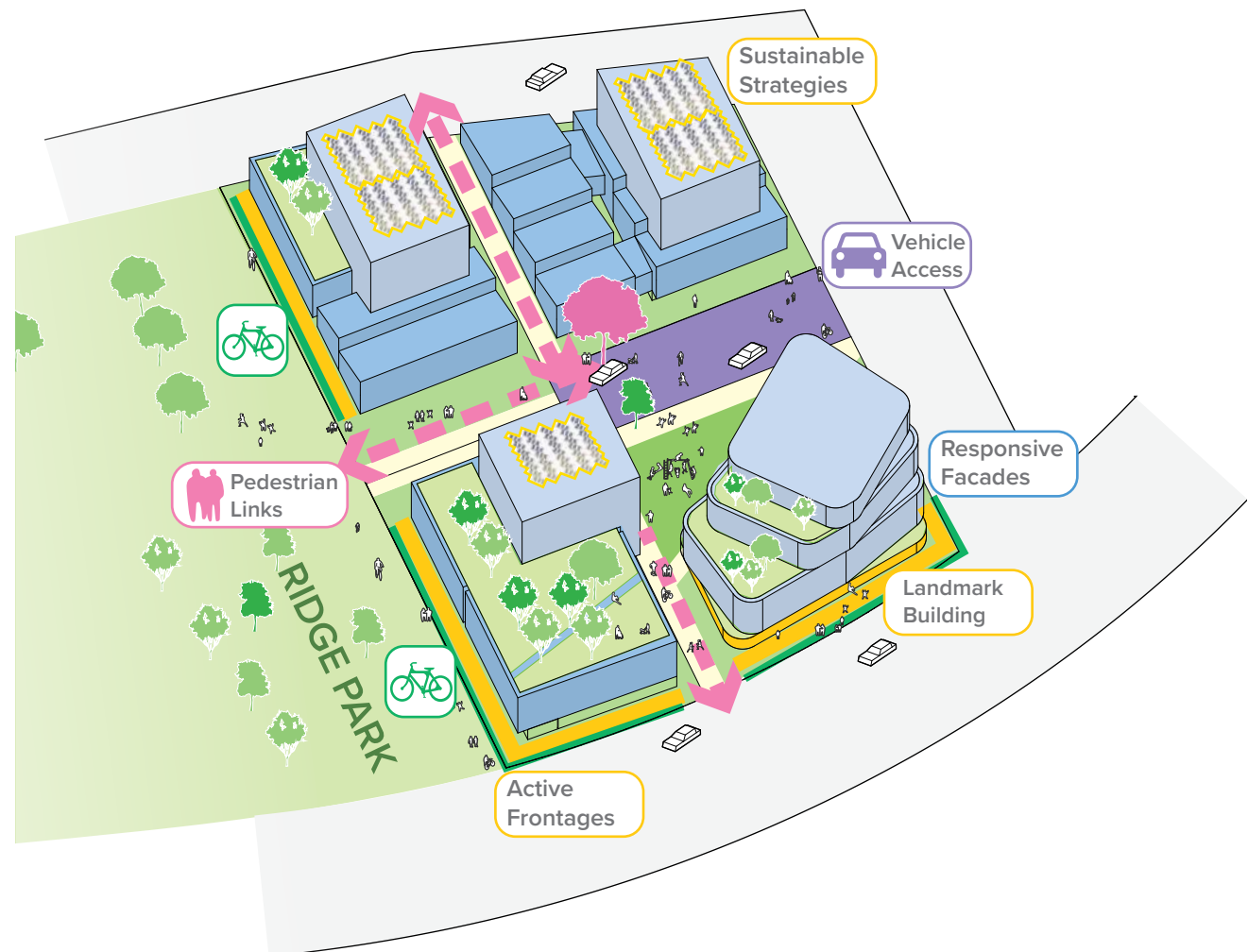
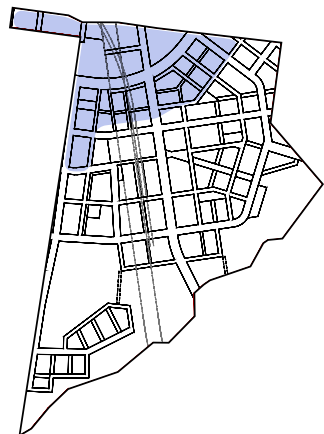
Future built form character 'look and feel' montage



# INNOVATION RESEARCH & EDUCATION

## A HUB FOR HIGHER VALUE ENTERPRISE USES AND CITY SERVICING USES LOCATED CLOSE TO AMENITY AND ACTIVITY.

Characterised by commercial, office, research, education, advanced industries and defence uses that support innovation sectors with high value employment. Active uses at street level and building typologies with complementary uses reflect the shift to leaner, smarter and more flexible forms of innovation in dense vertical urban forms.



# INNOVATION RESEARCH & EDUCATION CHARACTER



Diversity of built form height and architectural expression



Publicly accessible courtyards and green rooftops for open space diversity



Innovative materials that address environmental issues



Integration of green for a comfortable micro climate



Landmark character at key corners



Temporary uses and 'pop-up' activation integrated as part of site programming



Integration of green and blue to reflect the Parkland setting



Responsive, sustainable and innovative strategies integrated into design



Responsive, sustainable and innovative strategies



Mix of complementary uses within dense urban forms that include industrial uses



Sleeving of active uses for activation to the public domain

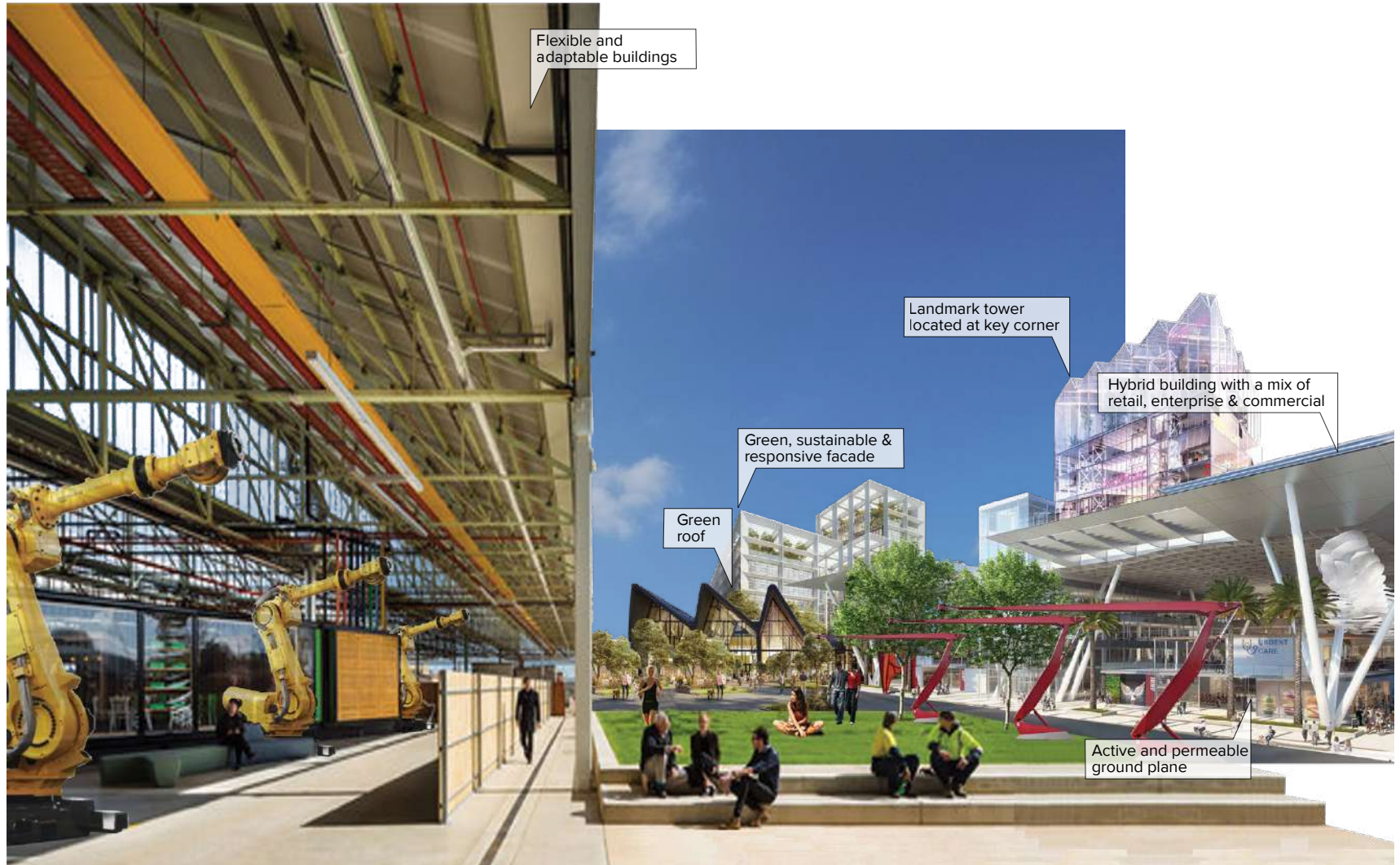


Adaptable, temporary construction strategies that support a circular economy



Mix of complementary uses in hybrid buildings for 24/7 activation

# INNOVATION RESEARCH & EDUCATION CHARACTER



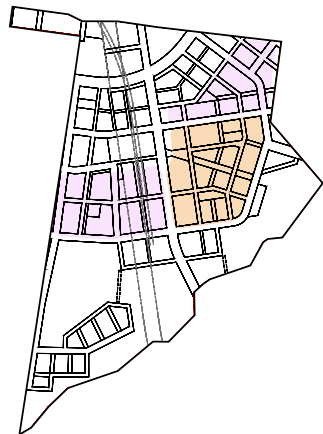
Future built form character 'look and feel' montage

# MIXED USE

**THE TRADITIONAL MIXED USE URBAN FABRIC THAT MAKES UP GREAT CITIES, PROVIDING SERVICES AND JOBS WITHIN WALKABLE DISTANCE OF TRANSIT AND HOMES.**

Characterised by a balanced mix of retail, commercial, office, recreational, community and residential uses, with active uses at street level and local parks for local community connection.

The south-east block is intended to have a greater concentration of retail floorspace to create a district shopping area.



# MIXED USE CHARACTER



Diversity of built form height, typologies and architectural expression



Transparency at street level to extend active uses to the public domain



Active & publicly accessible courtyards provide a mix of open space typologies



Adaptable building forms that can evolve over time to other uses



Mix of active and passive uses at street level to create an active street level



Porous and green buildings that celebrate the parkland nature of the city



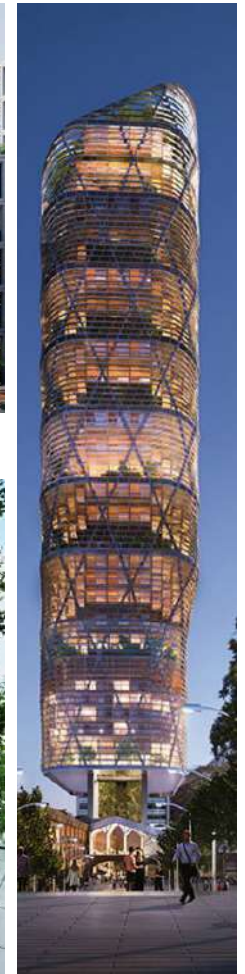
Fine grain articulation to the street level interface



Integration of green for a comfortable micro climate



Responsive, sustainable and innovative strategies



Landmark character at key corners

# MIXED USE CHARACTER

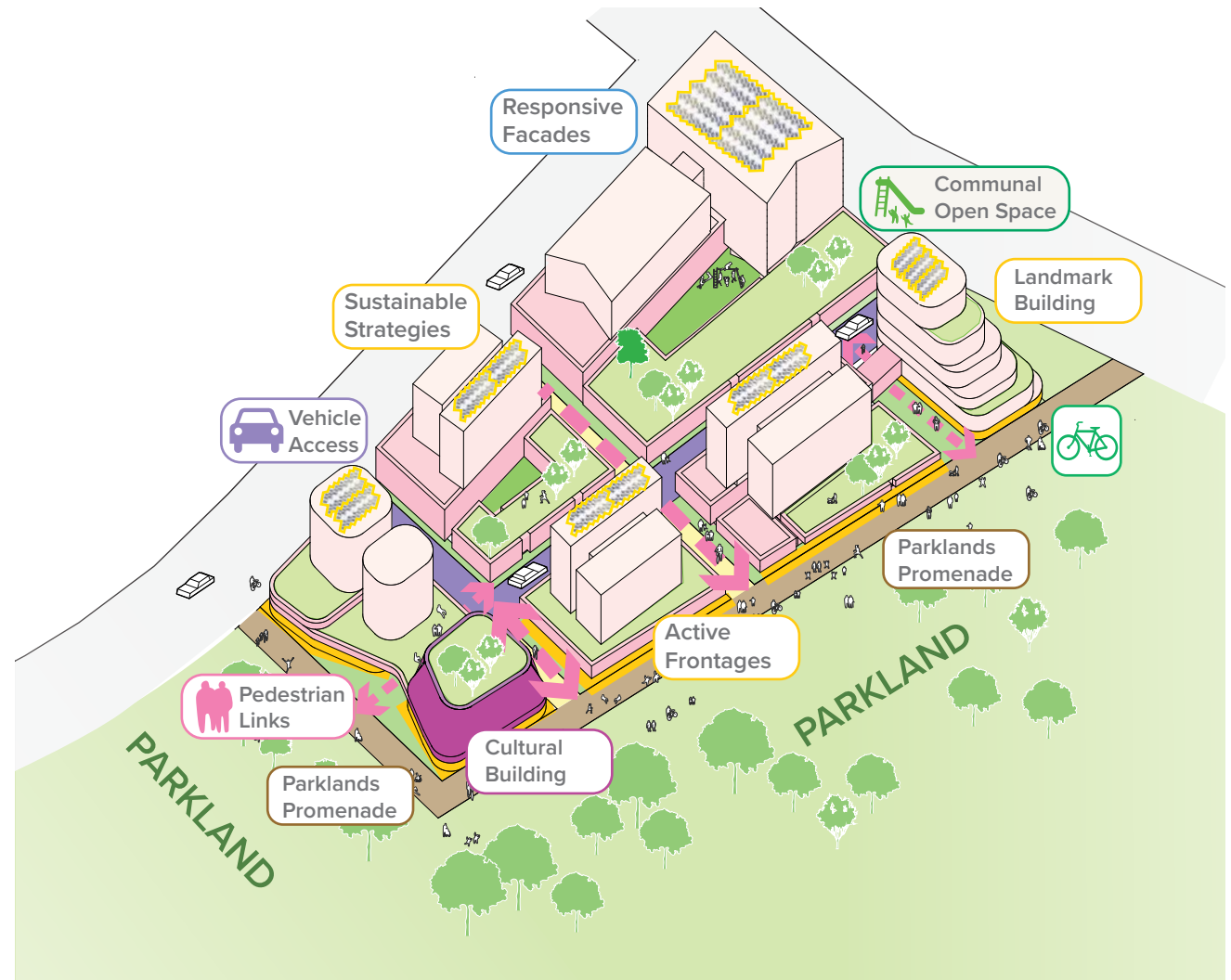
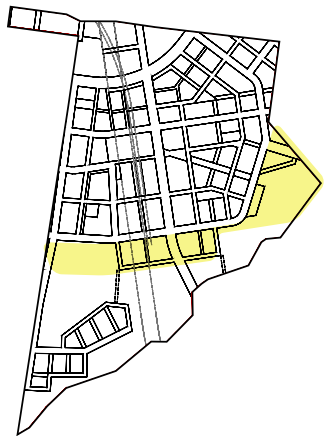


Future built form character 'look and feel' montage

# PARKLAND EDGE

**THE SOUTHERN GATEWAY TO THE CITY, IT IS AN ACTIVE, LIVELY ENTERTAINMENT HUB WITH THE PARKLANDS SERVING AS A BACKDROP.**

Characterised by a focus on cultural and civic uses, leisure and entertainment, plus hotel and residential with active interfaces at street level, outdoor dining and street trading for day and night activation along the promenade and the two key activity nodes (event space and swimming pool).



# PARKLAND EDGE CHARACTER



Diversity of built form height, typologies and architectural expression



Day / Night activation to public domain - retail, eat streets, entertainment



Responsive, sustainable and innovative materials and construction



Diversity of uses and architectural expression



Mix of complementary uses in hybrid buildings for 24/7 activation



Mix of activation spill out onto streets for an active street level



Green & shading strategies for a comfortable micro climate



Gateway buildings at key corners of along key sightlines



Frontages and uses that respond to the location next to the water



Innovative materials that address environmental issues, eg, pollution absorbing concrete



Landmark character at key corners and terminating vistas



# PARKLAND EDGE CHARACTER



Future built form character 'look and feel' montage

# MIXED USE RESIDENTIAL

**THE RESIDENTIAL QUARTER OF THE CITY BENEFITS FROM THE OPEN SPACE AMENITY AND OUTLOOK OF THE PARKLANDS.**

Characterised by predominantly residential uses with thin residential buildings that respond to local climate through passive design. Some fine grain commercial, retail, live-work and community uses to support the residential community.



# MIXED USE RESIDENTIAL CHARACTER



Narrow building forms to maximise cross ventilation to dwellings



Landscaped courtyards provide a mix of open space typologies



'Front doors' to provide an active, safe and welcoming public domain



Residential character and architectural expression



Local retail, food & beverage and work/live for activation at street level



Green and articulated facades provide a comfortable micro climate



Responsive, sustainable and innovative design, materials and strategies



Landmark character at key corners and terminating vistas

# MIXED USE RESIDENTIAL CHARACTER



Future built form character 'look and feel' montage

# DIVERSITY OF USES

## INDUSTRIAL & HYBRID LIGHT INDUSTRIAL

The shift to leaner, smarter and more flexible forms of production will change the design of factories and the organisation of future spaces of production.

Greener and more sustainable manufacturing models that need less room and that are able to make use of vertical space will allow for manufacturing to be located closer to urban centres and residential spaces and provide complimentary uses through hybrid building typologies.



Temporary uses and 'pop-up' activation integrated as part of site programming

## INNOVATION RESEARCH & WORKPLACE

Co-location of innovative and creative institutions with employment uses work in synergy to create vibrant places and spaces within Bradfield City Centre.

The proximity of uses such as universities, research institutions, non-profit organisations that support small businesses and co-working/maker spaces, start-up incubators and accelerators with businesses allow ideas and knowledge to be transferred more quickly and seamlessly. Buildings that provide thoughtfully-crafted spaces support the City's vision as a place to collaborate, innovate, work and create.



Mix of complementary uses within dense urban forms that include industrial uses

## VERTICAL EDUCATION

Vertical education facilities have the capacity to accommodate a diverse and varied mix of users within the City centre.

Planning needs to provide room for highly active and mobile occupants, address complex movement paths between destinations, and offer opportunities for incidental meetings, informal learning and social engagement. Spaces that support individual focused academic work through to large dynamic group events create a supportive workplace that facilitates student centred education.



Integration of open space into compact vertical urban form. Inner City South State Secondary College, Brisbane

## CIVIC & COMMUNITY

Civic and community uses belong to local residents, bringing the public together and providing a strong sense of community and identity.

Co-located with public space and complementary uses, civic and community uses provide the opportunity to contribute to the life of the City by supporting highly active uses as settings where celebrations are held, where exchanges both social and economic take place, and where cultures mix.



Green and articulated facades provide a comfortable micro climate

## ART & CULTURE

Art and culture create jobs, spurs innovation and supports the creation of place identity by providing active and engaging experiences.

Provision of purpose-built cultural infrastructure as well as spaces that support cultural production - maker and event spaces - the City will offer a unique urban experience that will act as a magnet for talent, tourism and local residents through a thriving creative industry.



Landmark character for gateway buildings at key corners of along key sight lines

## RETAIL

Successful urban retail streets and squares integrate the public domain with food & beverage, leisure, entertainment, art and culture.

Clustering of diverse uses that includes retail to create an attractive place to work, live and visit is critical for the growth of the City. Curation of temporary and 'pop-up' retail uses will be important to support the evolution of the City in the short, medium and long-term.



Co-location of retail, public space, residential, entertainment and an urban farm. Burwood Brickworks, Melbourne

## HOTEL & STUDENT ACCOMMODATION

The provision of diverse short term residential choice is a critical element of 24-hour economy high amenity places.

Hotels and student accommodation uses are provided as part of the land use mix for the City. Supported by function and meeting spaces, end-of-trip facilities and access to amenities such as dining, entertainment, education, social and cultural experiences.



Diversity of uses and architectural expression to support vibrant places and spaces within the city

## RESIDENTIAL

A resident population is critical in supporting retail and business in a 24-hour economy.

A mix of housing provides the opportunity for residents to live close to jobs and is critical to achieve the density of uses required for a thriving, active City.

Green and sustainable buildings will build on the parkland setting and provide a



Integration of green for a comfortable micro climate. Bosco Verticale, Milan

## ALTERNATIVE HOUSING

Alternative housing and short term housing models provides diverse housing options for a liveable and equitable City.

Intermediate housing such as hotels, co-living, pocket living and alternative short term housing such as micro-hotels provide for long term and short term housing choice in close proximity to jobs, amenities, public transport access and the future airport to support a more diverse population.



Response to the need for more flexible, international living and working. Zoku Hotel, Amsterdam

# SOCIAL INFRASTRUCTURE

## BRADFIELD WILL PROVIDE THE SOCIAL INFRASTRUCTURE TO MEET THE NEEDS OF WORKERS, RESIDENTS, AND VISITORS

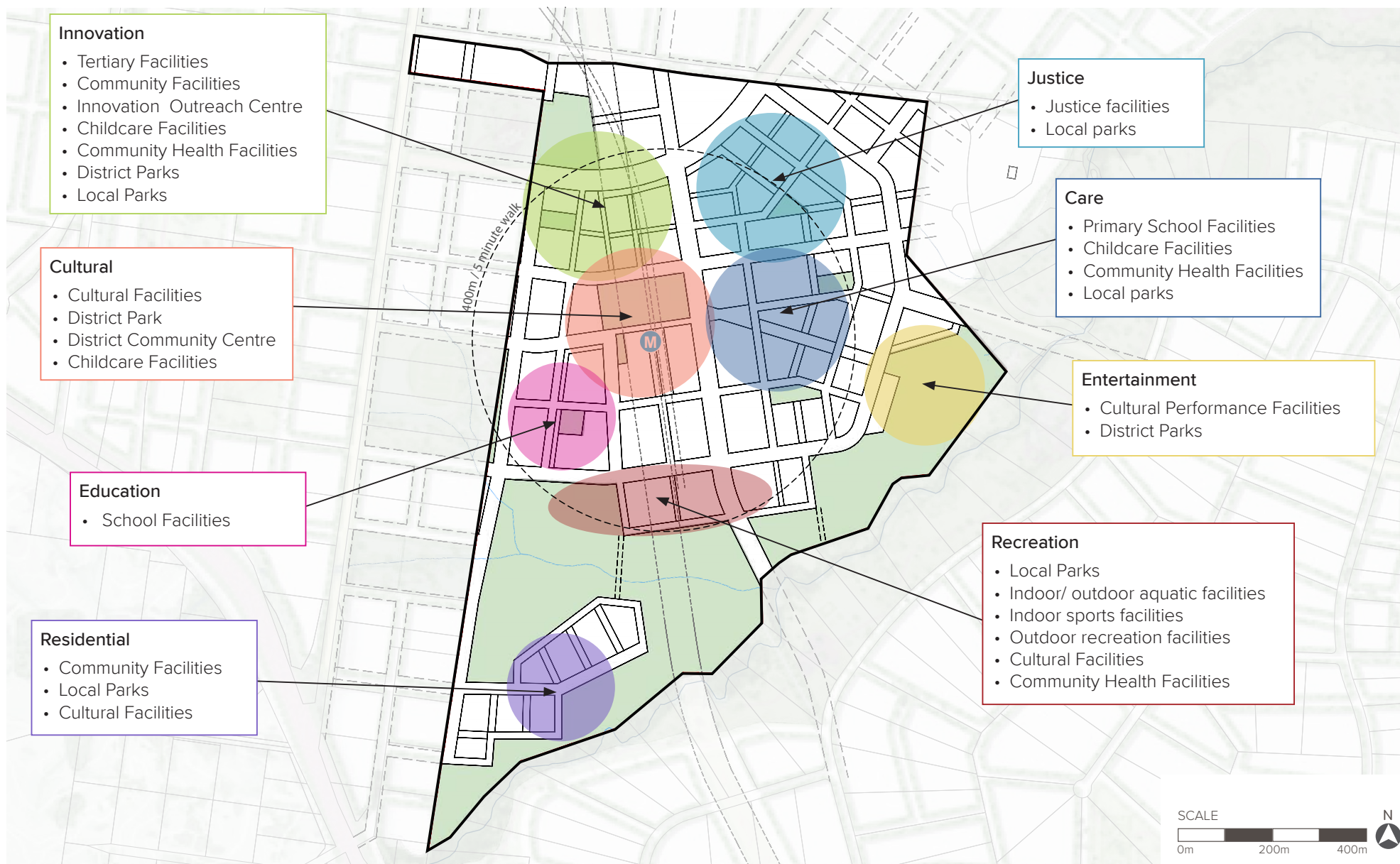
The Social Infrastructure Strategy has identified the following items will be required by 2056 to service the forecast population:

- 1 x Public Primary School incl. spaces for specialised learning;
- 1 x Public High School incl. spaces for specialised learning;
- 1 x Innovation outreach centre (consider co-location with public high school);
- 1 x Permanent TAFE/VET facility;
- Multiversity Campus/ maker space facilities collocated with compatible industry and community facilities;
- 1 x Community health centre / IHHub;
- 1 x Specialised First Nations community health facility;
- 1 x Justice Precinct with a co-located police station and courthouse;
- 1 x District community centre (co-located with the District/State satellite library);
- 1 x Local community space;
- 1 x Public childcare centre (min 100 places);
- 1 x Specialised First Nations childcare centre;
- ~7 x Private childcare centres (total 324 places – about 54 places each);
- 143 x OOSH places provided through Public Primary School;
- 1 x Private OOSH centre (min 59 places);
- Provision of approximately 136 x Moderate to high care needs places, 163 x Low care needs places and 7 x Short term restorative care places located in close proximity to the IHHub;
- Provision of approximately 68 x Community care packages delivered from the IHHub;
- 1 x Local cultural facility (i.e. gallery, studio or museum);
- 1 x First Nations Cultural Centre;
- 1 x Cultural Performance Centre;
- 2 x Playing fields (i.e. hockey and athletics);
- 1 x District sports field (2 x rectangles and 1 x oval);
- 1 x Indoor sports facility;
- 1 x Indoor aquatic/swimming facility;
- 1 x Youth focused outdoor recreation facility;
- 6 x Local parks;
- 2 x District parks;
- 1 x Regional park.

WPCA will engage and consult with key stakeholder and agencies to review the recommendations made within the draft Social Infrastructure Assessment.

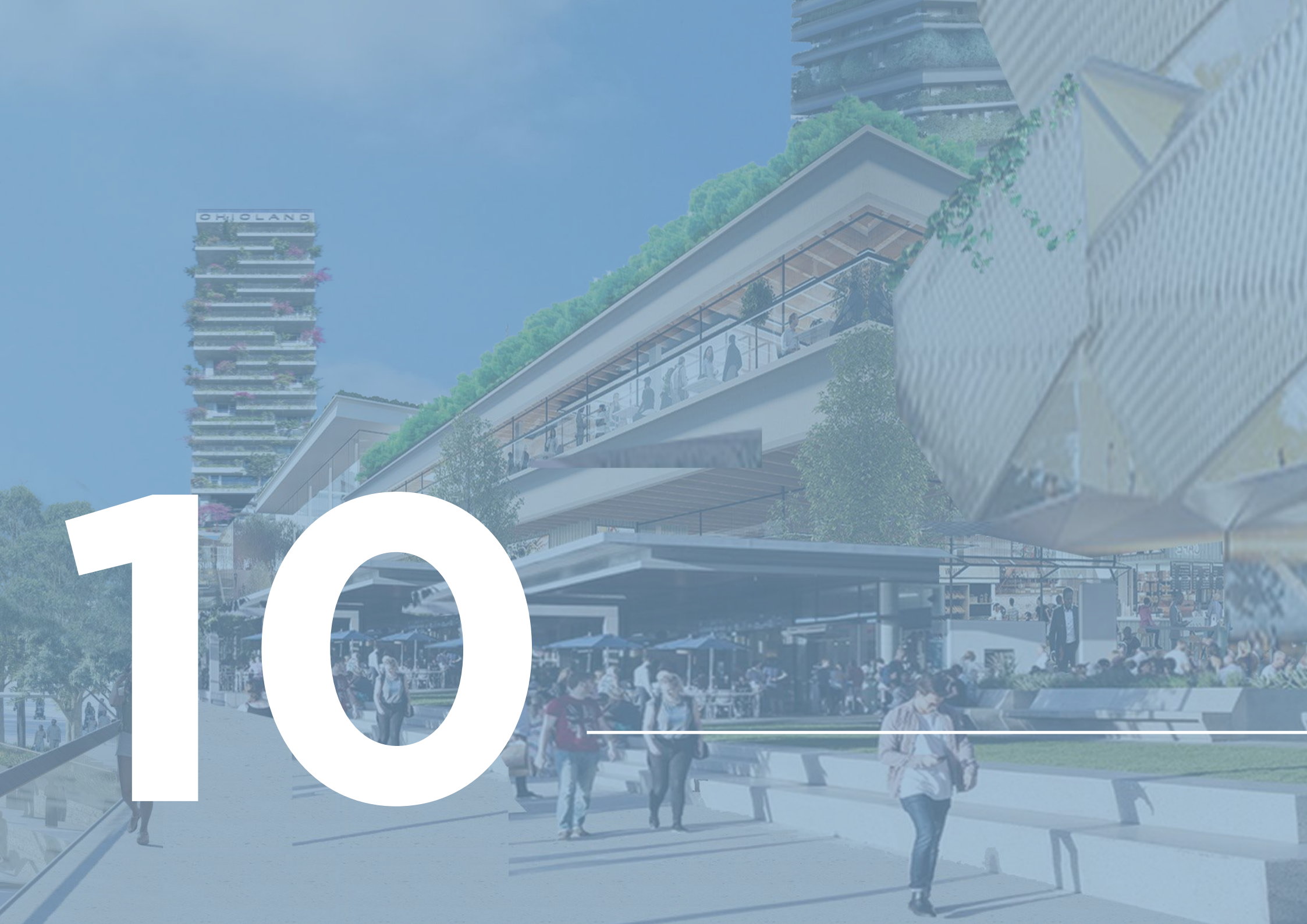


## SOCIAL INFRASTRUCTURE INDICATIVE LOCATIONS



The Master Plan does not propose permanent development in the existing 60m wide Special Purposes 2 (SP2) Infrastructure Zone corridor. A decision regarding future rail infrastructure in the corridor is the subject of review by Government.

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# BUILT FORM

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# POLICY ALIGNMENT

## THE BUILT FORM DESIGN APPROACH RESPONDS TO KEY POLICY OBJECTIVES AND REQUIREMENTS

### GOVERNMENT ARCHITECTS NSW

#### BETTER PLACED

Better Placed provides guidance on both the processes and outcomes of design in support of existing planning policy and best practice to achieve the best possible results with regard to quality, longevity and operation.

