

Hassell

BELLA VISTA STATION PRECINCT DESIGN GUIDELINES







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1.

INTRODUCTION

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1.1 Land to which this document applies

These guidelines apply to the design of open space and buildings within the lands listed under table 1.1.

Table 1.1: SSDA Property Description

ID	Lot No.	Plan No.	Owner
1	104	DP1252968	Sydney Metro
2	102	DP1252968	Sydney Metro
3	101	DP1252968	Sydney Metro
4	110	DP1252968	Sydney Metro
5	111	DP1252968	Sydney Metro
6	100	DP1252968	Sydney Metro
7	110	DP1250875	Sydney Metro
8	111	DP1250875	Sydney Metro
9	135	DP1250868	Sydney Metro
10	134	DP1250868	Sydney Metro
11	30	DP1071715	Sydney Metro
12	6	DP1244850	Planning Ministerial Corporation
13	7	DP1244850	Planning Ministerial Corporation
14	8	DP1244850	Planning Ministerial Corporation
15	9	DP1244850	Planning Ministerial Corporation
16	10	DP1244850	Sydney Metro
17	106	DP1252968	Sydney Metro
18	114	DP1252968	Sydney Metro
19	103	DP1252968	Sydney Metro
20	107	DP1252968	Sydney Metro
21	109	DP1252968	Sydney Metro
22	108	DP1252968	Sydney Metro
23	131	DP1252968	Sydney Metro
24	130	DP1252968	Sydney Metro
25	112	DP1252968	Sydney Metro
26	105	DP1252968	Sydney Metro

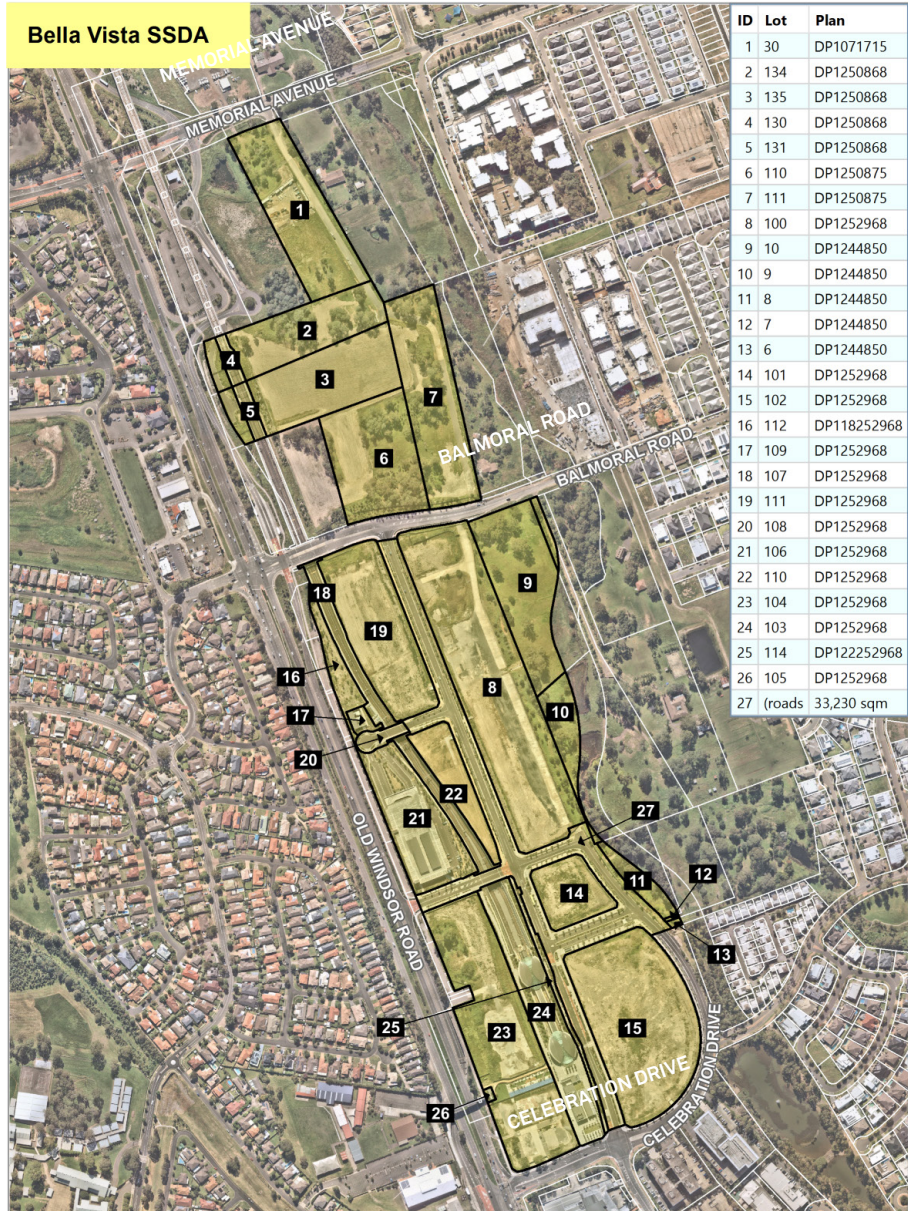


Figure 1.1: Plan of SSSA extents

1.2 Purpose of this document

These design guidelines have been developed in the context of prior agreements, opportunities and constraints inherited from the Bella Vista Structure Plan (Sydney Metro 2013), Bella Vista Station Precinct Planning Proposal (NSW Department of Planning and Environment 2017), road network planning by NSW Agency of Roads and Maritime Services (RMS) and the as-built conditions of the site following completion of the Sydney Metro North West project.

The concept State Significant Development (SSD) approval provides for the allocation of streets, open space, built form envelope and allocation of floor space.

These design guidelines have been prepared to give force to the aspirations contained within the urban design report prepared for the Bella Vista Station Precinct (SSD-10344).

They are to guide the detailed landscape and architectural design within the approved SSD open space network, street network, lot structure and building envelopes.

These guidelines compliment other NSW Government policy associated with SEPP 65 and SEPP Complying Development including:

- Residential Apartment Design Guidelines
- Low Rise Medium Density Design Guide for complying development

These documents should be referenced for building design within developments lots and address separation, natural ventilation, solar access and unit size.

Any guidance and policies related to the these issues have not been included in this document to mitigate unnecessary repetition.

The Design Guidelines address:

- Public Open Spaces
- Town Centre Character
- Built Form
- Solar Access
- Public Domain, Street Interface and Street Setbacks
- Shared Communal Spaces, Deep Soil and Rooftops
- Activation and Street Frontages
- Parking and Servicing
- Architectural Character, Facade Expression, Design Excellence and Sustainability

These guidelines define a series of objectives to be achieved in future built form which are located at the beginning of each section with specific controls following that guide assessment of whether a design proposal achieves the stated objectives.

2.

VISION AND PRINCIPLES

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BELLA VISTA



2.1 Project Vision

TO CREATE A BEAUTIFUL VIEW

The Bella Vista Station Precinct (station precinct) sits within the Bidjigal Land of the Dharug people¹, an area that has seen substantial transformation over time beginning with European development. The creation of local land grants and provision of access via the Old Windsor Road in 1794 resulted in an agricultural landscape that has been progressively replaced with low-density residential development since 2009.

As the 'Garden Shire', the delivery of high quality open space that creates layered views from the public to private realm is key to the successful transitioning of the existing community from a low density suburban community to an active and public transport oriented future projected under the Greater Sydney Region Plan and Hills Future 2036.

A garden is a place of curated natural production that provides beauty and sustenance to the individual, family and community.

The next iteration of the "Garden Shire" needs to engage with its deep heritage as a place of produce and beauty that begins with an indigenous understanding of how we can prepare the land for our future needs.

Nature, amenity and open space are at the core of the design process for Bella Vista and critical to achieving the vision of 'creating a beautiful view'. It is through investment in public realm, the layering of open space from the public to private realm and high quality architecture which will enable for increased density to be delivered in a way that enhances the existing community.

Enhancement of and access to the creek corridor, a layering of public to private open space and attractive walkable streets form the bones upon which private development is overlaid and within which the future vibrant centre of workplaces, community facilities and residences will operate.

This next stage of development seeks to reconnect the local settlement pattern with the underlying landscape that gave rise to its name.

The future Bella Vista community will be a place that fosters a stronger connection to its open spaces and riparian corridors embracing the approach of 'amenity oriented development'.

Building upon the transport anchor of Bella Vista Station, the urban design framework maximises connectivity to the public transport network and enhances the existing character of the site to link the established riparian corridor with a permeable street and block network and high quality public open spaces.

A new town square activated by community and retail uses, alongside a lushly planted and programmed riparian corridor and new local open spaces will form the spine for a local response to the 30-minute Central River City.

1. Tindale, Norman Barnett (1974). "Daruk (NSW)". Aboriginal Tribes of Australia: Their Terrain, Environmental Controls, Distribution, Limits, and Proper Names. Australian National University.

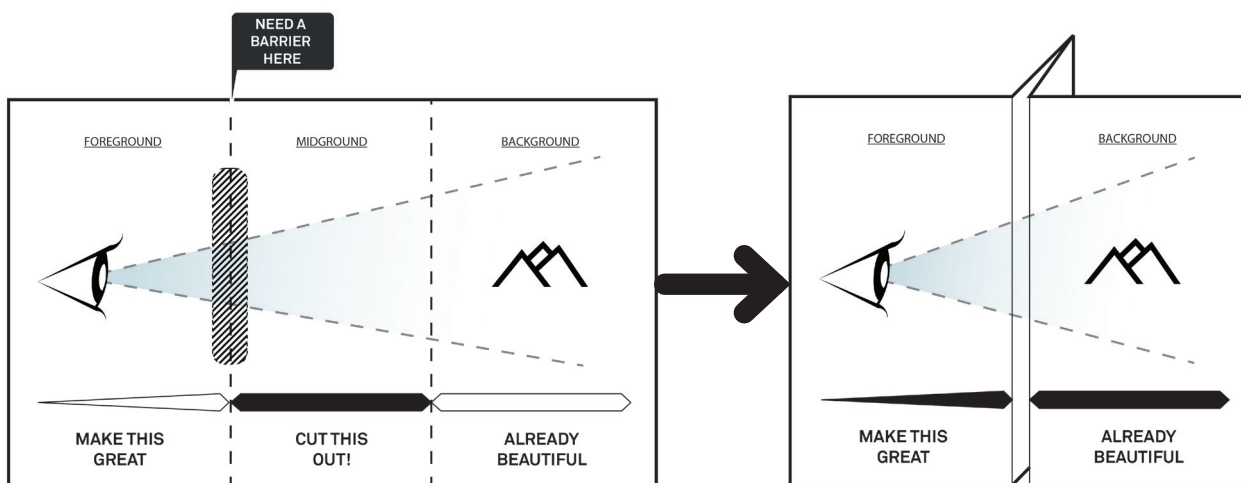


Figure 1.0.2: Conceptual approach to connecting proposed development to district views via 'borrowed views' that obscure the existing suburban context.

2.2 Development Principles

Vibrant and successful town centres are accomplished through an integrated and considered approach to place, land use, movement, landscape and built form. The design of the town centre will be guided by principles which respond to Bella Vista's unique context. These principles include:



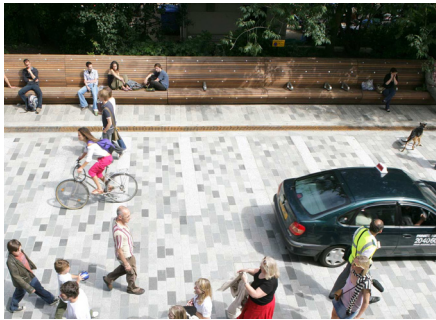
Reinforce Identity and Place

- Understand the needs and desires of the people who will live, work and play here to curate public realm that responds to their daily needs.
- Respond to the cultural and environmental heritage in a way that conveys a depth of experience for the community.
- Design open space and built form that responds to the site's landform and natural topography.
- Define the town centre by reinforcing urban edges and thresholds or transition zones.
- Ensure the built form responds to its surrounding residential context.



Create a Vibrant and Diverse Local Centre for Residents and Workers

- Ensure a variety of offerings ranging from community, civic, and retail that distinguish the local centre from its immediate counterparts and endow Bella Vista with a distinct identity.
- Curate a mixed use town centre which integrates retail, commercial and residential uses.
- Provide retail and commercial uses that are integrated with transport interchange.
- Create vibrant streets and public spaces through active frontages within Bella Vista.
- Improve local accessibility by reducing barrier effects and increase site permeability.
- Allow for uses that respond to negative noise impacts of Celebration Drive and Old Windsor Road.



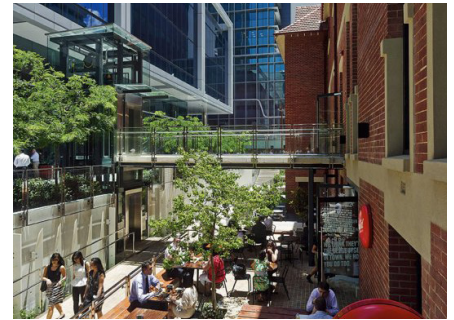
Create a Walkable Neighbourhood

- Space proof key open space amenities not only to act as walkable destinations but also to serve as connectors to essential civic and transportation infrastructure for local residents.
- Reduce spatial barriers for people to improve legibility of the pedestrian network.
- Connect and integrate with the existing movement network, making strong links to existing routes and destinations.
- Improve the arrival experience for pedestrians, cyclist and commuters.
- Establish a network of pedestrian and cycle paths, cross links (especially from West to East) and circuits for local leisure and active transport links to daily destinations such as the Metro Station, the school, shops, parks, the urban plaza and Elizabeth Macarthur Creek.



Create a Local Heart for Bella Vista

- Collocates multiple land uses around the town square to maximise use and activity throughout the day, night and week.
- Provides community and retail facilities that are easily accessible for the local resident and worker population.
- Provide a platform for public events and community expression.



Provide High Quality Retail, Employment & Residential Floor space

- Create opportunities for local employment floorspace.
- Expand opportunities for dining and the evening/night time economy.
- Deliver high level residential amenity that moves beyond the apartment design guidelines and delivers a beautiful view for people looking into the precinct, open space and buildings as well as people looking out.

3.

**STRUCTURE PLAN
AND CONCEPT
MASTER PLAN**

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3.1 Structure Plan & Key Elements

The precinct structure is defined under the following master plan drawings prepared by Hassell:

- A_0300 - Building Envelope Plan Overview
- A_0301 - Envelope Control Plan 01
- A_0302 - Envelope Control Plan 02
- A_0303 - Envelope Control Plan 03
- A_0400 - Deep Soil Areas Overview
- A_0401 - Deep Soil Areas 01
- A_0402 - Deep Soil Areas 02
- A_0403 - Deep Soil Areas 03

Implicit in this structure is the placement of the following key elements to drive the amenity oriented development necessary for this precincts success:

- Expansion and enhancement of Elizabeth Macarthur Creek as a central focus and connector for the existing and future community,
- Location of the district park and primary school central to the communities of Bella Vista and Kellyville with access to the active transport corridors along Old Windsor Road and Elizabeth Macarthur Creek and T-way crossing at Old Windsor Road/ Memorial Avenue,
- Location of a town square with a mix of uses fronting each side to increase diversity and activity throughout the day, night and week,
- Regular distribution of local open space to provide increased residential frontage to light, air and views and connect the urban high street and creek corridor,
- An urban 'high street' experience along Mawson Road which contrasts with the Riparian Corridor experience of Celebration Drive,
- An increasing landscape experience from east to west between the two north-south spines of Creek and High Street.

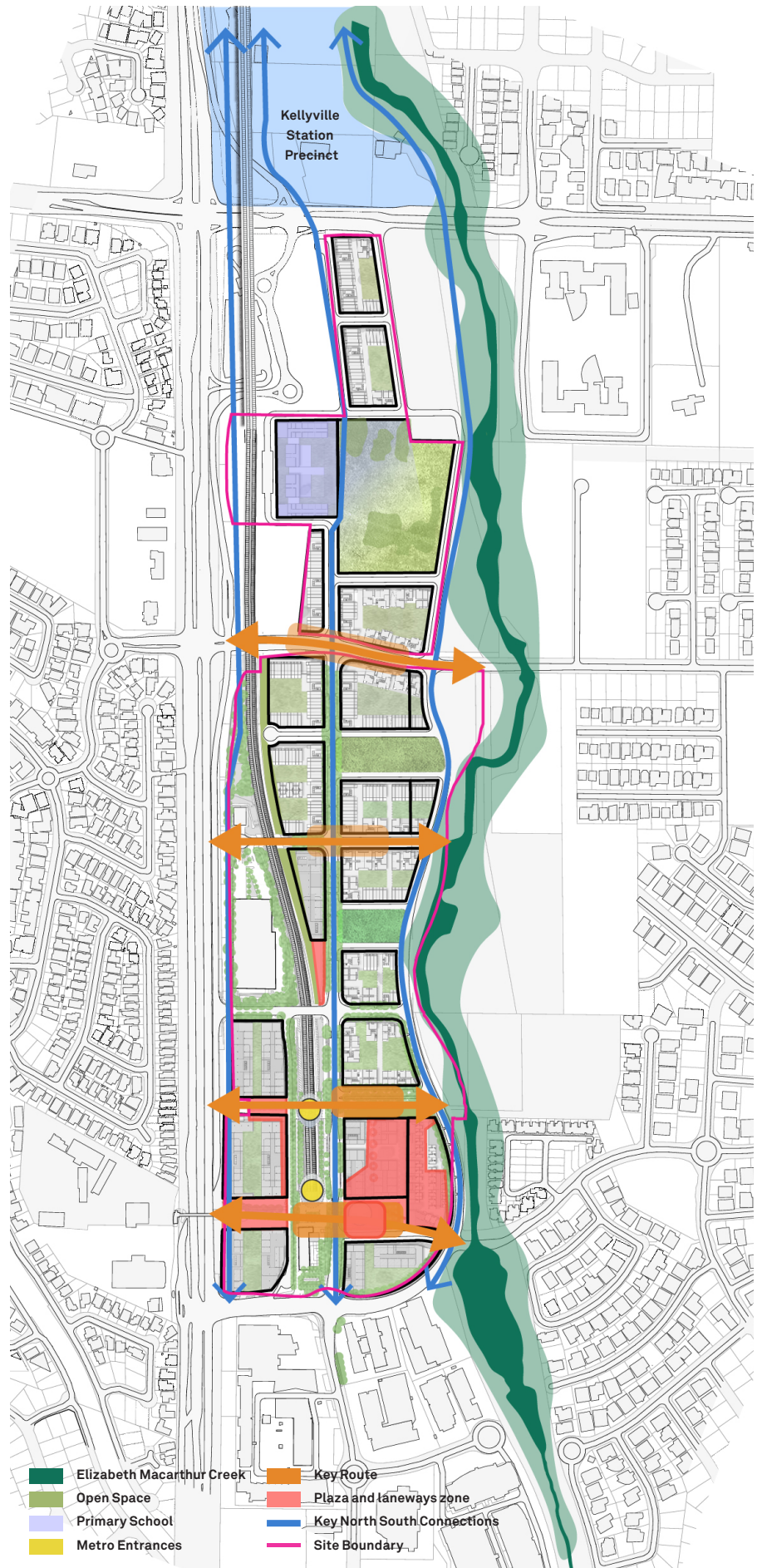


Figure 3.1.1 Station Precinct Structure Plan

3.2 Character Areas

The precinct has three distinct character areas which transition the lower density communities of Bella Vista, Kellyville, Glenwood and Stanhope Gardens to the strategic employment centre of Norwest.

This is delivered from North to South through the following character areas:

Local hub (100 Dwellings/ha) (Memorial Ave to Balmoral Rd)

- 2.5+ Ha District Open Space
- Retention of Cumberland Plains Woodland within open space network
- 1000 student primary school
- Local shops adjacent to the district park and school
- Enhanced riparian corridor for passive recreation and connectivity
- Increased provision of terrace housing and medium density typologies

Residential Core (180 Dwellings/ha) (Balmoral Rd to Unaipon Ave)

- Local open spaces distributed regularly to create local zones alongside key routes that provide access to the town centre
- Commercial uses introduced in line with land zoning
- Introduction of taller mid-high rise apartment buildings at the southern end of the precinct
- Enhanced riparian corridor for passive recreation and connectivity

Town Centre (120 Dwellings/ha) (Unaipon Ave to Celebration Dr)

- High density apartment buildings along Celebration Drive
- Medium to high density employment sites at Norwest interface
- Retail Hub incorporating supermarket
- Community Hub and Town Square at centre leveraging adjacent station and mix of uses fronting it to drive activation



Figure 3.2.1 Character areas of the Bella Vista Station Precinct

4.