“Good design creates useable, user friendly, enjoyable and attractive places and spaces, which continue to provide value and benefits to people, the place and the natural environment over extended periods. Good design brings benefits socially, environmentally and economically, and builds on these benefits over time – it adds value.”

#### BUILT FORM RESPONSE

The built form has been developed in line with the design process described in Better Placed and integrates:

- Built form in response to the public domain;
- Height distribution and massing for a legible urban form and to provide;
- Building diversity to create attractive places and spaces;
- Staging that allows for flexibility in the delivery of buildings within development blocks to respond to market needs.

#### PRECINCT PLAN

The Precinct Plan sets out the objectives for built form to create people focused and place based outcomes. Bradfield is planned as a dense urban precinct planned around the Aerotropolis metro station and the Wianamatta-South Creek Corridor system.

Bradfield City Centre will be focused on employment and economic development as a city of innovation, advanced technology, education and creative industries. Residential development will be within walking distance of public transport and will benefit from proximity to blue-green infrastructure including creeks and open spaces.

#### BUILT FORM RESPONSE

The built form response is consistent with the objectives of the Precinct Plan to create a metropolitan centre that serves the future airport.

The built form response is underpinned by the provision of flexible and diverse typologies that respond to the human scale and pedestrian experience.

The mix of building sizes and heights support the open space typologies and fine grained street and pedestrian network of the public domain. The range of building typologies respond to precinct character.

#### APARTMENT DESIGN GUIDE

The Apartment Design Guide (ADG) is a key tool in establishing residential design guidance. The guide states key suggested minimum space and amenity standards to improve liveability and longevity of apartment developments, providing detail on the nine design principles of SEPP 65.

The objectives of the ADG are to create equitable and high-quality built spaces that are more responsive to the environment. When buildings are designed sustainably, they respond to climate, they are cheaper to heat or cool, they last longer and create less waste, and are more enjoyable to inhabit.

#### BUILT FORM RESPONSE

The built form response is consistent with the objectives of the ADG, responding to the future vision, context and desired character of Bradfield City Centre.

Continuous street walls are provided at a human scale to define the city block structure. Taller built form is provided up to OLS limits with appropriate separation. Building envelopes are designed to provide flexibility for a diversity of uses including residential with the capacity to achieve amenity to the public and private domain.

## DEVELOPMENT CONTROL PLAN (DCP)

The Aerotropolis DCP sets out the objectives for Bradfield City Centre to achieve connectivity, liveability and productivity. This will be achieved by:

- Building on the distinctive character of the Parklands;
- Supporting accessibility, quality place and amenity outcomes to drive economic growth;
- Encouraging design that enhances First Nations and European character and heritage;
- Encouraging ecologically sustainable development to reduce impacts on the environment.

### BUILT FORM RESPONSE

The built form response is consistent with the objectives of the DCP.

- Scale and massing of built form responds to desired local character;
- Built form enlivens the ground plane and activates and frames public space;
- Developments use resources efficiently, reduce embodied emissions, and consider on site energy production.

## RECOGNISE COUNTRY

Recognise Country provides guidance to embed culturally responsive design solutions into the built environment and contribute to a more sustainable and liveable future for residents, workers and visitors in the Aerotropolis.

Country-centred design provides a holistic approach to create a built environment that is adaptive to the location, responsive to the climate and environment, designed for local needs and traditions, and created using local resources and construction techniques to improve the way we plan and design the places where we live, work, and play.

### BUILT FORM RESPONSE

Starting from a landscape led approach, the Master Plan establishes a relationship with Country to provide places that are responsive to Country and celebrate the stories of Country through built form outcomes.

The built form response is underpinned by the provision of greater energy efficiency, sustainability and liveability outcomes. This provides environmental, economic and social benefits through the potential to minimise environmental impacts, reduce construction and operation costs, provide economic development opportunities, contribute to local identity, and create culturally safe and inclusive places.

## COOL SUBURBS

Cool Suburbs is a heat resilience rating and assessment tool for urban planning and development. Heat (urban heat, extreme heat and heatwave) has cumulative and cascading impacts on our community, economy and ecosystems. Western Sydney has always been hotter than the east because coastal breezes do not penetrate past Parramatta, and in summer, the region is subject to hot air masses from central Australia. Heat resilience is a significant and growing challenge.

The Cool Suburbs Tool (CST) is a voluntary, industry-based performance (ratings) tool to assess place-based urban heat resilience. The CST has been designed to support improved resilience outcomes.

### BUILT FORM RESPONSE

The built form responds to the prevailing and future climatic conditions and enables passive cooling of the local environment by removing heat from the environment through increased effective ventilation and vegetation cover and reducing radiant temperatures to enhance Human Thermal Comfort.

Building envelope areas provide flexibility for built form to integrate passive design principles to make future buildings in Bradfield City Centre more resilient to high outdoor ambient air temperatures and potential energy grid failure during extreme heat events.

# INSPIRATION

A SELECTION OF THE 60+ CASE STUDIES UNDERTAKEN FOR THE MASTER PLAN THAT HAVE INFLUENCED THE APPROACH TO BUILT FORM

## GREENERY AND INNOVATION

### SONGDO BUSINESS DISTRICT, SOUTH KOREA



Songdo has transformed from a gateway city to Incheon Airport into a technologically advanced utopia. The world's first purpose-built smart city, Songdo was designed to create a new sustainable business district, incorporating 40% green space throughout the city, and using a range of technologies to reduce emissions and increase convenience. An underground pneumatic waste system removes vehicles from the streets, with 75% to be recycled. Residents can control their lighting, heating and air control systems with a single control panel and access state of the art-recycling facilities. Data is tracked and shared between public service-associations.

## ACTIVATION

### KINGS CROSS, LONDON



A highly connected precinct designed to be an accessible, high quality mixed-use environment with a focus on art, culture and heritage. To avoid dead zones of activity, all ground-floor units are leased to different occupiers from those in the floors above. The mix of uses is curated to help create 24/7 activation and ensure the precinct is a busy, lively place that allows people to work, shop, or visit. Built in room for flexibility, negotiation, change, and experimentation with occupiers and activities for the place character to grow by itself over time. Integrated mixed-uses within a building leverage opportunities provided by co-locating uses. Delivery of a vertical school presents an efficient opportunity to mix residential development with community needs.

## URBAN HEAT MITIGATION

### SOUTH BEACH, SINGAPORE



Connected to a transport interchange via a green pedestrian avenue, South Beach consists of Grade A office space, private residences, a hotel and retail spaces. An innovative canopy covering the ground level reduces temperature by 13°C, and improves the efficiency of rainwater collection. Both towers feature sky gardens which improve the micro-climate and provide communal spaces. The east and west facades have an external screen with horizontal louvre system for shading, while the north and south facades have glazing panels that reflect daylight into the building. A split core between the hotel and private residences enables all residential units to be ventilated through an air well located above the hotel lift shaft.

## SUSTAINABLE BUILDINGS

### VANKE DESIGN COMMUNITY, SHENZHEN



Vanke headquarters is a linked building that consists of apartments, a hotel, housing/work units and a conference centre. The building is elevated to increase the permeability and to allow breeze to pass through. The highly-landscaped areas form part of the self-sustaining irrigation system, reducing the use of potable water by 50%. The building also features 1,400m<sup>2</sup> of solar panels on rooftop to generate 12.5% of the total energy supply for the building. The double-skin facades with low-e glass curtain walls and perforated aluminium louvres reduce the solar heat gain up to 70%, while allowing light penetration.

## COST EFFECTIVE SUSTAINABLE DESIGN

### GOODWOOD RESIDENCES, SINGAPORE



The Goodwood Residence consists of environmental features which costs only an additional 1% of the construction cost. The building is designed with a shallow building depth (one apartment depth) that ensures all upper level units are cross ventilated. 1,700m<sup>2</sup> vertical greenery serve as insulation and acoustic buffer. Operable folding solar shutters made of 220cm-long strips of aluminium sections. Reed planting beds that act as a bio-filter for a self-sustaining irrigation system. All internal walls are made of reclaimed aggregates. Dual pneumatic chutes for different wastes.

## VERTICAL GREENERY

### ONE CENTRAL PARK, SYDNEY



One Central Park approaches sustainability broadly, attracting 5 Star Green Star ratings for its retail and residential sections while aiming to provide a wider, public benefit. The large vertical gardens have been designed to withstand seasonal conditions. A central tri-generation plant provides low carbon electricity to the complex and its properties. Each apartment is fitted with smart metering screens which provide interactive, real-time monitoring of electrical, gas and water consumption, enabling them to better track and moderate usage. As part of the design, thermal analysis on each apartment was undertaken to inform the integration of individual façades, their articulation and materiality. These allowed for a reduction in mechanical services for the building whilst also providing an improvement in occupant comfort. A heliostat provides natural light to the park and retail at street level.

# BUILT FORM DESIGN PRINCIPLES



## GREEN A PARKLAND CITY EXPERIENCE

### URBAN, GREEN AND BLUE

Integrate green and blue within built form to extend the landscape into urban form and make landscape visible

### HUMAN SCALED

Create human-scaled spaces and interfaces throughout the city

### HEALTHY FOR ALL

Create a healthy environment for people and the natural ecology



## CONNECT CONNECTED GLOBAL AND LOCAL

### START WITH COUNTRY FIRST

Adaptive and flexible forms that responds to the location, climate and environment. Designed for a global city but balances local needs and traditions.

### PERMEABLE AND POROUS

Prioritising pedestrian connections for an attractive, safe, active, highly walkable and permeable pedestrian network

### CONNECTED

Protect and respond to key views and vistas to reinforce the connection to country



## TRAVEL A GLOBAL DESTINATION

### VIBRANT AND DIVERSE

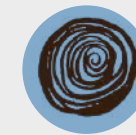
Building interfaces that promote social interaction to provide the life, activation and intensity critical to a high amenity and liveable city

### ALWAYS ACTIVE

A fine grained pedestrian scaled ground plane that enriches the public domain by providing a visually interesting street level experience

### IDENTIFIABLE

Variety and a mix of scale, architectural design and character in the built form for a diverse and enriching urban environment.



## DREAM INNOVATION AND GROWTH

### INNOVATIVE, FLEXIBLE AND ADAPTABLE

Design for resilience and longevity to anticipate future change through flexible/adaptable spaces that can accommodate active uses into the future, requiring minimal internal redesign and structural change

### COLLABORATIVE AND ENGAGED

Hybrid uses in dense urban forms that accommodate diverse and complementary uses

### SUSTAINABLE

Provide a world-leading response to the challenges of climate change through the living building challenge and green star communities 6 stars target



# URBAN, GREEN & BLUE

**INTEGRATE GREEN AND BLUE WITHIN BUILT FORM TO EXTEND THE LANDSCAPE INTO URBAN FORM AND MAKE LANDSCAPE VISIBLE**



- Enhance the parkland city experience through spaces and places that extend the landscape into urban form
- Maximise greenery on and in buildings including walls, terraces, roofs and courtyards
- Integrate blue within built form to provide a cool and comfortable micro climate and reinforce the connection to the landscape



Responsive, sustainable design

# HUMAN SCALED

## CREATE HUMAN-SCALED SPACES AND INTERFACES THROUGHOUT THE CITY

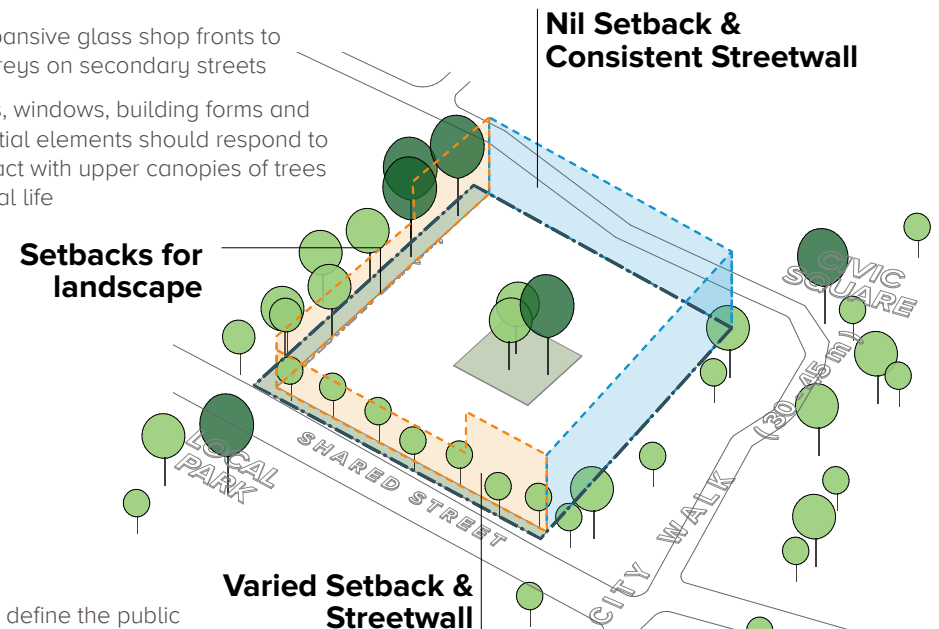


Local retail, food & beverage and work/live for activation at street level



Mix of active and passive uses at street level

- Provide street walls that support an urban and human scaled public domain (landmark sites excluded)
- Provide fine grain articulation
- Provide level access to all frontages and entrances.
- Articulate a human scale with the use of fine grained materials
- Avoid expansive glass shop fronts to lower storeys on secondary streets
- Balconies, windows, building forms and other spatial elements should respond to and interact with upper canopies of trees and animal life



Street walls to define the public domain and street level

# HEALTHY FOR ALL

## CREATE A HEALTHY ENVIRONMENT FOR PEOPLE AND THE NATURAL ECOLOGY



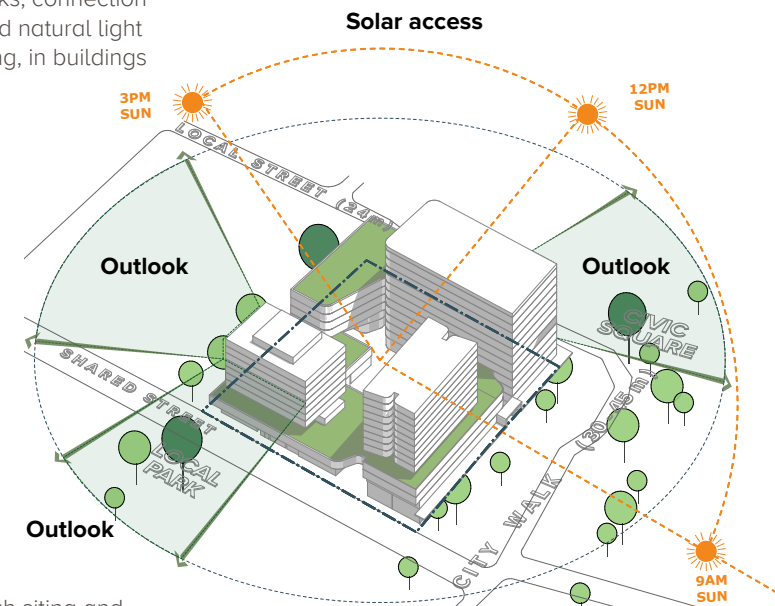
- Provide built form that responds to local climate, environmental constraints and weather extremes
- Provide spaces and places that are liveable, productive, and affordable
- Provide pedestrian priority public domain interfaces that promote active lifestyles and active transport through outlook to parks, connection to nature, greenery and natural light and secure bike parking, in buildings



Narrow building forms to maximise cross ventilation to dwellings



Responsive, sustainable and innovative design, materials and strategies



Maximise amenity through siting and design of built form

# START WITH COUNTRY FIRST

**ADAPTIVE AND FLEXIBLE FORMS THAT RESPONDS TO THE LOCATION, CLIMATE AND ENVIRONMENT. DESIGNED FOR A GLOBAL CITY BUT BALANCES LOCAL NEEDS AND TRADITIONS.**

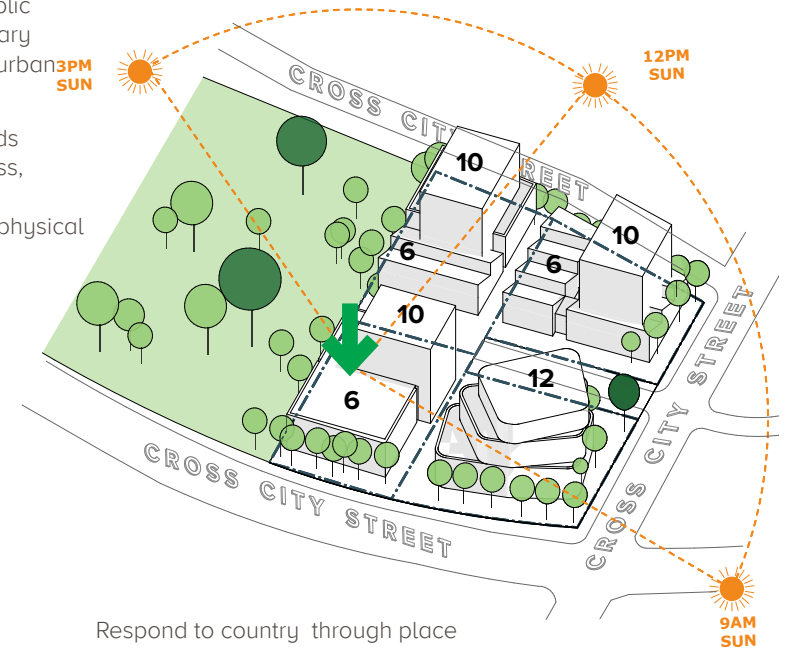


Form and a sustainable design approach that is site-specific



Integrated artwork within the public domain tells the story of Country

- Provide a site specific and unique response to place
- Recognise Country through the built form (eg., way-finding, public art, interpretative elements)
- Use natural and local materials, colours and landscape
- Design interfaces to the public domain that blur the boundary between green space and urban form
- Facade design that responds to Country through openness, natural ventilation, habitat creation, experiences and physical connections



Respond to country through place specific and response to local climate

# PERMEABLE & POROUS

**PRIORITISING PEDESTRIAN CONNECTIONS FOR AN ATTRACTIVE, SAFE, ACTIVE, HIGHLY WALKABLE AND PERMEABLE PEDESTRIAN NETWORK**

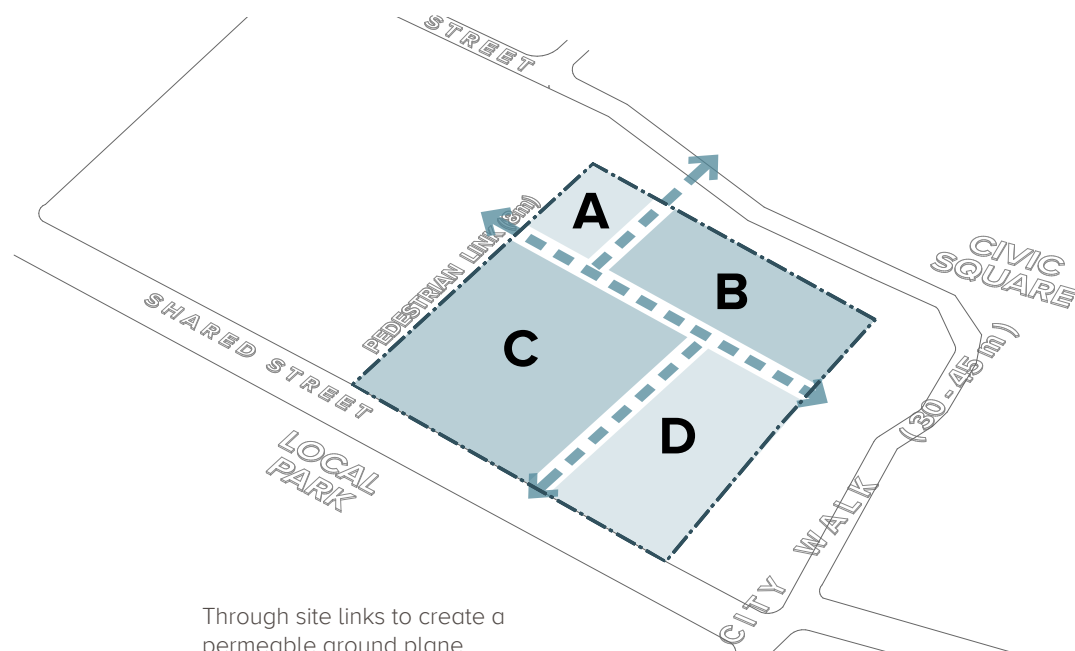


Responsive, sustainable and innovative strategies integrated into design



Mix of activation spill out onto streets for an active street level

- Create a permeable ground plane with active through site links to connect spaces and places
- Provide a fine grain network of shared zones and pedestrian links within superblocks
- Provide flexible publicly accessible spaces



Through site links to create a permeable ground plane

# CONNECTED

**PROTECT AND RESPOND TO KEY VIEWS AND VISTAS TO REINFORCE THE CONNECTION TO COUNTRY**

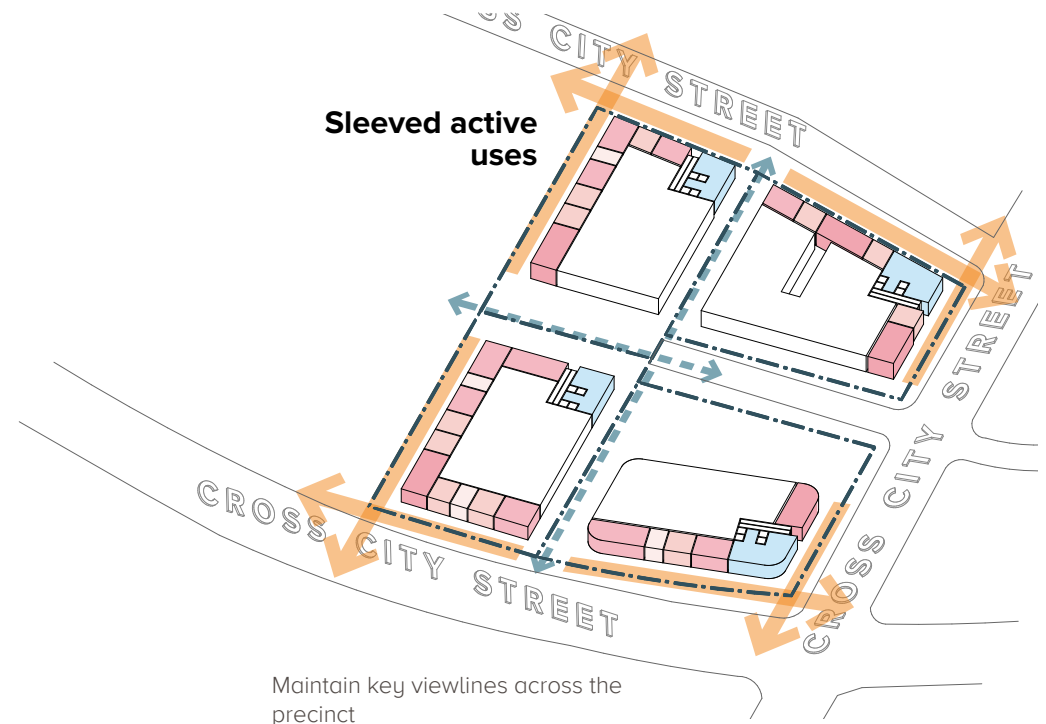


Maximise views to the sky for an enhanced sense of permeability



Built form response to protect key views and vistas

- Link ridge to creek and everything in between by providing views and sight lines through buildings to key spaces and places
- Provide views to the sky along key connections



# IDENTIFIABLE

**VARIETY AND A MIX OF SCALE, ARCHITECTURAL DESIGN AND CHARACTER IN THE BUILT FORM FOR A DIVERSE AND ENRICHING URBAN ENVIRONMENT.**



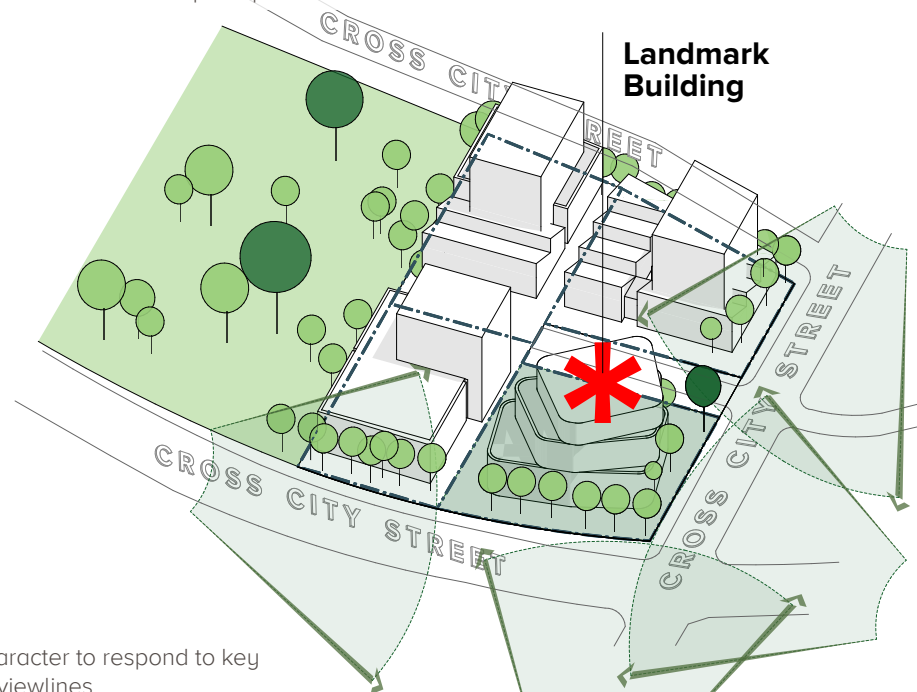
- Provide landmark buildings at key corners and sites
- Provide diversity of building typologies, height and architectural expression
- Provide public art that speaks to place
- Enhance the parkland city character through built form that provides connection to nature and the parklands
- Prioritise local materials and plant palettes



Height diversity allows for distribution of built form to provide amenity



Diversity of built form height, typologies and architectural expression



Built form character to respond to key corners and viewlines

# VIBRANT AND DIVERSE

**BUILDING INTERFACES THAT PROMOTE SOCIAL INTERACTION TO PROVIDE THE LIFE, ACTIVATION AND INTENSITY CRITICAL TO A HIGH AMENITY AND LIVEABLE CITY**



- Provide a diverse ground plane mix to create a 24/7 city that supports economic and social life
- Create activation at all stages through curation of uses and sustainable temporary buildings
- Maximise active frontages that prioritise public and communal uses including:
  - Outdoor dining;
  - Bespoke and small scale retail and markets;
  - Cultural uses and other informal performance, cultural practice and public ceremony.



Active uses and frontages to site links and courtyards



Day / Night activation to public domain - retail, eat streets, entertainment



Active uses increase the vibrancy and quality of street scapes

**Through site connectivity**



# ALWAYS ACTIVE

A FINE GRAINED PEDESTRIAN SCALED GROUND PLANE THAT ENRICHES THE PUBLIC DOMAIN BY PROVIDING A VISUALLY INTERESTING STREET LEVEL EXPERIENCE



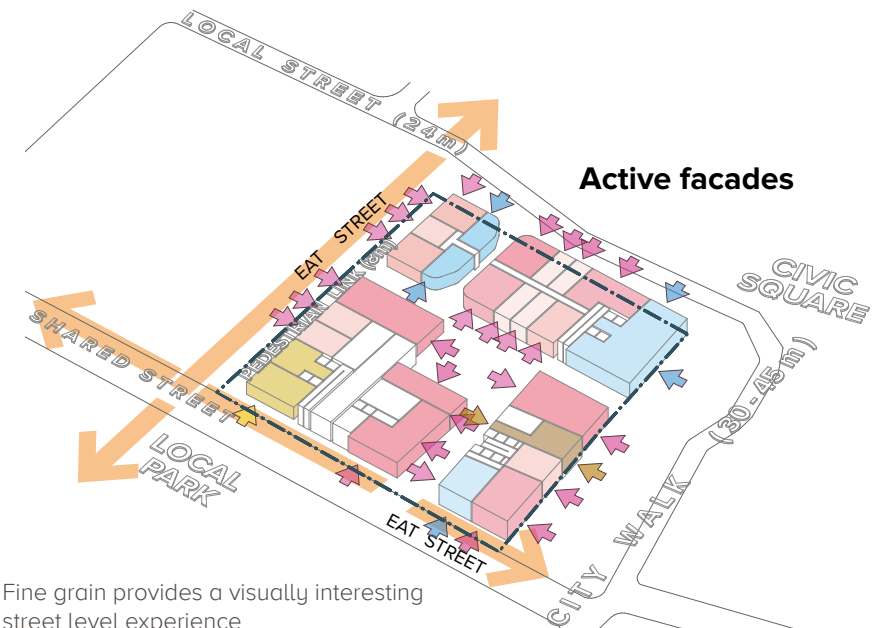
- Provide active frontages and transparency at street level
- Provide active uses visible from the outside or spilling to the public domain



Internal uses spill out onto streets for an active street level



Frontages and uses that respond to location and context



Fine grain provides a visually interesting street level experience

# INNOVATIVE, FLEXIBLE AND ADAPTABLE

**DESIGN FOR RESILIENCE AND LONGEVITY TO ANTICIPATE FUTURE CHANGE THROUGH FLEXIBLE/ADAPTABLE SPACES THAT CAN ACCOMMODATE ACTIVE USES INTO THE FUTURE, REQUIRING MINIMAL INTERNAL REDESIGN AND STRUCTURAL CHANGE**



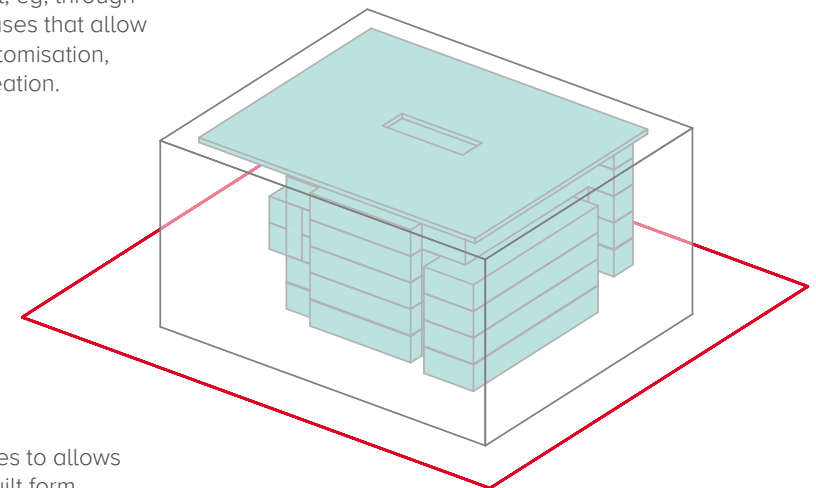
- Provide flexible building forms that allow adaptation over time
- Provide buildings that enable reuse in place, rather than demolition
- Integrate innovative strategies, materials and construction methods
- Provide multiple uses and programs as well as private and public space vertically to extend the public domain and create multiple ground planes.
- Provide place activation at all stages of development, eg, through short term temporary uses that allow for fast and cheap customisation, localisation and co-creation.