GENERAL CONTROLS

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4.1

DESIGN EXCELLENCE

Objectives:

- A. To define and reinforce a distinctive character within the master plan area,
- B. To create buildings which will improve with age and express building functions,
- C. To ensure architectural diversity and uniqueness is achieved,
- D. To achieve a high standard of architectural and urban design, materials and detailing appropriate to the building type and location.
- E. To ensure the form and external appearance of the buildings improve the quality and amenity of the public domain,
- F. To ensure buildings meet sustainable design principles in terms of sunlight, ventilation, wind, reflectivity, visual and acoustic privacy,
- G. To ensure buildings meet, and where possible exceed, sustainable design principles. Specifically, in terms of sunlight, ventilation, wind, reflectivity, visual and acoustic privacy, safety and security and resource, energy and water efficiency.
- H. Development adapts to climate change.
- I. Development contributes to decreasing the urban heat island impact.
- J. Development contributes to improved quality of life, health and well-being of the community.
- K. Development is to be in accordance with the ecologically sustainable strategies and targets outlined in the AECOM Bella Vista Precinct ESD Report and Landcom's Sustainable Places Policy.
- L. The design, construction and operation of development minimises adverse impacts on the natural environment.
- M. Development is designed and located where possible to protect Aboriginal sites and archaeological relics by minimising the likelihood of disturbance.
- N. Development is appropriately designed with regard to sensitive and direct interfaces with heritage sites.
- O. Development is sited to minimise adverse impacts on the significance of the heritage items where possible.
- P. To ensure that the development promotes social and economic integration whilst providing households on lower incomes access to housing opportunities
- Q. To enable the provision of diverse and innovative housing typologies in response to local needs
- R. To ensure a consistency in the material treatment of affordable and market dwellings to avoid a visual differentiation between the income groups of residents

4.1.1 Design Excellence Processes

4.1.1.1. Controls:

1. All future development including built form and key open spaces, should follow the Design Excellence Strategy developed by Landcom and Sydney Metro in collaboration with GANSW.
2. Future detailed design proposals across superlots are encouraged to use multiple architectural designers to promote architectural diversity.
3. Architects shall be selected from the NSW Government Architect's 'Pre-qualification Scheme for Strategy and Design Excellence' or act in collaboration with a pre-qualified designer.
4. All detailed development applications will be designed in accordance with the principles of 'Better Placed' by the NSW Government Architect.
5. Public art is to be procured in accordance with the SMNWP Public Art Guidelines prepared by Landcom.

4.1.2 Affordable housing

4.1.2. Controls:

1. Ensure a minimum of 5% of the number of dwellings delivered are affordable housing throughout the Kellyville & Bella Vista precincts. The location(s) and configuration of affordable housing within the Kellyville and Bella Vista precincts is flexible as long as the 5% minimum is met, and may occur on any or all of the associated development lots.
2. Affordable housing must be integrated into the overall development with no discernible difference in quality from market rate units.
3. The provision of Affordable Housing must conform with the Affordable Rental Housing SEPP, 2009 (ARHSEPP)

4.1.3 Indigenous & European Heritage

4.1.3. Controls:

1. The report prepared by Kelleher Nightingale Consulting titled "Kellyville/Bella Vista Station Precinct - Aboriginal Cultural Heritage Assessment" dated July 2019 is to guide any future site-specific indigenous heritage sites, values, objects and/or places within the boundaries of the Bella Vista Precinct,
2. The report prepared by ADVISIAN titled "Landcom European Heritage Services for the Bella Vista and Kellyville Precincts - Precinct Wide Heritage Significance and Impact Assessment" dated May 2019 is to guide any future site-specific heritage assessments and management of heritage sites, values, objects and/or places within the boundaries of the Bella Vista Precinct.

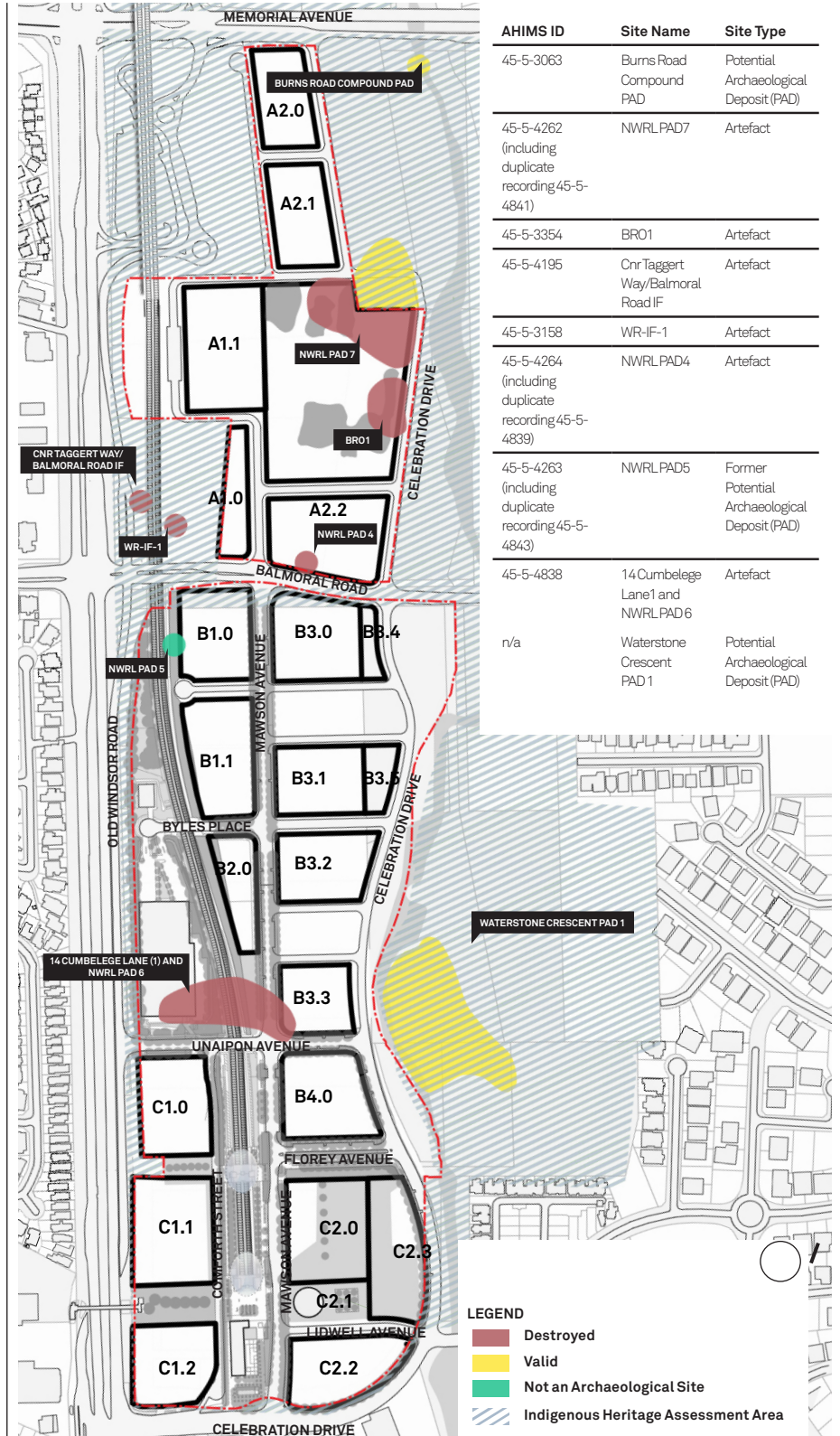


Figure 4.1.3.1 Identified indigenous archaeological sites within the Indigenous Heritage Assessment area (kelleher nightingale 2019)

4.1.4 Environmentally Sustainable Design

4.1.4 Controls:

1. The report prepared by AECOM titled "Bella Vista Station Precinct Ecologically Sustainable Development Report" dated August 2019 and Landcom Sustainable Places is to guide the precinct sustainability targets.
2. Development to achieve a minimum 5 Star Green Star Design and As-Built for medium to high density residential development.
3. Development other than residential should achieve a minimum 5-star Green Star Design and as Built rating, respectively.
4. The ecological value of the site is to be close to the existing conditions, including retention of Cumberland Plains Woodland where possible.
5. Mitigation strategies of potential urban heat island effect are to be instituted including but not limited to extensive public domain landscaping, light coloured roof materials, green roofs and solar PV.
6. Use of a 'cool' material of high diffuse solar reflectivity and high emissivity value for pavement and roofs that mitigate potential heat island effect.
7. The incorporation of green walls and roofs into the design of commercial and residential buildings is encouraged. Where suitable, building facades should incorporate vertical landscaping features to soften the visual bulk of buildings and to improve streetscape appeal.

4.1.4 Controls (continued):

8. Building designs are to:
 - Maximise the use of natural light and cross ventilation;
 - Reduce the reliance on mechanical heating and cooling

This is to include the use of eaves, awnings, good insulation and landscaping which:

- Include energy efficient light fittings and water fittings; and
 - Allow for separate metering of water and energy usage for commercial and multi-unit tenancies.
9. The provision of onsite energy generation is to be maximised where possible, i.e. solar PV or wind turbines on roofs,
 10. Develop and demonstrate site specific climate resilience strategies that encourage walking, biking and use of public transport throughout the precinct and between the precinct and adjacent areas through convenient location of bicycle facilities and location of private laneways and through site links to build on the public connectivity network.
 11. Ensure a public domain that encourages social interaction, is pedestrian oriented, has activated street frontage that are adaptable and comfortable, providing a sense of safety for all that reside in, work in or visit the area.

4.1.5 Safety and Security

4.1.5 Controls:

1. All development to be planned and designed on sound Crime Prevention Through Environmental Design (CPTED) principles,

4.2

PUBLIC OPEN SPACE GUIDELINES

Objectives:

- A. To create a landscape that is contextual to the district's landscape character.
- B. To create an open space network that connects and integrates with the wider district context.
- C. To protect and enhance the riparian corridor of Elizabeth Macarthur Creek in accordance with the Water Management Act 2000, NSW Government 'Guidelines for Riparian Corridors on Waterfront Land'.
- D. To establish a public realm that will foster healthy and sustainable natural systems and encourage integration with Elizabeth Macarthur Creek.
- E. To provide a range of open spaces for the Community within a walkable distance from future housing and employment.
- F. To use street planting and landscape to reduce the impacts of urban heat island effect in the public domain.
- G. To develop a series of complementary open spaces and connections that promote the use of walking and cycling as the primary means of moving through the precinct.
- H. To promote the community's health, well being and social interaction through an attractive, safe and engaging public realm.
- I. To maximise solar access to public domain throughout the precinct.
- J. To define the importance and role of each street into a legible and thoughtful sequence of scale that encourages and prioritises pedestrian and cycle movement.
- K. Ensure that the design of the streets reinforces the character of the precinct as a whole and the individual identities of each sub-precinct.
- L. Create a clear hierarchy of streets that facilitates appropriate levels of movement and access.
- M. Prioritise pedestrian movement and create a walk-able and cycle-able public domain.

4.2.1 Integrated Green Infrastructure and Elizabeth Macarthur Creek

4.2.1. Controls:

1. Establish an accessible local open space network that is integrated with and connected into the green infrastructure of the district through connected paths, and natural corridors. The public design will be designed to support the needs of the local community and complement the existing open space networks in surrounding areas,
2. The open space network will provide a local application of Sydney's Blue/Green Grid and Designing with Country Strategies including the Caddies Creek Trail,
3. Provide offset to any encroachments into the Outer Area of the 'Vegetated Riparian Zone' (VRZ) as indicated in figures 4.2.1.1 and 4.2.1.2,
4. Create an overall scheme of managed lawns for passive recreational uses between the riparian corridor and celebration drive to provide additional open space for nature based recreation,
5. Establish native plantings along the creek boundary interface with the precinct,
6. A continuous off road path for pedestrians and cyclists will be provided for the length of Elizabeth Macarthur Creek connecting the existing Norwest centre through the station precinct to Kellyville Station Precinct and integrated with the wider active transport network between Bella Vista and Kellyville and outside of the inner area of the VRZ,

7. Where space is not available outside of the inner area of the VRZ for a pedestrian/cycle path the off-road path will be integrated with the design of Celebration Drive as indicated in figures 4.2.1.1 and 4.2.1.2,
8. Provide regular unsignalised pedestrian crossings along Celebration Drive as indicated in figures 4.2.1.1 and 4.2.1.2 to facilitate pedestrian and cyclist movement throughout the precinct,
9. Design the active transport network to interface with potential future connections over Elizabeth Macarthur Creek that may be delivered by others at a future time as indicated in figures 4.2.1.1 and 4.2.1.2,

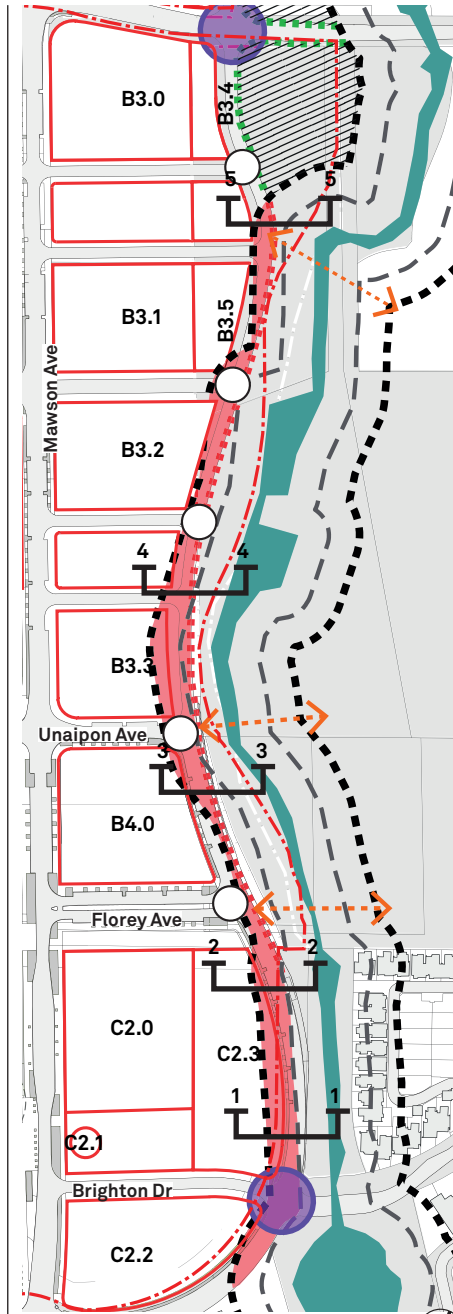


Figure 4.2.1.1
Elizabeth Macarthur Creek Plan Zones
Sections Celebration Drive South of
Balmoral Rd.

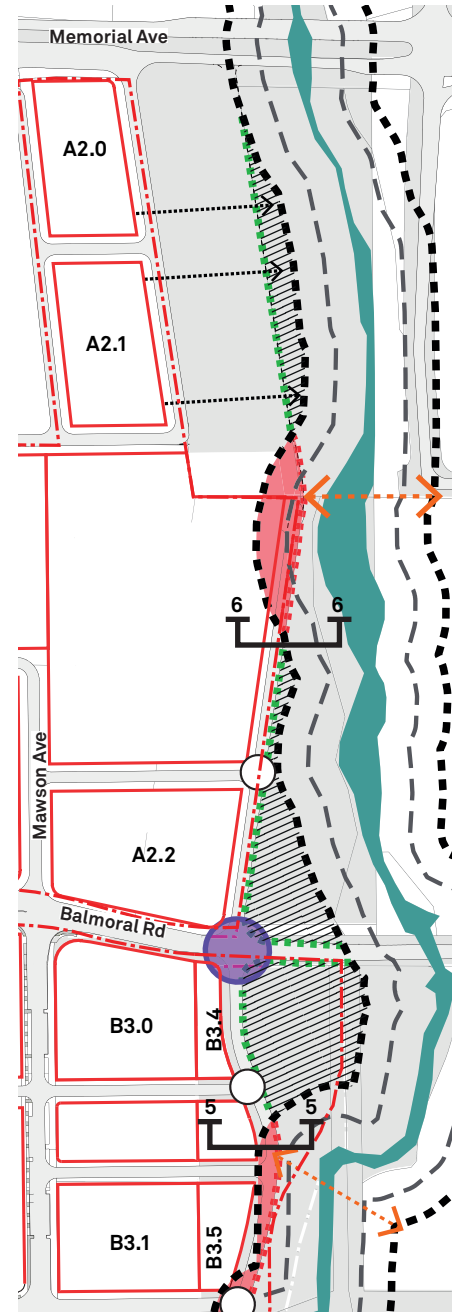
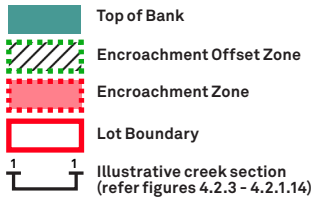
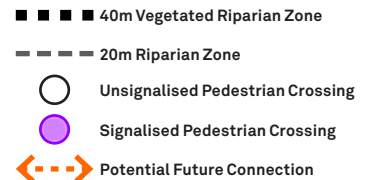


Figure 4.2.1.2
Elizabeth Macarthur Creek Plan Zones
Sections Celebration Drive North of
Balmoral Rd.



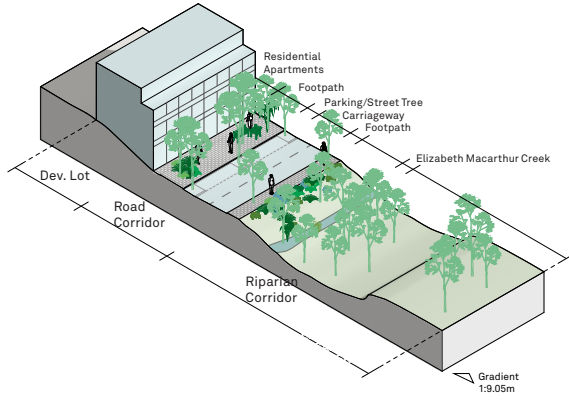
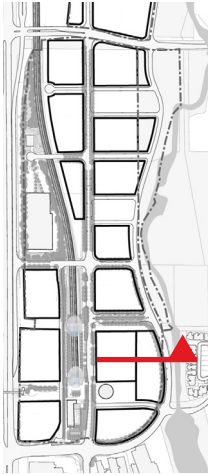


Figure 4.2.1.3
Riparian Corridor Section 1 - Town Centre to Creek Corridor

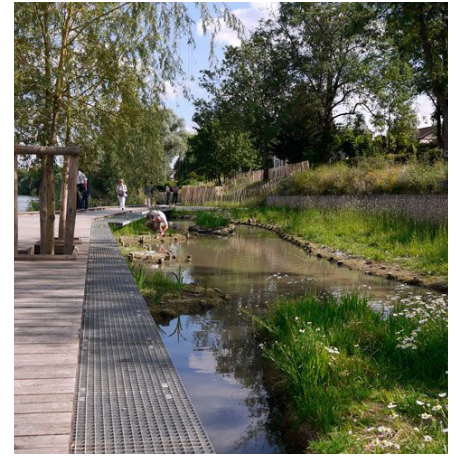


Figure 4.2.1.4
Potential Character

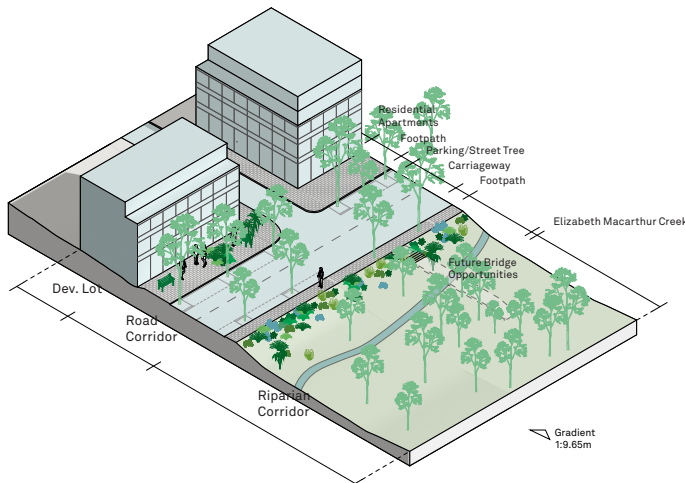
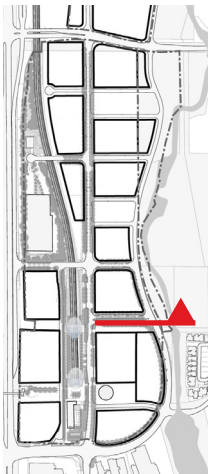