Use innovative materials that address environmental issues



Provide flexibility to accommodate temporary uses for activation 24/7



'Loose fit' building envelopes to allow for future flexibility in the built form

# COLLABORATIVE & ENGAGED

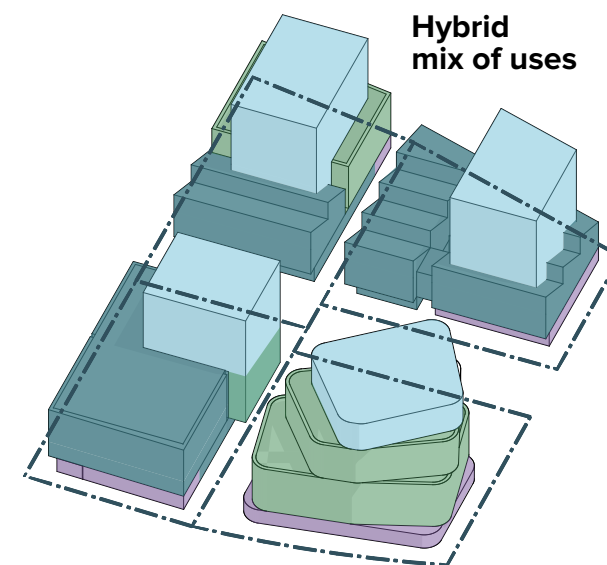
## HYBRID USES IN DENSE URBAN FORMS THAT ACCOMMODATE DIVERSE AND COMPLEMENTARY USES



- Design spaces and places that promote collaboration and social engagement
- Co-locate uses to create synergy and places that support co-creation
- Provide communal spaces and community gardens in courtyards and roofs



Mix of complementary uses in hybrid buildings

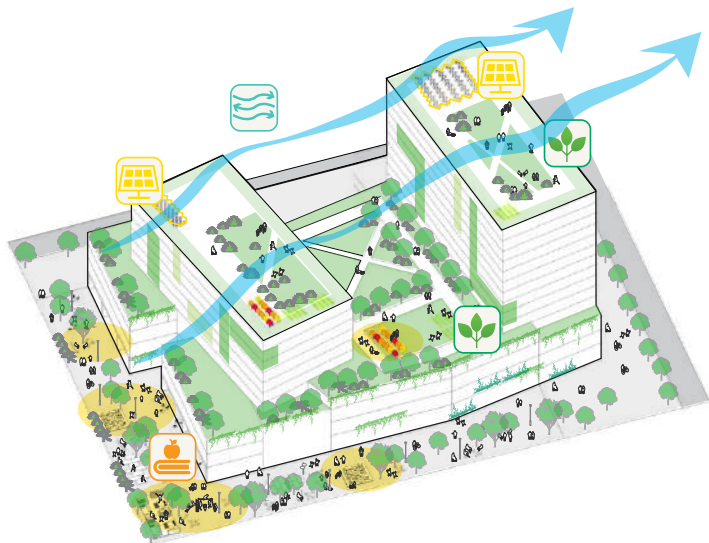


Hybrid uses within buildings, lots and across the precinct for 24/7 activation

# SUSTAINABLE

**PROVIDE A WORLD-LEADING RESPONSE TO THE CHALLENGES OF CLIMATE CHANGE THROUGH THE LIVING BUILDING CHALLENGE AND GREEN STAR COMMUNITIES**

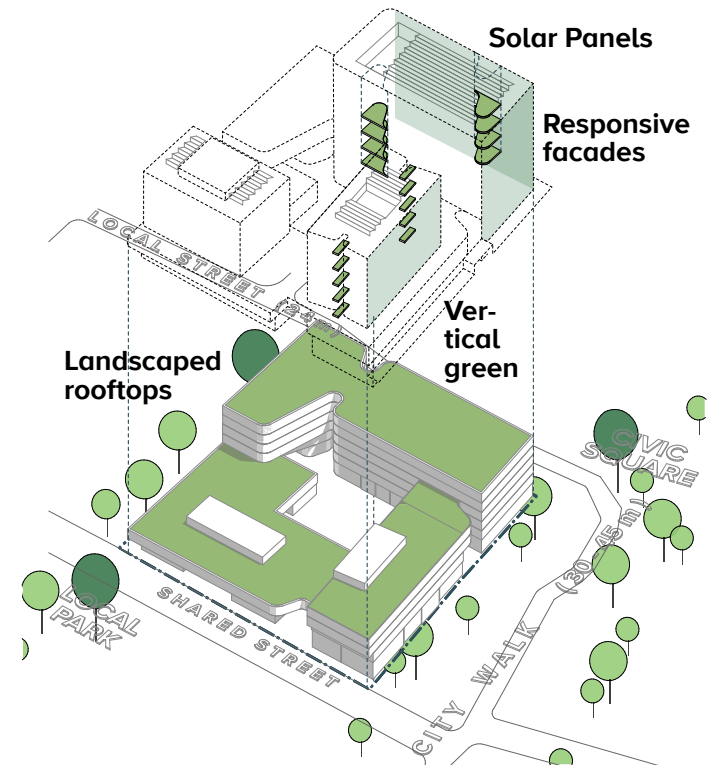
- Minimise energy, water and waste and promote circular economy initiatives
- Integrate a multi-utility approach to deliver the lowest cost zero carbon outcome
- Integrate smart city technology for safety, equity and connectivity
- Integrate sustainability principles for water, waste, energy and heat
- Embed smart technologies within buildings



Embed smart technologies within buildings



Maximise the use of passive design strategies to reduce water and energy use.



Building envelopes support green strategies

## WATER

- Green infrastructure to provide water treatment, urban cooling, ecosystem services and amenity is integrated into built environment;
- Rainwater captured at lot and building scale;
- Vegetation/trees in the public and private domain supported by soil volumes;
- Development that protects, maintains, or restores waterway health and the community's environmental values;
- Stormwater run-off targets (infiltration and harvesting) are applied at the lot and building scale;
- Retreat - Adapt – Defend options for flood management;
- Smart city data monitoring of potable and non-potable water demand, harvesting, storage and production.

## WASTE

- Avoid First, then Reduce, Reuse, Recycle in material choices and construction methods;
- Buildings with prefabricated/modular, long life and loose fit, flexible and adaptable solutions;
- Adaptable and reusable infrastructure - temporary facilities that can be modified as Bradfield City Centre grows/changes;
- Waste minimisation in building design;
- Buildings designed for end-of-life disassembly and recovery;
- Use of recycled and renewable materials;
- Support innovative construction approaches;
- Building envelopes that support collaborative housing models that reduce waste/encourage sharing economy;
- Smart city data monitoring of waste volumes and contamination rates, illegal dumping incidents.

## ENERGY

- Adaptable infrastructure for Charging stations that support public and private charging;
- Roof space designed for energy generation, open space and amenity, gardens, food production, water harvesting and urban cooling;
- Provide space for local food production and distribution / retail / sharing (markets, community gardens on public land and private spaces);
- Smart city data monitoring of energy demand, production, storage and peak loads.

## HEAT

- Places designed to provide air flow, green open space, and appropriate building forms so that the cooling from green space can be harnessed;
- High albedo building materials to reflect light and heat;
- Building envelopes with articulation zones that support shade through eaves and overhangs, awnings;
- Permeable pavements;
- Provide space for adequate vegetation around the buildings;
- Natural ventilation.



The first retail centre to achieve the Living Building Challenge Petal Certification. Burwood Brickworks, Melbourne

# METHODOLOGY & ASSUMPTIONS

## A PARAMETRIC PROCESS FOR PRELIMINARY TESTING

The starting point for built form testing was through the development of a performance based model. This provided a way to ensure solar access for amenity to key open spaces and an understanding of possible massing through a solar envelope within imaginary boundaries given by:

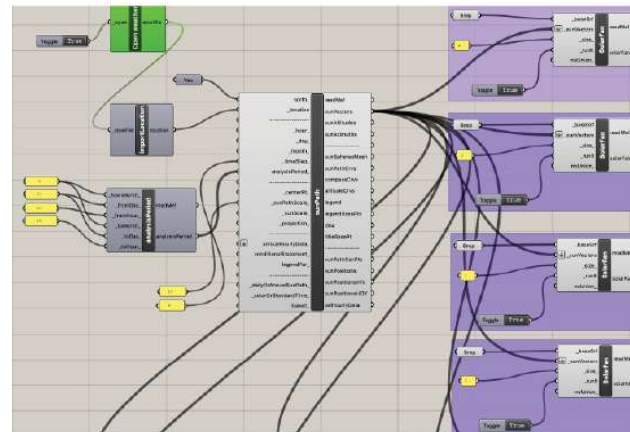
- The sun's relative path during a given time and day of the year;
- The period of the day and year when solar access is currently assessed, ie, at mid-winter;
- Solar access to the public domain as a constraint to provide the desired future qualities and characteristics for Bradfield City Centre;
- Massing within the solar envelope will not create unreasonable overshadowing to the adjacent context within these constraints.

The resulting solar envelope provides a starting point for a performance based model to test the range of height and massing that could be supported within Bradfield City Centre.

## PARAMETRIC PROCESS

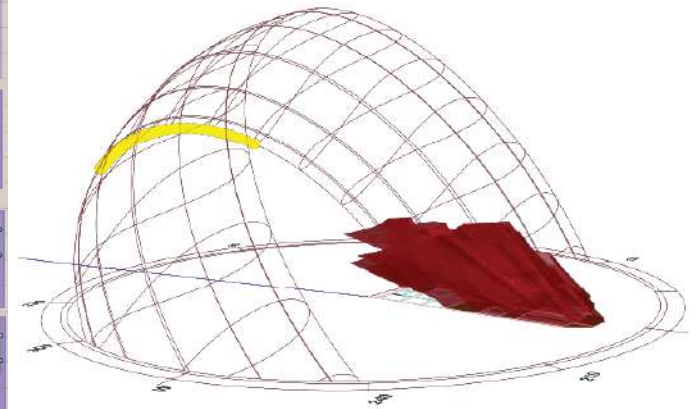
A parametric process has been adopted that allows for rapid testing and provides accurate results that can be understood in a simple visual format. This process has been used to generate as a starting point for testing, a performance based envelope model based on the solar access requirements for public open space.

The process involves the use of Ladybug - an environmental plug-in for Grasshopper - that is used in conjunction with Rhino. Environmental data like the sun path is imported and a script has been developed to generate solar access planes for a specified public open space area based on the solar performance required. This is a flexible approach that can be modified if parameters change.



## SUN PATH

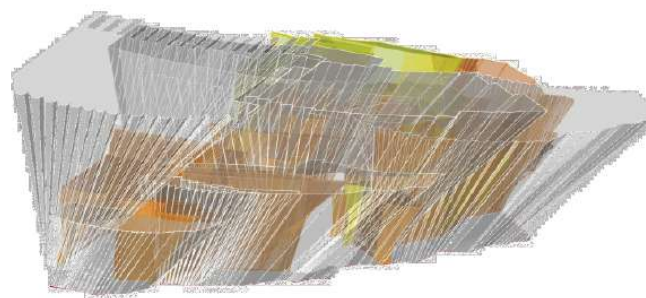
The sun path at mid-winter (Winter Solstice - June 21), mid-spring /mid- autumn (Spring Equinox - March 21 and Autumn Equinox - September 21) and mid-summer (Summer Solstice - December 21).



## SOLAR ACCESS PLANES

Solar access planes are the imaginary boundaries between the sun and the context requiring solar access to determine areas where future built form would not provide additional overshadowing.

Solar access planes have been developed for the public domain based using defined solar access requirements for public open space as a constraint. This provides as a starting point, a performance based solar envelope model that, together with the Design Guides, provide the desired future controls for development within Bradfield City Centre.



- solar access plane for public open spaces
- solar access plane for Green Loop
- solar access plane for street network

## SETTING SOLAR ACCESS MEASURES

Public open space contributes to the liveability and attractiveness of urban places by providing green spaces that accommodate a wide range of active and passive uses.

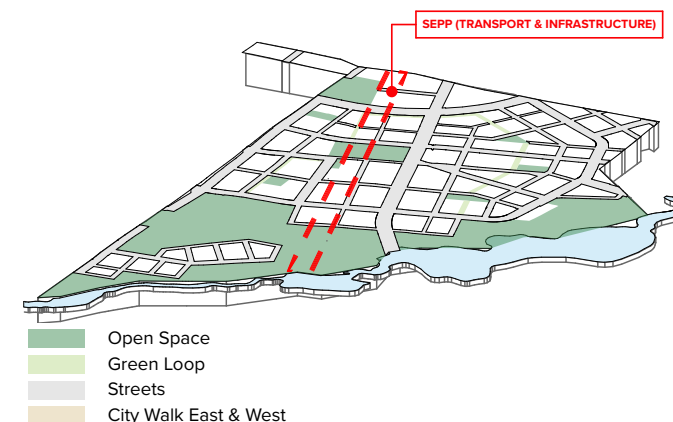
Setting appropriate measures for solar access to the public domain are important considerations to achieve the desired liveability outcomes for Bradfield City Centre.

The DCP requirement for a minimum of 3 hours solar access to 70% area of public open space between 9am and 3pm mid winter has been applied to all district and regional parks.

However in order to achieve the broader urban objectives for Bradfield, for local parks that are constrained within a dense city environment Liverpool Council's requirement for a minimum of 3 hours solar access to a 50% area of public open space between 9am to 3pm at mid-winter has been applied

## SUMMER & WINTER STREETS

Key streets connect major open spaces to the future metro station. The Green Loop and City Walks are the key pedestrian connection that links key cultural markers across the site. Consideration of appropriate shade protection for pedestrian comfort during summer balanced with solar access at mid-winter will be required to provide an appropriate level of amenity



# METHODOLOGY & ASSUMPTIONS (CONTINUED)

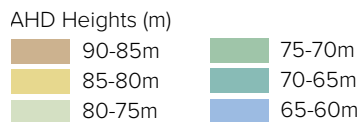
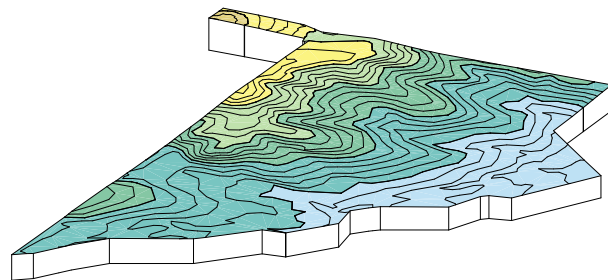
## A PERFORMANCE BASED MODEL PROVIDED EARLY UNDERSTANDING OF CONTEXTUAL CONSTRAINTS

### TOPOGRAPHY

The desired built form has been tested concurrently with the existing topography and a future possible context.

The existing topography falls from a high point at the north-west towards Moore Gully. Level changes across individual lots provide opportunities for development to utilise the fall of the land for additional built form.

The topography and site boundaries provide the starting point for development of the preliminary site envelope.



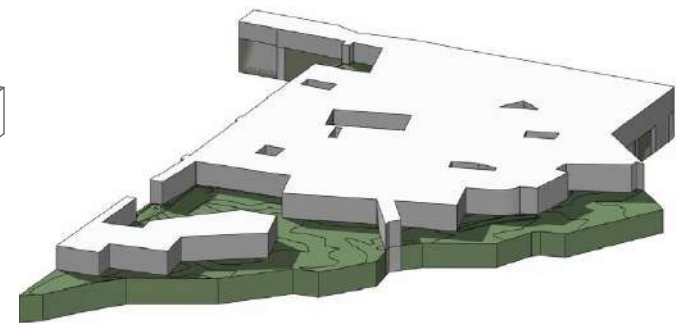
### AERONAUTICAL CONSTRAINTS

The Obstacle Limitation Surfaces (OLS) provides the maximum height for the development envelope. The OLS (RL 125.5m AHD) is the key aeronautical limit that constrains maximum possible height across the site. The OLS provides the maximum height for the development envelope.



### PUBLIC OPEN SPACE

Refinement is provided by the proposed open space distribution.

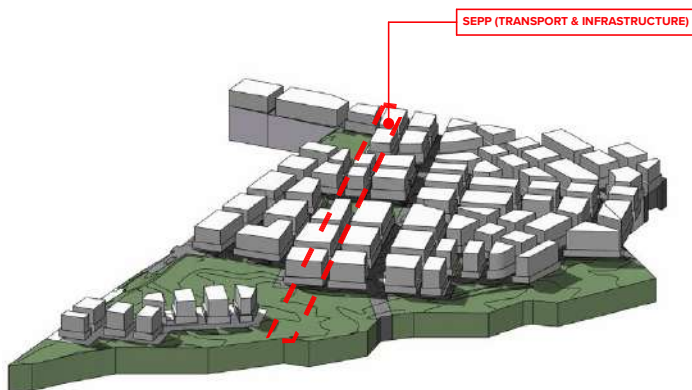


*The Master Plan does not propose permanent development in the existing 60m wide Special Purposes 2 (SP2) Infrastructure Zone corridor. A decision regarding future rail infrastructure in the corridor is the subject of review by Government.*



## STREET NETWORK

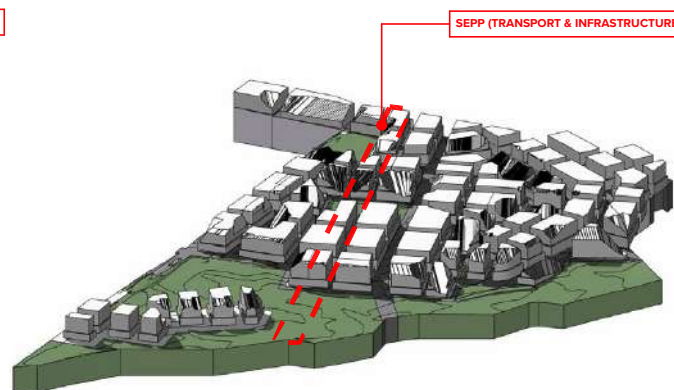
Further refinement is provided by the proposed street network which is subtracted from the development envelope.



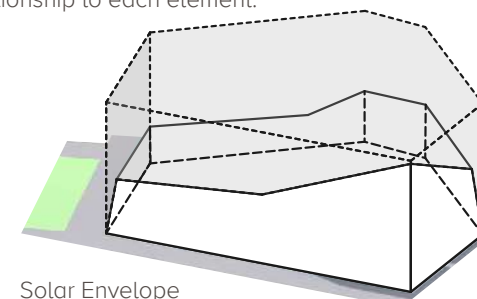
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## SOLAR ENVELOPE

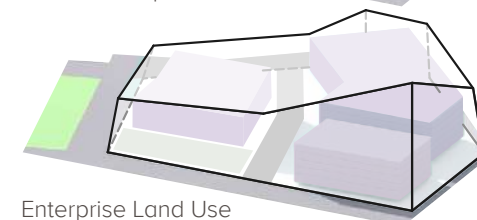
The defined solar access requirements for public open space in Bradfield City Centre provide solar access planes, which are subtracted from the development envelope to provide solar envelopes for individual sites within each superlot.



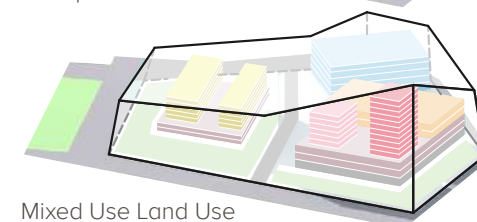
A solar envelope for each lot is established based on the existing topography, OLS height limit, proposed public open space, proposed primary street network and the proposed solar access for public open space. Solar envelopes between lots will vary based on their relationship to each element.



Solar Envelope



Enterprise Land Use



Mixed Use Land Use

# METHODOLOGY & ASSUMPTIONS (CONTINUED)

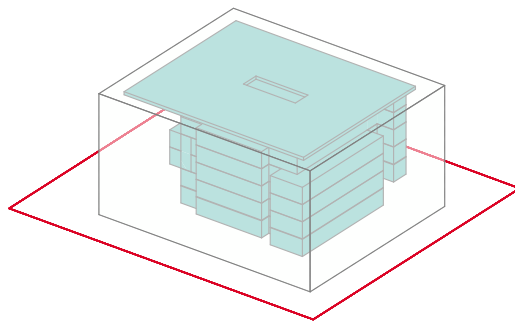
## THREE DIMENSIONAL BUILDING ENVELOPES REPRESENT THE DESIRED BUILT FORM OUTCOME FOR THE MASTER PLAN

### BUILDING ENVELOPES

The desired future built form is represented in building envelopes that are greater in volume than the future proposed built form consistent with the ADG approach to building envelopes (ADG 2B Building Envelopes).

'Loose fit' building envelopes have been used for proposed development to test solar access based on a Building Envelope Area (BEA) to Gross Floor Area (GFA) efficiency range of 65% to 75% for non-residential and residential uses. This provides for the worst case scenario to be tested and allows for future flexibility in the built form design to support innovative and flexible building forms.

The gross approximate envelope area is established through floor to floor heights based on the land use typology. The heights have been used to determine the maximum number of storeys that can be accommodated within each superlot to allow for a mix of non-residential and residential uses.



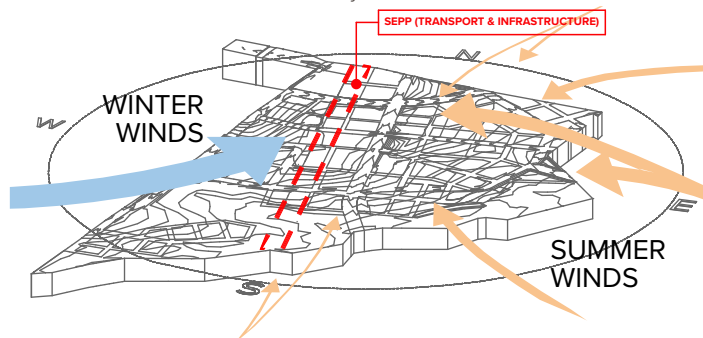
'Loose fit' Building Envelopes  
Relationship of Building Envelope Area to future built form

### URBAN HEAT RESPONSE

Consideration of environmental constraints such as wind, noise, pollution, biodiversity, hydrology, archaeological, heritage and Aboriginal cultural items.

One key consideration is the response to wind conditions to respond to urban heat island effect. The site has a dominant prevailing wind condition during the summer from within the North East to South East quadrant at 3pm in the afternoon. These afternoon breezes will be essential to daytime purging of heat and are present within Bradfield for more than 99% of the year. During winter the wind is highly dominant from the SW in the mornings. Whilst it is desirable to design to protect from this wind condition, such protection must be balanced with the benefits provided by this breeze during summertime mornings.

The desired future built form provides varying building heights and building orientation to mitigate wind effects. Gaps between buildings that lead out to relatively open areas also assist to avoid canyon effects.

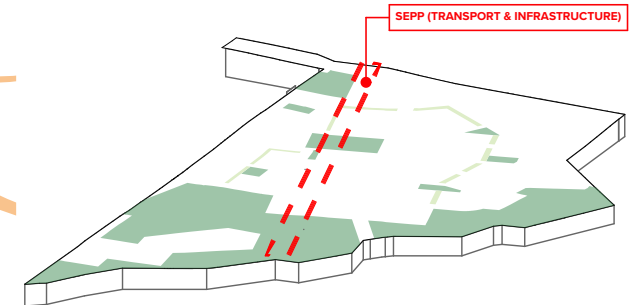


### SOLAR ACCESS TESTING

**Public Open Space achieves or exceeds the minimum required solar access in mid winter.**

The DCP provisions for 70% of the district public open space to receive a minimum 3 hours of sunlight between 9am to 3pm in mid-winter ensure healthy green parks that will require less on-going maintenance and disruption to residents and visitors.

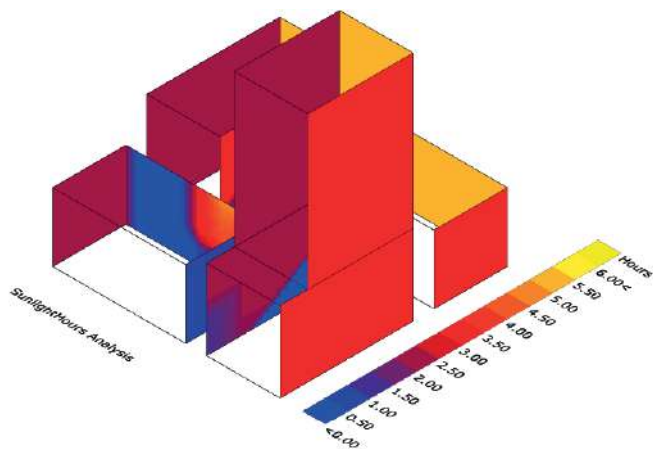
Local parks have been provided with a lower requirement of a minimum 3 hours to 50% of the open space to deliver the desired density of uses within the city centre.



**Future residential uses are considered.**

In residential developments, solar and daylight access improves energy efficiency and amenity by creating pleasant conditions to live and work. Solar access is the ability of a building to receive direct sunlight without the obstruction from other buildings.

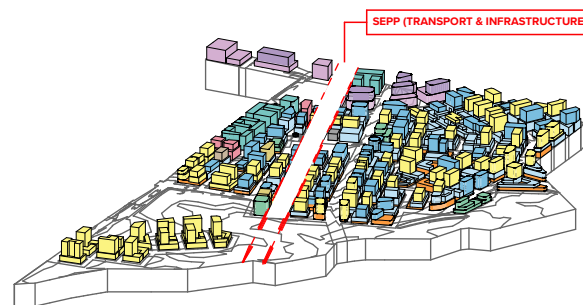
Building envelopes that include residential uses have been tested to ensure that a minimum of 70- 75% of the primary envelope facade area - North, East and West - receive a minimum of 2 hours direct sunlight between 9am and 3pm at mid winter.



**Non-residential uses are considered.**

The desired built form includes and anticipates a variety of non-residential uses that do not need to meet the ADG criteria for direct sunlight and where relevant, the extent of the Primary Building Envelope Facade area calculated is varied accordingly.

To achieve the desired mix of uses within Bradfield City Centre, it is anticipated that podiums will be predominantly non-residential.



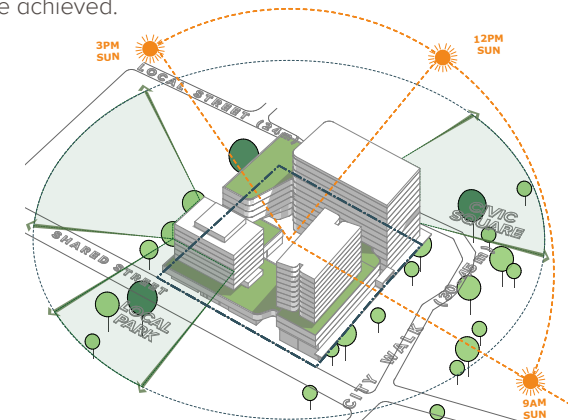
- Indicative use location
- Residential
  - Retail
  - Educational
  - Commercial
  - Commercial (towers)
  - Community / Cultural

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**Lot Testing**

A variety of interfaces form the context that require a different set of criteria for testing depending on their relationship to understand and address the extent and influence of overshadowing. Access to sunlight for public open space and access to sunlight for residential building envelopes has been measured as part of the built form testing.

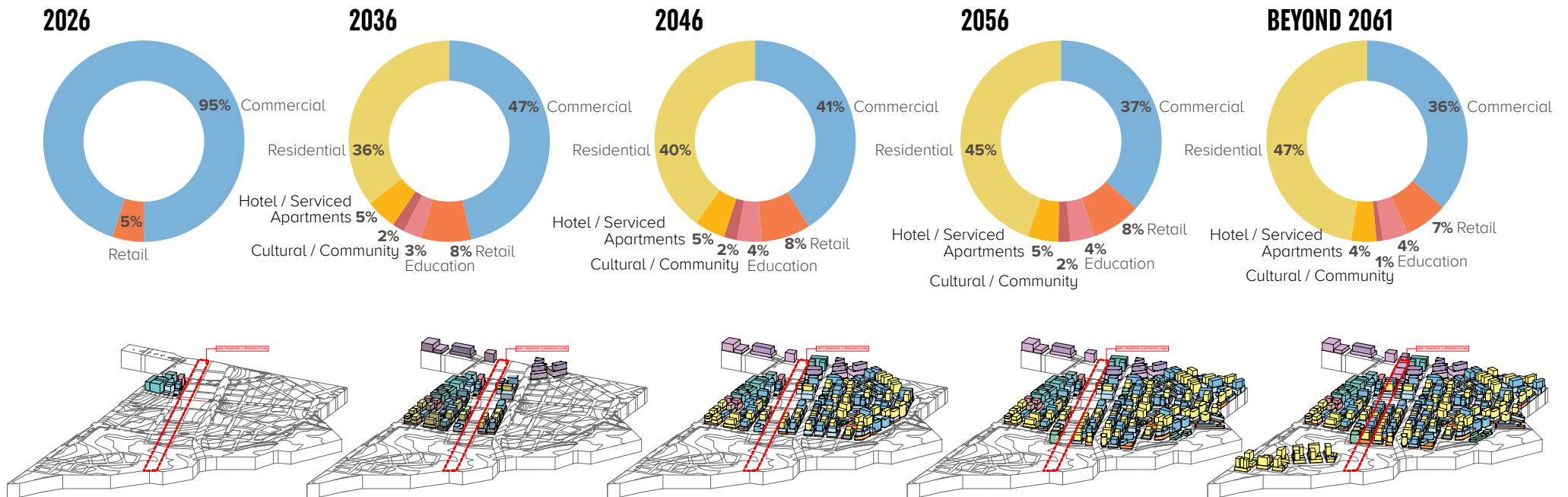
A representative mixed use lot has been explored in further detail to test primary ADG controls to ensure they can achieve desired outcomes including ADG objectives for solar and daylight access. As part of future detailed designs a comprehensive assessment will need to be undertaken to ensure that ADG objectives and design criteria specific to the final built form outcome, specific layouts and context will be achieved.



# METHODOLOGY & ASSUMPTIONS (CONTINUED)

## INDICATIVE DEVELOPMENT OVER TIME - DENSITY & LAND USE

The diagrams below provide an indicative land use mix that could be delivered over time at Bradfield. Early stages of development are strategically placed close to the future metro station to enable clustering of occupiers and business/ retail services. Over time and as Bradfield City Centre grows, the change and evolution of place and uses over time will grow in complexity as the worker and resident population grows to provide the supporting land uses that will be important to create vibrant places and spaces within Bradfield City Centre.



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# BUILT FORM APPROACH TO LAND USE

The proposed built form within Bradfield City responds to the land use. Co-location of a range of uses that work in synergy with the land use

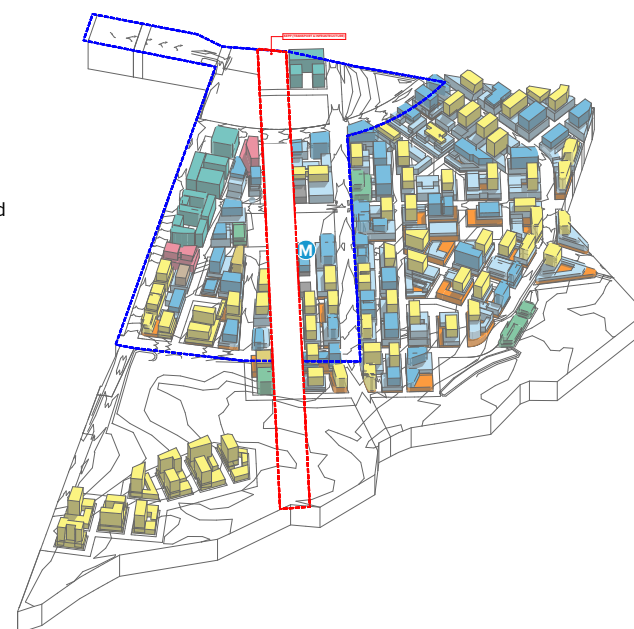
Provision of residential uses with employment uses will provide the opportunity for people to live close to jobs and create the required intensity of uses that will support the growth of the city over time.