Figure 4.2.1.5
Riparian Corridor Section 2 - Florey Ave to Creek Corridor



Figure 4.2.1.6
Potential Character

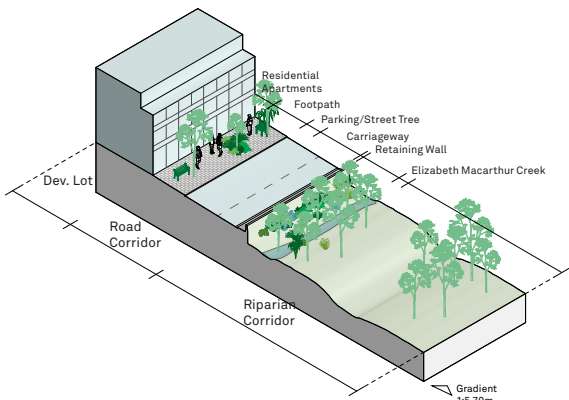
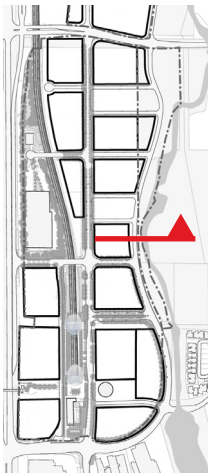
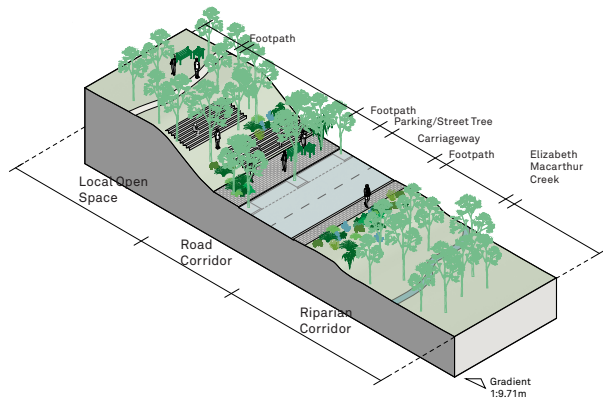
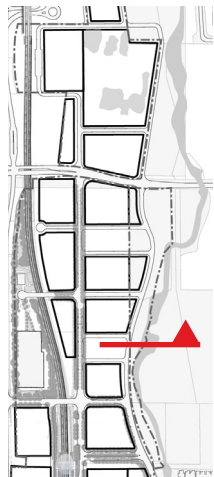


Figure 4.2.1.7
Riparian Corridor Section 3 - Future Residential to Creek (constrained corridor)



Figure 4.2.1.8
Potential Character

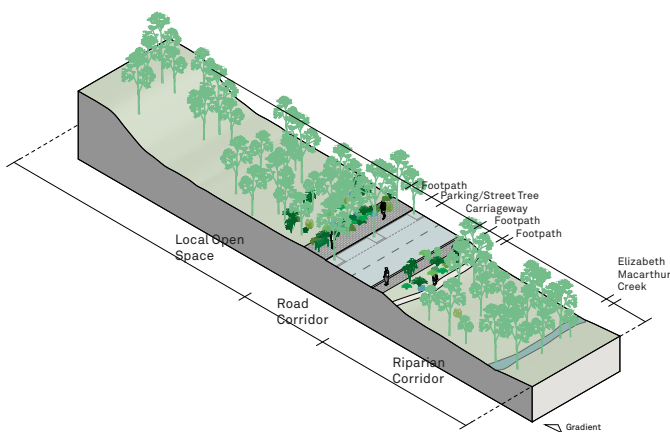
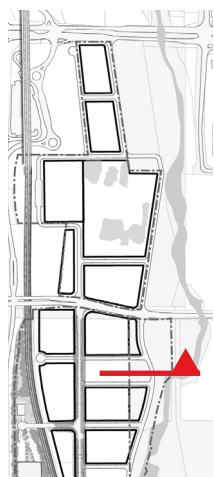
Section 04 - General Controls



**Figure 4.2.1.9
Riparian Corridor Section 4 - Future Local Open Space to Creek Corridor**



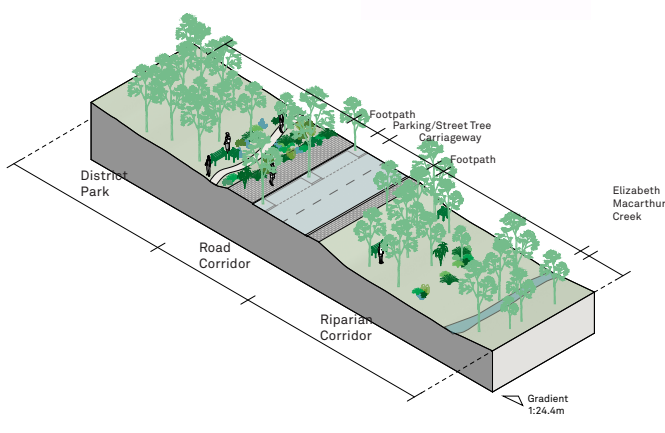
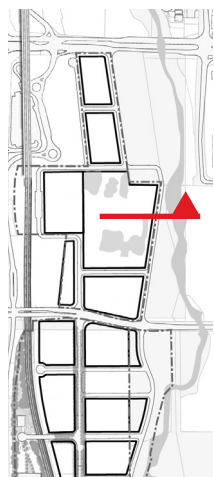
**Figure 4.2.1.10
Potential Character**



**Figure 4.2.1.11
Riparian Corridor Section 5 - Future Residential to Creek (unconstrained corridor)**



**Figure 4.2.1.12
Potential Character**



**Figure 4.2.1.13
Riparian Corridor Section 6 - District Park to Creek Corridor**



**Figure 4.2.1.14
Potential Character**

4.2.2 Open space distribution, provisions and connections

4.2.2. Controls:

1. Provide a range of open spaces strategically placed across the precinct that ensures all residents are within no more than 10 minutes walking distance of an open space from home (typically 200m in high rise / high density development and 400m in low rise/medium density developments),
2. Provide a diversity of recreation and leisure opportunities through a range of open space settings including an urban plaza, local parks, district open space and natural creek corridor,
3. Design the open spaces within the precinct to support a wide range of passive and informal active uses that are accessible and can be enjoyed by a diverse range of people from all ages, backgrounds and interests,
4. Locate open spaces adjacent to the pedestrian and cycle networks to form an interconnected and walkable open space network along Elizabeth Macarthur Creek,
5. Provide clear direct links to and from the open spaces to adjacent suburbs and surrounding street network to increase the range of activities available and to permit ready access to the district's sports facilities within a 2-5km radius,

4.2.3 Minimum public open space

4.2.3. Controls:

1. A Local Park (O1) of a minimum 3,815 sqm must be provided between Lots B3.3 and B3.2 in accordance with the master plan drawings and as noted in figure 4.2.3.
2. A Local Park (O2) of a minimum 6,650 sqm must be provided between Lots B3.0 and B3.1 in accordance with the master plan drawings and as noted in figure 4.2.3.
3. The Elizabeth Macarthur Creek Corridor, exclusive of the SP2 zoned land is to be embellished as local open space for public access and use (O3) in accordance with the master plan drawings and as noted in figure 4.2.3.
4. A district park (O4) of a minimum 2.74ha must be provided between Lots A1.1, A2.1 and A2.2 in accordance with the master plan drawings and as noted in figure 4.2.3.
5. Lot C2.1 will be dedicated for future public facilities (P1 - town square and community centre) with a minimum land area of 3,575sqm in accordance with the master plan drawings and as noted in figure 4.2.3.
6. A Commercial Plaza (P2) of a minimum 2,780sqm must be publicly accessible and provided between Lots C1.1 and Lots C1.2 to connect the pedestrian bridge over Old Windsor Road to the southern Metro Station Entry in accordance with the and as noted in figure 4.2.3.
7. A Commercial Plaza (P3) of a minimum 750sqm must be publicly accessible and provided between Lots C1.0 and C1.1 in accordance with the master plan drawings and as noted in figure 4.2.3
8. A Green Link (P4) of a minimum 1,500 sqm must be provided south of Florey Avenue. This will help to connect the northern Metro concourse down to the riparian corridor, and provide increased separation of commercial and residential lots on either side of the streets in accordance with the master plan drawings and as noted in figure 4.2.3.
9. A Commercial Plaza (P5) of a minimum 650 sqm must be provided adjacent to lot B2.0, to provide visual amenity for surrounding lots in accordance with the master plan drawings and as noted in figure 4.2.3.
10. Publicly accessible private open spaces and laneways must connect Elizabeth Macarthur Creek, the Town Square, the District Park, Local parks and Metro entries where possible.
11. Future school on lot A1.1 must provide unencumbered access north/south to the district park (O4) between the T-Way stop and Mawson Ave as noted in figure 4.2.3.

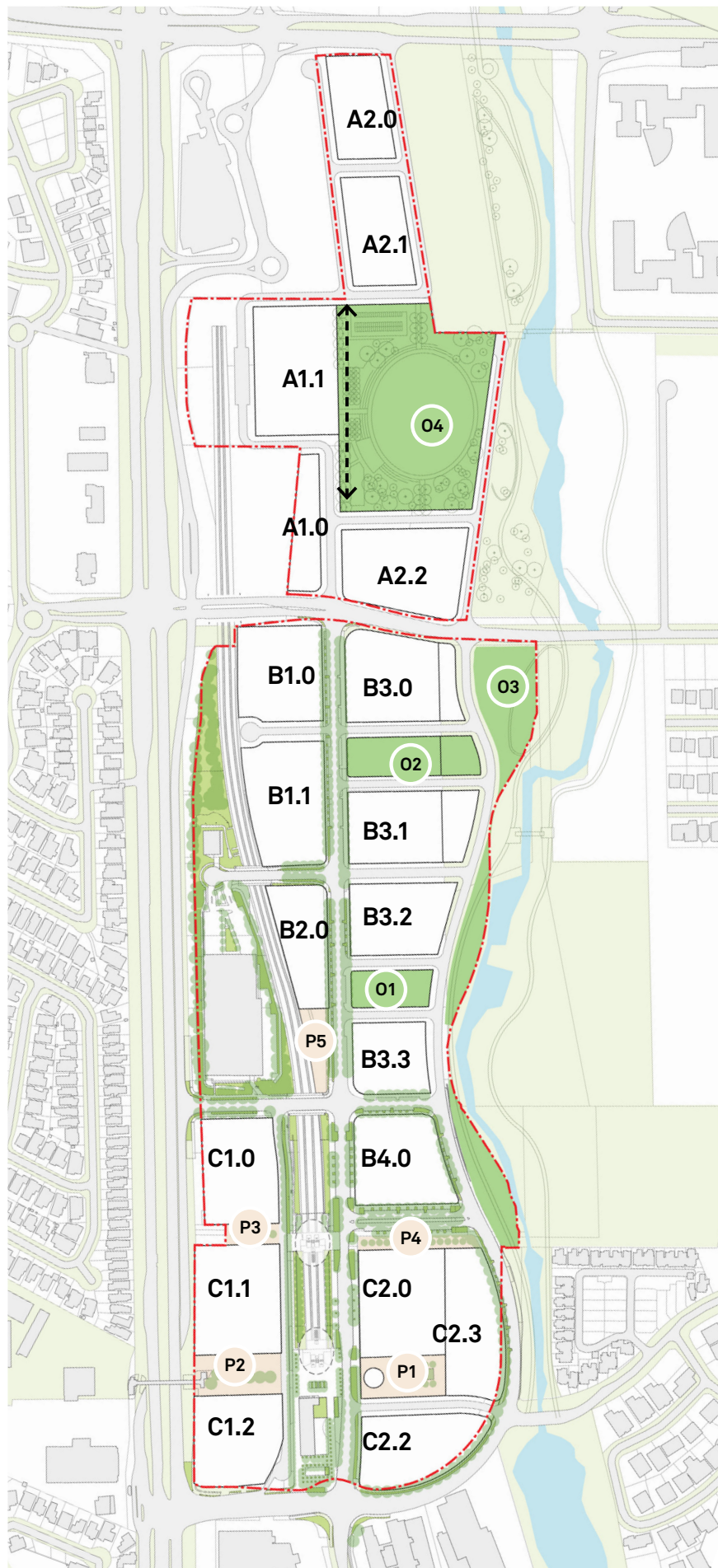


Figure 4.2.3: Public Open Spaces to be provided within the SSD Extents

- 01 Public Park
- P2 Public Plaza
- C1.0 Private Development Lot
- ↔ Public access

4.2.4 Solar access controls to public open spaces

4.2.4. Controls:

1. Built form allows solar access into town square allowing for a minimum 75% that receives uninterrupted light from 10am-2pm on the winter solstice, June 21.
2. Built form allow solar access into local parks so that 75% of each park gets uninterrupted light from 10am-2pm on the winter solstice, June 21.
3. Ensure solar access to Mawson Avenue is maximised by ensuring generous separation by taller buildings that may cause overshadowing along its length.
4. Height and location of built form on commercial lots C1.0, C1.1 and C1.2 is focused further west to maximise solar access to commercial plazas and metro concourse up to and during daytime hours.

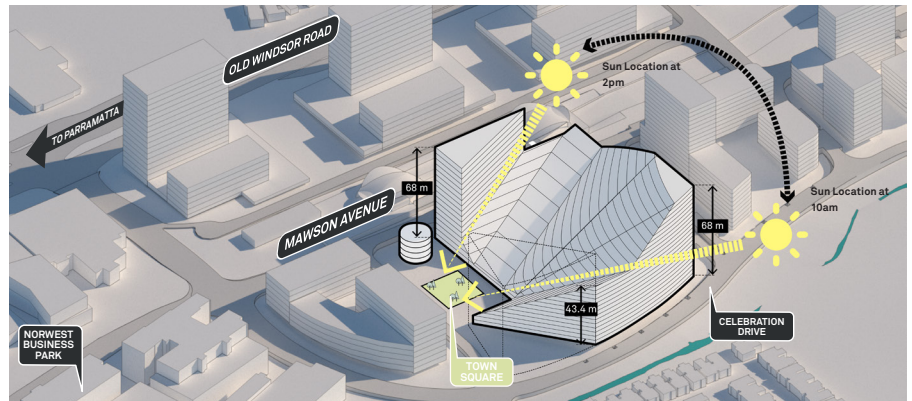


Figure 4.2.4.1: 3d view of town plaza showing overshadowing at 12pm on Winter Solstice from proposed building envelope

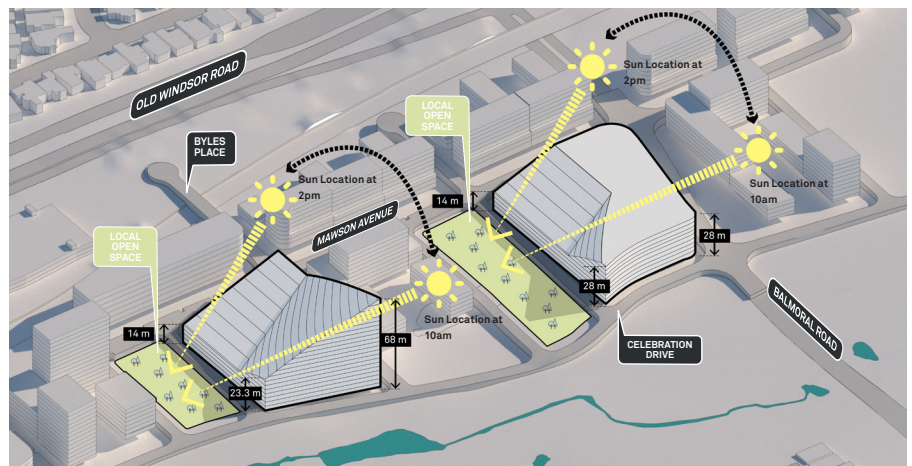


Figure 4.2.4.2: 3d view of local parks showing overshadowing at 12pm on Winter Solstice from proposed building envelope

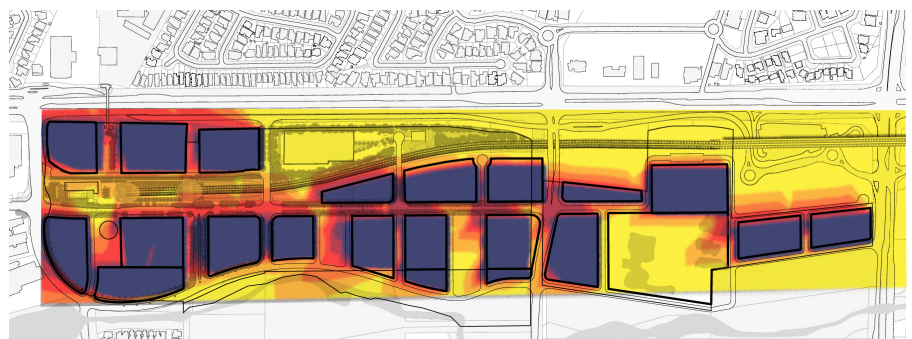


Figure 4.2.4.3: Hours of direct sunlight on winter solstice to public open space and streets as a result of building envelopes which are to be improved upon by future building proposals.

 0 Hours	 3 Hours
 1 Hours	 4+ Hours
 2 Hours	

4.2.5 Street tree planting and landscape

4.2.5. Controls:

1. Establish a wayfinding strategy to assist residents and visitors with orientation and navigation within the precinct.
2. Existing significant trees and remnants of the Cumberland Plain Woodland should be retained and integrated into the development proposals and public domain projects where possible.
3. The public domain should be designed with street furniture (seating opportunities and activation spaces) to facilitate social interaction.
4. Design street planting to extend the green corridor of the open space network, to provide shade, create local distinctiveness, seasonal variety and habitat opportunities.
5. The design of the streetscape should achieve a minimum of 40% mature tree canopy coverage.
6. Street trees should be provided at spacings that ensure fully mature canopy still retains unobstructed street lighting
7. Tree selection should be based on the following for Main Streets as identified on figure 4.2.6.1:
 - Large size tree
 - Australian native
 - Evergreen
 - Mature height of at least 15-20m
 - At least 12m mature canopy spread
 - Provide a unique character and promote diversity in streetscape

The following species are recommended for main streets in

the Bella Vista Precinct:

- Eucalyptus crebra (narrow-leaved ironbark)
 - Eucalyptus tereticomis (forest red gum)
 - Melaleuca styphelioides (prickly-leaved paperbark)
 - Tristaniopsis laurina 'luscious' (kanooka gum)
8. Tree selection should be based on the following for Local Streets as identified on figure 4.2.6.1:
 - Medium size tree
 - Australian native or exotic
 - Evergreen or deciduous
 - Mature height of approximately 10-12m
 - Mature canopy spread of approximately 6-8m
 9. Tree selection should be based on the following for laneways as identified on figure 4.2.6.1:
 - Small size tree with narrow form
 - Exotic
 - Evergreen or deciduous
 - Mature height of approximately 4-6m
 - Mature canopy spread of approximately 3-4m

The following species are recommended for laneways in the Bella Vista Precinct:

- *Gordonia axillaris* (Fried Egg Plant)
- *Lagerstroemia indica* (Crepe Myrtle)

10. Trees shall be planted in the road corridor (rather than pedestrian pavement corridor) unless specified in the landscape report prepared by Clouston, and spaced along streets in accordance with the following table and figures 4.2.5.1-4.2.5.12:

Bella Vista Tree Spacing Requirement

Road Type	Tree Spacing (m)	Sides of road with trees
Main Street	15	2
Local Street	8.5	2
Local Street (one way)	8.5	2
Laneway	6	1

11. 4.2.5. Controls (continued)

12.A structural soil system should be provided for street tree planting comprised of a rigid, open grid structure placed in the proposed tree root zone with the soil backfilled as the structure is placed in layers. This system should ensure that::

- The soil retains its open structure, permitting the movement of air and free drainage of water through the soil;
- Provides for a suitable soil volume for the nominated species that will promote healthy tree root growth and enhancing tree stability in storms or in windy environments;
- Vehicles can pass over this soil profile without compacting the soil or causing depressions in the surface; hence road and pedestrian pavement surfaces can be applied over these soils
- Soil volumes can be extended beyond the immediate conventional tree pit volume, ensuring healthier tree growth; and
- The placement of underground services (local utility ducts) within the structural soil system should be avoided wherever feasible, though encroachment may be permitted with suitable coordination.

13. Rootbarriers(orsimilar)should be installed to prevent growth of roots beyond the 'tree pit' zone and the area underneath car bays (ie to prevent growth into road carriageway pavement or into utility areas).

14. The soil volume required for street trees is to be determined by the following formula:

$$\text{Mature Canopy Spread (m}^2\text{)} \times 0.6\text{m} = \text{Required Soil Volume}$$

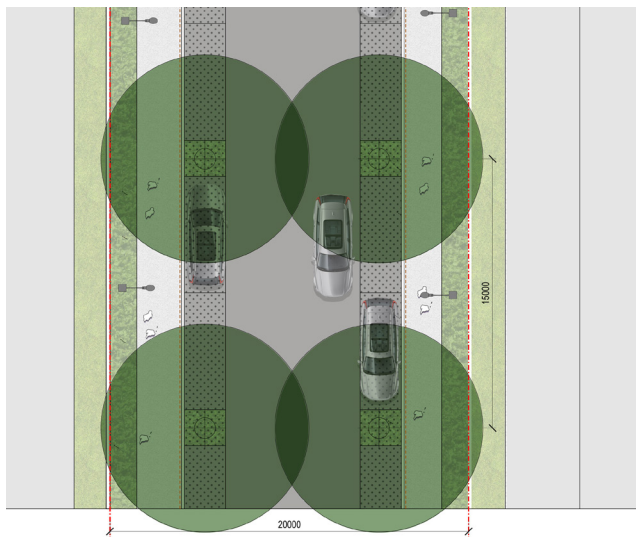
The following table illustrates indicative soil requirement for different size of trees.

Bella Vista Tree Spacing Requirement	
Tree Type	Indicative Soil Volume (m ³)
Large Tree Canopy spread 17m and greater, (Canopy coverage approx. 110m ²)	50-80
Medium Tree Canopy spread 11 - 16m, (Canopy coverage approx. 50m ²)	20-40
Small Tree Canopy spread 10m and less, (Canopy coverage approx. 15m ²)	5-15



Figure 4.2.5.1 Street Planting Plan (Clouston Associates)

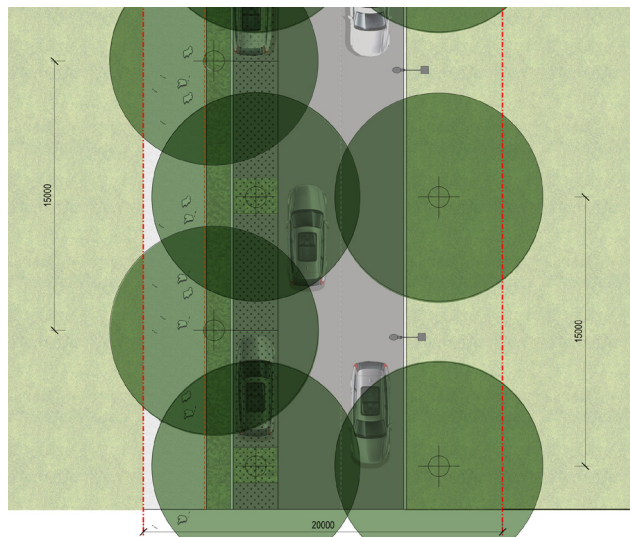
- Main Street - 15m tree spacing
- Local Street - 8.5m tree spacing
- One Way Street - 8.5m tree spacing
- Private Laneway - 6m tree spacing



MAIN STREET
Bella Vista - Residential

Tree Spacing: 15m (Two carparks between trees)
Road corridor width: 20m from setback to setback
Side of road with trees: 2

- Legend**
- Structural soil system
 - Root barrier
 - Setback boundary
 - Street light pole



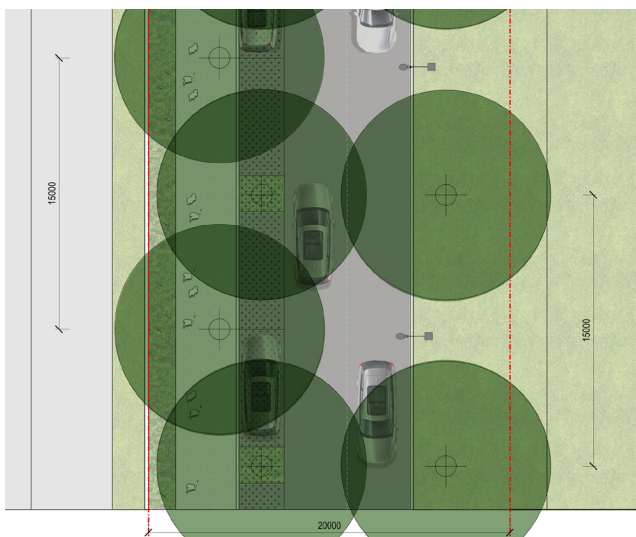
MAIN STREET
Bella Vista - Open Space and Riparian

Tree Spacing: 15m (Two carparks between trees)
Road corridor width: 20m from setback to setback
Side of road with trees: 3

- Legend**
- Structural soil system
 - Root barrier
 - Setback boundary
 - Street light pole

Figure 4.2.5.2 - Main Street Planting Detail Plan 01 (Clouston Associates)

Figure 4.2.5.3 - Main Street Planting Detail Plan 02 (Clouston Associates)

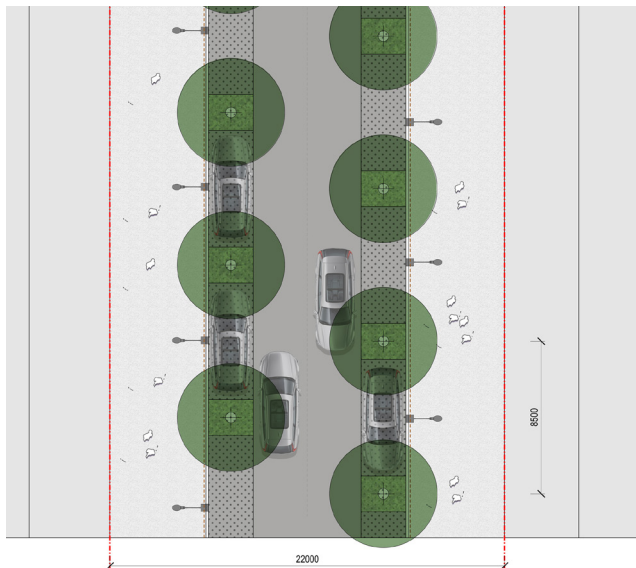


MAIN STREET
Bella Vista - Residential and Riparian

Tree Spacing: 15m (Two carparks between trees)
Road corridor width: 20m from setback to setback
Side of road with trees: 3

- Legend**
- Structural soil system
 - Root barrier
 - Setback boundary
 - Street light pole

Figure 4.2.5.4 - Main Street Planting Detail Plan 03 (Clouston Associates)



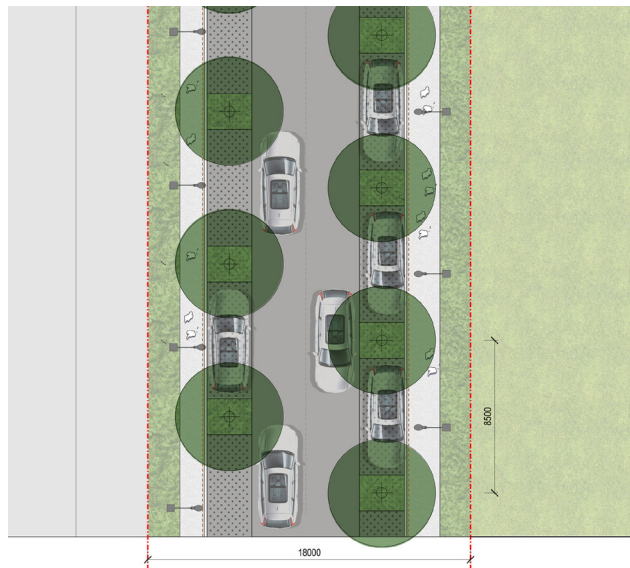
LOCAL STREET
 Bella Vista - Commercial

Tree Spacing: 8.5m (One carpark between trees)
 Road corridor width: 22m from setback to setback
 Side of road with trees: 2

Legend

- Structural soil system
- Root barrier
- Setback boundary
- Street light pole

Figure 4.2.5.5 - Local Street Planting Detail Plan 01 (Clouston Associates)



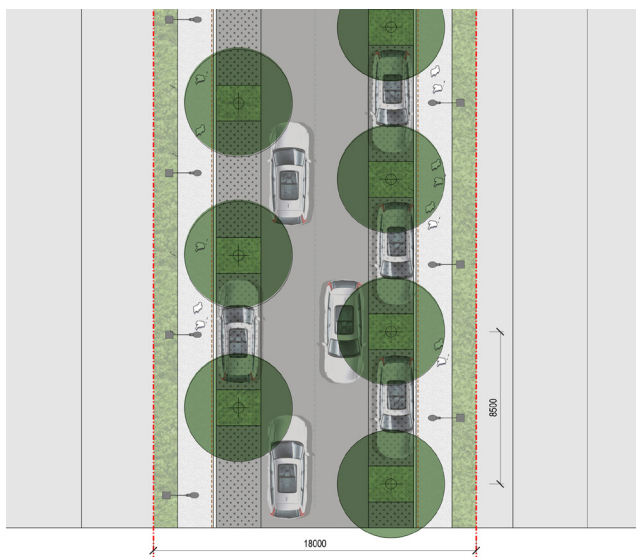
LOCAL STREET
 Bella Vista - Park and Residential

Tree Spacing: 8.5m (One carpark between trees)
 Road corridor width: 18m from setback to setback
 Side of road with trees: 2

Legend

- Structural soil system
- Root barrier
- Setback boundary
- Street light pole

Figure 4.2.5.6 - Local Street Planting Detail Plan 02 (Clouston Associates)



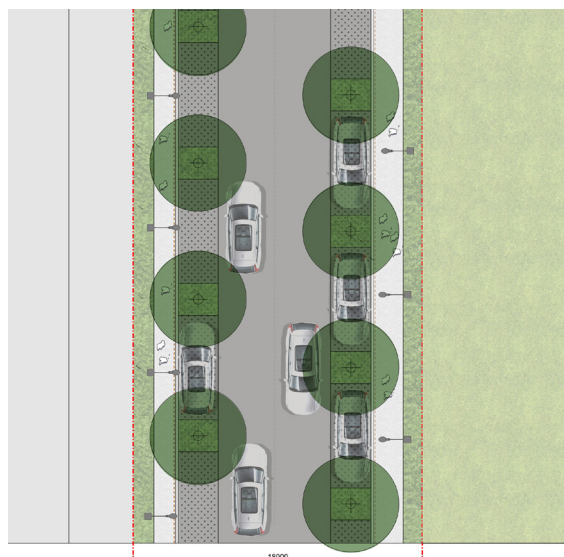
LOCAL STREET
 Bella Vista - Residential

Tree Spacing: 8.5m (One carpark between trees)
 Road corridor width: 18m from setback to setback
 Side of road with trees: 2

Legend

- Structural soil system
- Root barrier
- Setback boundary
- Street light pole

Figure 4.2.5.7 - Local Street Planting Detail Plan 03 (Clouston Associates)



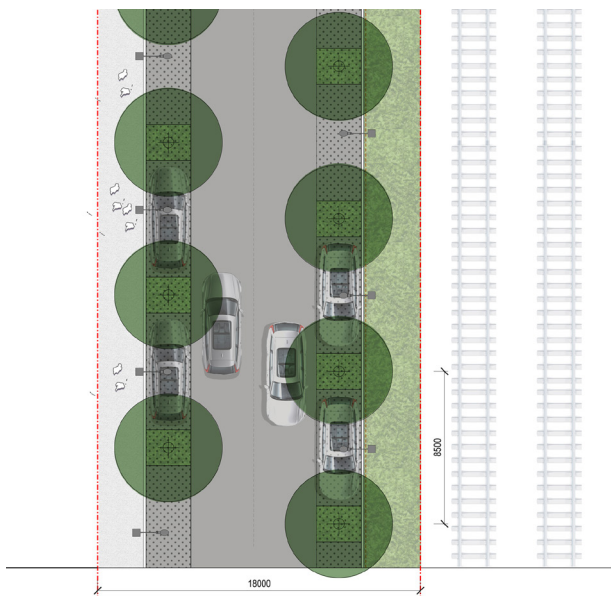
LOCAL STREET
 Bella Vista - Residential and Park (3.5m carriageway)

Tree Spacing: 8.5m (One carpark between trees)
 Road corridor width: 18m from setback to setback
 Side of road with trees: 2

Legend

- Structural soil system
- Root barrier
- Setback boundary
- Street light pole

Figure 4.2.5.8 - Local Street Planting Detail Plan 04 (Clouston Associates)

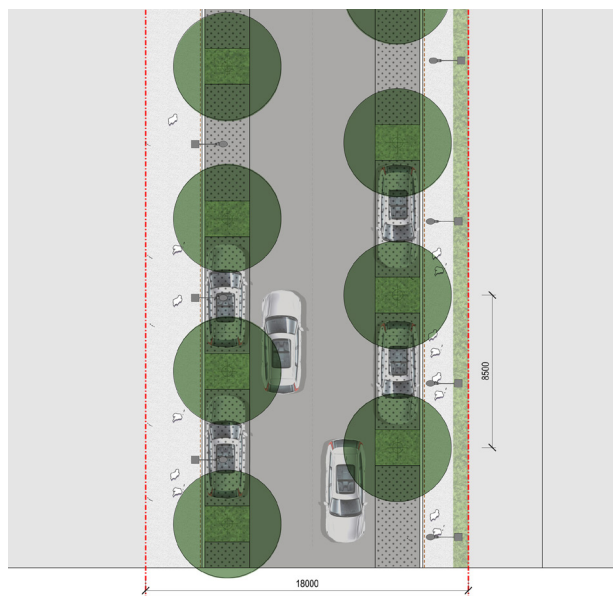


LOCAL STREET
 Bella Vista - Metro and School

Tree Spacing: 8.5m (One carpark between trees)
 Road corridor width: 18m from setback to setback

Legend
 Structural soil system
 Root barrier
 Setback boundary

Figure 4.2.5.9 - Local Street Planting Detail Plan 05 (Clouston Associates)

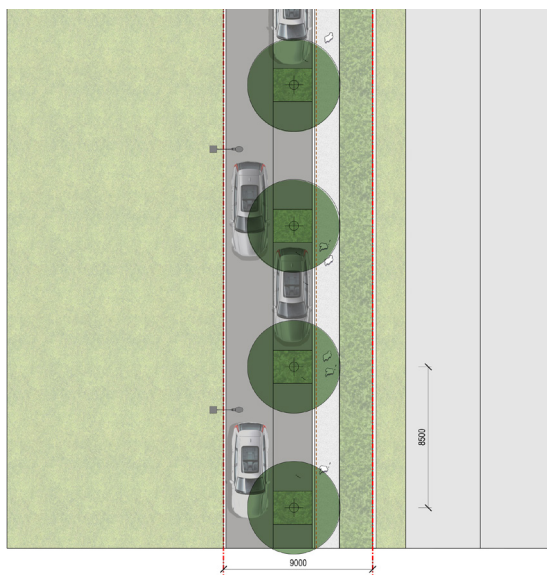


LOCAL STREET
 Bella Vista - Residential and School

Tree Spacing: 8.5m (One carpark between trees)
 Road corridor width: 18m from setback to setback

Legend
 Structural soil system
 Root barrier
 Setback boundary

Figure 4.2.5.10 - Local Street Planting Detail Plan 06 (Clouston Associates)

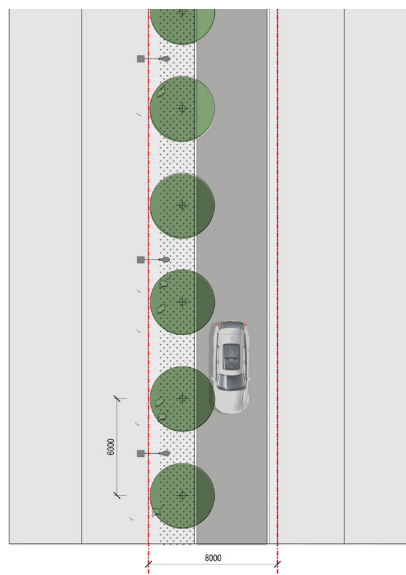


ONEWAY STREET
 Bella Vista - Park and Residential

Tree Spacing: 8.5m (One carpark between trees)
 Road corridor width: 9m from setback to setback
 Side of road with trees: 1

Legend
 Structural soil system
 Root barrier
 Setback boundary
 Street light pole

Figure 4.2.5.11 - Local Street Planting Detail Plan 07 (Clouston Associates)



LANEWAY - PRIVATE
 Bella Vista - Residential

Tree Spacing: 6m (No carpark)
 Road corridor width: 8m from setback to setback
 Side of road with trees: 1

Legend
 Structural soil system
 Root barrier
 Setback boundary
 Street light pole

Figure 4.2.5.12 - Lane way Planting Detail Plan 01 (Clouston Associates)

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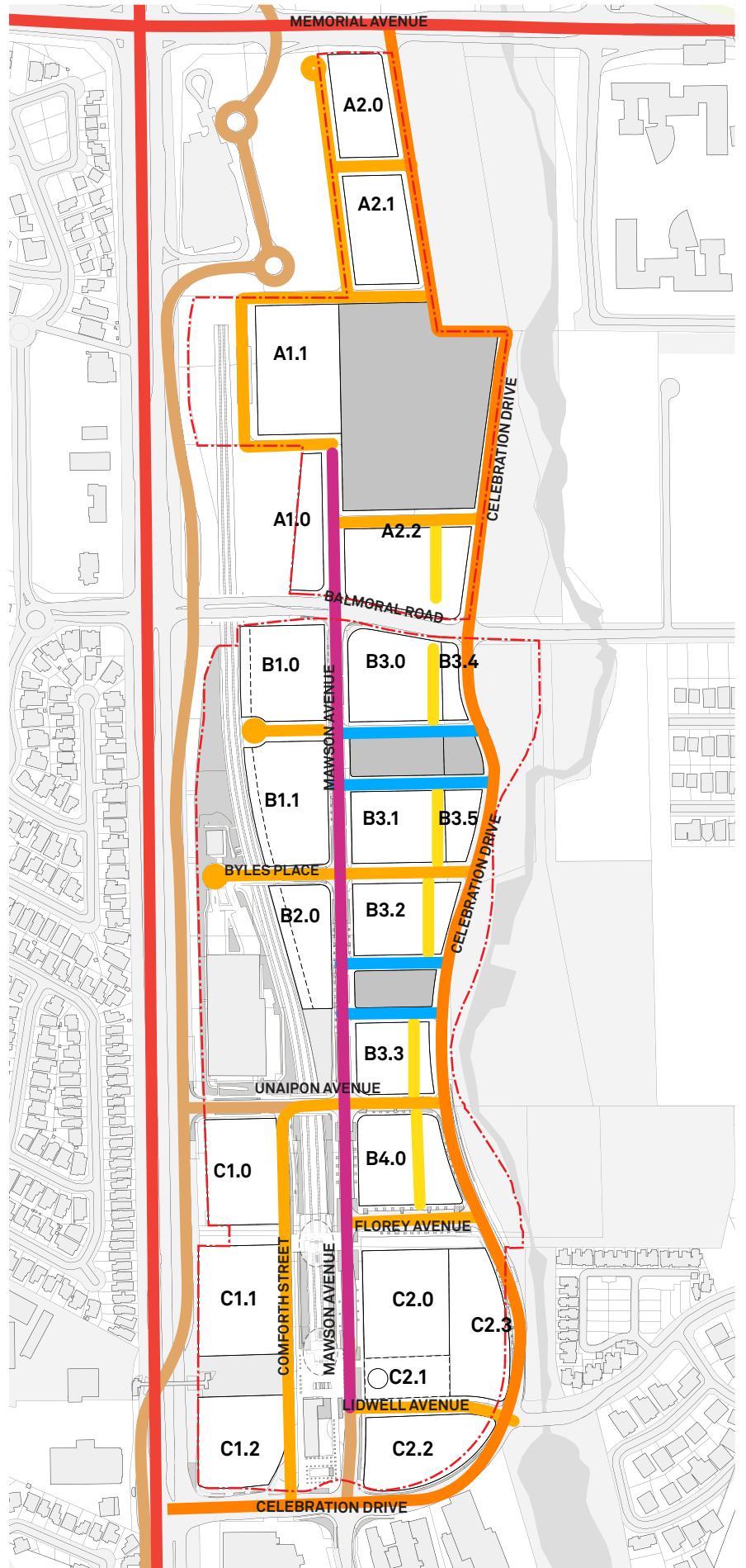
4.2.6 Street hierarchy

4.2.6. Controls:

1. Mawson Avenue between Balmoral Rd and Celebration Drive must be treated as the main street in the precinct and face residential and commercial lobbies to encourage pedestrian foot traffic.
2. Celebration Drive must be treated as a transitional space and not a barrier between the development of Bella Vista to the west and the riparian corridor to the east.
3. Brighton Dr extension (Lidwell Ave) to include traffic calming measures to prioritise pedestrian movements.
4. The local roads must have a break down of scale in built form to reinforce the slower character and pedestrian focus of the streets.
5. One way local roads will act as a border to the local parks, to reinforce the slower character and pedestrian focus of the surrounding residential built form.
6. Laneways must act to remove driveway crossings from pedestrian priority streets and act as a secondary pedestrian movement network between blocks allowing a clear separation of the front and back door experience for residents and visitors.