**LEGEND**

- Stage 1 Boundary
- Enterprise**
- 4 - 8 Storeys
- 9 Storeys and above
- Innovation & Research** (inc. Advanced manufacturing, CSIRO and infratech)
- Metro Infrastructure**
- Retail** (inc. Shops, F&B, Entertainment)
- Mixed Use Commercial**
- 4 - 8 Storeys
- 9 Storeys and above
- Education** (inc. Multiversity, TAFE/VET, Secondary & Primary schools)
- Civic, Cultural & Community**
- Mixed Use Residential** (inc. Hotel, Serviced apartments, Student accommodation & Build to rent)
- 4 - 8 Storeys
- 9 Storeys and above

## MIXED USE

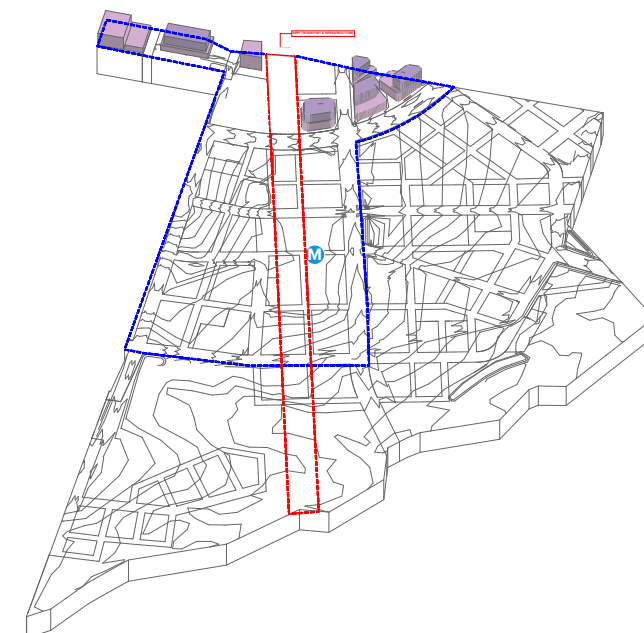
Mixed Use zones around the metro station enable the delivery of employment and higher density residential uses and include a mix of commercial uses like retail, office, medical, social services and places of entertainment. The provision of a diverse mix of short to long term residential uses to include hotel, and a mix of housing will support the growth of a diverse residential population by providing housing choice.



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## ENTERPRISE

Enterprise land uses are complementary to the city and the airport as a 24-hour transport hub and support a range of commercial and industrial uses as well as a mix of retail and educational uses.

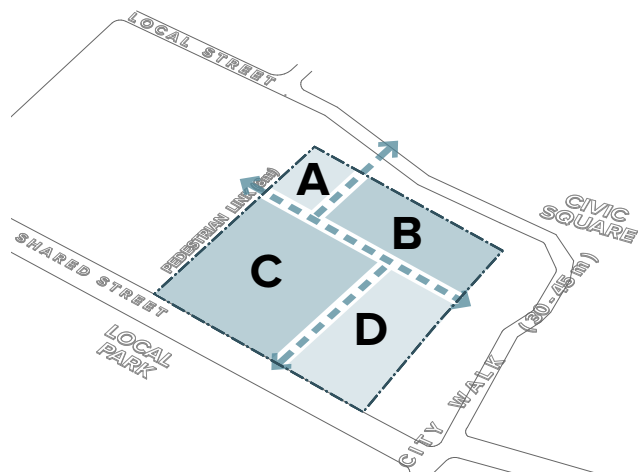


# MIXED-USE BUILT FORM APPROACH

## LOT SIZES

Supporting an attractive, safe, active, highly walkable and permeable pedestrian network as an essential element to the life of the City.

The City block structure supports a diverse range of buildings form sizes and uses and varied street scape and neighbourhoods. Pedestrian through site connections and access points across development lots with active frontages will provide convenient connections that increase permeability through the City.

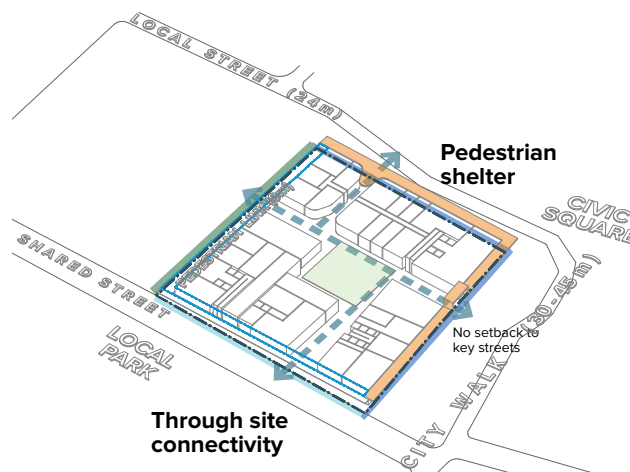


## INTERFACES TO PUBLIC DOMAIN

Public and private domain interfaces that promote social interaction provide the life, activation and intensity that is critical to create a high amenity and liveable City.

Nil setbacks to key setback and pedestrian shelter promotes walking and cycling by making the pedestrian experience enjoyable with good amenity.

Setbacks along shared streets and pedestrian links promotes active uses by providing space for social interaction, transition to private space and spill out of active internal uses and opportunities for green cover and tree canopy.



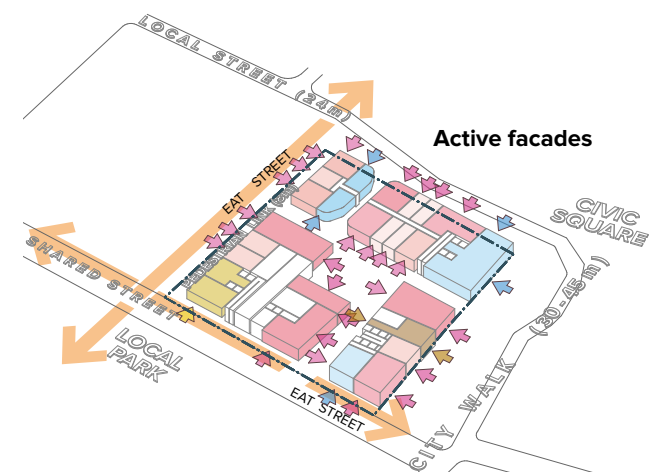
## STREET LEVEL EXPERIENCE

A fine grained pedestrian scaled ground plane that supports active uses enriches the public domain by providing a visually interesting street level experience.

Built form amenity is provided through a mix and variety of frontage sizes.

Articulation and modulation provides visual diversity that promotes a vibrant environment.

Transparent and open façades at street level creates engagement with the public domain and visibility of activities.

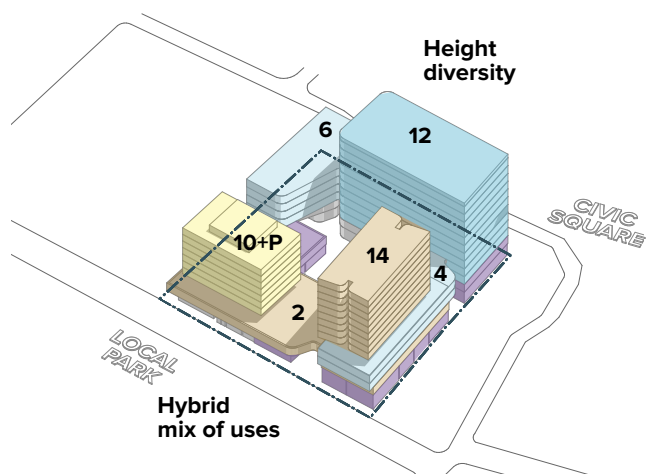


## BUILT FORM DIVERSITY

Variety and a mix of scale, architectural design and character in the built form creates a diverse and enriching urban environment.

Street walls that respond to the human-scale provide a well defined public domain and crafts the street level experience

Height diversity allows for distribution of built form to provide amenity to public, semi-public space, streets, and private spaces.

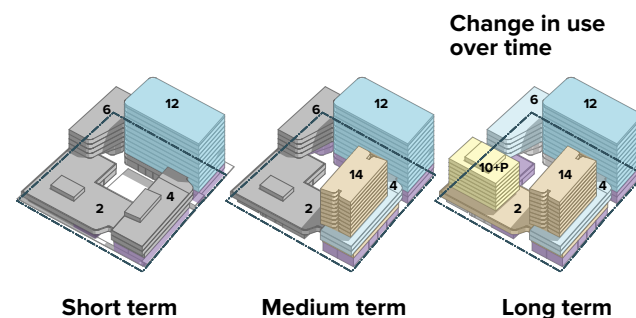


## EVOLUTION OVER TIME

The built form and land use of the City will continually evolve over time as the resident and worker population grows and uses intensify and diversify.

Building envelopes that support flexible and adaptable buildings will allow the sustainable growth of the City over time.

Activation, programming and curation of ground level uses are critical to deliver an appropriate density and intensity of uses to meet short, medium & long term needs.

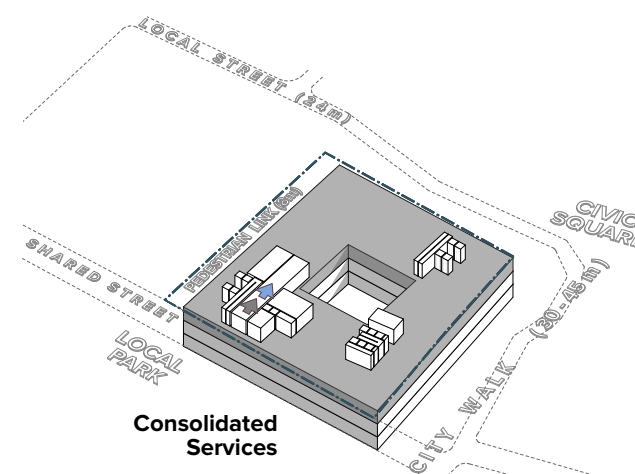


## ACCESS, SERVICES & LOADING

Consolidating access, services & loading will support greater activation of the street and walkability across the City by creating enjoyable places to move through.

Integrated and consolidated access and services minimise the visual impact on the public realm. An integrated access approach will provide greater activation across the City by minimising blank walls and pedestrian and vehicular conflicts.

Consolidated parking allows parking to adapt and respond more flexibly to changing needs.



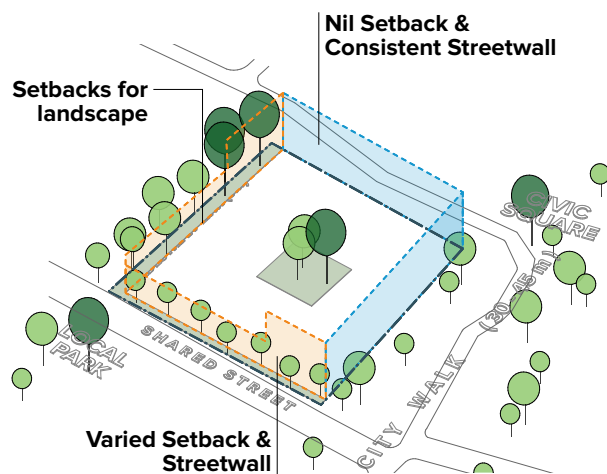
# MIXED-USE BUILT FORM APPROACH (CONTINUED)

## SETBACKS & STREETWALLS

Setbacks and street walls activate and define the public domain. Building and ground level setbacks respond to the street hierarchy and allow the provision of tree canopy, deep soil and landscape zones.

For key streets, zero street and ground floor setbacks create a consistent street scape with defined and consistent street walls.

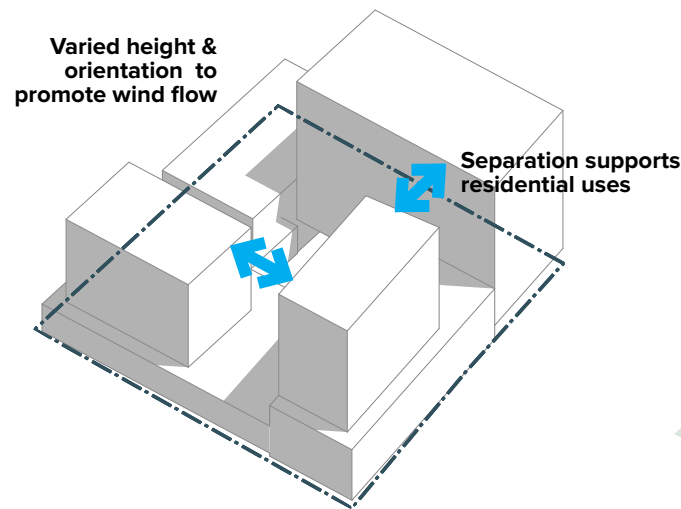
Varied setbacks and street walls to shared streets and pedestrian links provide built form variation that creates a hierarchy and diversity of spaces.



## SEPARATION

Building envelopes have been arranged to provide appropriate building separation to respond to the scale of the context - including streets - to enhance the experience of places.

Building separation and setbacks have been aligned with building use, orientation and street hierarchy.

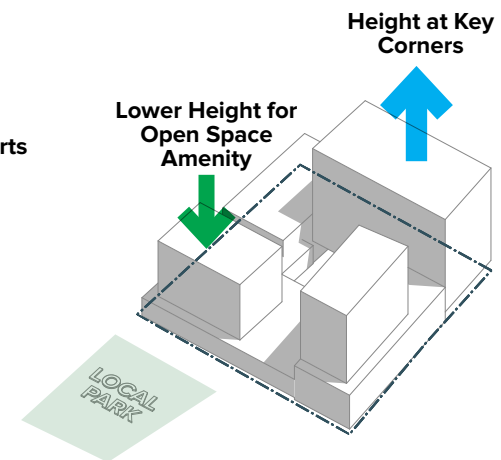


## HEIGHT

Appropriate building heights ensure adequate daylight and sunlight access, as well as sky view for apartments, communal open space, adjoining properties and public space.

Consistent maximum height for towers with variations to the skyline provided by lower height to to meet solar access requirements, provide open space amenity and streetwall height variation.

Adequate tower separation protects access to daylight, sunlight and sky view for the surrounding public domain and adjacent developments.



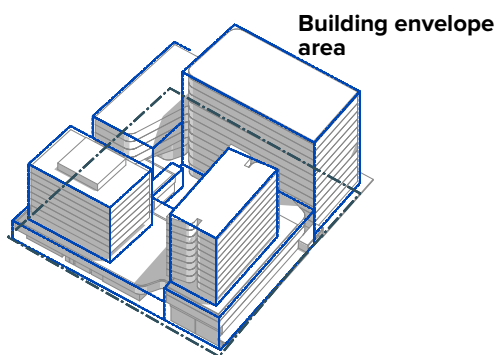


## FLOORPLATE SIZE & ARTICULATION

Building envelopes have been designed as 'loose-fit' envelopes that allow for the articulation and modulation of building forms.

Building articulation zones and a building efficiency of 65% for residential uses is lower than the guidance provided under the ADG. A building efficiency of 75% is provided for mixed use buildings that include non-residential and residential uses. This range of efficiencies allow for greater flexibility and innovation of the final built form.

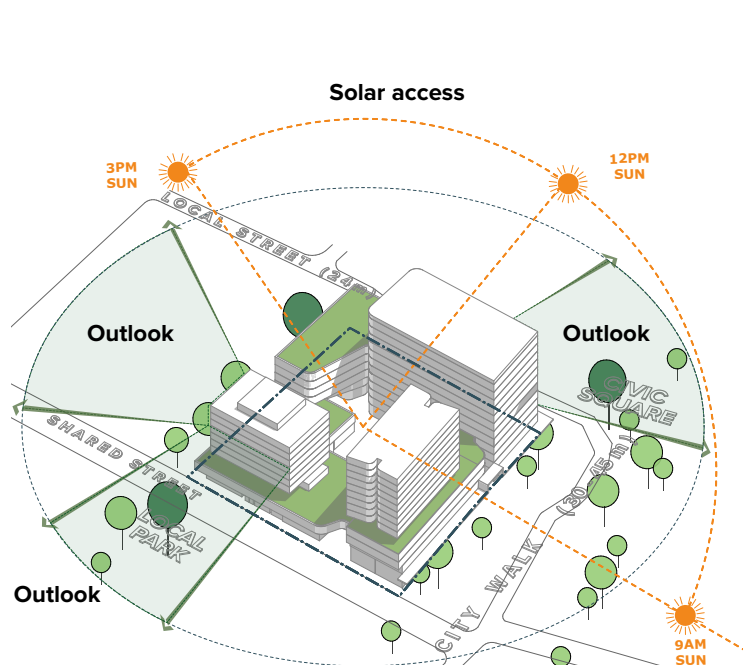
Building forms support facade variation to provide a change in form, proportion, position, quantity and composition to provide visual interest at different scales.



## AMENITY

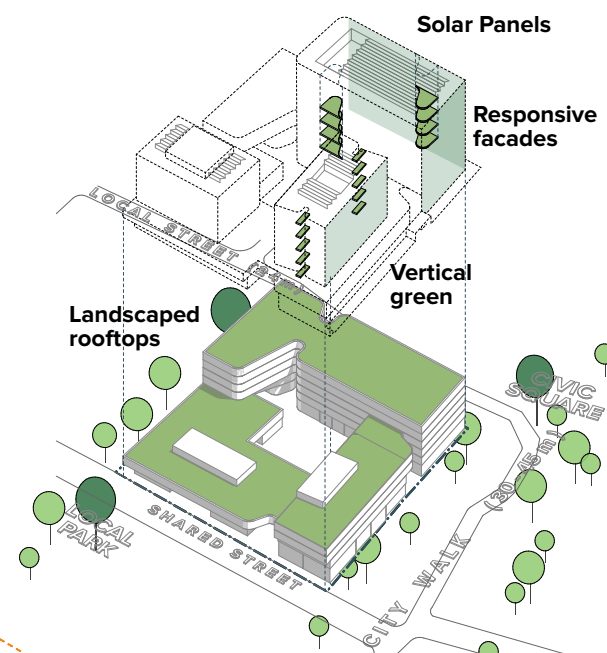
Building envelopes have been designed for flexibility of building uses to include residential uses with the capacity to achieve the amenity outcomes of the ADG, including solar access and cross ventilation.

Maximise solar amenity through the siting and design of built form to protect communal and public open space. Ameliorate existing adverse wind conditions and ensure appropriate wind comfort levels at the ground plane.



## SUSTAINABILITY

Building envelopes support green strategies with building orientations that prioritise passive means for reduction of energy consumption.

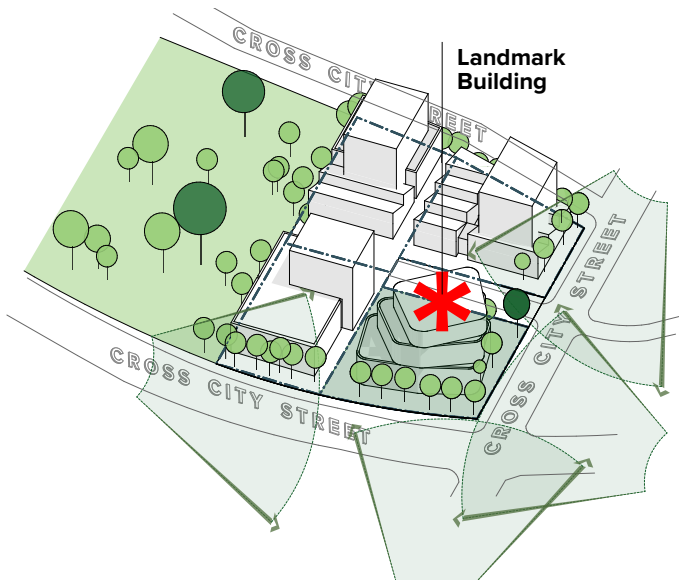


# ENTERPRISE BUILT FORM APPROACH

## ORIENTATION

Building form layout and orientation define the public domain with taller landmark buildings located to address key corners and terminate vistas.

Built form articulation and varied facade treatments and materials reinforce the vertical rhythm of street scape.

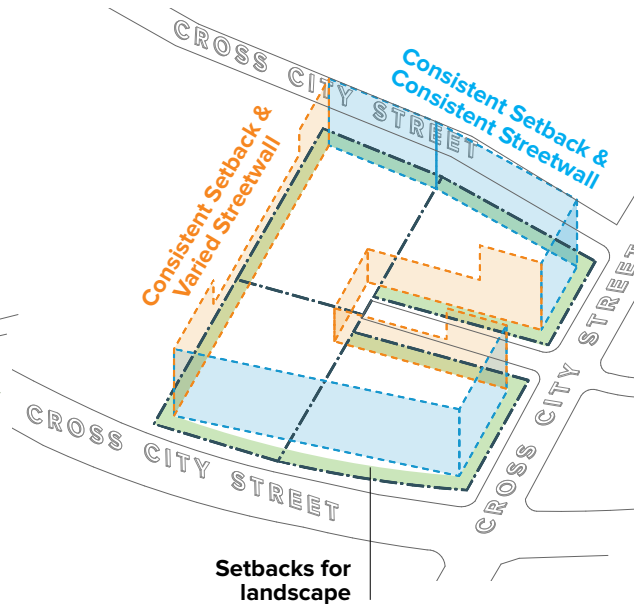


## SETBACKS & STREETWALLS

Setbacks and street walls activate and define the public domain. Building setbacks respond to the street hierarchy and allow the provision of tree canopy, deep soil and landscape zones.

For key streets, consistent street walls create a defined street scape.

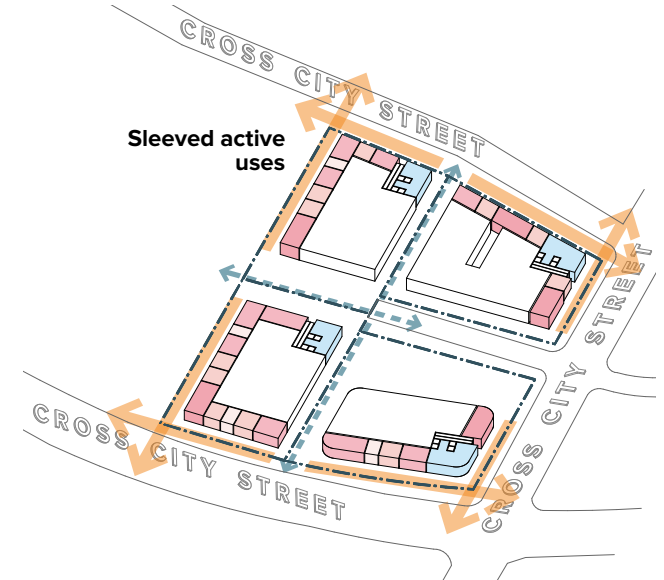
Varied street walls to shared streets and pedestrian links provide built form variation that creates a hierarchy and diversity of spaces.



## INTERFACES TO PUBLIC DOMAIN

Active uses increase the vibrancy and quality of street scape and increase the transparency of the built form interface with the street.

Big-box uses sleeved with smaller scale active uses enhance and activate interfaces with the public realm by concealing inactive uses from public view.

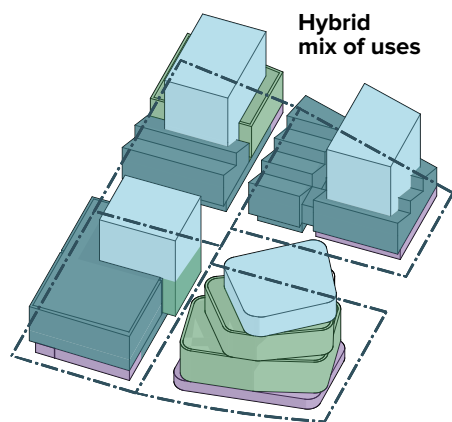


## HYBRID USES

Advanced technology will allow for future production uses to be provided in smaller footprints.

Hybrid uses in dense urban forms that accommodate diverse and complementary uses such as light industrial, research, commercial, retail and ancillary services

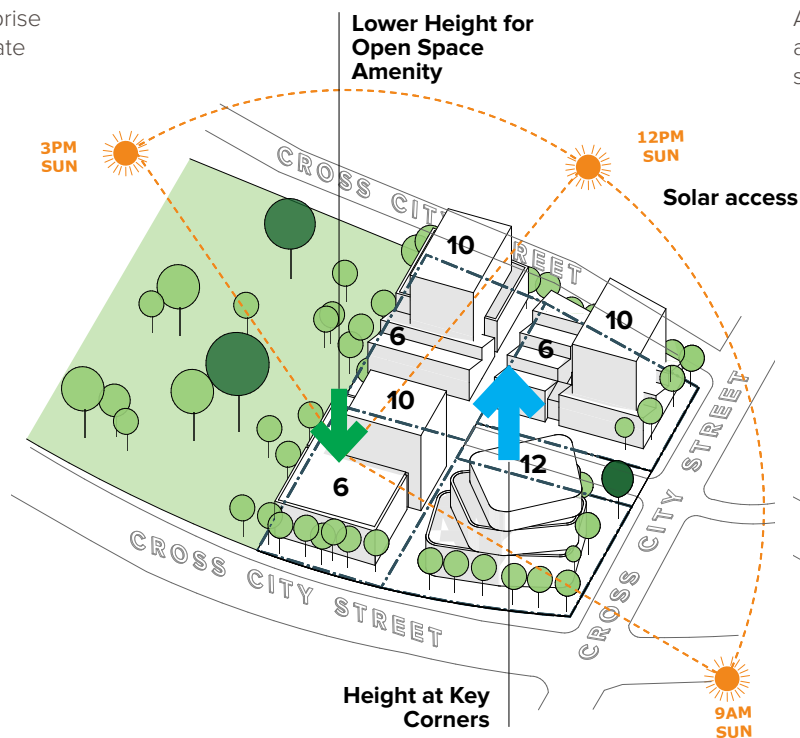
Compact building footprints provide opportunities for outdoor space amenity. Close to the City core, enterprise uses will be in denser hybrid vertical buildings to create dense urban forms within a parkland setting.



## HEIGHT

Green and sustainable vertical manufacturing models allow production uses to be located closer to urban centres and residential spaces.

Built form scale, height and massing transitions to the public domain provide solar access amenity and a human scale experience at street level.

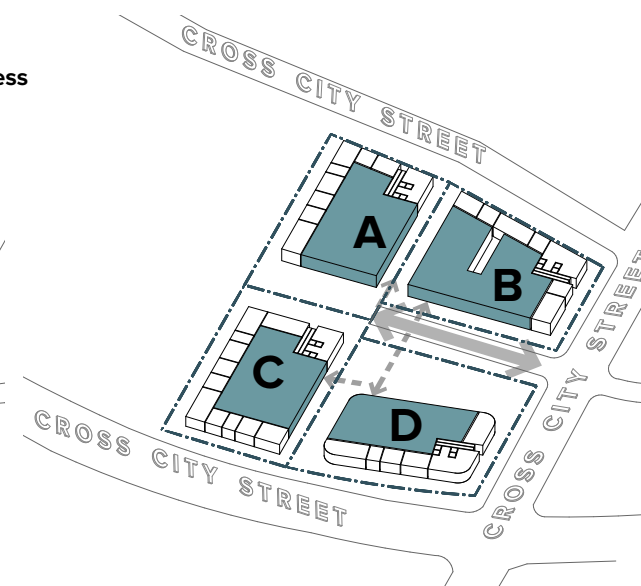


## ACCESS, SERVICES & LOADING

Consolidated freight hubs will support greater activation of the street and walkability across the City by minimising inactive facades.

Parking and loading areas provided above ground in flexible built form that can be readily adapted to cater for other uses support the growth of the City over time.

Active uses sleeved over inactive uses maximise outlook and street activation by locating habitable and occupied space on the perimeter of a building.



# STREET AND BUILDING INTERFACES

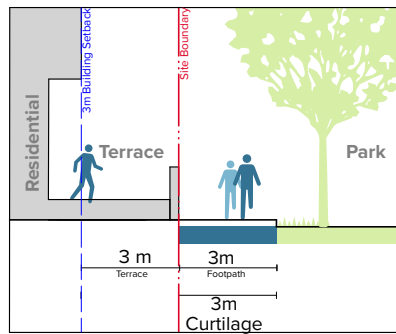
## PARK INTERFACES

Providing a 3m curtilage in addition to the local park to allow for activated frontages



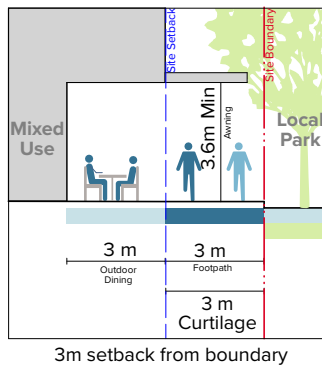
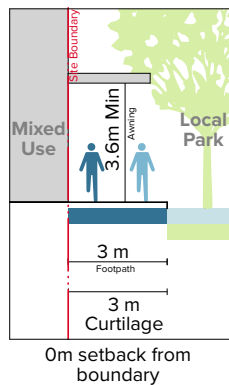
## RESIDENTIAL FRONT DOOR

Accommodate a 3m curtilage to the park interface



## RETAIL/ OUTDOOR DINING

Accommodate a 3m curtilage to the park interface



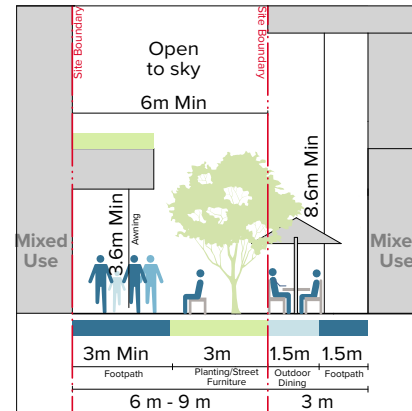
## STREETS FOR THE SEASONS

Providing Through Site Link typologies that are suited to the climate and allow for all year round activation



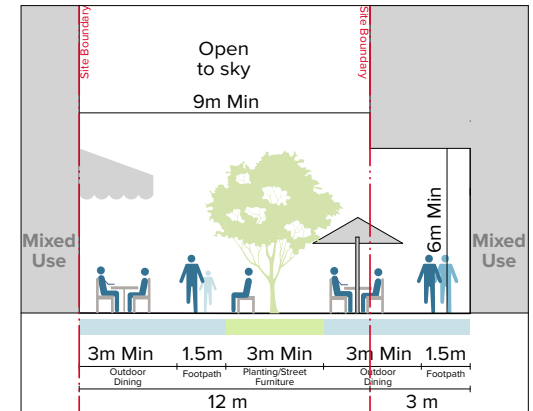
## SUMMER STREETS

6-9m Through site links/ arcades that provide shade with a connection to natural light



## WINTER STREETS

12m Pedestrian through site links that provide flexible weather protection and maximise daylight access during winter



# STREET AND BUILDING INTERFACES

## RESPONSIVE AWNING STRATEGY

A series of street level interfaces have been explored to provide a variety of typologies to accommodate an adequate zone for outdoor dining. This provides future flexibility & amenity that will further enhance the objectives in the WSA DCP

### TYPICAL MAIN STREET



### ONLY PERMITTED ON SECONDARY LANES/ STREETS



### FIXED AWNINGS

Awnings integrated with the street wall. 0m setback required

### COLONNADES

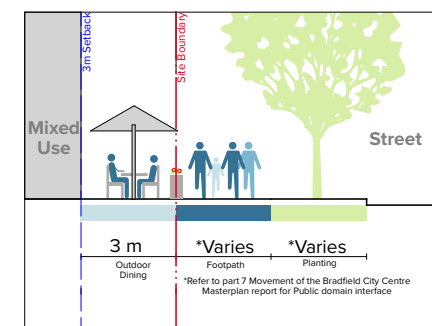
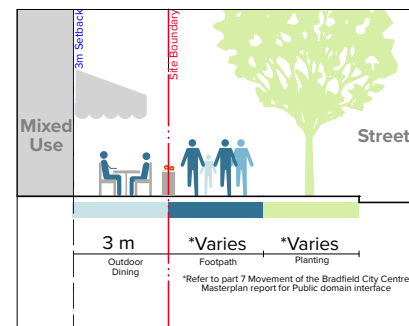
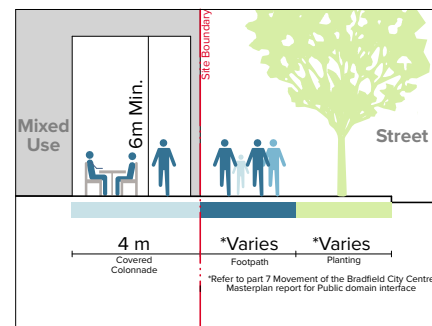
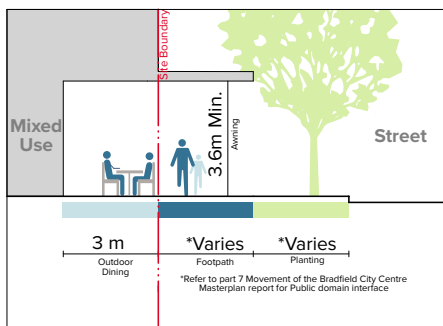
Double height spaces creating outdoor rooms. 0m setback required

### RETRACTABLE AWNINGS

Flexible awnings that can adapt to different weather conditions. 3m setback required where outdoor dining is proposed

### TEMPORARY/ SHADING STRUCTURES

Flexible street furniture within spaces to provide adaptability with proposed uses. 3m setback required where outdoor dining is proposed.