Figure 4.2.6.1
Street Hierarchy Plan

- Old Windsor Road
- Bus T-Way
- Mawson Avenue
- Celebration Drive
- 2-Way Local Road
- One Way Local Road
- Laneway (Indicative Locations)



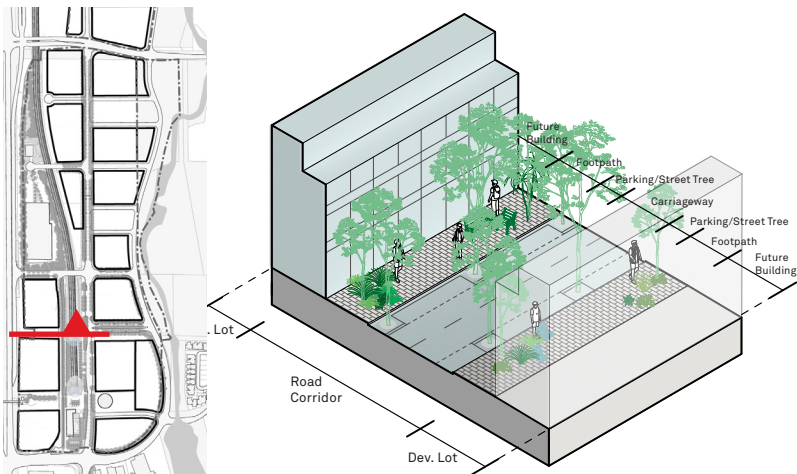


Figure 4.2.6.2
Mawson Axon Section



Figure 4.2.6.3
Mawson Ave Character

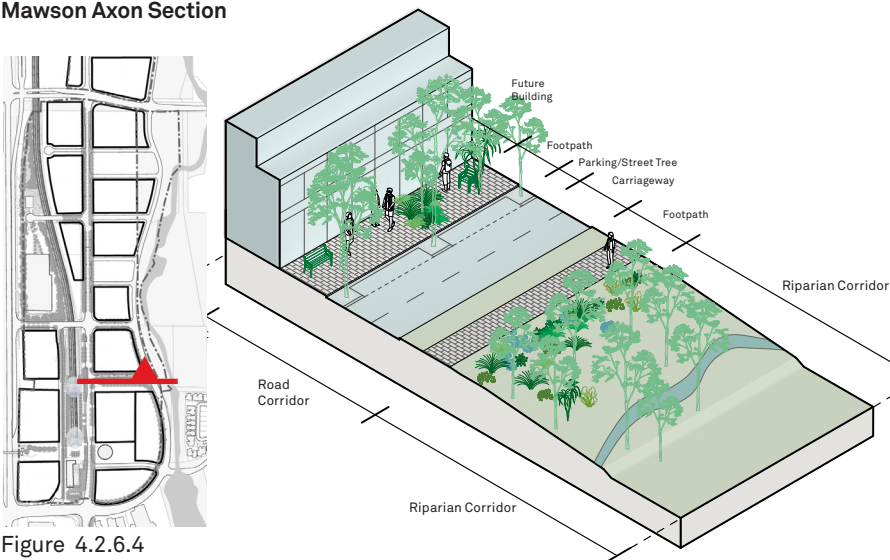


Figure 4.2.6.4
Celebration Axon Section



Figure 4.2.6.5
Celebration Dr Character

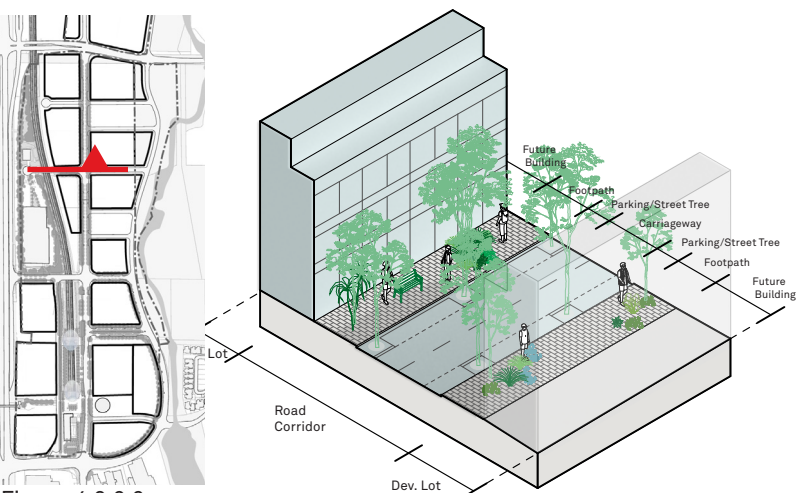


Figure 4.2.6.6
Local Road Axon Section

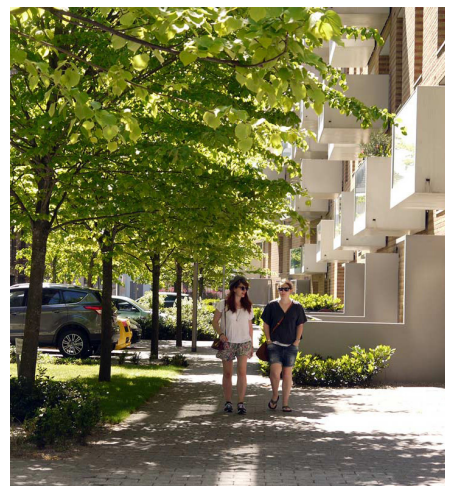


Figure 4.2.6.7
Local Road Character

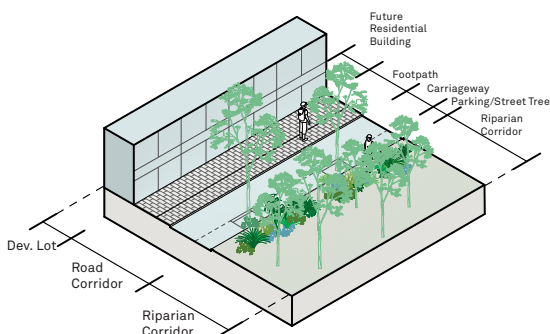
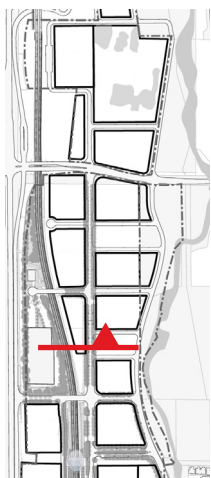


Figure 4.2.6.8
One Way Local Road Axon Section

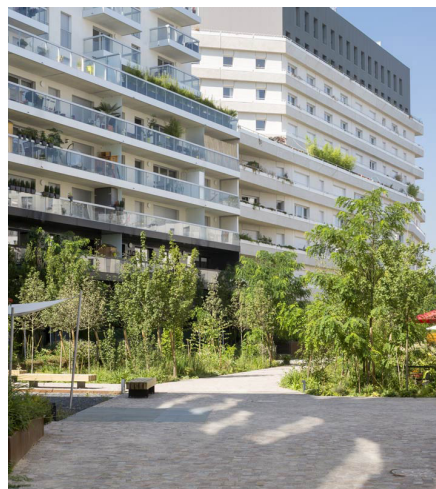


Figure 4.2.6.9
One Way Local Road Character

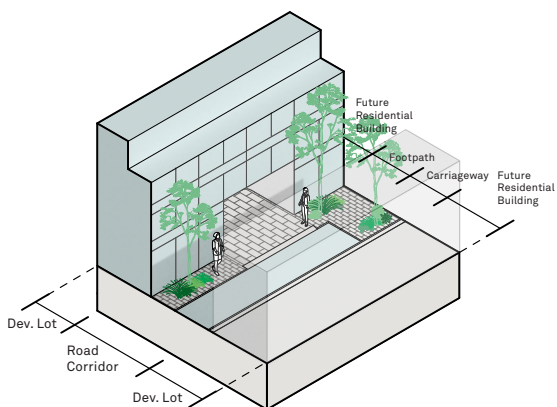
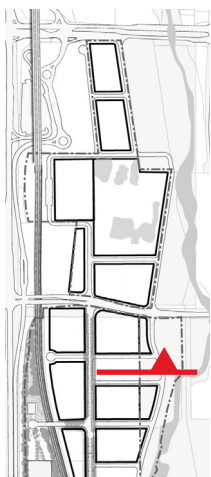


Figure 4.2.6.10
Laneway Axon Section

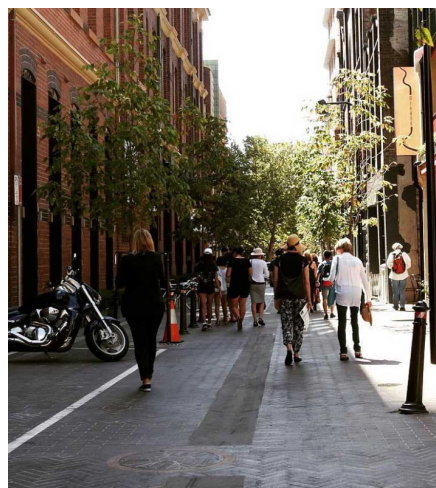


Figure 4.2.6.11
Laneway Character

Elements: Planting Character

Elements: Paths Character



Figure 4.2.7.12



Figure 4.2.6.13



Figure 4.2.6.14

4.2.7 Main Street Design

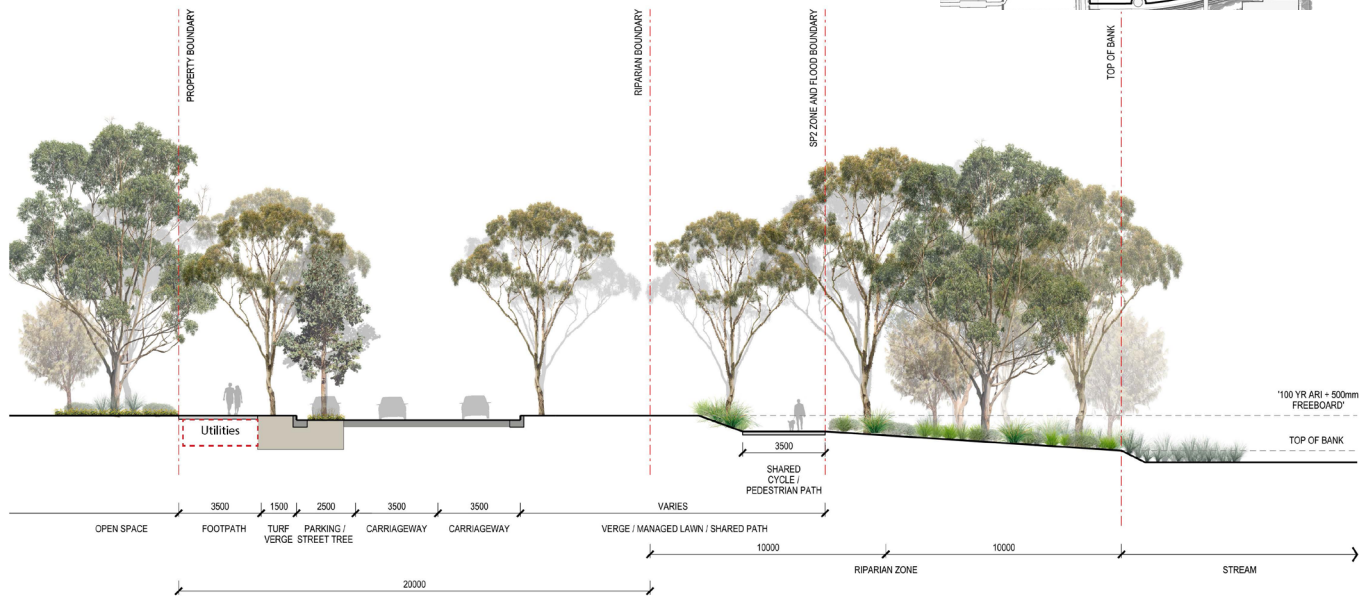
4.2.7. Controls:

1. Mawson Avenue extension will be designed with allocation of footpaths, planting, parking and traffic lanes as detailed in figures 4.2.7.1 and the landscape report prepared by Clouston.
2. Celebration Drive will be designed with allocation of footpaths, planting, parking and traffic lanes as detailed in figures 4.2.7.2 - 4.2.7.3 and the landscape report prepared by Clouston.

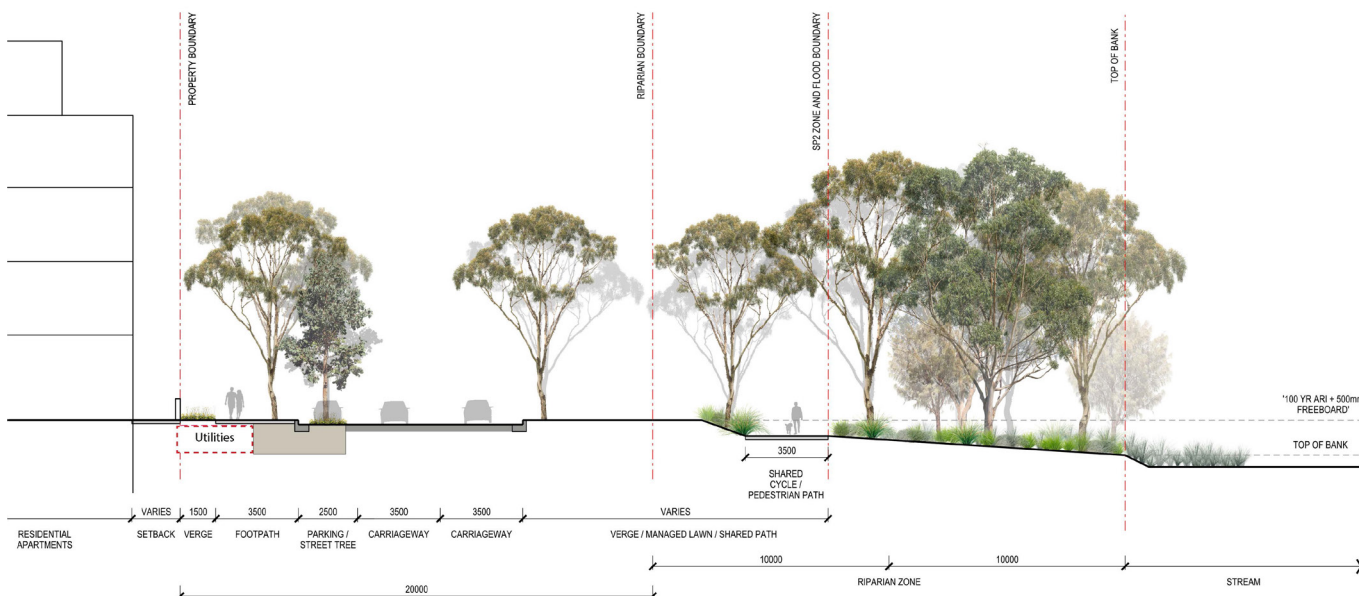


Figure 4.2.7.1
Main Street Section 01

Section 04 - General Controls



**Figure 4.2.72
Main Street Section 03**



**Figure 4.2.73
Main Street Section 04**

4.2.8 Local Street Design

4.2.8. Controls:

1. Local Two-way Streets will be designed with allocation of footpaths, planting, parking and traffic lanes as detailed in figures 4.2.8.1 - 4.2.8.5 and the landscape report prepared by Clouston..
2. Local One-way Streets will be designed with allocation of footpaths, planting, parking and traffic lanes as detailed in figure 4.2.8.6 and the landscape report prepared by Clouston..

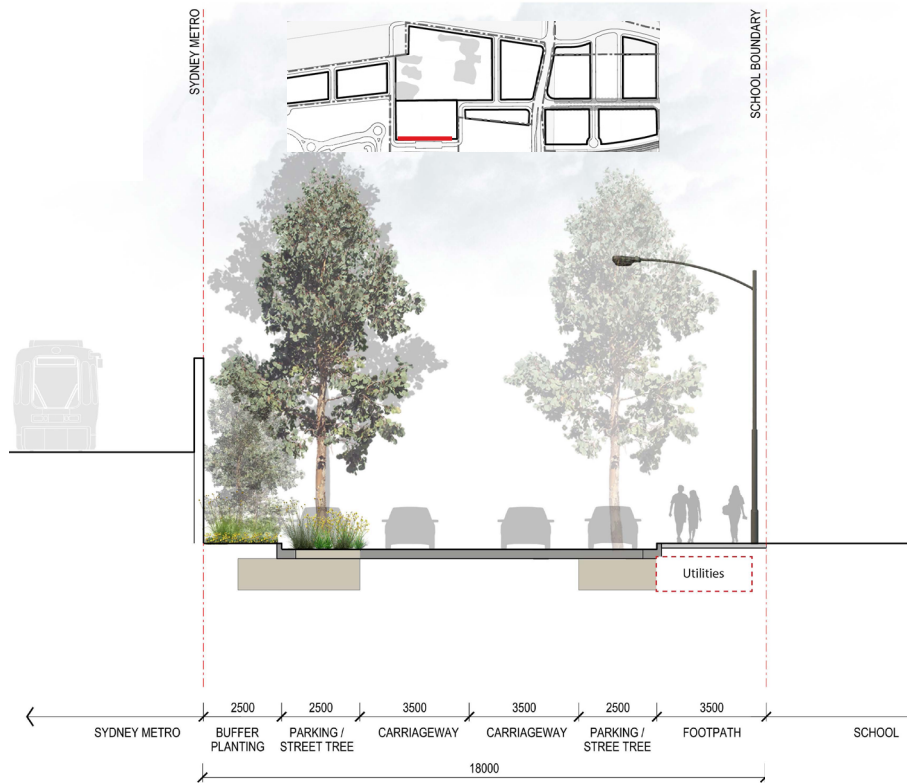


Figure 4.2.8.1
Local Street Section 01

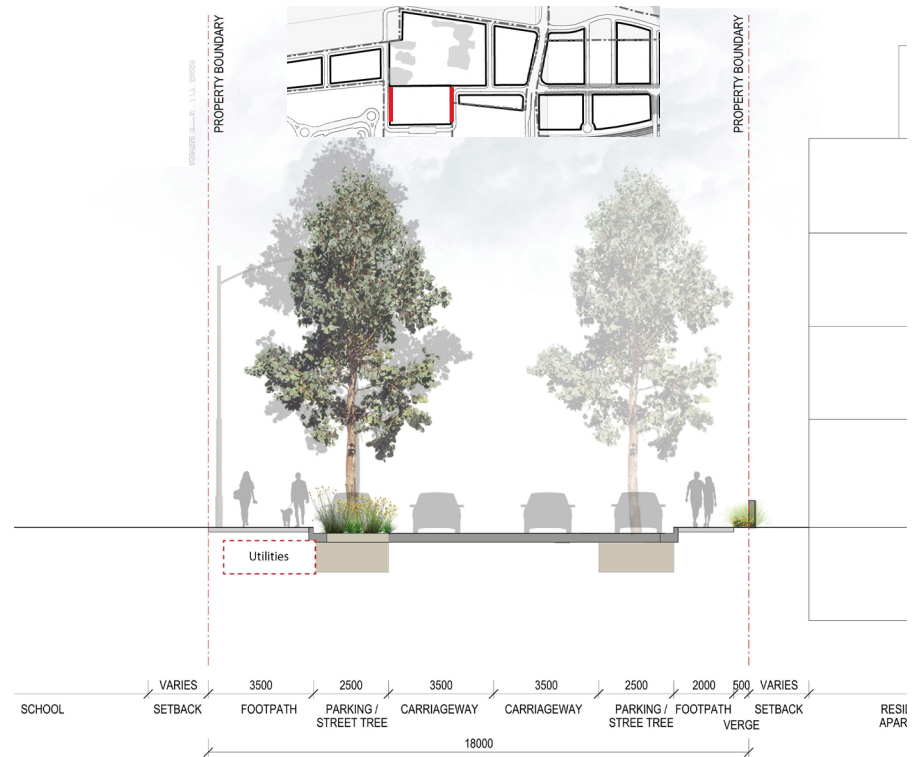


Figure 4.2.8.2
Local Street Section 02

Section 04 - General Controls



**Figure 4.2.8.3
Local Street Section 03**

Section 04 - General Controls

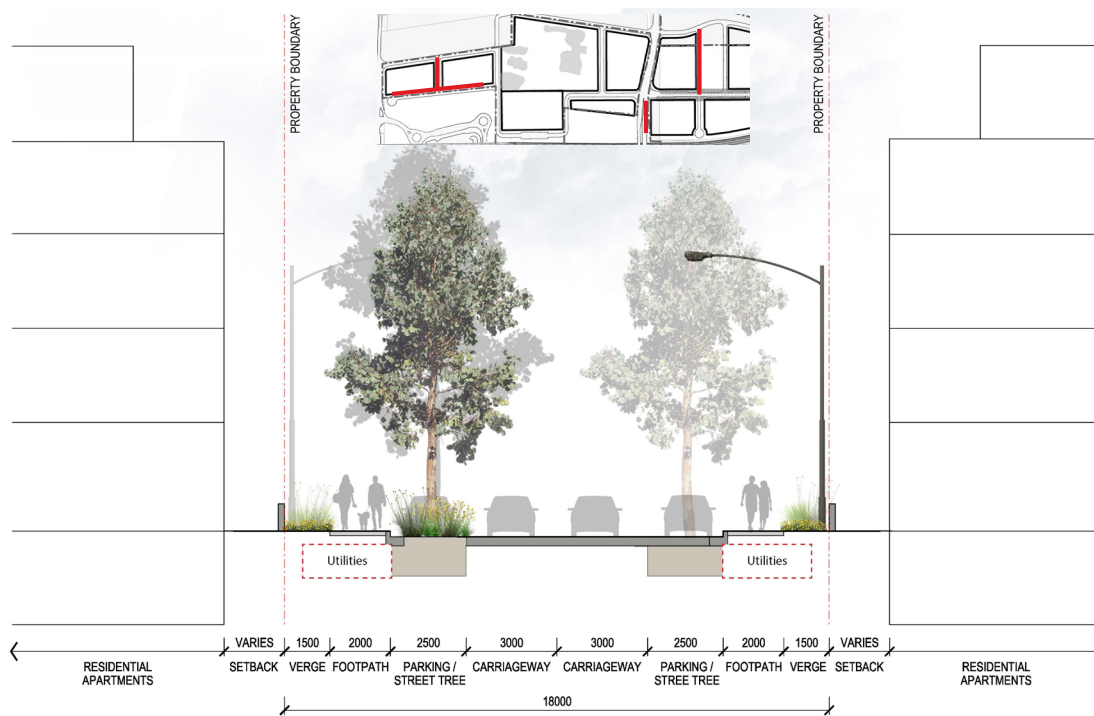


Figure 4.2.8.4
Local Street Section 04

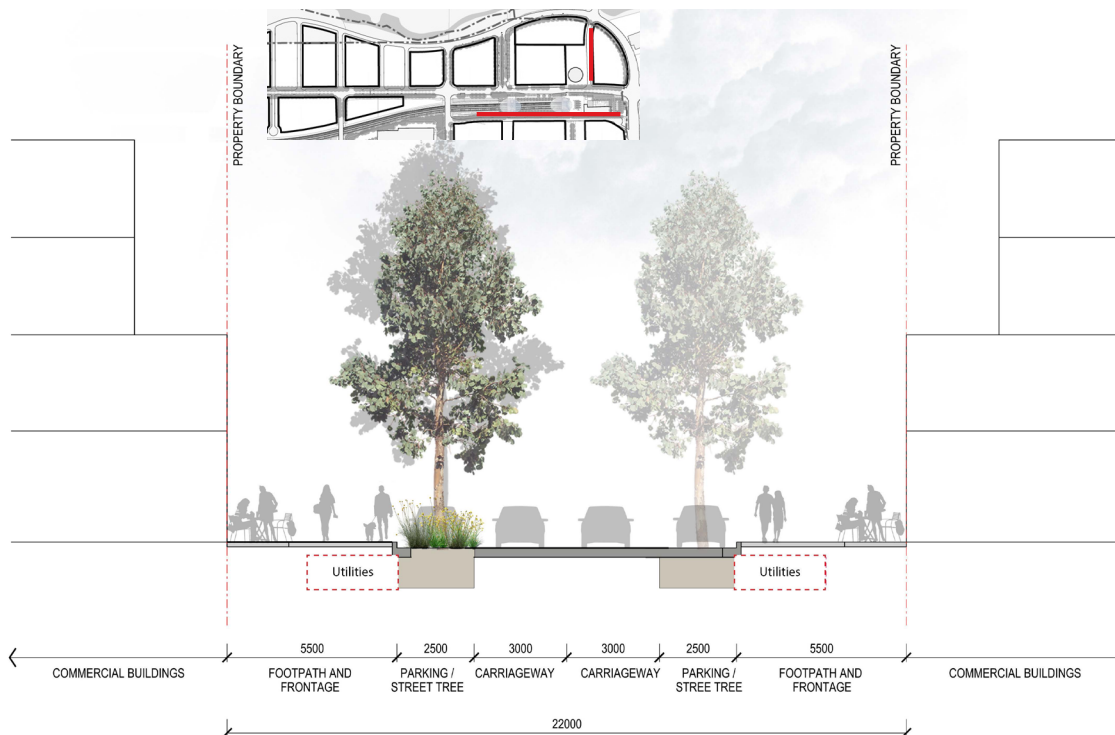


Figure 4.2.8.5
Local Street Section 05

Section 04 - General Controls



Figure 4.2.8.6
Local Street Section 06

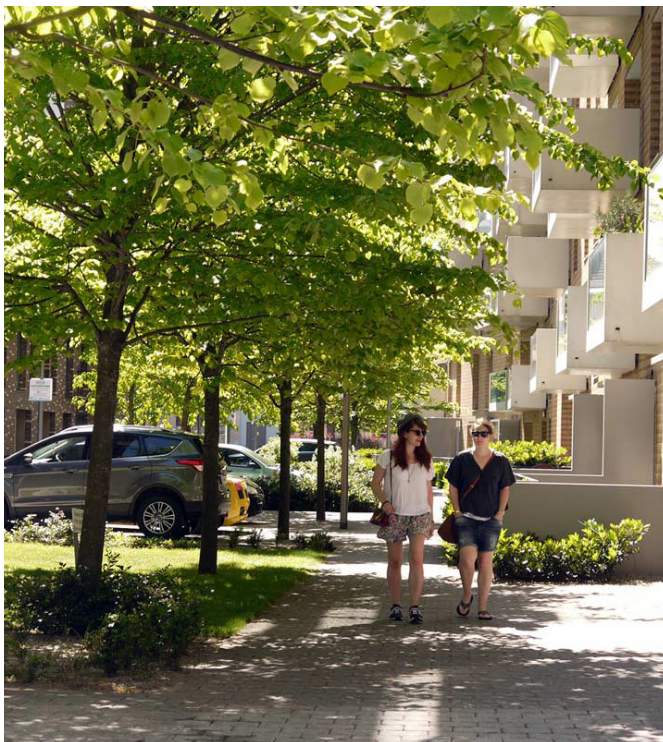


Figure 4.2.8.7
Potential Local Street Character

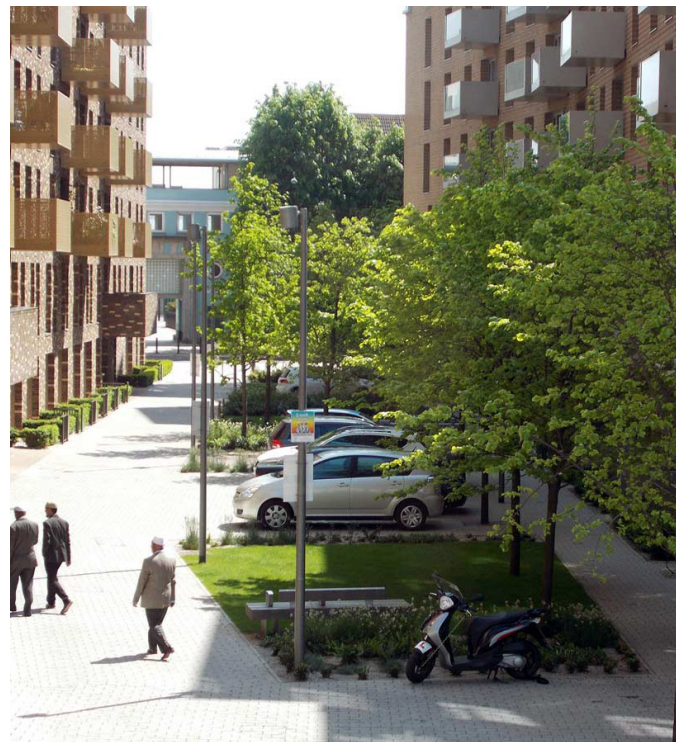


Figure 4.2.8.8
Potential One Way Street Character

4.2.9 Laneway Design

4.2.9. Controls:

1. Laneways will be designed with allocation of footpaths, planting, parking and traffic lanes as detailed in figure 4.2.8.1 and the landscape design report prepared by Clouston.



Figure 4.2.9.1
Lane way Section 01

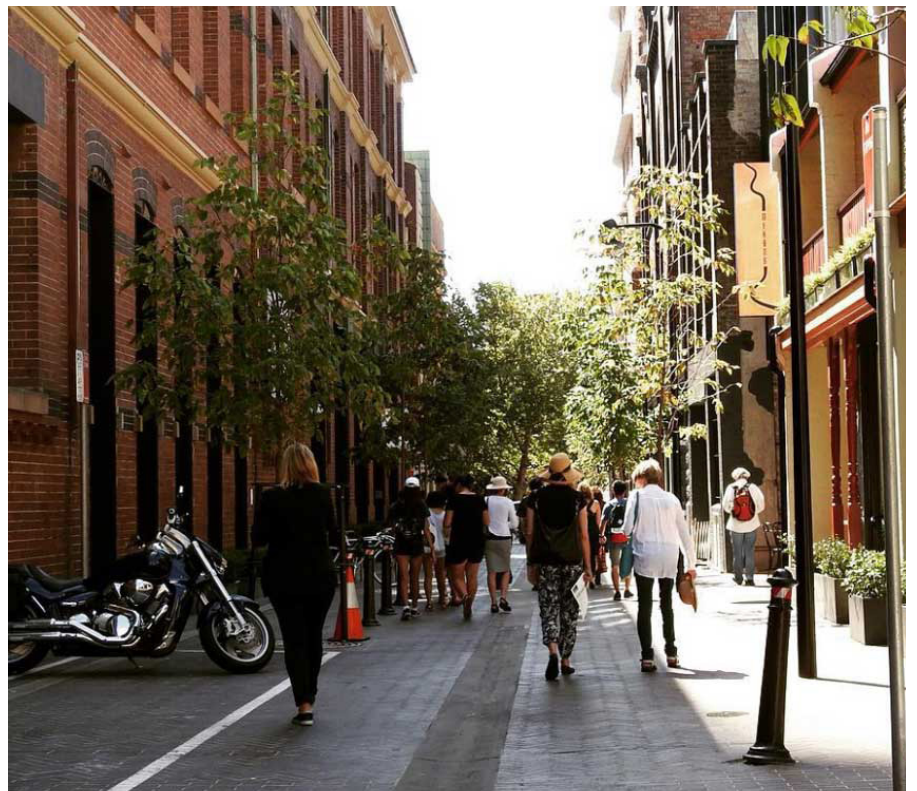


Figure 4.2.9.2
Potential Laneway Character

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4.3

MOVEMENT AND ACCESS

Objectives:

- A. Establish a pedestrian and cycle network to connect to the eastern side of Elizabeth Macarthur Creek, via strategically located creek crossing points.
- B. Design the pedestrian and cycle network as an integral element within the urban structure of the development that links parks, streets and the creek.
- C. Establish a network of pedestrian and cycle paths, cross links (especially from West to East) and circuits for local leisure and active transport links to daily destinations such as the Metro Station, the school, shops, parks, the urban plaza and Elizabeth Macarthur Creek.
- D. Establish a wayfinding strategy to provide a coherent signage system for locals and visitors.
- E. Ensure vehicle movements and site servicing minimises impact on the pedestrian experience and encourages active transport.

4.3.1 Active mobility network (pedestrian and cycle network infrastructure)

4.3.1 Controls:

1. Locate the leisure and active transport links strategically to connect the Metro Station and town centre development with the surrounding residential areas such as Glenwood to the West via the existing pedestrian crossing and footbridge across Old Windsor Road and existing residential developments to the east via the proposed link bridge over the Elizabeth Macarthur Creek.
2. Locate visitor bike parking adjacent to entry lobbies and within communal open space at ground floor.
3. Locate employee and resident bike parking in easily accessible locations within the first basement level, adjacent lift lobbies or integrated with dedicated parking and storage.
4. All non residential development is to provide end of trip facilities.

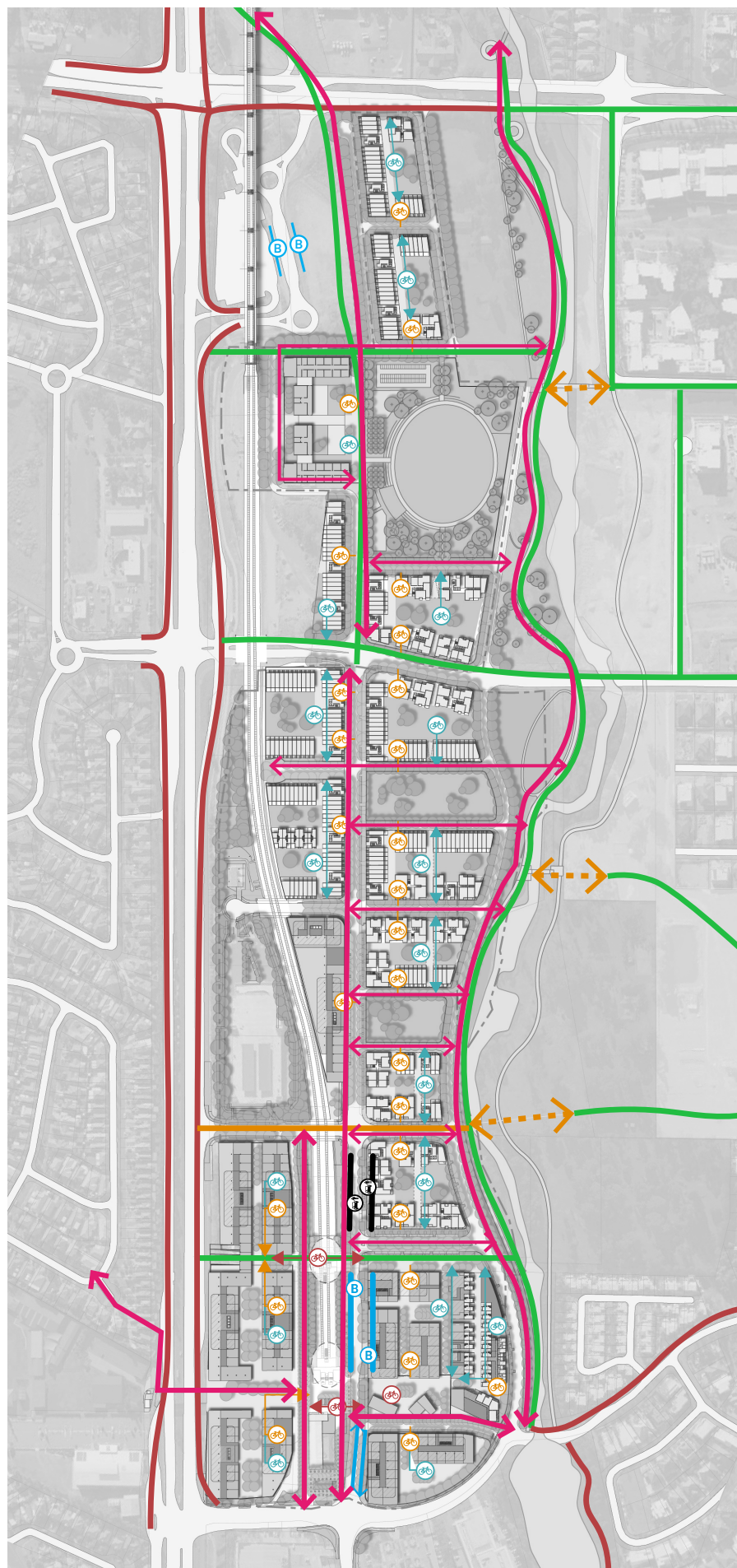








Figure 4.3.1
Bike Network

- Precinct Connector
- Future Cycleways
- Existing Cycleways
- - - Potential Future Footbridge
-  Public Cycle Facility
-  Resident/Worker Cycle Facility
-  Visitor Cycle Facility
-  Bus Stop
-  Primary Pedestrian Route
-  Secondary Pedestrian Route

4.3.2 Vehicular access

4.3.2 Controls:

1. Conflicts between vehicles and pedestrians are to be minimised and the creation of high quality walkable streets prioritised.
2. The natural topography should be leveraged to minimise the impact of vehicle entrances and ramping on pedestrian priority frontages.
3. Celebration Drive and Mawson Ave are not permitted to have driveway crossovers except in indicated zones on figure 4.3.2, with loading and parking access delivered via private lanes and local streets
4. With the exception of C2.3, Residential lots should provide a mid-block lane for vehicular and loading access and to maximise the pedestrian experience of surrounding streets.
5. Commercial lots C1.0, C1.1 and C1.2 should provide zones for vehicular / loading access along Comforth Street away from plaza entries.
6. Lots B1.0, B1.1 and B2.0 should provide zones for vehicular / loading access on neighbourhood roads off Mawson Avenue.
7. Vehicular entries should be minimised to one per lot where possible.
8. Internal loading docks will be shared wherever possible to limit the amount of driveways.
9. Loading docks will be used for both garbage collection and resident loading, generally located within basements and designed to provide forward in / forward out movements of all vehicles.
10. Above ground parking should be discouraged. Where basement levels could be exposed as a result of the falling topography, these will be skinned by an active use and designed for future adaptation and use as a habitable space.
11. Basement frontages and uninterrupted blank walls are not permitted to Celebration Drive, as a minimum the communal open space will be visible from the public realm on Celebration Drive.
12. All roads to accommodate access for 12.5m Heavy Rigid Vehicle.
13. Cul-de-sac's shall be designed to have a minimum 19m radius.
14. Loading and servicing to be undertaken within sites.

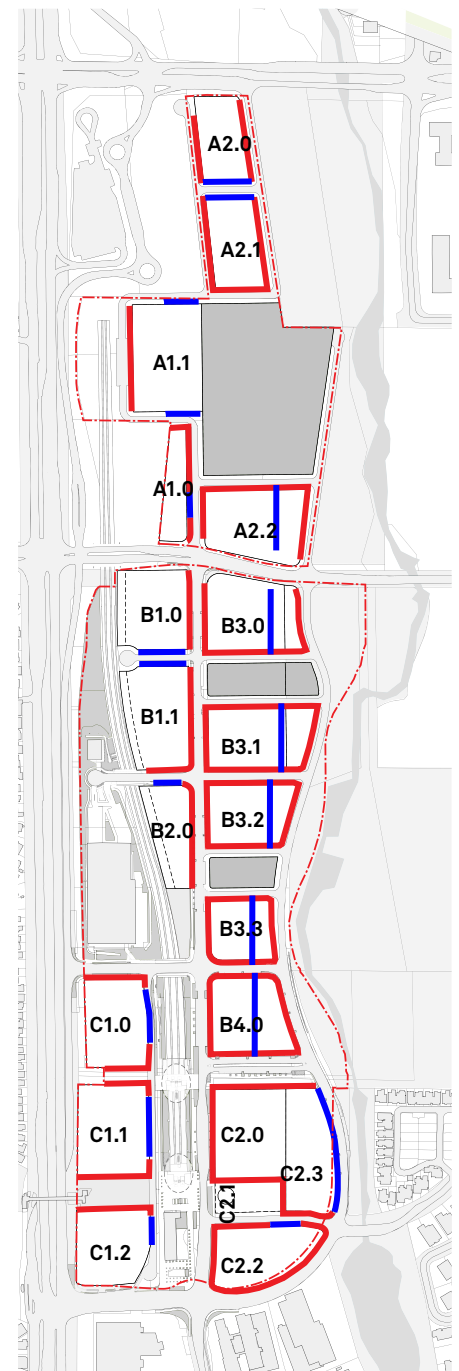


Figure 4.3.2.1
Frontages for private parking and servicing access

- Pedestrian Access
- Vehicular / Loading Access Laneway (indicative location)

Note: Vehicular/Loading will not occupy this entire extent and should be as narrow as possible off the private laneway.