# BLOCK STRUCTURE PERMEABILITY

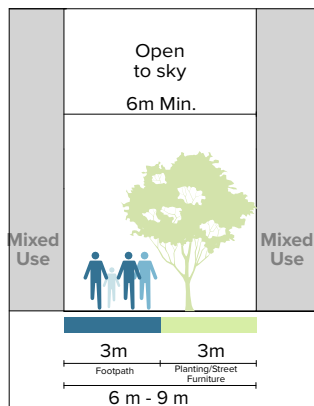
## THROUGH SITE LINKS

Through Site Links are main circulation corridors and high streets for the superlot, with nodes of activation and retail space at its edges with ample space for pedestrian and vehicles to transit along. These streets provide space for outdoor dining, gathering, public events, markets and circulation.



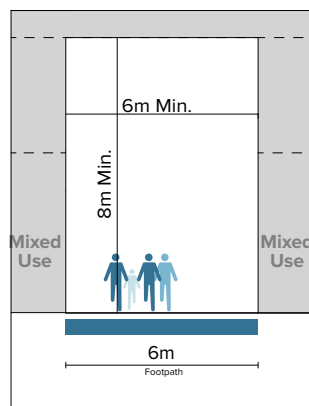
### 1A PEDESTRIAN STREETS SMALL

Tertiary pedestrian links facilitates circulation through narrow corridors.



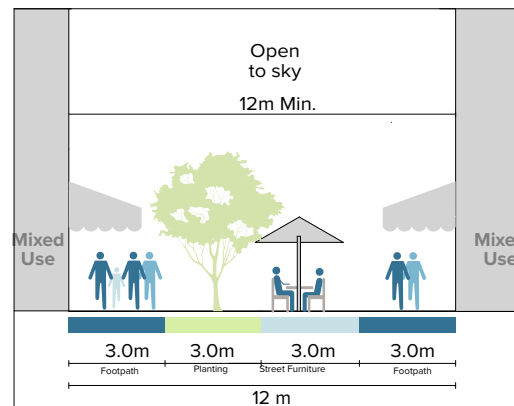
### 1B ARCADES

6m Pedestrian arcades that are 2 storeys high.



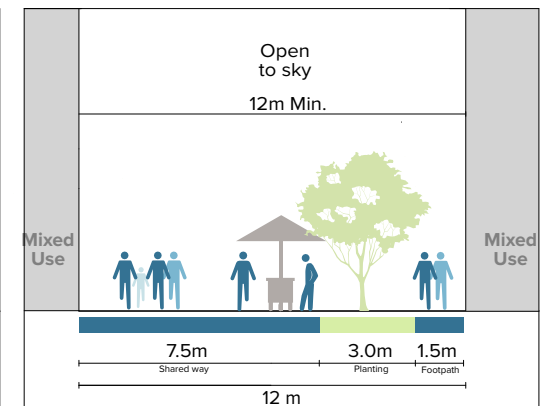
### 2A PEDESTRIAN STREETS MEDIUM

Secondary links for effective urban circulation with landscape and dedicated zone for seating and outdoor dining.



### 2B SHARED PEDESTRIAN STREETS

Shared pedestrian streets with nodes of activation and retail spaces at edges.



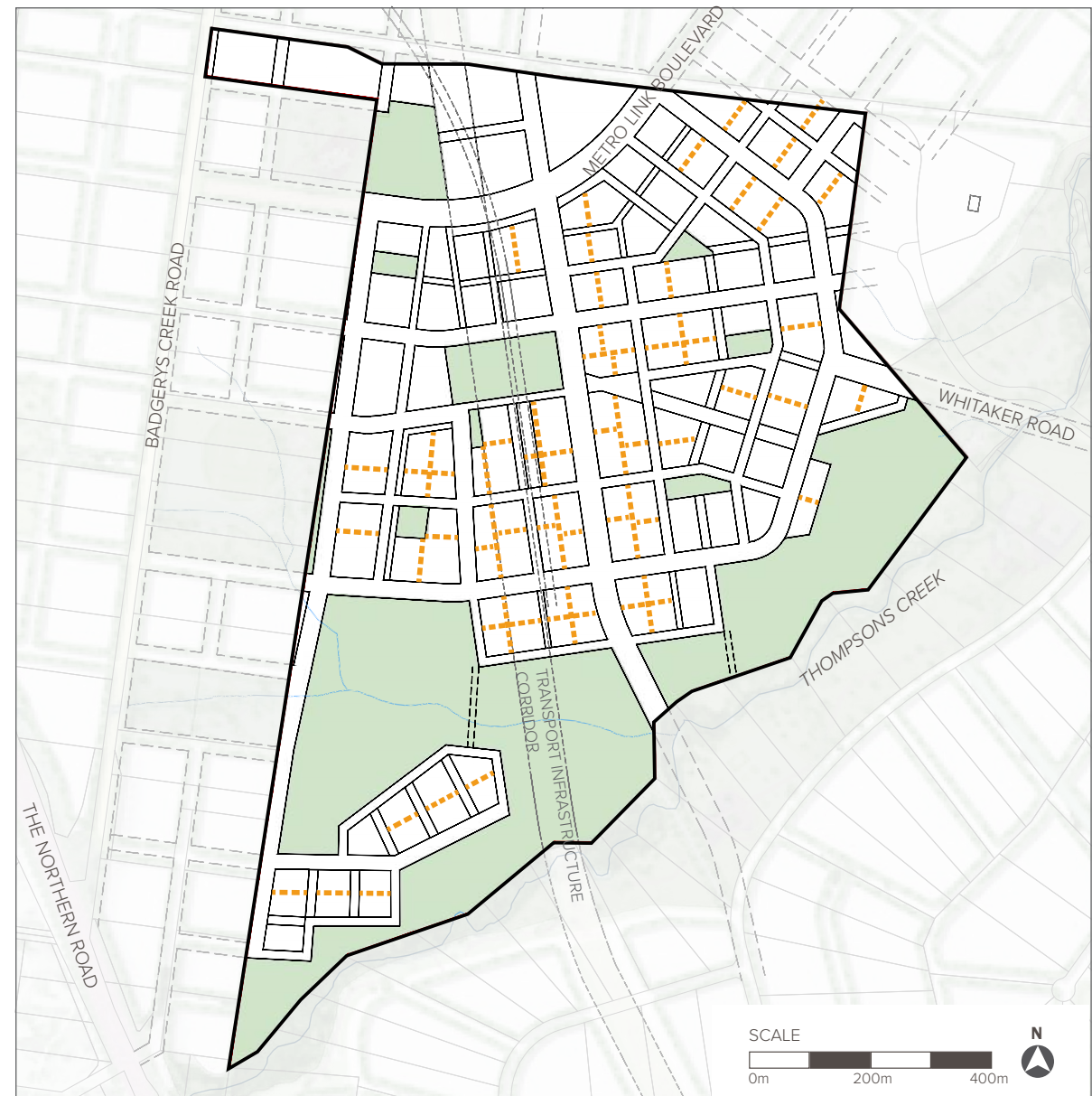
# BLOCK STRUCTURE PERMEABILITY

A fine grain network of pedestrian lanes, through site links and green spaces will create a permeable ground plane and walkable city that connect spaces and places.

Indicative locations for Through Site Links have been indicated for mixed use sites larger than 4500sqm to embed a fine grain block structure within the Bradfield City Centre.

## Legend

 Indicative through-site link



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# STREET WALL HEIGHT

The built form across Bradfield City Centre is defined by:

Four to six storey street walls that:

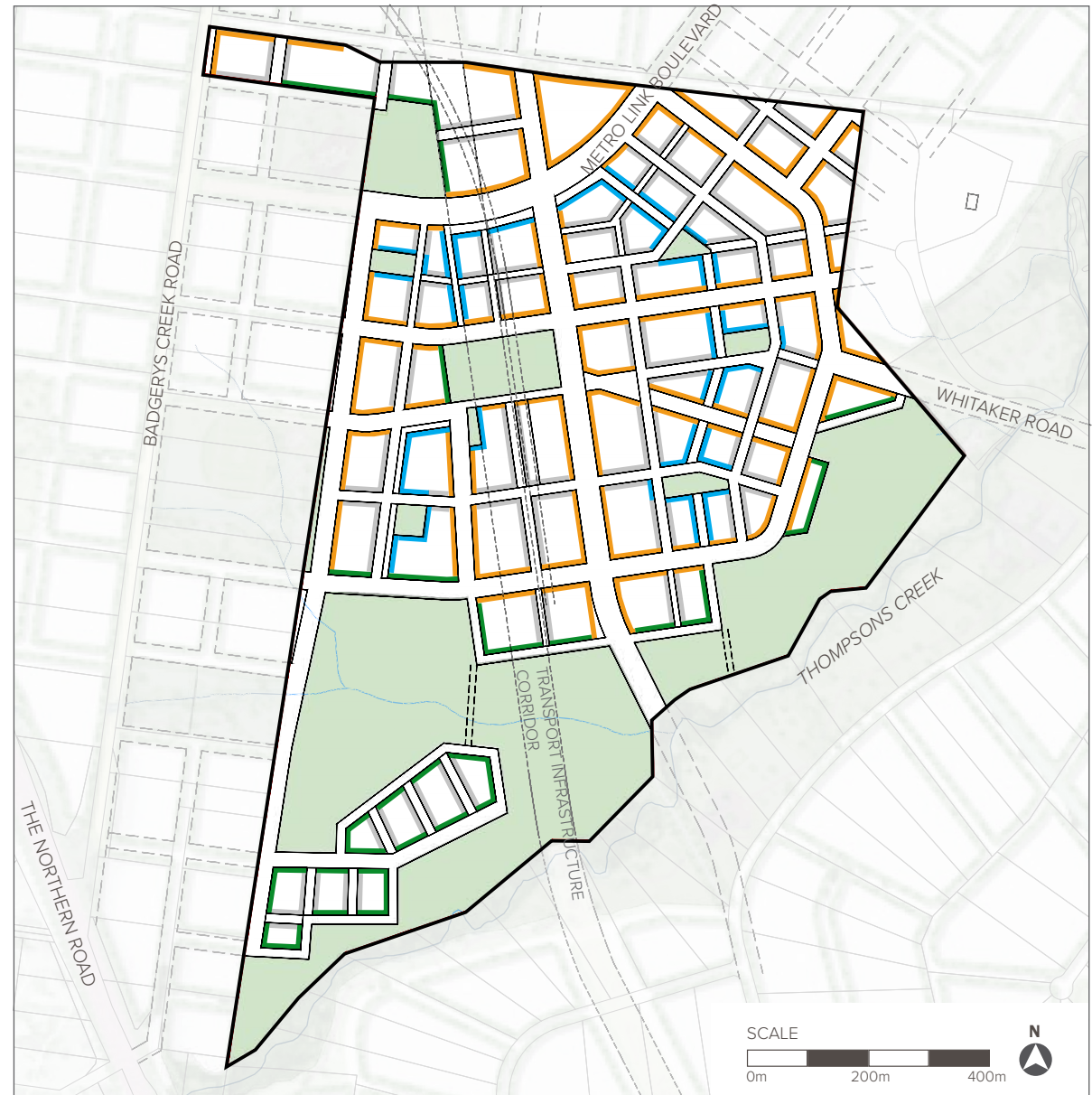
- Responds to the human-scale;
- Provides a well defined public domain and crafts the street level experience;
- Defines the street edge to the proposed street network;
- Provides a pedestrian experience that promotes walking and cycling by making it enjoyable with good amenity;
- Promotes passive surveillance for increased perception of safety;

Height and massing transition that:

- Responds to future context;
- Provides variety and a mix of scale, architectural design and character to create a diverse and enriching urban environment;
- Provides amenity to public, semi-public spaces and streets, and private spaces.

## Legend

- 2-4 storey street wall to green loop and local parks
- 4 storey street wall to district and regional parks
- 4-6 storey street wall to main streets
- Variable street wall height permitted to local streets and lanes



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# SETBACKS

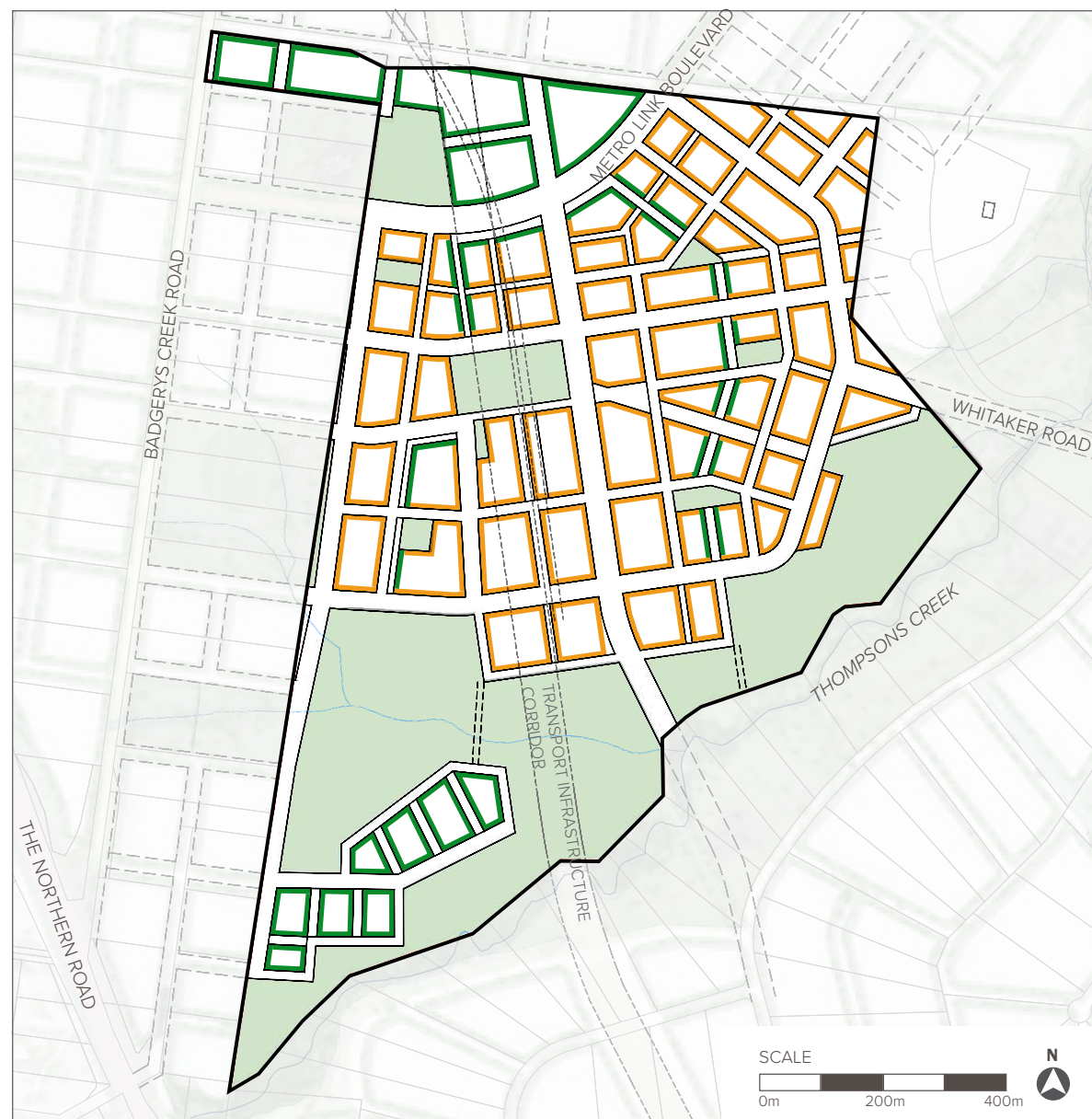
Building and ground level setbacks provide a transition to surrounding context, where contextually appropriate, and reduce the visual bulk and scale at street level through variation in form and scale.

Provision of pedestrian shelter for key movement corridors and areas of anticipated foot traffic through the design of continuous permanent and adaptable awnings and colonnades to create a more pedestrian friendly and inviting street scape/public realm.

Awnings are located based on the key movement networks, destinations and clusters of active building uses. Adaptable awnings can be added over time as the city grows to incorporate more active uses such as dining and street retail.

## Legend

- 0m setbacks required (3m setback permitted to accommodate outdoor dining and 3m setback required for any ground floor residential)
- 3m setbacks required to green loop, residential and enterprise areas



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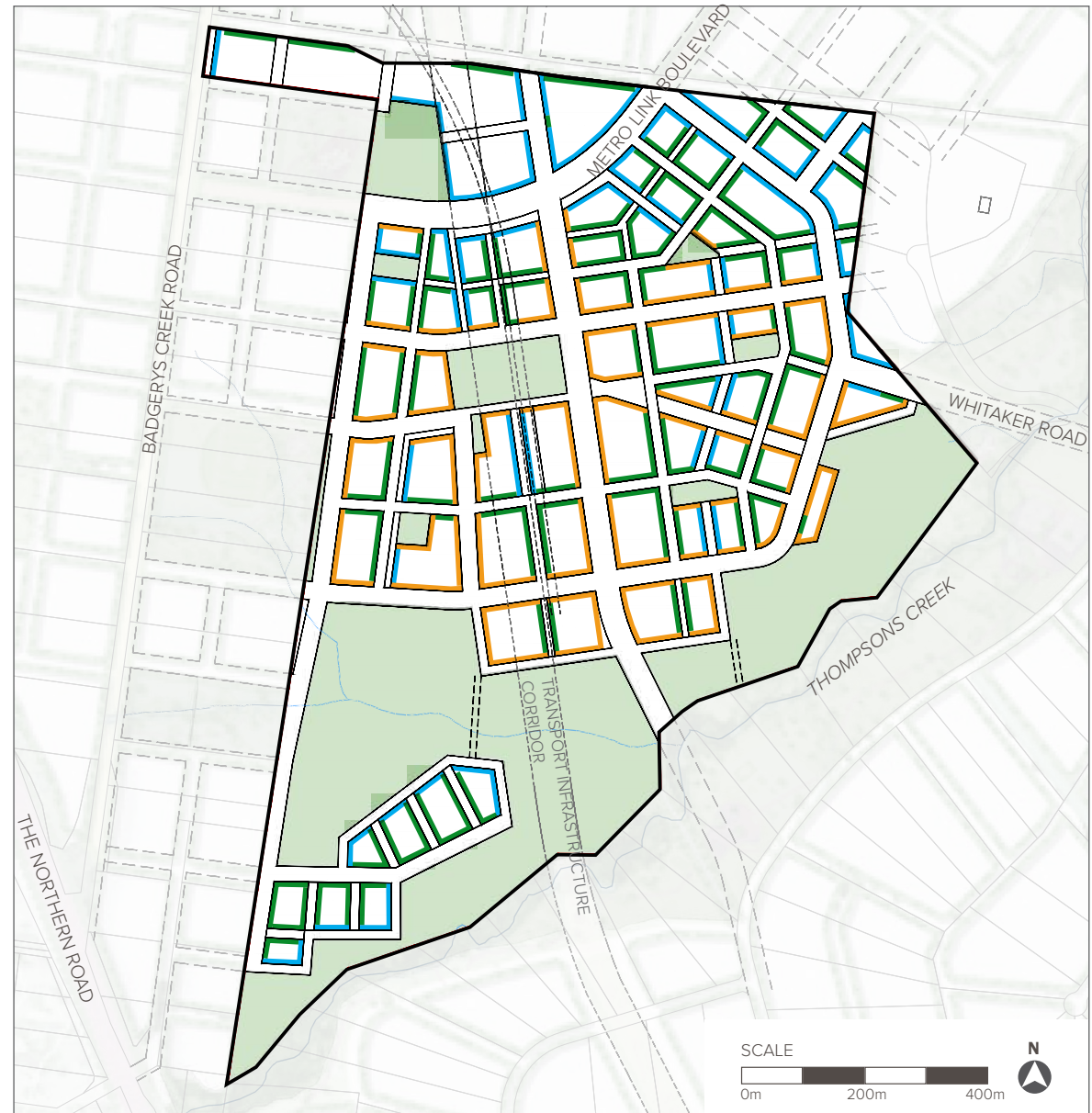
# ACTIVE FRONTAGES

The aspiration for Bradfield is to achieve highly activated streets throughout the city centre. As a new city with limited catchment for retail in the early years the focus is to create the framework and urban structure to support street life. This starts with the creation of high quality civic spaces, and high amenity walkable streets. For buildings this means creating ground levels that are highly engaged with the street. The highest priority for active frontages is fronting the key civic spaces, the parklands, the pedestrian mall, the transit interchange and the commercial high streets. Secondary priority for activation is along the Green Loop, the northern enterprise and mixed use areas and the southern residential focussed area, as these areas will likely reduce in intensity. Tertiary priority for activation is on the local city streets within neighbourhood as these will have a more diverse mix of interfaces including entries and shopfronts, as well as vehicle accesses. At Bradfield the following definition of active frontage is used, consistent with the City of Sydney.

**Active Frontage:** street frontages where there is an active visual engagement between those in the street and those on the ground floors of buildings. Frequent building entries that face and open towards the street, transparent street frontages, quality materials and refined details, and mixed land uses will make streets more diverse and attractive for pedestrians and increase the perception of safety and encourage higher levels of pedestrian activity.

## Legend

- █ **Primary Frontages**
  - minimum 90% ground level active frontages
  - no ground floor residential permitted
  - no vehicle access permitted
  - no blank walls and/or services and utilities
  
- █ **Secondary Frontage**
  - minimum 60% active frontages
  - no vehicle access permitted
  - blank walls and/ or services and utilities only permitted is essential and limited to maximum 15% of the frontage and maximum 6m continuous length
  
- █ **Tertiary Frontage**
  - vehicle accesses, services, utilities and/ or blank walls limited to a maximum 25% of the frontage and maximum 10m continuous length



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# LANDMARK & GATEWAY BUILDINGS



## Landmark Buildings

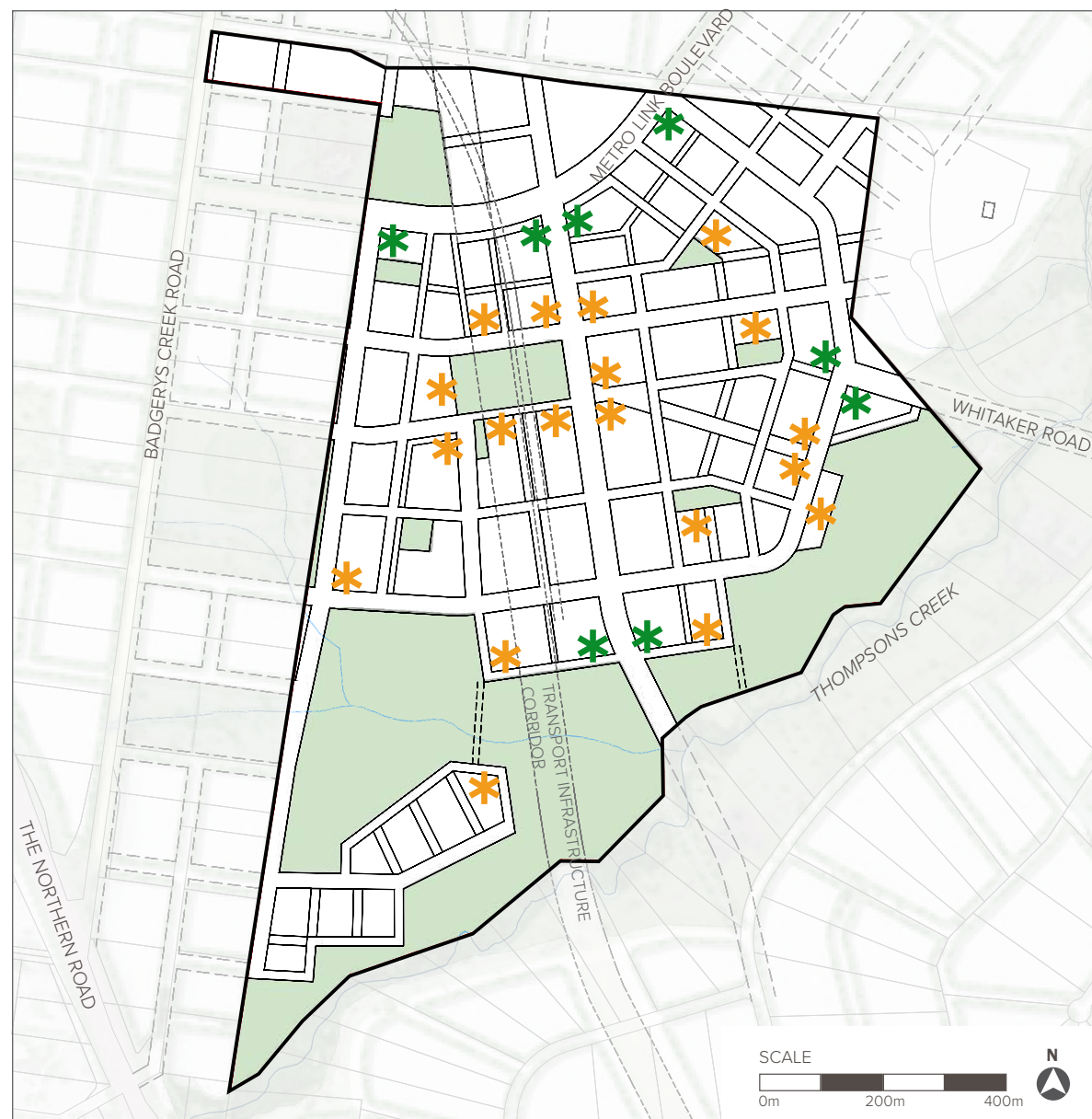
Buildings in important civic locations that have a significant role in shaping the identity of the area. The location of the building envelope can be flexible provided that the design of the building appropriately defines this highly visible site. The optimal building envelope is to be explored through the design excellence process.

## Gateway Buildings

Buildings situated in highly visible and prominent locations that mark key arrival points to the city. As part of the design excellence process additional height may be justified (subject to compliance with PANS-OPS and being cognisant of impacts on solar access to public spaces). The location of the building envelope can be flexible provided that the design of the building appropriately defines this highly visible site. The optimal building envelope is to be explored through the design excellence process.

## Legend

-  Landmark Building
-  Gateway Building

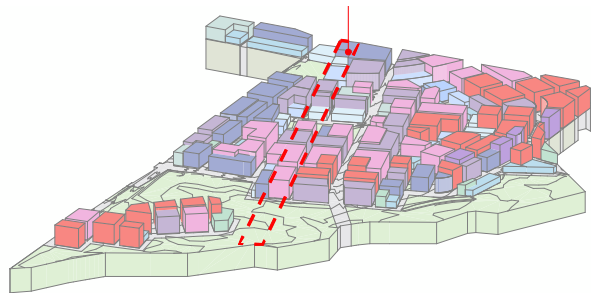


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# MAXIMUM BUILDING HEIGHT

The maximum building height has been established through the following parameters:

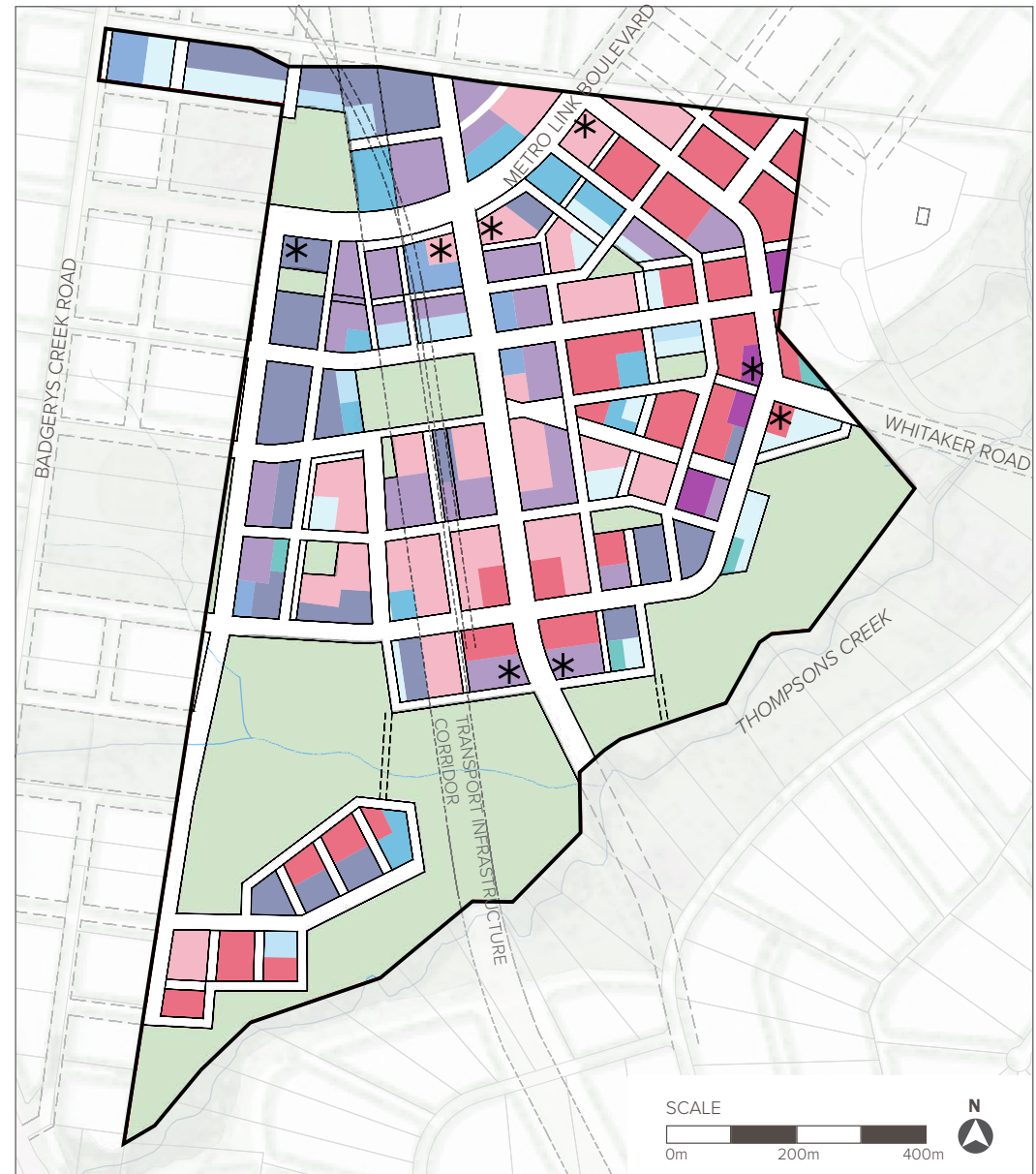
- A maximum height based on RL 125.25 OLS
- Providing a built form envelope that allows for a minimum 3 hours direct sunlight between 9am and 3pm on the 21st June to a moving 70% area of open space to District & Regional Parks and 50% area to Local Parks.
- Providing a varied skyline that highlights key corners of sites.
- Note: As part of the design excellence process additional height may be justified for gateway sites (subject to compliance with PANS-OPS and being cognisant of impacts on solar access to public spaces).



**Legend**

- 60m
- 55m
- 51m
- 47m
- 40m
- 36m
- 32m
- 25m
- 21m
- 17m

✱ Gateway Building



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# BUSHFIRE SAFETY

A bushfire hazard assessment has been prepared for the master plan and Asset Protection Zones (APZs) have been recommended in areas adjoining fire risks such as Ridge Park, Thompsons Creek and Moore Gully. Additional setbacks apply for certain sensitive uses classified as Special Fire Protection Purposes (SFPP).

## Legend

-  Asset Protection Zone
-  Residential setback 12-16m

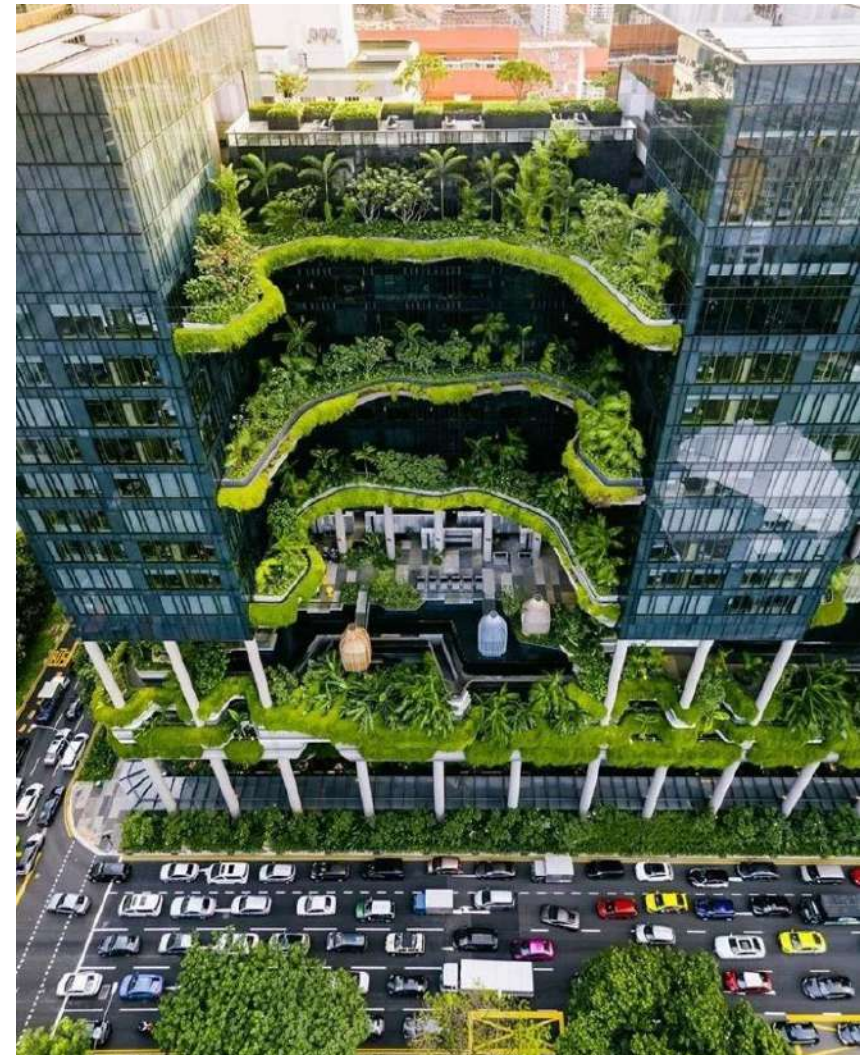


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# TREE CANOPY AND PERMEABILITY

**THE MASTER PLAN ACHIEVES THE 40% TARGETS FOR TREE CANOPY COVER AND PERVIOUSNESS AS SET OUT IN THE PRECINCT PLAN, ENSURING BRADFIELD WILL BE A COOL, GREEN, RESILIENT CITY**

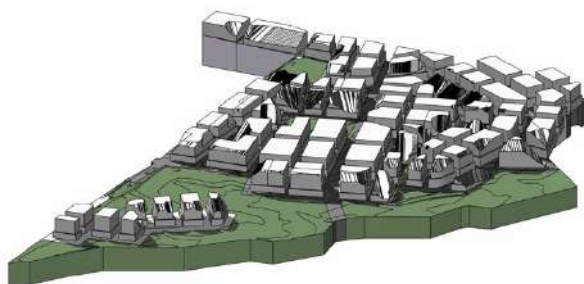
	Aerotropolis Precinct Plan / DCP / Urban Design Report			Bradfield City Centre Master Plan		
	Proportion of site area	Tree canopy	Perviousness	Proportion of site area	Tree canopy	Perviousness
Streets	35%	65%	35%	29%	65%	25%
Open Space	15%	45%	90%	31%	57%	84%
Lots	50%	25-35%	30%	40%	15%	16%
<b>Total</b>		<b>40%</b>	<b>40%</b>		<b>42%</b>	<b>40%</b>



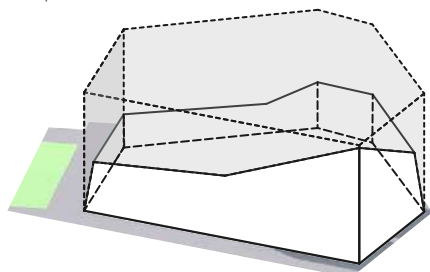
# FLOORSPACE ASSUMPTIONS

## SOLAR ENVELOPE

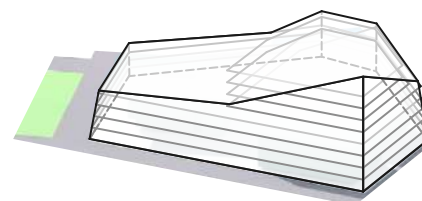
The defined solar access requirements for public open space in Bradfield City Centre provide solar access planes, which are subtracted from the development envelope to provide solar envelopes for individual sites within each superlot.



A solar envelope for each lot is established based on the existing topography, OLS height limit, proposed public open space, proposed primary street network and the proposed solar access for public open space. Solar envelopes between lots will vary based on their relationship to each element.



## GROSS ENVELOPE AREA



## ENTERPRISE LOTS

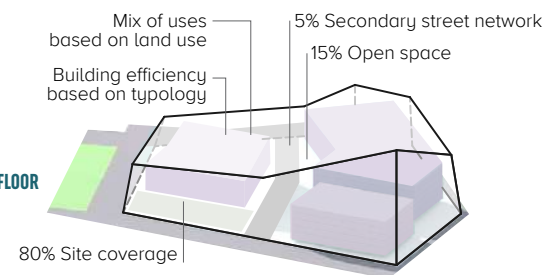
The approximate gross envelope area is established through floor to floor heights based on the land use typology.

For advanced manufacturing and industry land use, a minimum **6m floor to floor** has been used to determine the maximum number of storeys that can be accommodated within the solar envelope for each superlot.

Additional assumptions:  
Rooftop plant is to be within the solar envelope but temporary crane zones intrude



## POTENTIAL CAPACITY



The potential capacity (GFA) is established through the following parameters and assumptions:

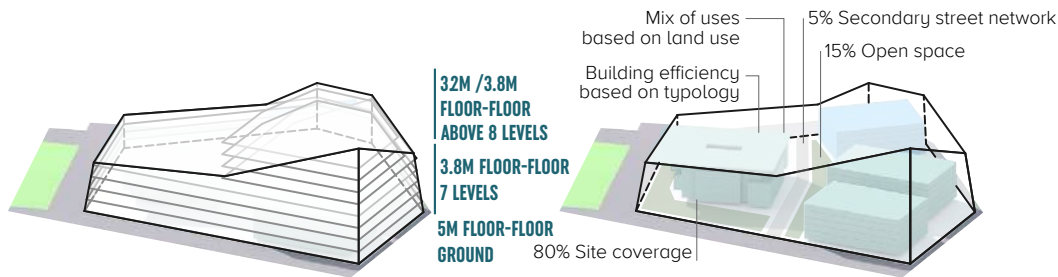
1. 20% Public & Publicly Accessible Domain Allowance to provide for secondary network;
2. 80% Site Coverage based on Sydney Water requirements
3. Average building efficiency BEA to GFA of 65%

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# FLOORSPACE ASSUMPTIONS

## GROSS ENVELOPE AREA

## POTENTIAL CAPACITY



## ADVANCED MANUFACTURING & INDUSTRY LOTS

The gross approximate envelope area is established through floor to floor heights based on the land use typology.

For enterprise land use, a minimum

- **5.0m floor to floor for ground level**
- **3.8m floor to floor for the 7 storeys** and
- **Above 8 storeys - 3.2m floor to floor (residential) 3.8m floor to floor (commercial)**

has been used to determine the maximum number of storeys that can be accommodated within the solar envelope for each superlot to allow for future residential uses.

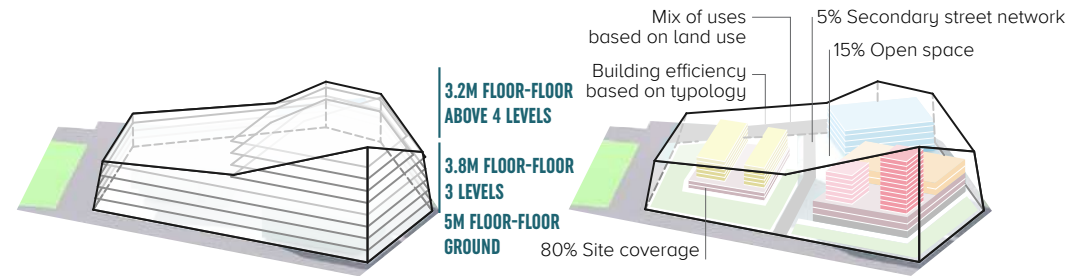
The potential capacity (GFA) is established through the following parameters and assumptions:

1. 20% Public & Publicly Accessible Domain Allowance to provide for secondary network:
2. 80% Site Coverage based on offsetting Sydney Water requirements to the public domain
3. Average building efficiency BEA to GFA of 75%



## GROSS ENVELOPE AREA

## POTENTIAL CAPACITY



## MIXED USE LOTS

The approximate gross envelope area is established through floor to floor heights based on the land use typology.

For mixed use land use, a minimum

- **5.0m floor to floor for ground level**
- **3.8m floor to floor for 3 storeys** and
- **Above 4 storeys - 3.2m floor to floor (residential) 3.8m floor to floor (commercial)**

has been used to determine the maximum number of storeys that can be accommodated within the solar envelope for each superlot to allow for a mix of retail, commercial and residential uses.

The potential capacity (GFA) is established through the following parameters and assumptions:

1. 20% Public & Publicly Accessible Domain Allowance to provide for secondary network:
2. 80% Site Coverage based on Sydney Water requirements
3. A Mix of Uses based on compatible hybrid uses:
  - 40% Research / Commercial
  - 5% Retail, Services & Childcare
  - 5% Education
  - 45% Residential
  - 1% Civic, Cultural, Community
  - 4% Hotel / Student Accommodation
4. Average building efficiency BEA to GFA of 75% for Mixed use lots



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# FLOORSPACE ALLOCATION

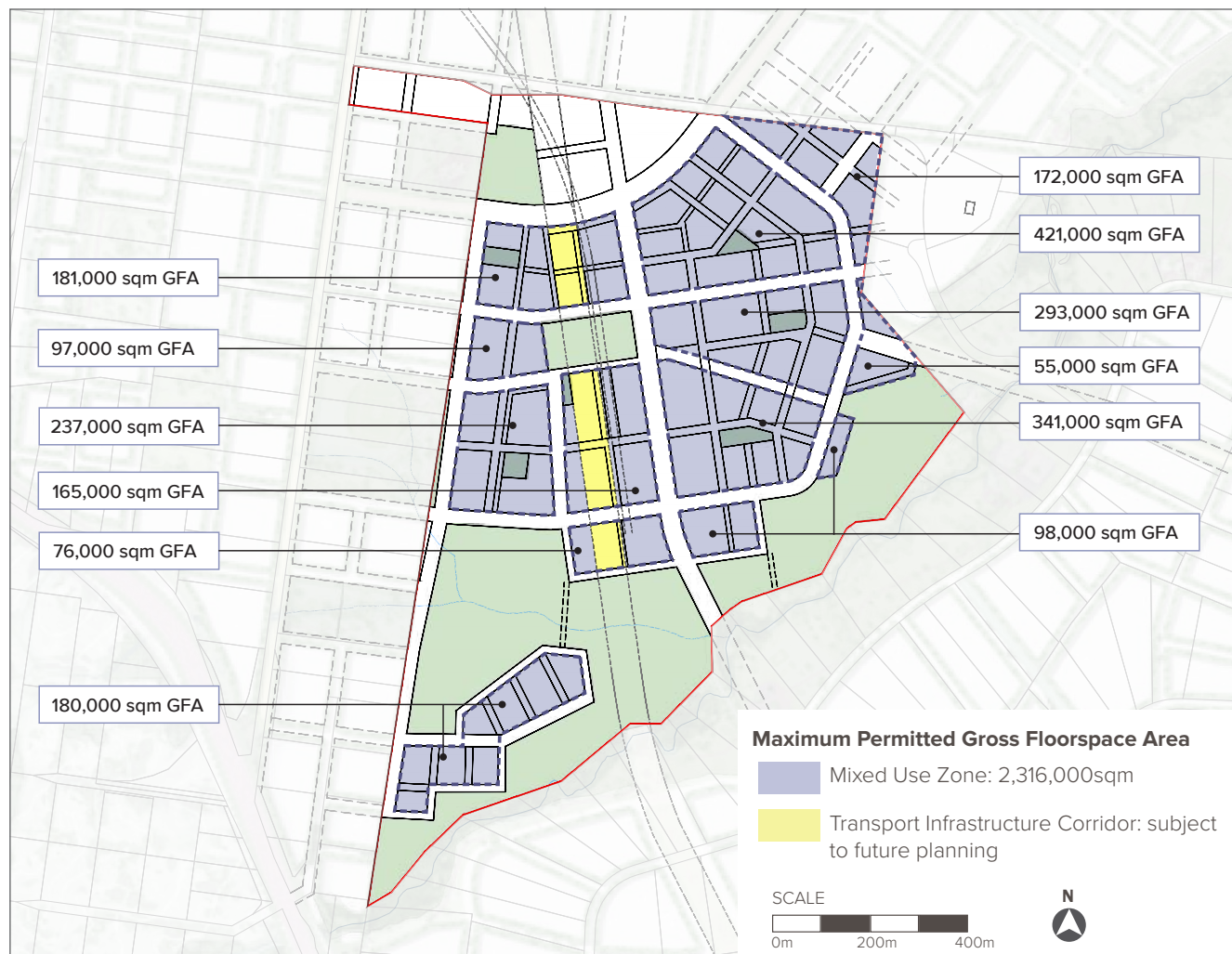
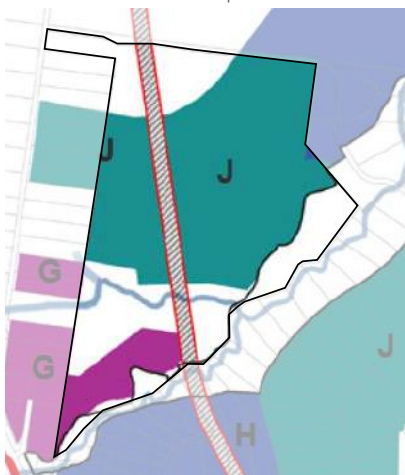
The maximum gross floorspace area permitted within the mixed use zone in the Bradfield City Centre based on the floorspace ratio (FSR) in the Precinct Plan totals 2,316,000sqm. The plan opposite allocates this floorspace across the mixed use areas of the master plan.

Indicative gross floorspace areas have also been calculated based on the indicative built form modelling and the assumptions set out in this chapter and is well within the floorspace allocations.

FSR in Precinct Plan	Land area within Bradfield City Centre	Maximum Permitted Gross Floorspace Area
3.5 (Area J)	597,128 sqm	2,089,948 sqm
3.0 (Area H)	1,736 sqm	5,208 sqm
2.5 (Area G)	88,500 sqm	221,250 sqm

**Total gross floorspace (mixed use zone only) 2,316,406 sqm**

Precinct Plan FSR Map



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# INDICATIVE MASSING

Shaped by the open space and public domain configuration, the massing and height strategy provides for varied heights to create visually interesting urban forms that respond to the opportunities and challenges of the site, responds to environmental constraints, and provides amenity to both the public and private domain.

A range of heights provide diversity of building forms and creates a varied and visually interesting skyline. Key strategies include:

- Building heights are distributed to define the street edge and provide legibility and orientation;
- Height provided in less constrained areas to allow for lower heights to more critical interfaces;
- Places that are appropriately scaled and achieve solar access requirements to the private and public domain;
- Respond to key views and vistas by creating a varied and visually interesting skyline;
- Buildings stepped in response to the topography and key view corridors;
- Transition in massing and scale to the future public domain and future context.

## Legend

- Enterprise**
- 4 - 8 Storeys
- 9 Storeys and above
- Innovation & Research** (inc. Advanced manufacturing, CSIRO and infratech)
- Metro Infrastructure**
- Retail** (inc. Shops, F&B, Entertainment)
- Mixed Use Commercial**
- 4 - 8 Storeys
- 9 Storeys and above
- Education** (inc. Multiversity, TAFE/VET, Secondary & Primary schools)
- Civic, Cultural & Community**
- Mixed Use Residential** (inc. Hotel, Serviced apartments, Student accommodation & Build to rent)
- 4 - 8 Storeys
- 9 Storeys and above



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# OVERSHADOWING TO OPEN SPACE

The DCP requires in mid winter a minimum of 3 hours solar access between 9am and 3pm on the 21st of June to a minimum 70% area of open space. The shadow analysis shows that this requirement will be met for District and Regional Parks.

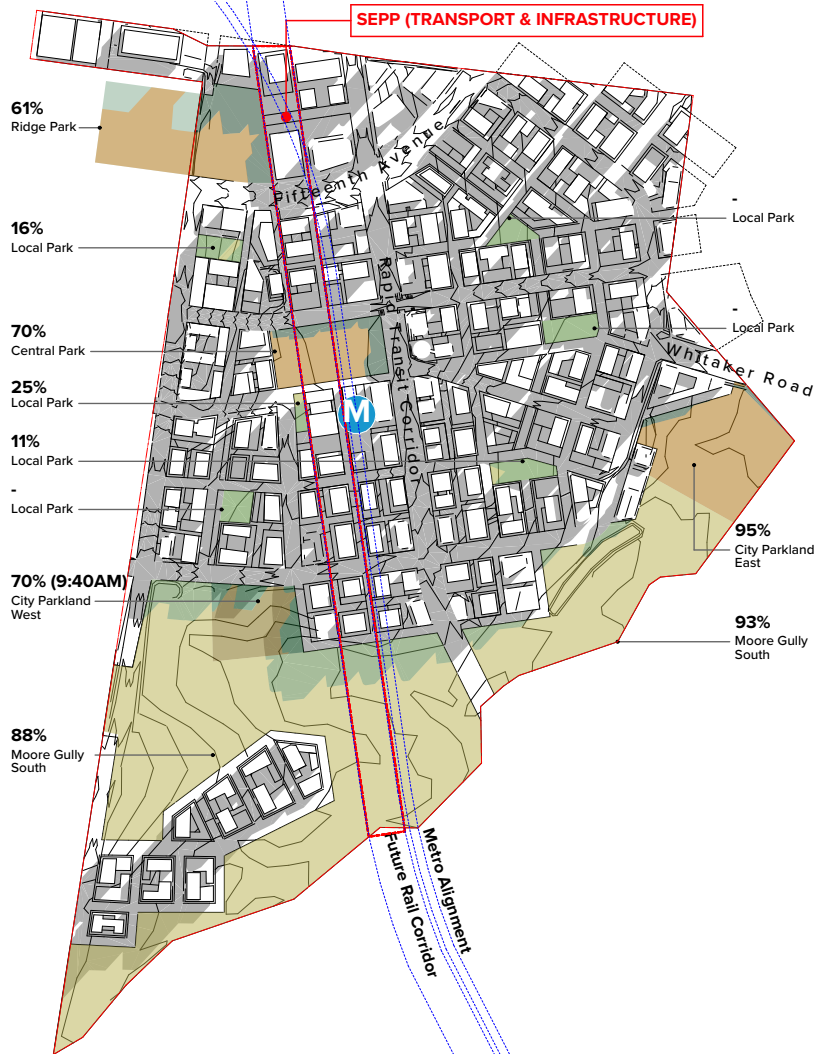
For Local Parks to achieve this metric it would significantly restrict density and built form objectives. For these smaller urban spaces an alternative target is proposed of 3hrs solar access between 9am and 3pm on the 21st June to a moving 50% are of the space. This is consistent with the Liverpool DCP requirement for new parks.

Park	Solar access 21 June						
	9am	10am	11am	12pm	1pm	2pm	3pm
1. Central Park	70%	92%	95%	93%	88%	69%	34%
2. Ridge Park	61%	86%	87%	91%	90%	90%	83%
3. Local Park	16%	30%	42%	50%	66%	80%	92%
4. Local Park	-	21%	44%	61%	64%	59%	51%
5. Local Park	-	29%	54%	60%	63%	54%	17%
6. Local Park	11%	58%	73%	81%	83%	54%	7%
7. Local Park	-	51%	62%	90%	77%	58%	-
8. City Parklands East	95%	96%	93%	92%	86%	77%	49%
9. City Parklands West	70%	75%	85%	86%	84%	75%	57%
10. The Parklands (east)	93%	92%	92%	92%	87%	76%	40%
11. The Parklands (west)	88%	87%	89%	90%	89%	86%	76%

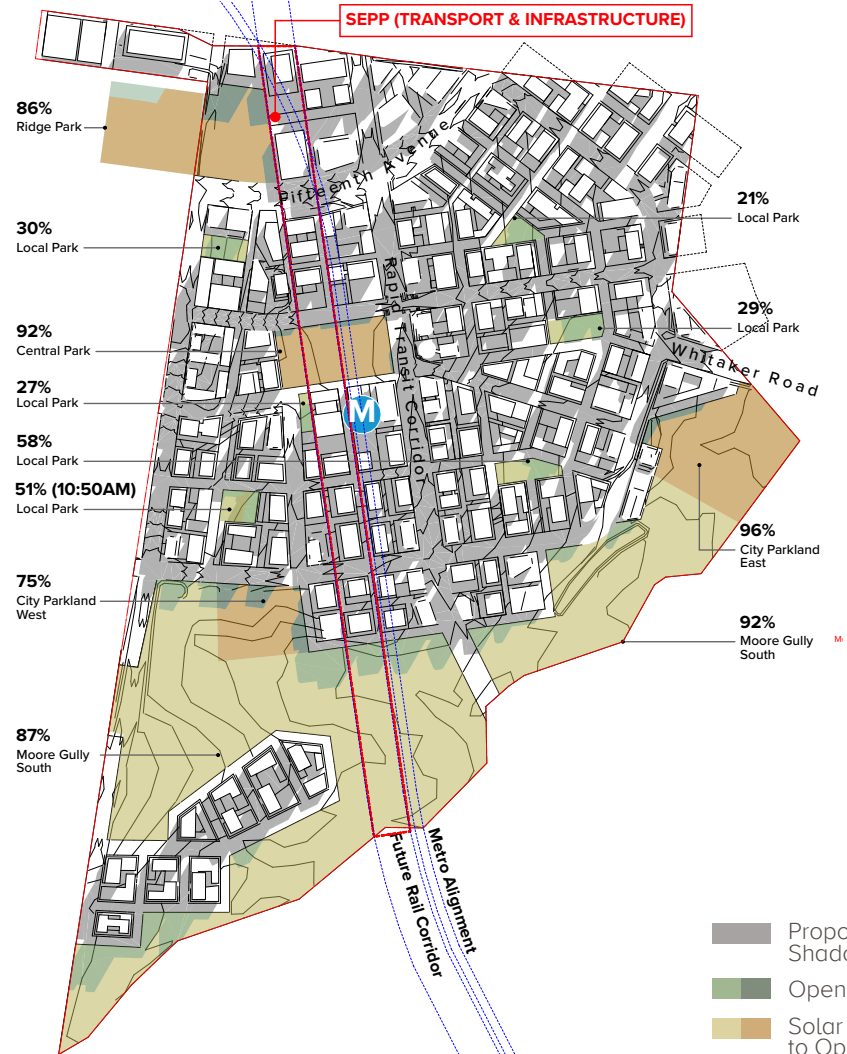


# OVERSHADOWING TO OPEN SPACE (CONTINUED)

MID-WINTER JUNE 21 \_ 9AM



MID-WINTER JUNE 21 \_ 10AM

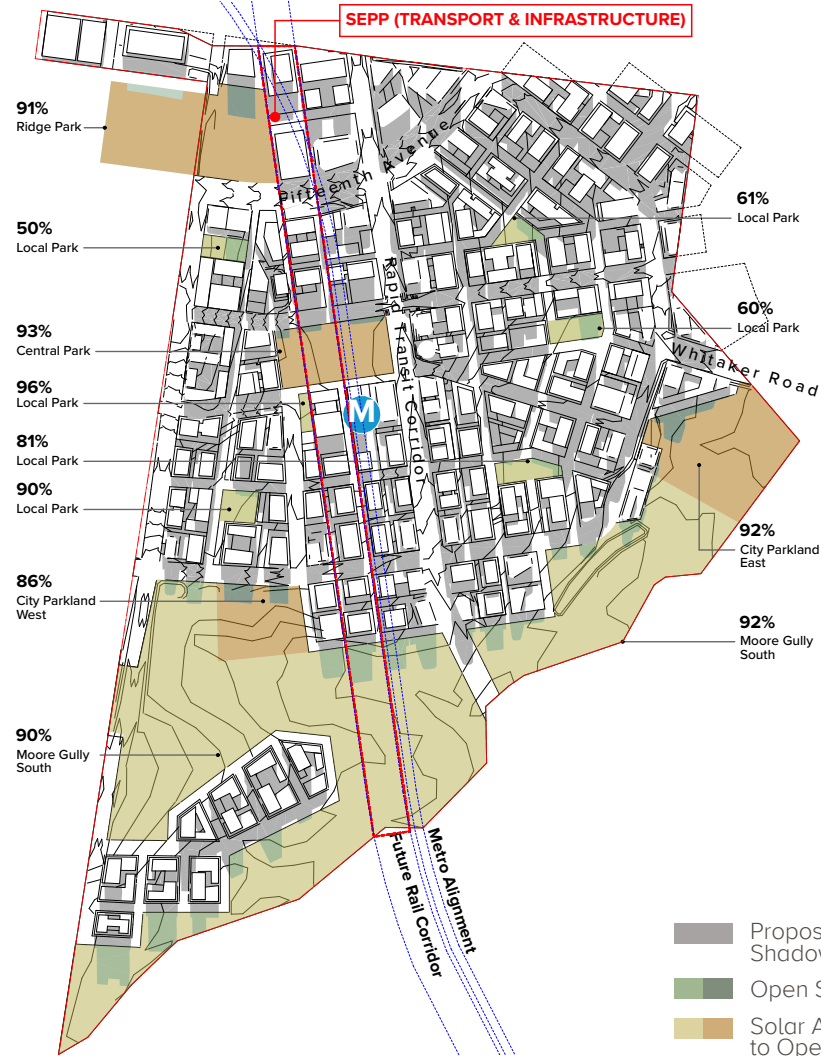
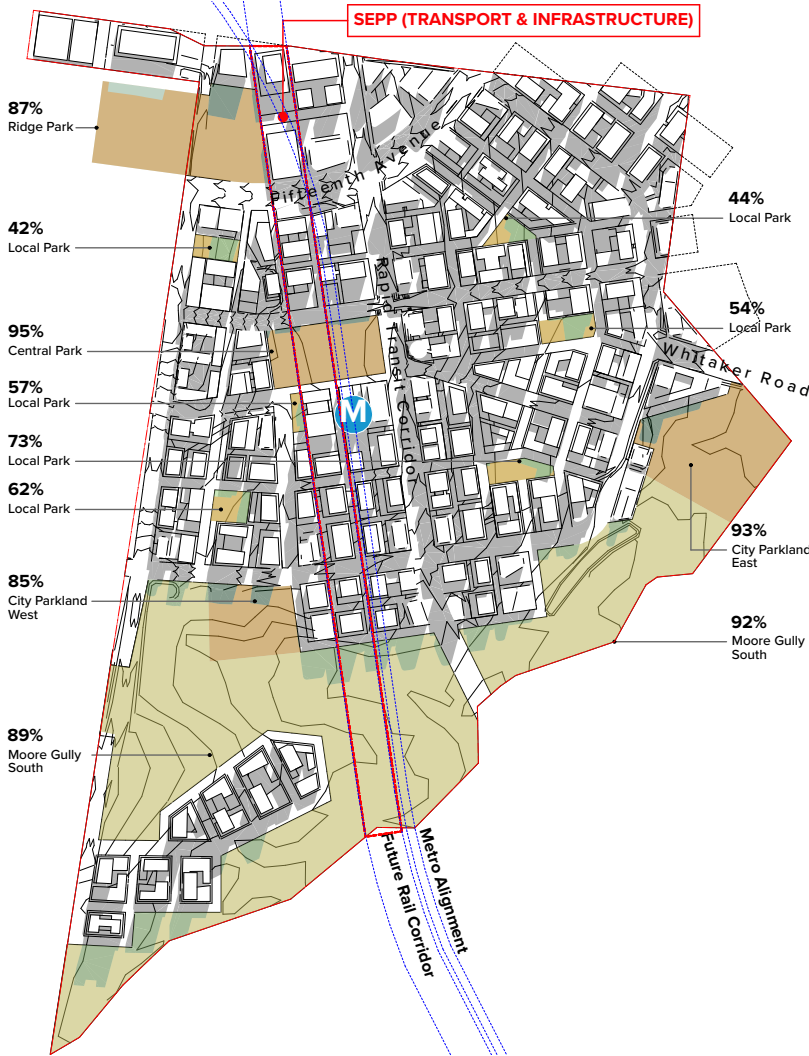