4.3.3 Parking

4.3.3 Controls:

1. Parking is to be provided as follows:

Vehicle Parking		
Land Use	Minimum Rate	Maximum Rate
Residential	0.4 per 1 Bed	0.6 per 1 bed
	0.7 per 2 Bed	0.9 per 2 Bed
	1.2 per 3 Bed	1.4 per 3 Bed
	0.1 visitor per unit	0.1 visitor per unit
Retail	1 per 130 sqm	1 per 60 sqm
Commercial	1 per 145 sqm	1 per 100 sqm
Carshare	1 per 150 spaces provided irrespective of land use. Note: 3 parking spaces should be deducted from the minimum and maximum provision for every 1 car share space provided.	

Bike Parking	
Residential	1 resident space per 3 units 1 visitor space per 12 units
Commercial	1 space per 150m ² gfa for staff 1 space per 1000m ² gfa for visitors
Retail - Supermarket	1 space per 450m ² for staff
Retail - Specialty	1 space per 300m ² gfa for staff
Retail - Neighbourhood Shops	8 spaces minimum
Open space/ parks	16 spaces
Community facilities	6 spaces

2. All basements are to be wholly contained within development lots.

4.4

BUILT FORM, LAND USE, SUBDIVISION AND TYPOLOGIES

Objectives:

- A. To define and reinforce a distinctive character within the precinct and deliver diverse and unique architectural forms,
- B. To create a network of private landscaped spaces that form larger landscape zones adjacent to, or visually connected with streets, public spaces, links or other communal opens spaces.
- C. To provide a series of communal open spaces that provide ample and quality landscaped spaces for residents and enhance the public realm experience.
- D. To maintain solar access to open spaces within the precinct
- E. To maximise internal and external views throughout the precinct.
- F. To reduce 'urban heat island' effect.
- G. To ensure that the development promotes social and economic integration whilst providing households on lower incomes access to housing opportunities.
- H. To achieve a high standard of architectural and urban design, materials and detailing appropriate to the building type and location.
- I. To ensure there is consistent design and material treatment of affordable and market dwellings to avoid a visual differentiation between the income groups of residents.
- J. To enable the provision of diverse and innovative housing typologies in response to local needs.
- K. To ensure that public spaces and streets are activated along their edges with retail and residential activity.
- L. To maximise individual entries along street frontages where ground floor apartments are located,
- M. To deliver amenity and safety for residents when designing ground floor apartments.
- N. To ensure the form and external appearance of the buildings improve the quality and amenity of the public domain
- O. To ensure buildings meet sustainable design principles in terms of sunlight ventilation, wind, reflectivity, visual and acoustic privacy, safety and security and resource, energy and water efficiency.
- P. To locate height and density focused towards the town centre, along Mawson Avenue and at selected street corners to modulate height and scale.
- Q. To mitigate noise levels from Old Windsor Road and the Metro Rail Corridor
- R. Provide areas of deep soil to allow for fuller tree canopy on each lot.
- S. Appropriately managing potential run-off and drainage issues.
- T. Maximise opportunities to use roof space for open space.
- U. To incorporate sustainable energy production features into the roof design.
- V. To minimise the visual impact of roof plant.

4.4.1 Subdivision

4.4.1. Controls:

1. Areas nominated as public parks will be transferred to local government ownership at the completion of works.
2. Subdivision will be undertaken in a logical manner that ensures the construction of complete streets and open spaces.
3. Final subdivision of sites will be undertaken in a manner that aggregates and co-locates communal open spaces and minimises footpath cross overs for private garage and basement access.

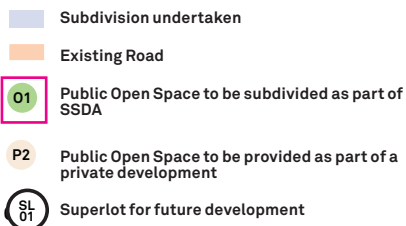


Figure 4.4.1.1: Preliminary superlot and open space subdivision



4.4.2 Land Use and Built Form

4.4.2. Controls:

1. Maintain low built form around the metro and rail corridor.
2. Maximise commercial height, away from metro, specifically toward Old Windsor Road to aid in noise mitigation.
3. Create lower podium conditions with ground level retail around plaza spaces.
4. Orientate built form to allow solar access into town square in accordance with section 3.0.
5. Orientate built form to maximise solar access to private communal open space within each development lot.
6. Lot C2.1 and A1.1 to be dedicated areas within the site for community centre (Lot C2.1) and school site (Lot A1.1)
7. Keep residential built form low along the riparian corridor and Celebration Drive north of Florey Avenue.
8. Maximise height along Mawson Avenue to enhance views to parks and adjoining riparian corridor.
9. Encourage a mixture of uses near the town centre.
10. Configure taller built form north-south to mitigate overshadowing.
11. Maximise interaction between future school towards district park.
12. Maintain low built form on plots C2.0, C2.2 and C2.3 for extent of frontages to the public square where potential freestanding community centre will be located and ensure the community facilities are the most prominent building experience within the town square.
13. On lots B1.0 and B1.1 residential built form closer to the rail corridor should maintain a low height and higher built form towards Mawson Avenue should be oriented in a way that mitigates the noise and visual impact of both the Metro and Old Windsor Road.
14. Low rise apartments adjacent the rail link will be designed to ensure no overlooking to the rail corridor with views oriented to adjacent streets or internal communal open space.
15. All ground floor apartments will be designed to provide a primary address, front door and garden off the adjacent street.
16. 20% of apartments within the precinct are to achieve a minimum 'Design and As-Built' Liveable housing Australia Silver level accreditation.
17. On all other residential streets, buildings must express a 2-4 storey scale on the lowest levels of the building.
18. Building height and massing should be arranged to create borrowed views, layering private, communal and public open space to avoid direct overlooking between dwellings, creating a 'beautiful view'.
19. A maximum street wall height of 24m should be maintained Along Mawson Avenue and the Metro Cutaway to provide desired character and improve amenity of future uses. Buildings should be set back above street wall in accordance with the approved envelope and heights maximised to allow for a reduction in height, diversity of built form and diversity of building typology closer to Elizabeth Macarthur Creek and the nominated open spaces.
20. Maximise Commercial height away from Mawson specifically around Old Windsor to aid in noise mitigation and to leverage opportunities for district views.
21. Maintain a lower height along Celebration Avenue to allow for view sharing to Elizabeth Macarthur Creek and the nominated opens spaces from buildings and apartments further away and to provide a comparable scale to adjacent existing lower density areas.
22. Maximum and minimum GFA's per lot will be controlled in accordance with 4.2.4.4 and 4.2.4.5.

Section 04 - General Controls

Figure 4.4.2.1

LEP Maximum Heights

- 68M Maximum LEP Height
- 21M Maximum LEP Height
- 28M Maximum LEP Height

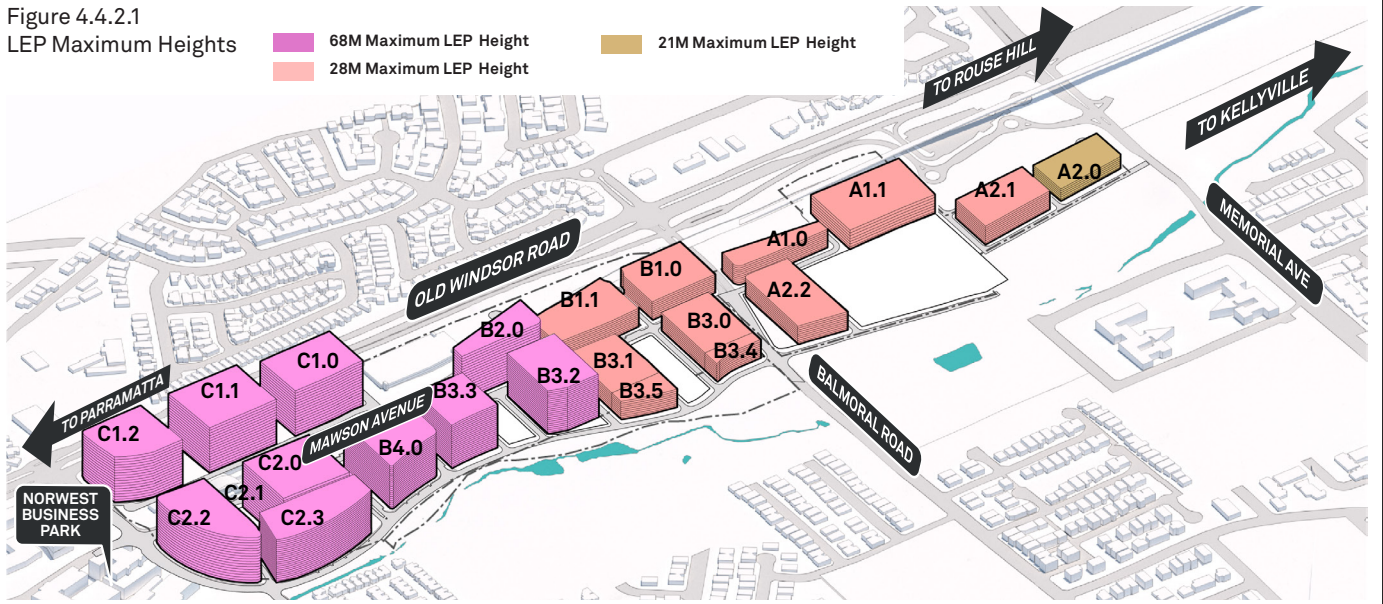


Figure 4.4.2.2

Concept Master Plan Height Controls

- 40M - 16M Max Height
- 24M Max Height
- 68M - 21M Max Height
- 7M Max Height
- 68M - 28M Max Height
- 68M Max Height

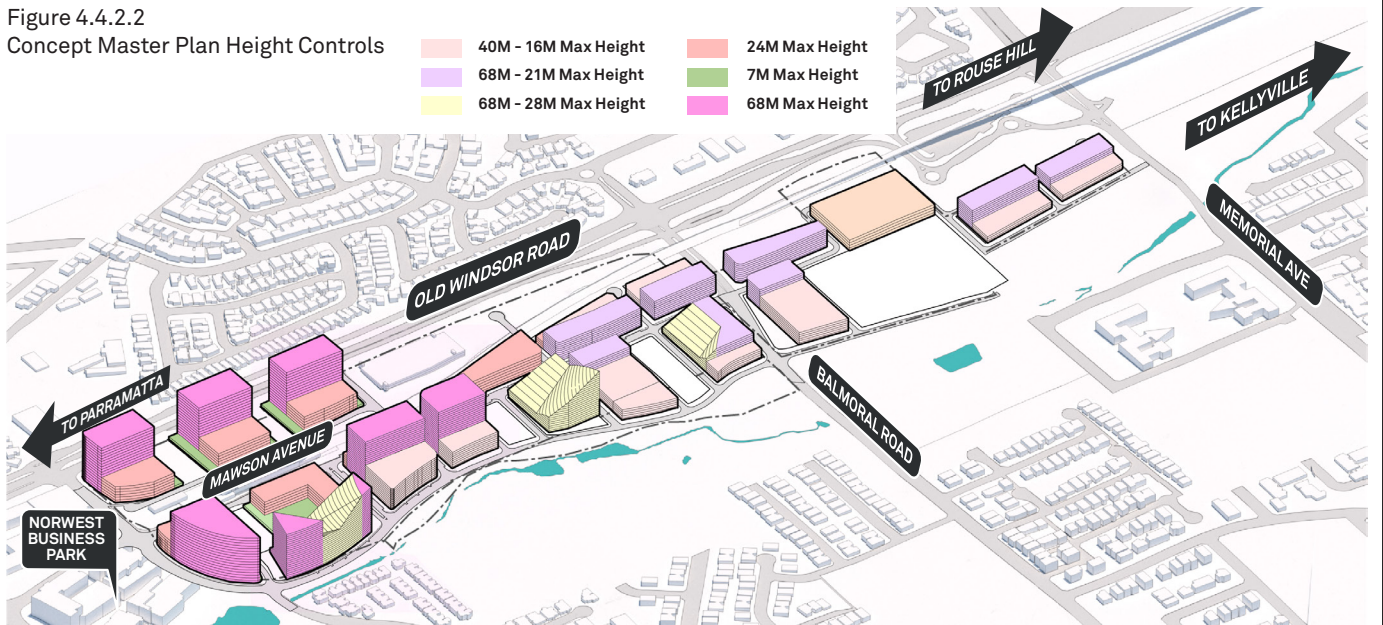
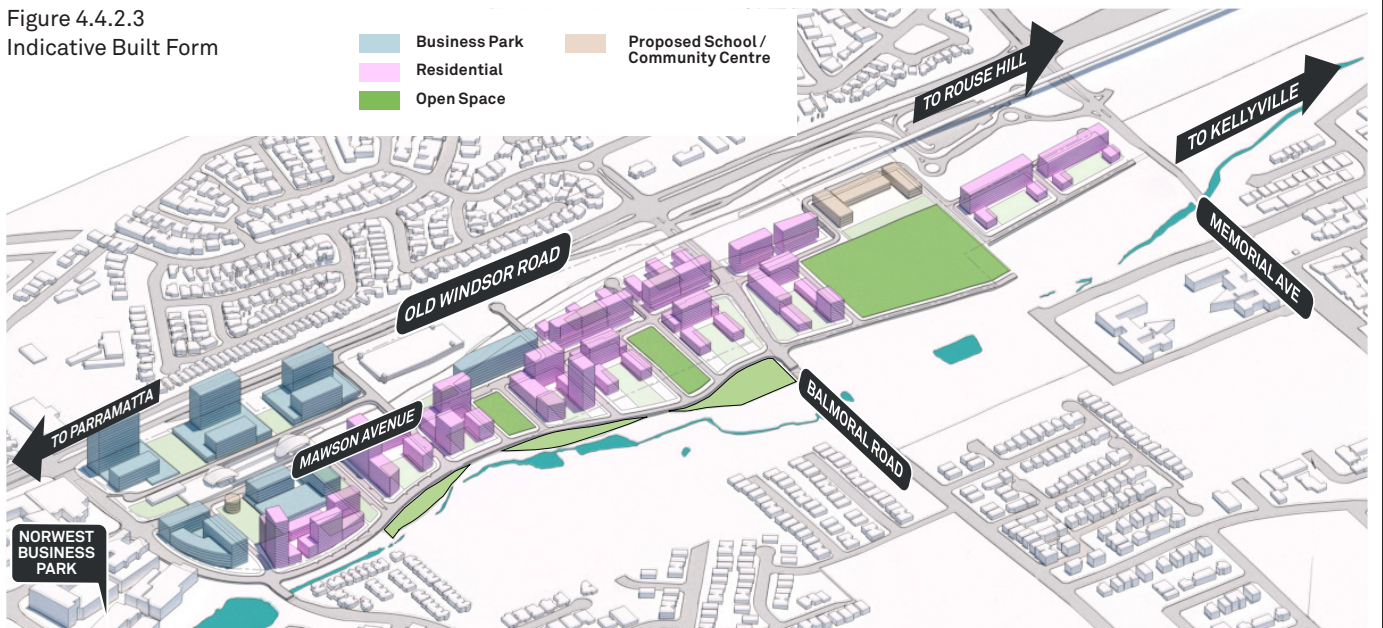


Figure 4.4.2.3

Indicative Built Form

- Business Park
- Residential
- Open Space
- Proposed School / Community Centre



4.4.2 Land Use and Built Form (Continued)

Land Use Plan & Character Areas

The proposed land uses for the site seeks to deliver Landcom’s mandate of creating high-quality transit oriented precincts around public transport infrastructure.

The land use allocations builds upon the character zones to progressively transition from primarily residential uses alongside local destinations of the district park and school in the north to increasing mixed use and employment uses around the station and interface with Norwest Business Park in the south.

The land use plan is consistent with the Hills Shire LEP and objectives of the Local Strategic Planning Statement which continues the collaborative design process commenced under the Sydney Metro North West corridor design.

Bella Visa Development Maximum Proposed Yield							
Lot Number	Lot Area	Maximum GFA	Projected GFA Allocation By Land Use				Dwellings
			Retail	Community	Commercial	Residential	
Memorial to Balmoral							
A1.0	3,425	17,740	1,000			16,740	205
A1.1	10,300	11,000		11,000			
A2.0	5,520	15,140				15,140	189
A2.1	6,300	22,820				22,820	285
A2.2	9,375	25,475				25,475	318
Total	34,920	92,175	1,000	11,000		80,175	997
Balmoral to Town Centre							
B1.0	6,780	21,100				21,100	264
B1.1	7,840	19,800				19,800	248
B2.0	4,100	16,250	500		15,750		
B3.0	7,730	15,150				15,150	189
B3.1	6,415	15,150				15,150	189
B3.2	6,670	33,600				33,600	420
B3.3	5,045	30,590				30,590	382
B3.4	1,340	5,375				5,375	67
B3.5	2,040	6,775				6,775	85
Total	47,960	163,790	500	0	15,750	147,540	1,844
Town Centre							
B4.0	7,750	39,395				39,395	492
C1.0	7,450	26,200	600		25,600		
C1.1	9,000	32,200	600		31,600		
C1.2	7,350	37,300	600		36,700		
C2.0	8,155	25,500	11,000		14,500		
C2.1	3,575	4,100	100	4,000			
C2.2	7,375	27,450	600		26,850		
C2.3	7,740	37,660				37,660	471
Total	58,395	229,805	13,500	4,000	135,250	77,055	963
Totals	141,275	485,770	15,000	15,000	151,000	304,770	3,804

Figure 4.4.2.4 *%5 Terraces for Lots A2.0 A2.1 A2.2 Maximum Proposed Yield

Bella Visa Development Minimum Proposed Yield							
Lot Number	Lot Area	Minimum GFA	Projected GFA Allocation By Land Use				Dwellings
			Retail	Community	Commercial	Residential	
Memorial to Balmoral							
A1.0	3,425	5,470	500			4,970	62
A1.1	10,300	11,000		11,000			
A2.0	5,520	8,850				8,850	111
A2.1	6,300	10,100				10,100	126
A2.2	9,375	15,000				15,000	188
Total	34,920	50,420	500	11,000	0	38,920	487
Balmoral to Town Centre							
B1.0	6,780	16,950				16950	212
B1.1	7,840	19,600				19600	245
B2.0	4,100	12,300	250		12,050		
B3.0	7,730	12,878				12878	161
B3.1	6,415	12,878				12878	161
B3.2	6,670	16,700				16700	209
B3.3	5,045	20,200				20200	253
B3.4	1,340	3,350				3350	42
B3.5	2,040	5,100				5100	64
Total	47,960	119,955	250	0	12,050	107,655	1,346
Town Centre							
B4.0	7,750	27,150				27,150	339
C1.0	7,450	24,000	450		23,550		
C1.1	9,000	25,770	450		25,320		
C1.2	7,350	21,945	450		21,495		
C2.0	8,155	24,465	10465		14,000		
C2.1	3,575	4,100	100	4,000			
C2.2	7,375	20,850	450		20,400		
C2.3	7,740	30,950				30,950	387
Total	58,395	179,230	12,365	4,000	104,765	58,100	726
Totals	141,275	349,605	13,115	15,000	116,815	204,675	2,559

Figure 4.4.2.5 *%5 Terraces for Lots A2.0 A2.1 A2.2 Minimum Proposed Yield

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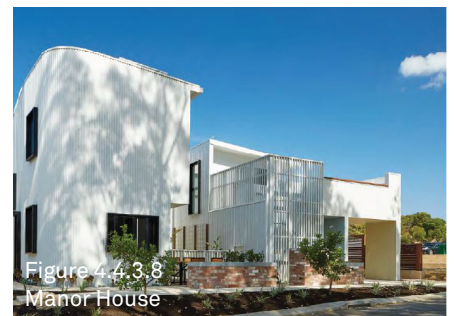
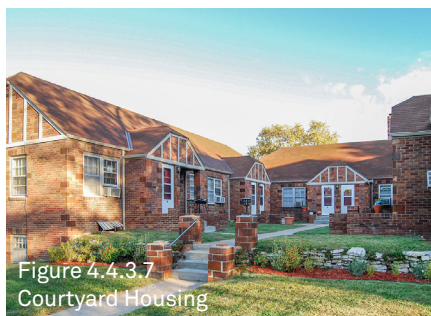
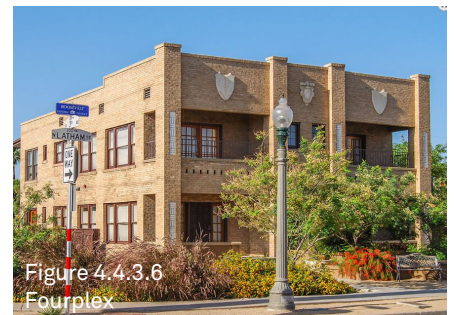
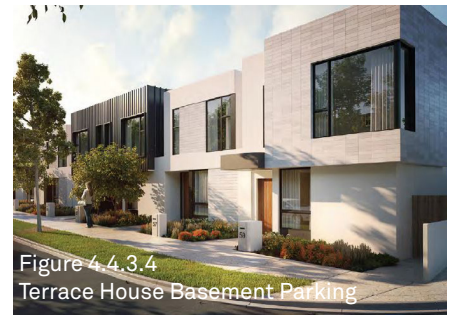
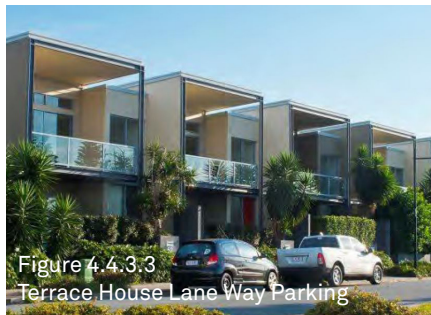
4.4.3 Typologies

4.4.4. Controls:

1. The design of individual buildings within superlots must demonstrate a diversity of building typology across the entire development that addresses the demand for housing options as defined under the NSW Government Low Rise Medium Density Design Guide including:

- Terraces
- Dual Occupancies
- Multi Dwelling Terraces
- Multi Dwellings Houses
- Manor Houses
- Live Work
- Courtyard Apartments
- Fourplexes

2. 5% of all dwellings on lots A2.0, A2.1 and A2.2 will be provided with minimum terrace provisions of as noted on building envelope drawing A0303.