- Proposed Shadows
- Open Space
- Solar Access to Open Space

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MID-WINTER JUNE 21 \_ 11AM

MID-WINTER JUNE 21 \_ 12PM

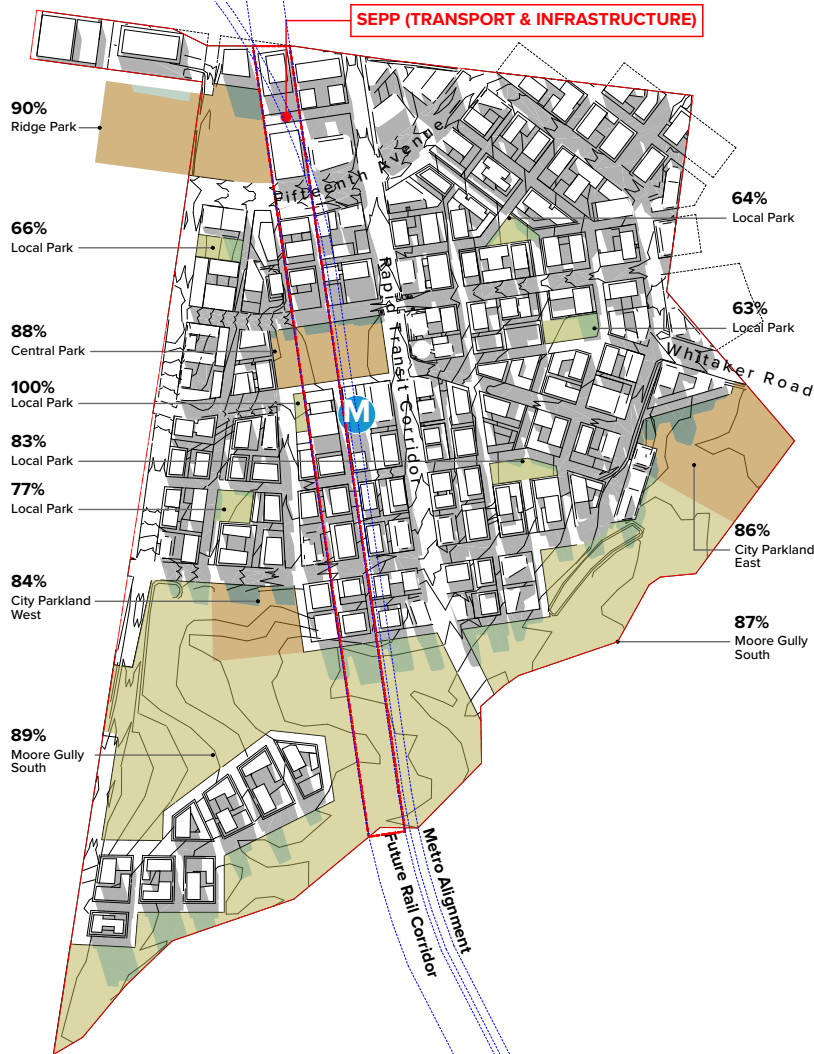


- Proposed Shadows
- Open Space
- Solar Access to Open Space

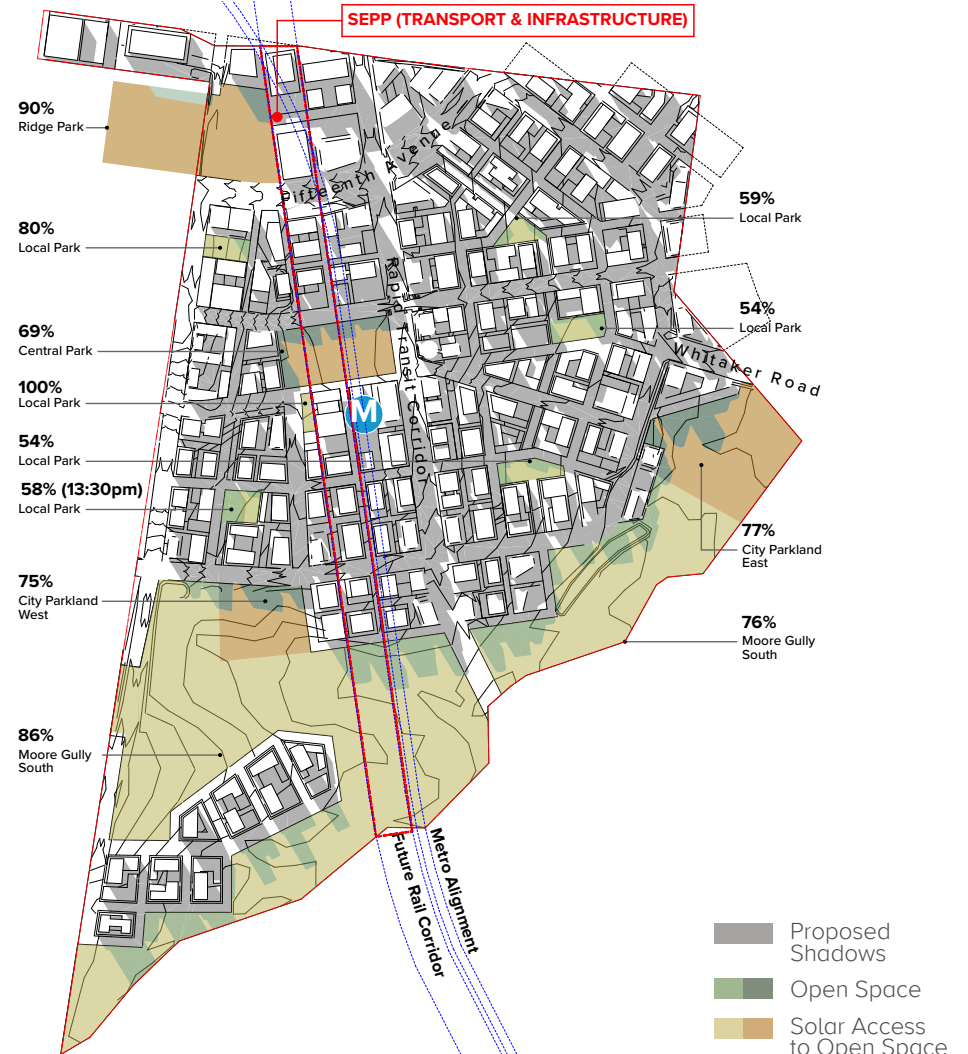
The Master Plan does not propose permanent development in the existing 60m wide Special Purposes 2 (SP2) Infrastructure Zone corridor. A decision regarding future rail infrastructure in the corridor is the subject of review by Government.

# OVERSHADOWING TO OPEN SPACE (CONTINUED)

MID-WINTER JUNE 21 \_ 1PM



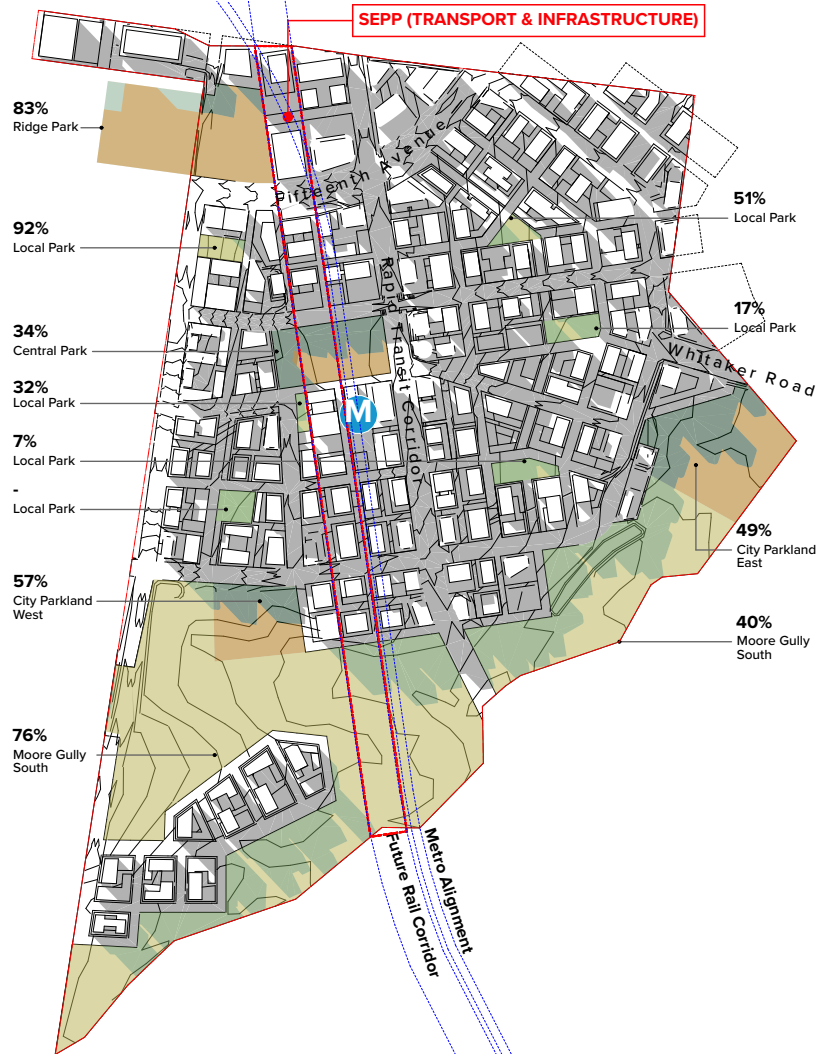
MID-WINTER JUNE 21 \_ 2PM



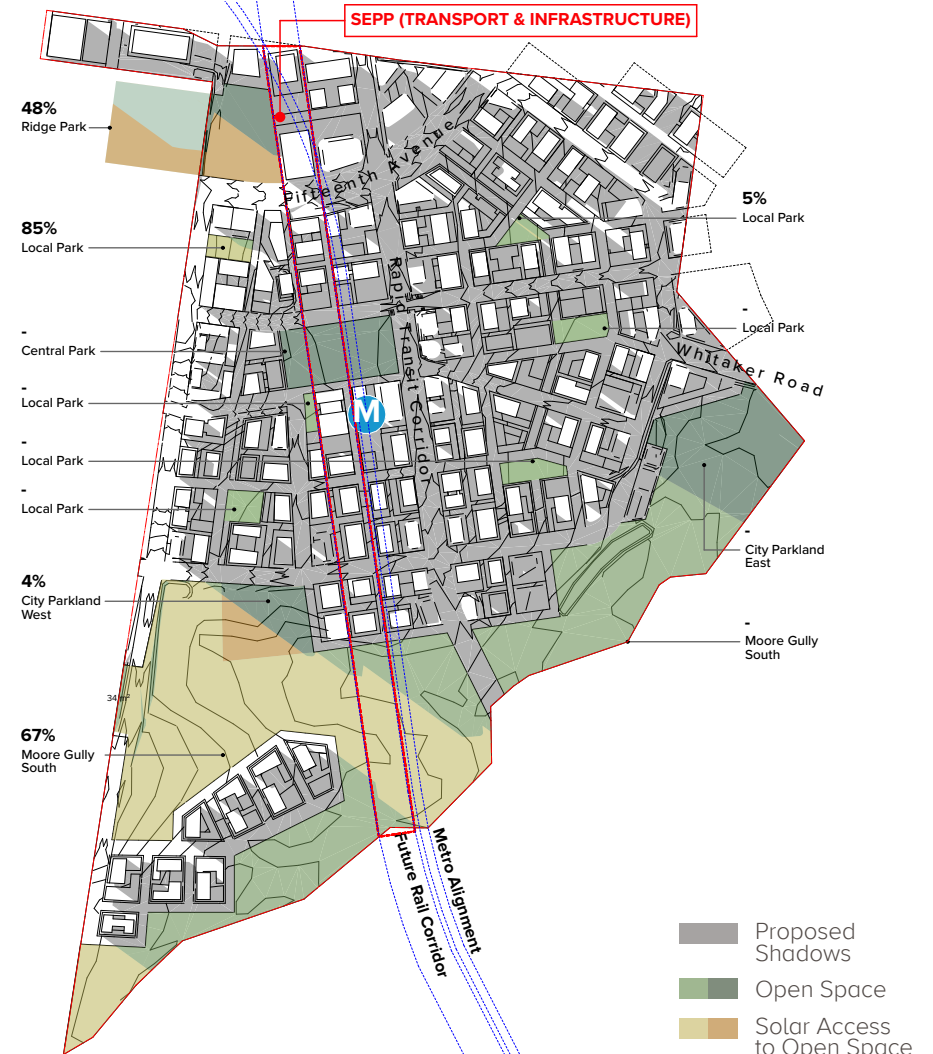
- Proposed Shadows
- Open Space
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MID-WINTER JUNE 21 \_ 3PM



MID-WINTER JUNE 21 \_ 4PM

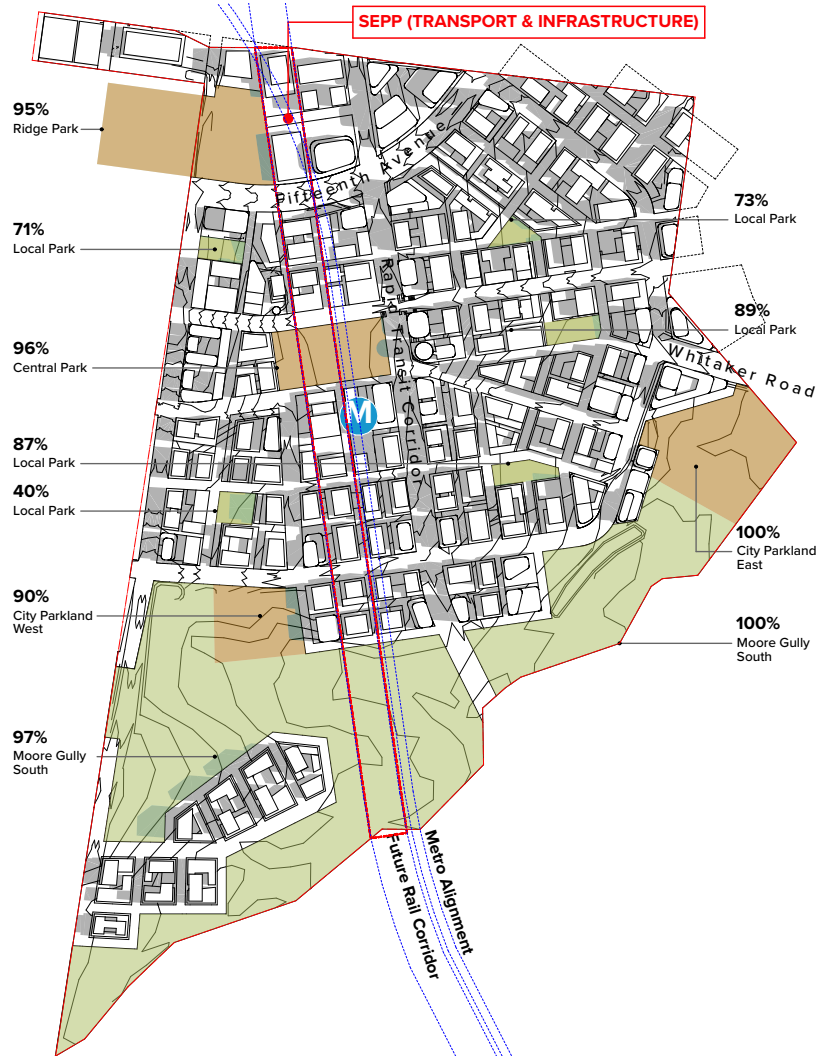


- Proposed Shadows
- Open Space
- Solar Access to Open Space

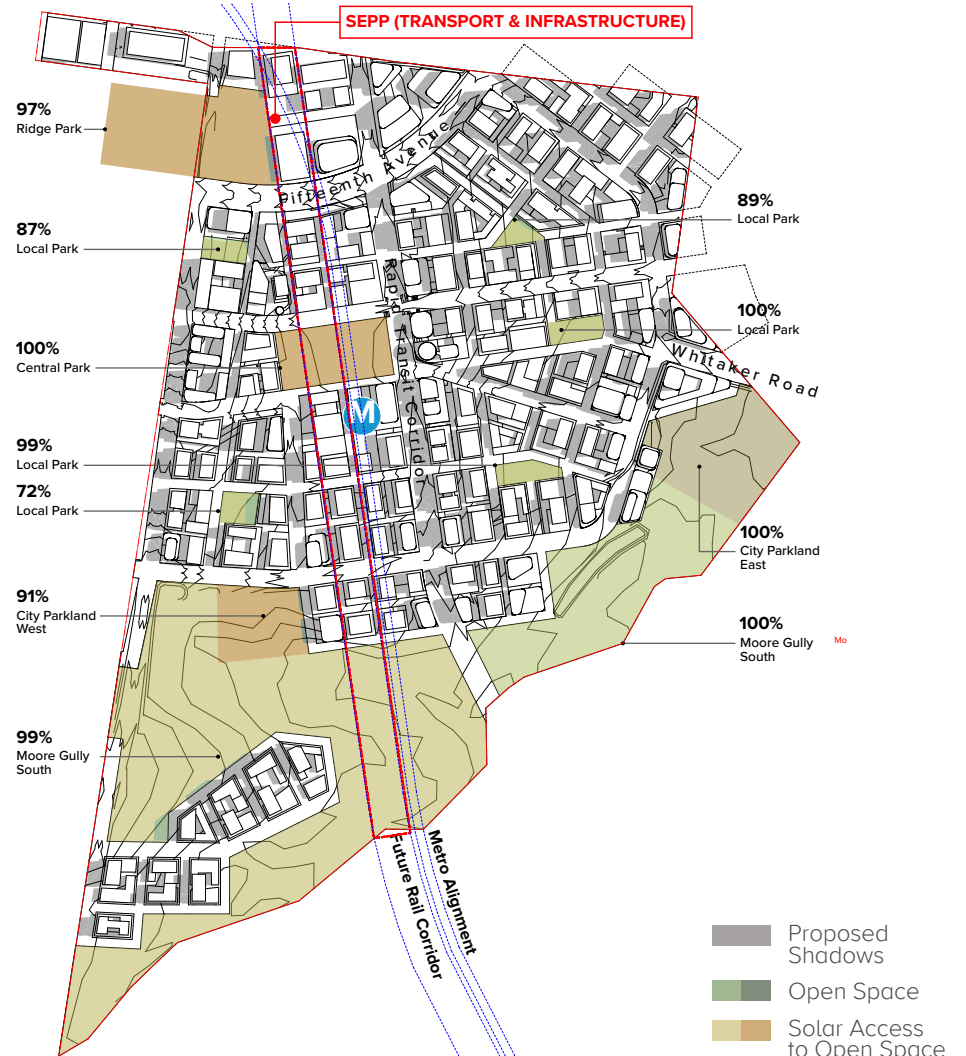
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# OVERSHADOWING TO OPEN SPACE (CONTINUED)

MID-SUMMER DECEMBER 21 \_ 9AM



MID-SUMMER DECEMBER 21 \_ 10AM

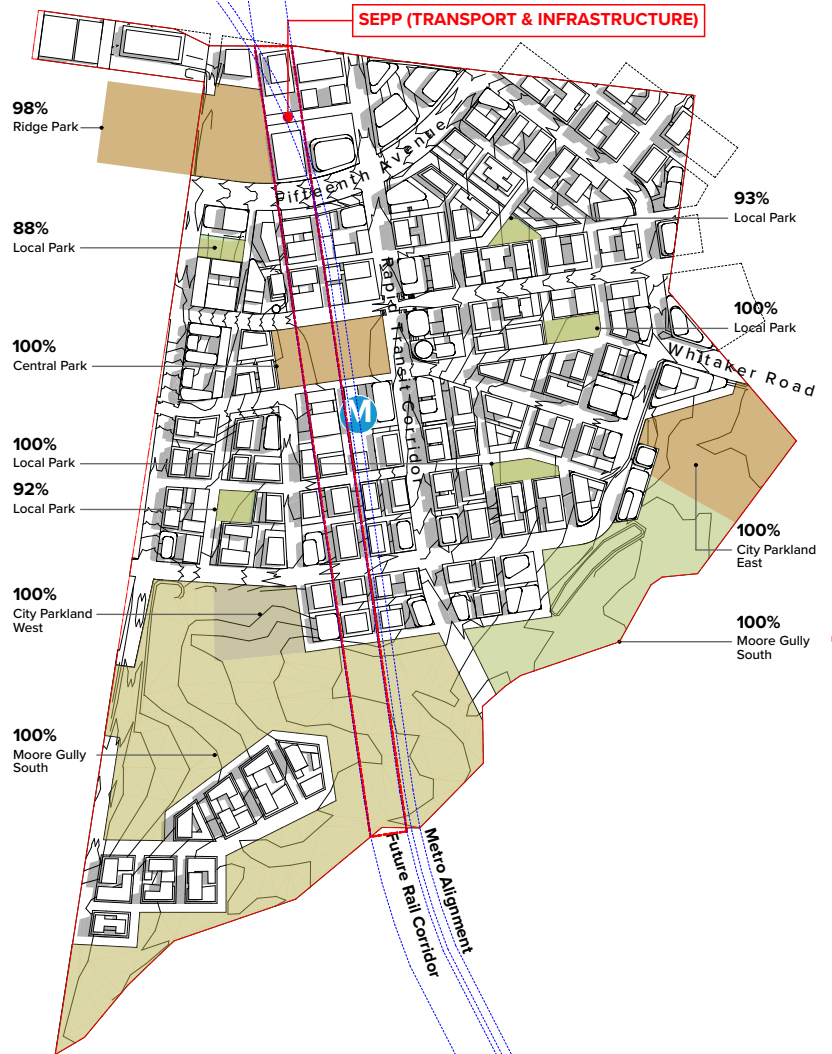


- Proposed Shadows
- Open Space
- Solar Access to Open Space

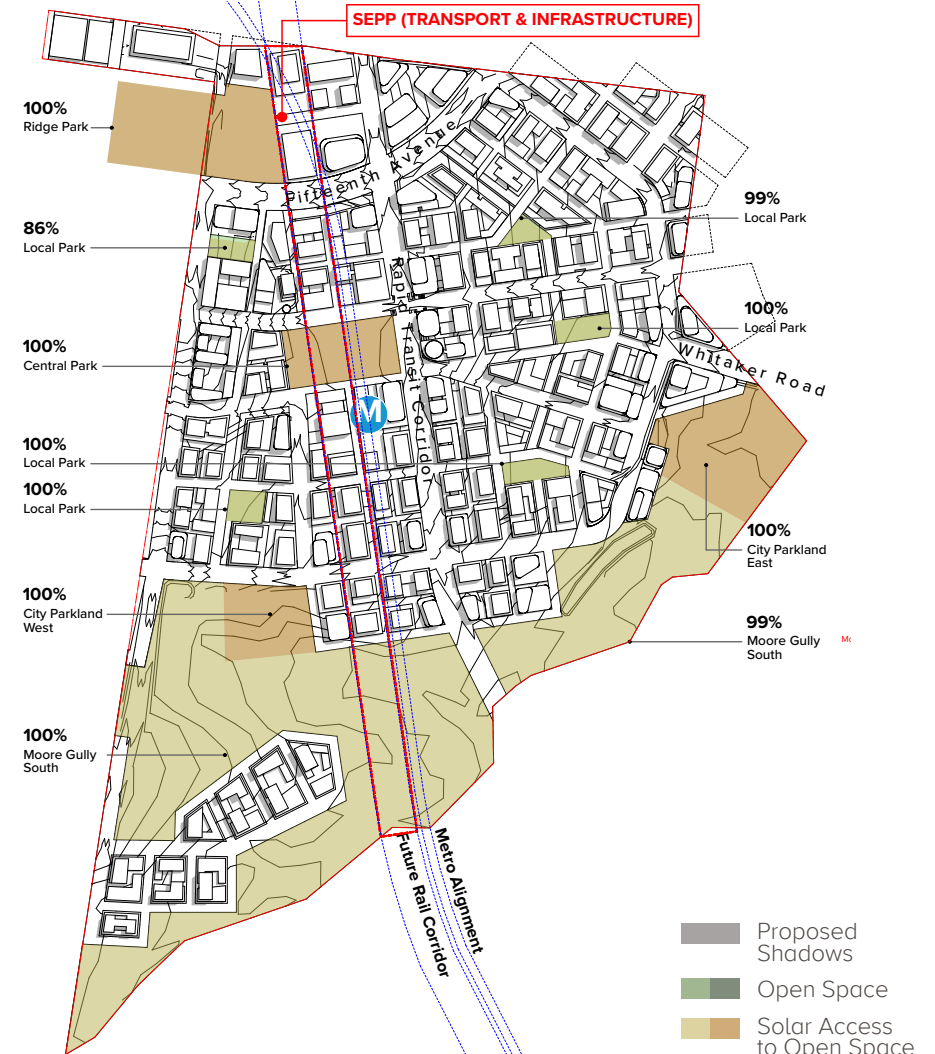
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MID-SUMMER DECEMBER 21 \_ 11AM



MID-SUMMER DECEMBER 21 \_ 12PM

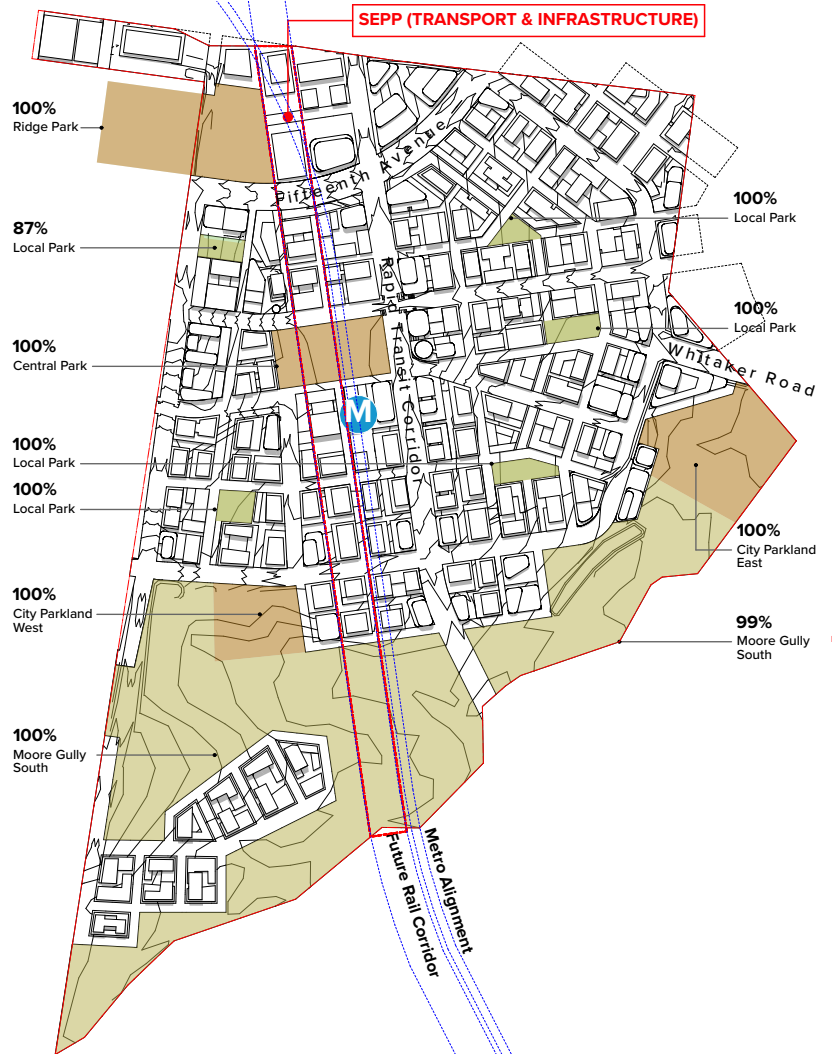


- Proposed Shadows
- Open Space
- Solar Access to Open Space

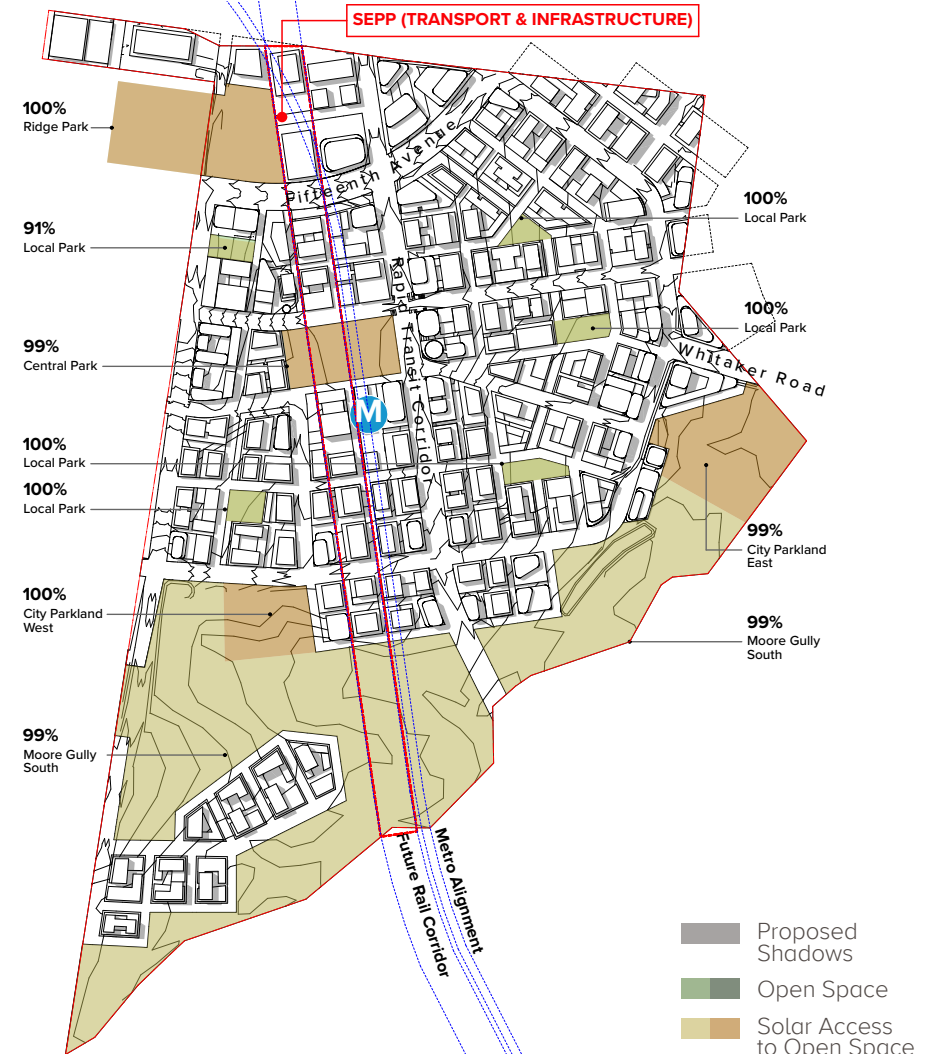
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# OVERSHADOWING TO OPEN SPACE (CONTINUED)

MID-SUMMER DECEMBER 21 \_ 1PM



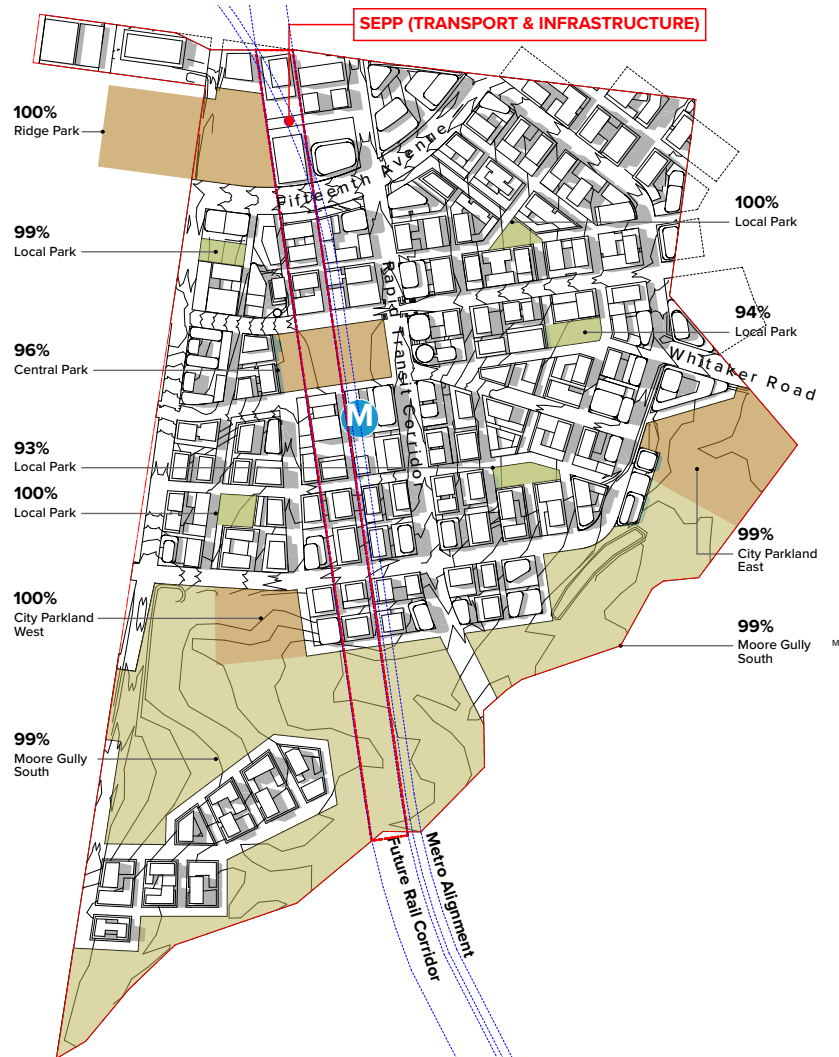
MID-SUMMER DECEMBER 21 \_ 2PM



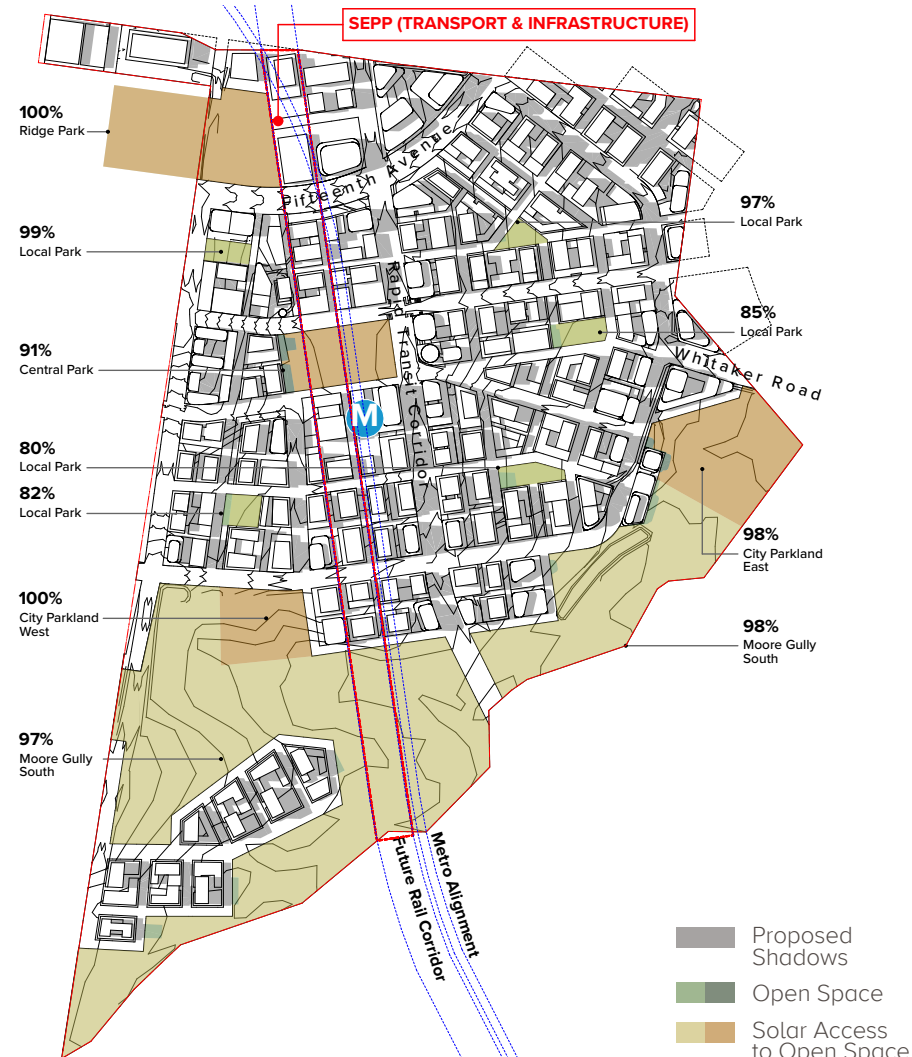
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### MID-SUMMER DECEMBER 21 \_ 3PM



### MID-SUMMER DECEMBER 21 \_ 4PM



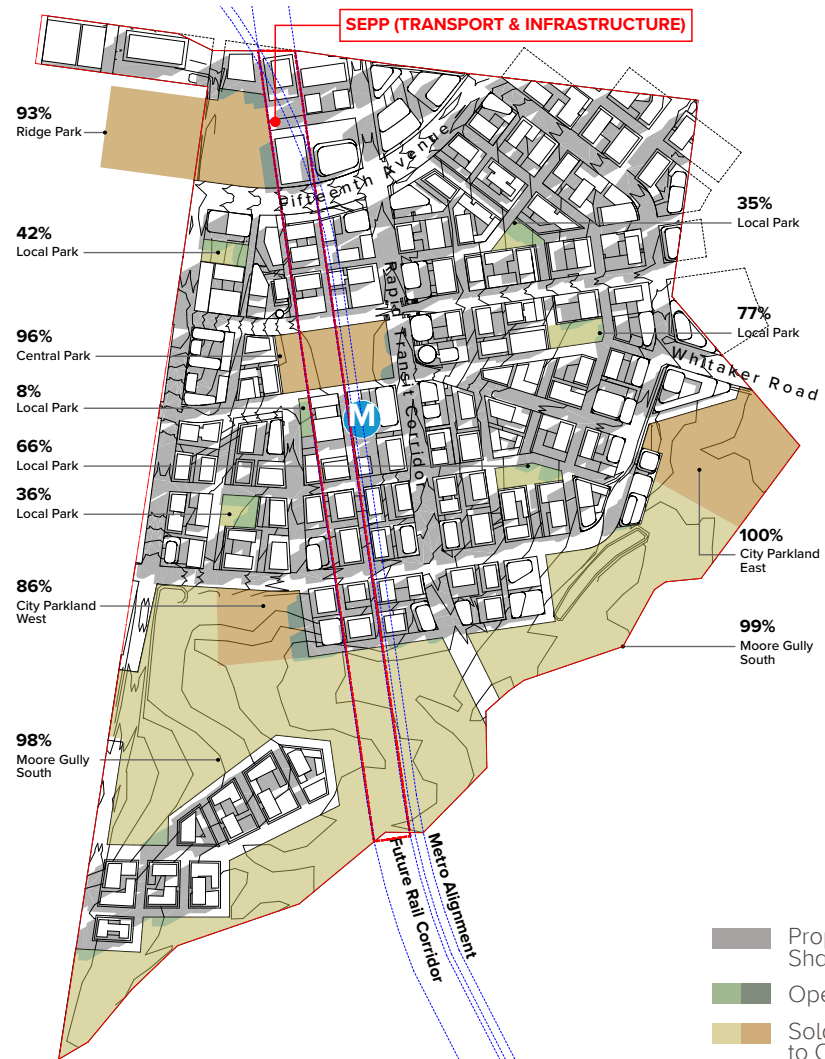
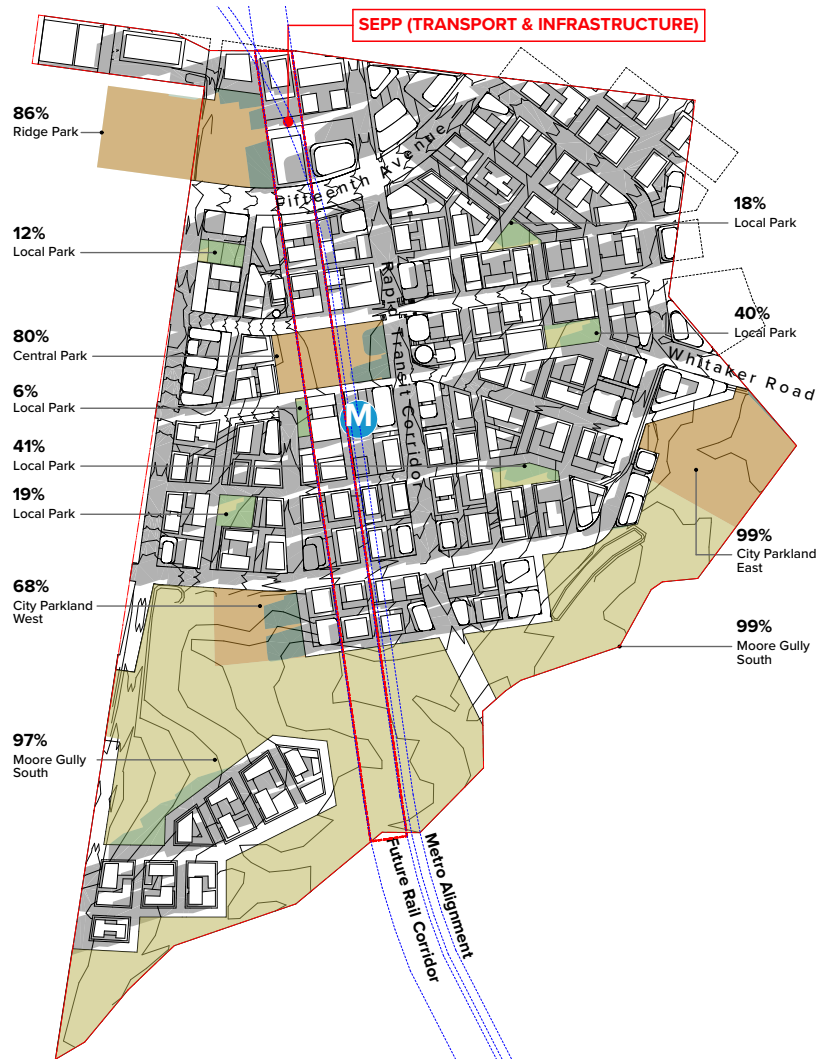
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# OVERSHADOWING TO OPEN SPACE (CONTINUED)

EQUINOX MARCH / SEPTEMBER 21 \_ 9AM

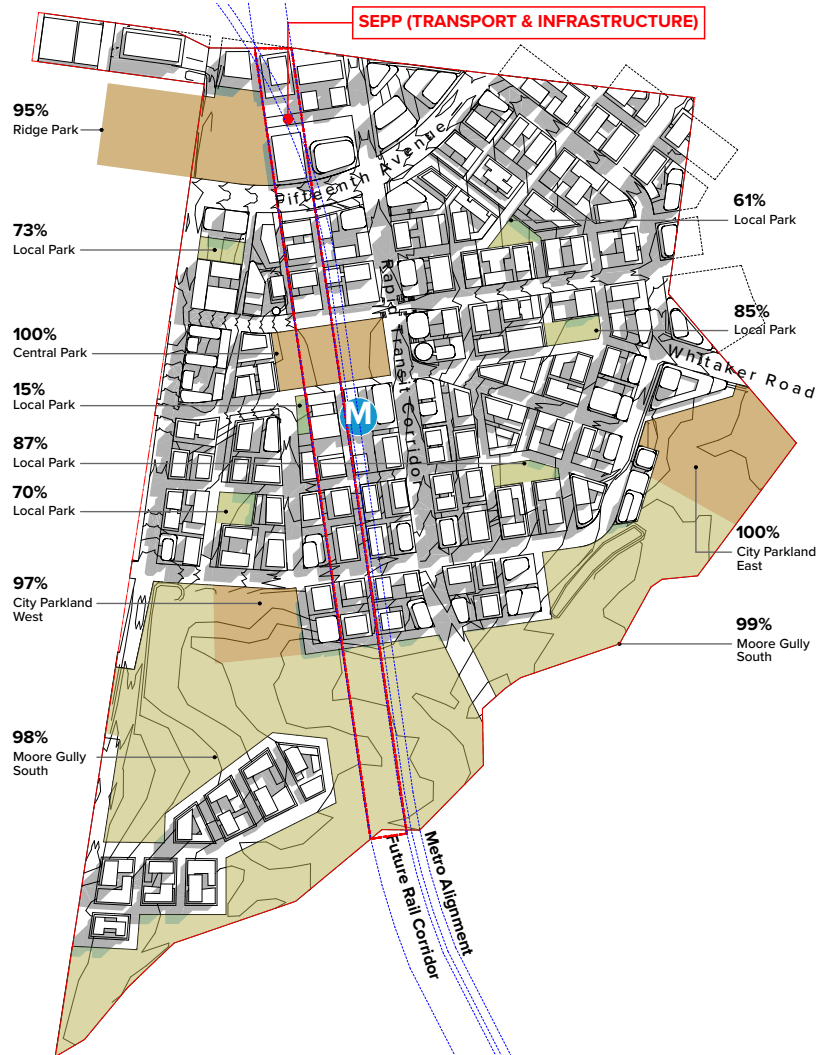
EQUINOX MARCH / SEPTEMBER 21 \_ 10AM



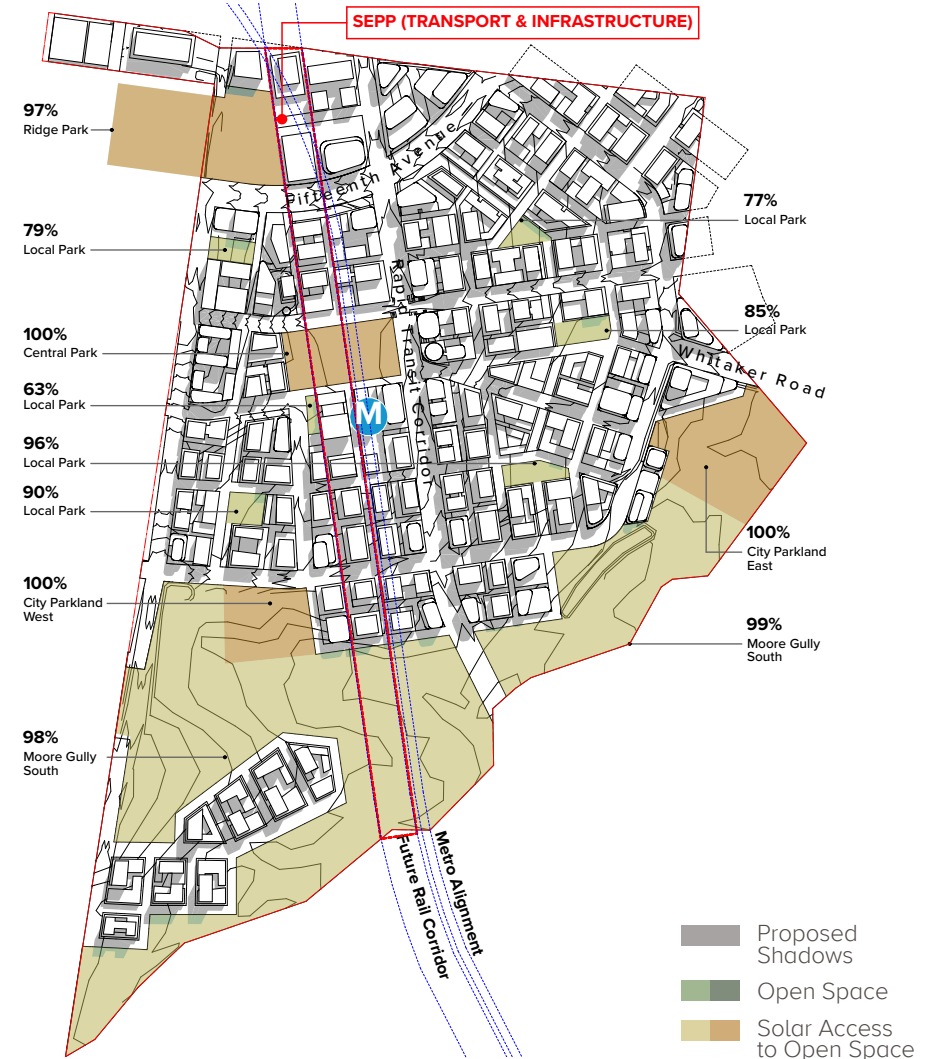
- Proposed Shadows
- Open Space
- Solar Access to Open Space

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### EQUINOX MARCH / SEPTEMBER 21 \_ 11AM



### EQUINOX MARCH / SEPTEMBER 21 \_ 12PM

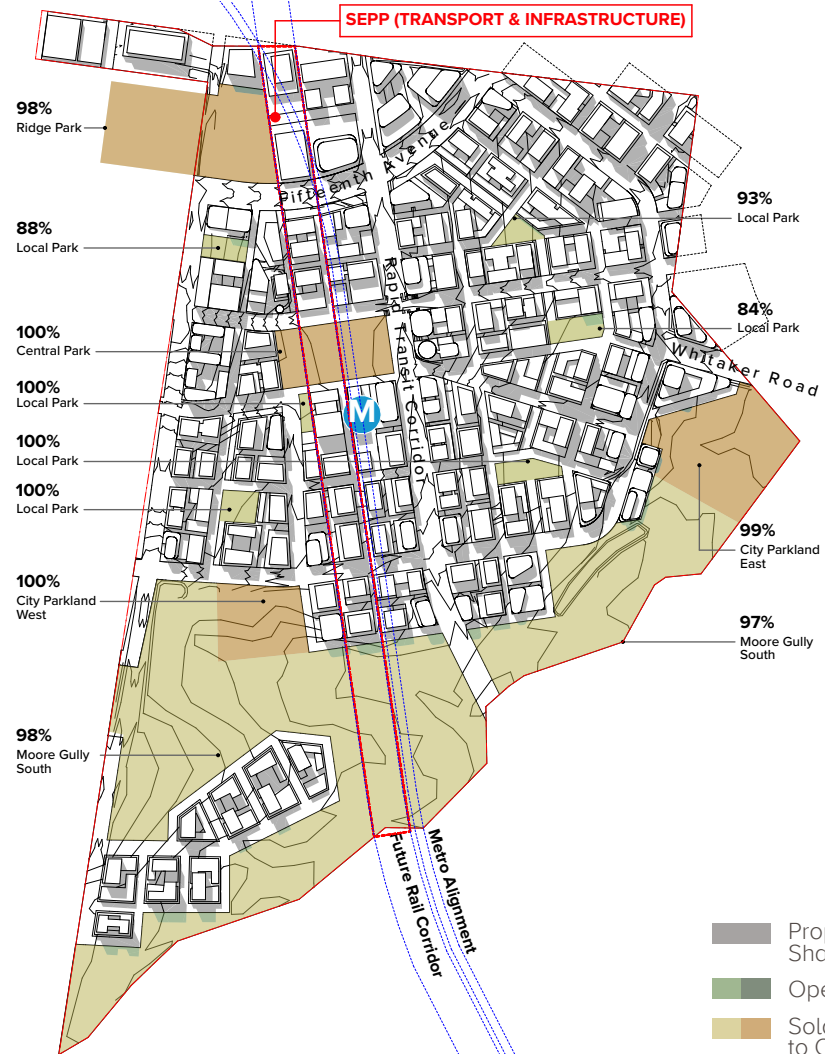
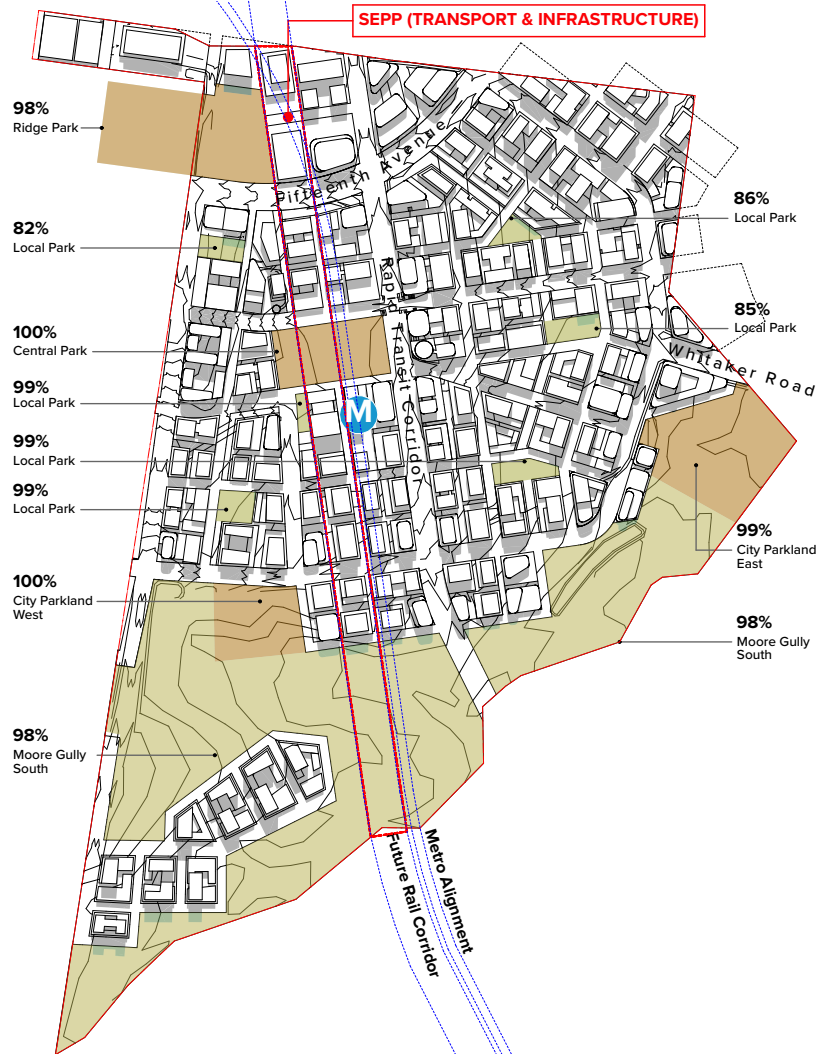


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# OVERSHADOWING TO OPEN SPACE (CONTINUED)

EQUINOX MARCH / SEPTEMBER 21 \_ 1PM

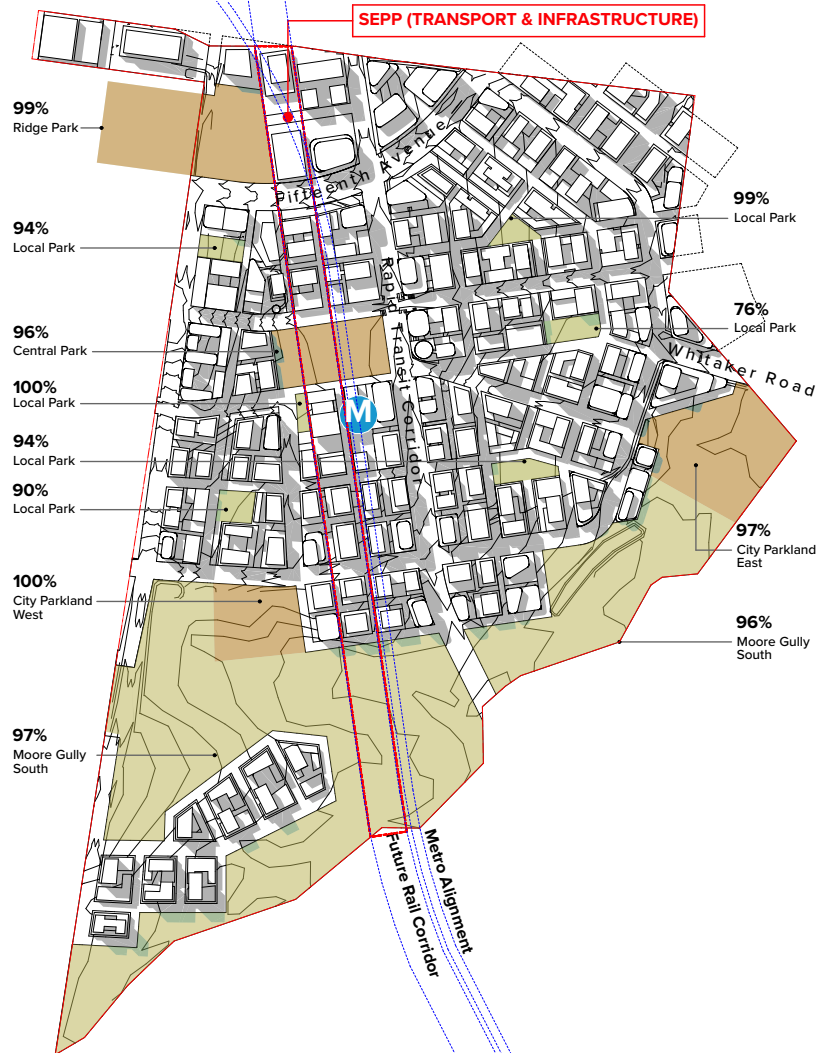
EQUINOX MARCH / SEPTEMBER 21 \_ 2PM



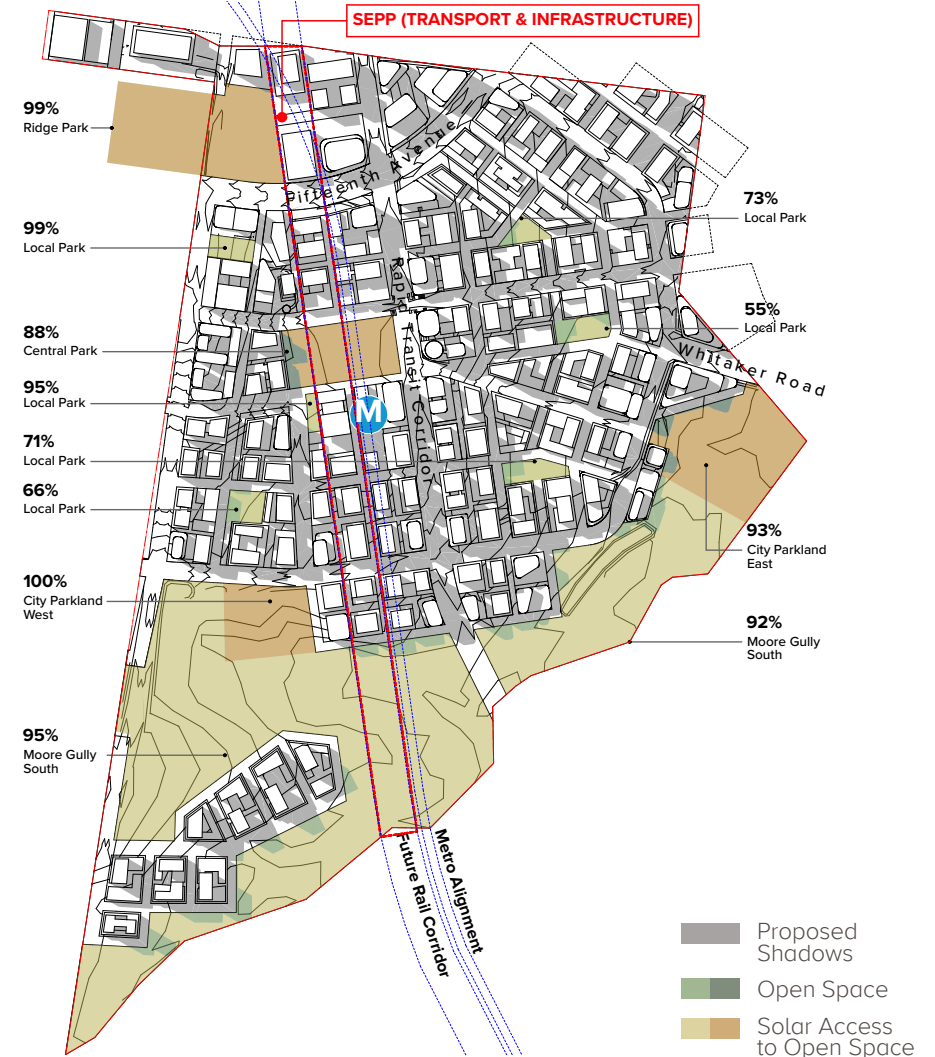
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### EQUINOX MARCH / SEPTEMBER 21 \_ 3PM



### EQUINOX MARCH / SEPTEMBER 21 \_ 4PM



- Proposed Shadows
- Open Space
- Solar Access to Open Space

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1





**STAGING**

# STAGING PLAN

With over two million square meters of floorspace, Bradfield City Centre is expected to take over 50 years to develop to its full capacity.

The first decade of development activity is focussed in Stage 1, which has access to existing roads and includes the WSA Metro station. Stage 1 includes key anchor tenants, key transport infrastructure and key public domain as detailed over page.

The parklands and adjoining development sites form Stage 2, and will commence shortly after Stage 1 to provide the recreation and natural amenity for the growing city.

It is envisaged that Stage 3 would comprise the eastern half of the city and stage 4 the southern area, however the timing and sequencing of these areas is yet to be determined.

Development within the transport infrastructure corridor is subject to decisions by the NSW government about the design and timing of future rail lines.



*The Master Plan does not propose permanent development in the existing 60m wide Special Purposes 2 (SP2) Infrastructure Zone corridor. A decision regarding future rail infrastructure in the corridor is the subject of review by Government.*

# STAGE 1

Stage 1 of Bradfield City Centre comprises approximately 39 hectares of land located within the central and north-west quadrant of the Master Plan.

Stage 1 includes the 2ha Central Park, 1.8ha of Ridge Park and significant transport infrastructure including the WSA Metro station, transit boulevard, rapid bus station, bus layover and charging facility, temporary commuter carpark, activation uses, and the key road network and streetscapes to access mixed-use and enterprise development parcels.

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- ① First Building
- ② WSA Metro Station
- ③ WSA Metro Construction Zone
- ④ Temporary Access Roads
- ⑤ Central Park
- ⑥ Ridge Park
- ⑦ Civic / Cultural Facility
- ⑧ Transit Boulevard
- ⑨ Bus Layover and Charging
- ⑩ Transport Infrastructure Corridor (60m)
- ⑪ Temporary At-grade Commuter Carpark
- ⑫ Potential Temporary Parking
- Mixed-Use Development Sites
- Enterprise Development Sites
- ..... Green Loop
- Open Space
- Stage 1 Boundary



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