'Missing Middle' Typologies

(As highlighted in NSW Low Rise Medium Density Design Guide & MissingMiddleHousing.com)

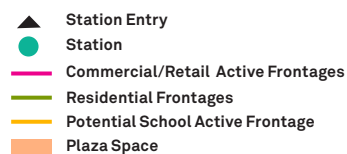
4.4.4 Activation and street frontage

4.4.4. Controls:

1. Lots C2.1 should provide community and retail uses at ground level fronting Mawson Avenue and the Town Square in accordance with Figure 4.4.4.
2. Lots C1.0, C1.1, C1.2 should accommodate retail use at ground level fronting the commercial plazas and Comforth Street in accordance with Figure 4.4.4.
3. Lots C2.0, C2.2 and C2.3 should accommodate retail use at ground level fronting Mawson Avenue and the Town Square in accordance with Figure 4.4.4.
4. Ground floor apartments fronting Mawson Avenue should be designed to permit future use for small scale commercial tenancies with a regular width that supports this potential use in accordance with Figure 4.4.4.
5. Lot B2.0 should accommodate retail and or communal use at ground level fronting Mawson Avenue in accordance with Figure 4.4.4.
6. Direct street access should be provided to ground floor apartments on all streets, where possible.
7. Two-storey residential typologies should be considered on east west street frontages of apartment buildings.
8. Buildings should be designed to promote passive surveillance of the public realm.



Figure 4.4.4
Active Street Frontages



4.4.5 Public Domain Interface

4.4.5. Controls:

1. Commercial buildings fronting public plazas should express a 1-2 storey scale at the lowest levels of the building and be provided with retail tenancies to encourage activation.
2. The town square should be activated by retail uses at the ground floor of adjacent buildings irrespective of the primary land use (Community, Commercial, Retail or Residential).
3. Along all retail frontages awnings should be provided, a minimum of 3m from the ground.
4. Communal open space should be clearly defined and separate from the public domain.
5. When fronting streets: balconies, terraces and courtyard apartments should have direct street entry, wherever possible.
6. Apartments, balconies and courtyards fronting the landscaped corridor of Elizabeth Macarthur Creek, the District Park, the Local Parks and the Town Square should be physically separated via a fence or barrier but provide passive surveillance.
7. All residential lobbies should have access directly to the street.
8. All ground floor apartments should be provided with a primary entry from the adjacent road.
9. Residential units fronting Celebration Drive and Elizabeth Macarthur Creek should be provided with direct access at the ground level.

4.4.6 Building Heights

4.4.6. Controls:

1. All development is to be contained entirely within the maximum buildings heights noted on the approved building envelope drawings inclusive of balustrades, shading devices and lift overruns.

4.4.7 Street wall height

4.4.7. Controls:

1. Commercial buildings along Comforth Street, Mawson Avenue and Bligh Street should express a 4-7 storey scale on the lowest levels of the building.
2. Commercial buildings along public domain plazas must be provided with ground floor retail and express a 1-2 storey scale on the lowest levels of the building.
3. Residential buildings, along Mawson Avenue south of Balmoral Road, and roads south of Byles Place, must express a 4-6 storey scale on the lowest levels of the building.
4. On all other residential streets, buildings must express a 2-4 storey scale on the lowest levels of the building.

4.4.8 Ground Level Setback

4.4.8. Controls:

1. On commercial streets and public plazas the lower levels of the buildings must have a 0m setback from the lot boundary as indicated in figure 4.4.9.2.
2. On Mawson Avenue south of Balmoral Road, the lower levels of buildings may be built to the lot boundary where non-residential frontages are provided as indicated in figure 4.4.9.3.
3. All residential frontages will be provided with a minimum set back to lower levels of 2m.
4. Where retail seating is not provided, setback zones should be landscaped to balance street activation and residential amenity.

4.4.9 Upper Level Setback

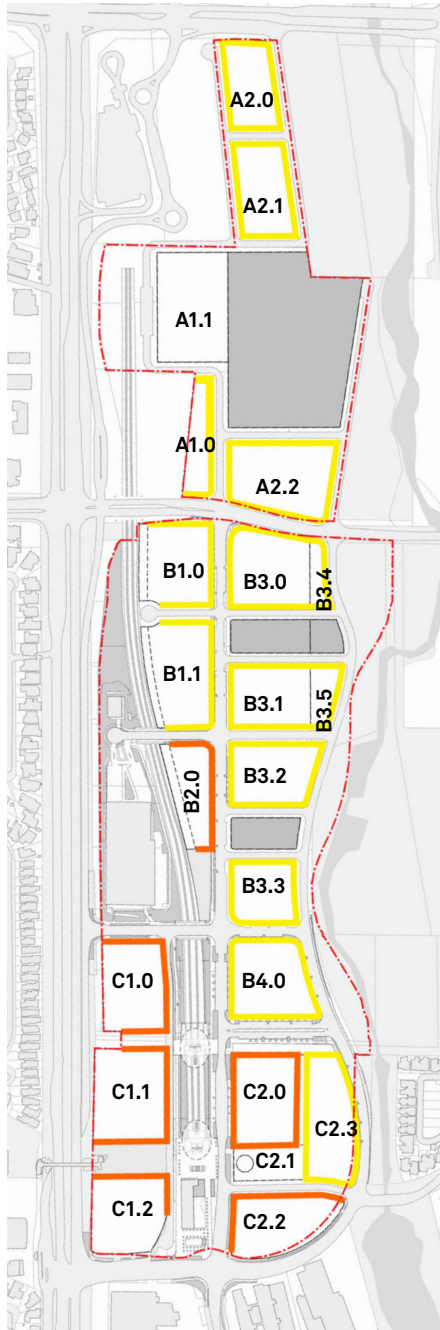


Figure 4.4.8
Minimum
Ground Level Street Setback



- 0m Setback (Commercial uses)
- 2m Setback (All other uses)

4.4.9. Controls:

1. On commercial streets, upper floors of buildings must be set back a minimum of 3m from the lot boundary as indicated in figure 4.4.9.2.
2. On Mawson Avenue, upper levels of buildings must be set back a minimum of 3m from the lot boundary as indicated in figure 4.4.9.3 and 4.4.9.5.
3. On all other residential streets, the upper levels of buildings must be set back a minimum of 5m from the lot boundary as indicated in figure 4.4.9.4.

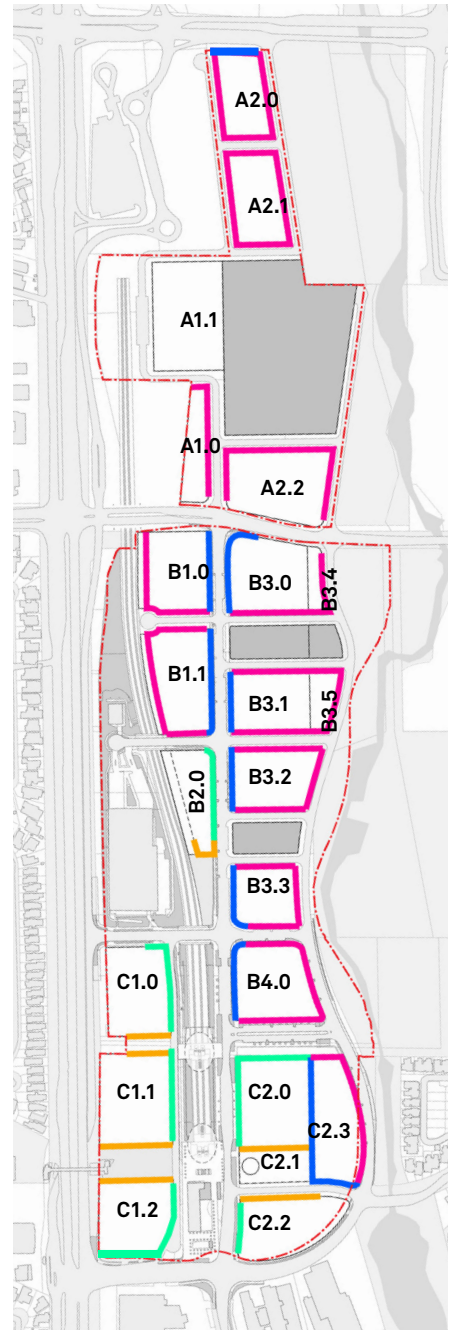


Figure 4.4.9.1
Upper Level Street Setback

- Commercial 1-2 Storey Setback (Figure 4.4.9.2)
- Commercial 4-7 Storey Setback (Figure 4.4.9.3)
- Residential 2-4 Storey Setback (Figure 4.4.9.4)
- Residential 4-6 Storey Setback (Figure 4.4.9.5)

Section 04 - General Controls

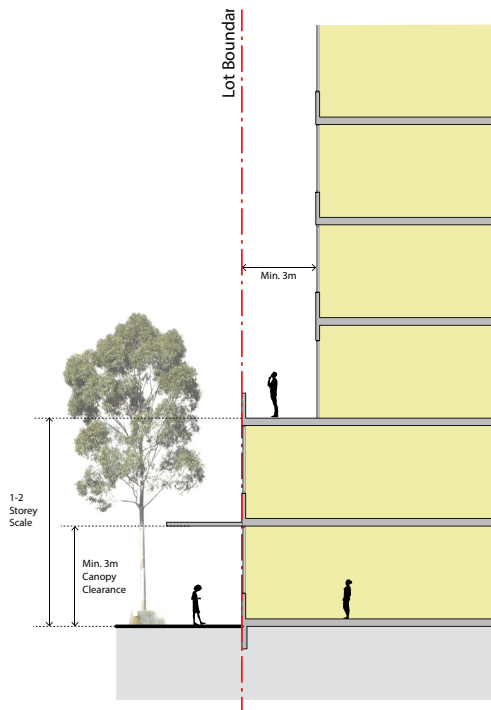


Figure 4.4.9.2
Commercial 1-2 Storey setback along Plazas and Town Square

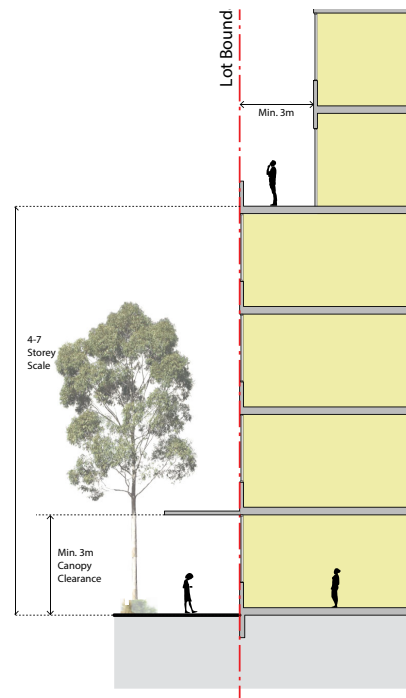


Figure 4.4.9.3
Commercial 4-7 Storey setback along Mawson Avenue and Comforth Street

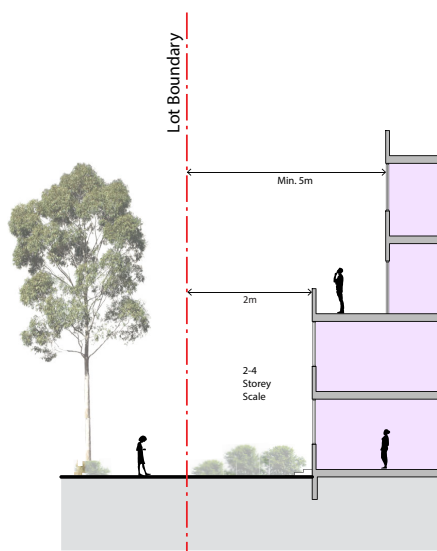


Figure 4.4.9.4
Residential 2-4 Storey setback on all other neighbourhood roads.

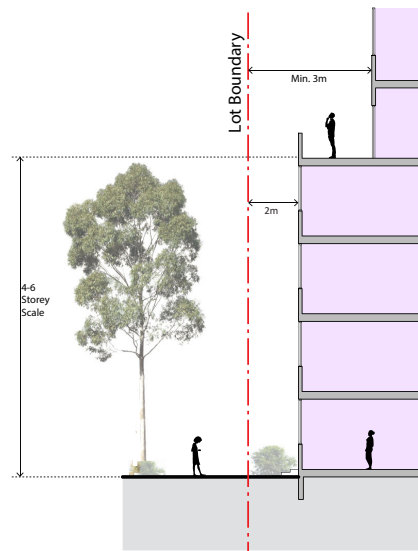


Figure 4.4.9.5
Residential 4-6 Storey setback along Mawson Avenue south of Balmoral Road and all roads south of Byles Place.

4.4.10 Architectural character & facade expression

4.4.10. Controls:

1. The lower levels of residential buildings should use durable self-finished materials that communicate a unique material experience of Bella Vista. White render, large expanses of unarticulated glass and lightweight facade systems should be avoided as a primary facade material.
2. Self-finished, durable, low embodied energy, locally procured, non-combustible and sustainable materials to be prioritised in construction.
3. Use of green façades should be encouraged.
4. Break up long building edges with facade expression or modulation, especially at lower levels.
5. Provide individual street access & address to ground floor residential dwellings.
6. Ensure the podium or lower building levels are designed to have a complimentary language to any upper levels/ tower form.

4.4.11 Rooftops

4.4.11. Controls:

1. Incorporate green roofs or rooftop gardens, to reduce the temperature of roof surfaces and the surrounding micro-climate.
2. Taller buildings should maximise location and provide space for solar panels, wind turbines and locate plant equipment to reduce reliance on energy network.
3. Provide a series of rooftop communal open spaces for the gathering of residents within buildings.
4. These spaces should take advantage of easterly aspects and panoramic views where available of the surrounding area, including the riparian corridor.
5. Rooftop gardens may utilise raised planters to define smaller spaces for sitting and gathering and be located to prevent the overlooking of adjacent units.

4.4.12 Wind mitigation

4.4.12. Controls:

1. Buildings of 8 or more storeys shall be subject to wind tunnel testing and demonstrate the following:
 - In public open spaces, the annual maximum gust speed should not exceed 23 metres per second;
 - In walkways, pedestrian transit areas, streets where pedestrians do not generally stop, sit, stand, window shop and the like, annual maximum gust speed should not exceed 16 metres per second;
 - In areas where pedestrians are involved in stationary short-exposure activities such as window shopping, standing or sitting (including areas such as bus stops, public open space and private open space), the annual maximum gust speed should not exceed 13 metres per second;
 - In areas for stationary long-exposure activity, such as outdoor dining, the annual maximum gust speed should not exceed 10 metres per second; and
 - The report is to be prepared by a suitably qualified engineer.

4.4.13 Shared communal spaces and deep soil planting

4.4.13. Controls:

1. Each lot must provide a mix of public and communal open space with a combined minimum area equal to 25% of the lot area. These should be collocated with deep soil zones.
2. Shared communal spaces on lots along Celebration Drive shall be oriented towards Elizabeth Macarthur Creek. The communal open space will be visually connected to Celebration Drive for a minimum of 25% of the street frontage and visible from the public realm.
3. Locate communal open spaces to maximise amenity within sites with adequate sunlight, aspect and outlook for residents.
4. Ground level access from residential units facing communal spaces should be provided.
5. Create a broader series of landscaped spaces by locating them strategically to form larger landscape zones that sit adjacent to, or visually connected with streets, landscaped public spaces, links or other communal open spaces.
6. Deep soil planting will be provided in accordance with Hills Shire Council Requirements.
7. Deep soil zones should be provided where setbacks are 2-5m from lot boundary.
8. Deep soil zones should be provided for public plazas and future school (Lot A1.1).

9. No built structures are permitted below deep soil zones.
10. Deep soil zones should be maintained close to the rail corridor at Lots B1.0 and B1.1 to maintain denser tree canopy to help mitigate rail noise and visual impact from the Metro and Old Windsor Road beyond. Any planting is to be provided in accordance with Sydney Metro requirements for works adjacent to a rail corridor.
11. Planting selection should vary from the shade tolerant species located on ground floor communal open space to drier, strappy or grassy species for rooftops that will cope with the greater exposure and varied environment.

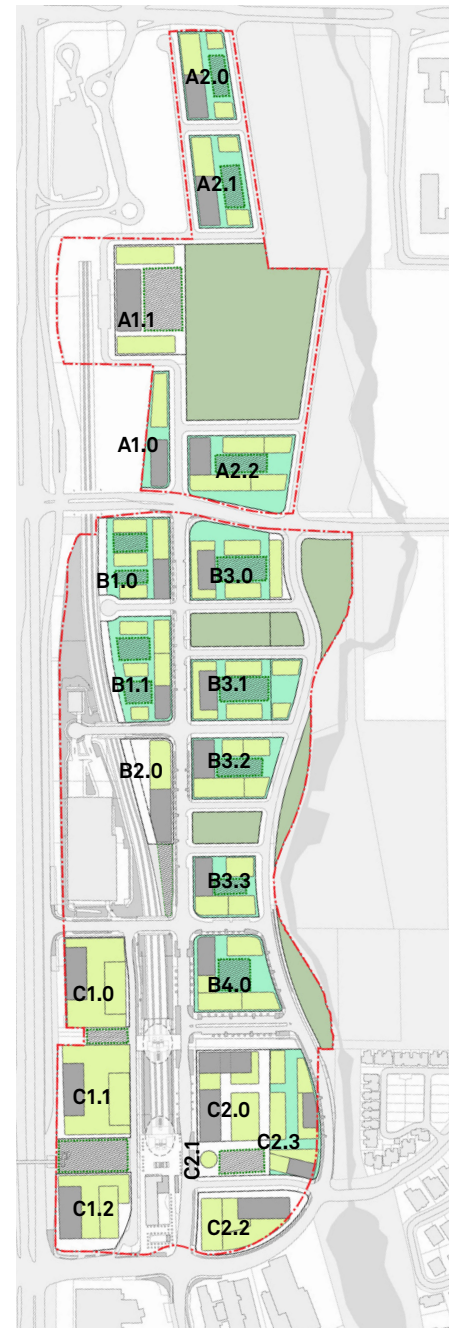
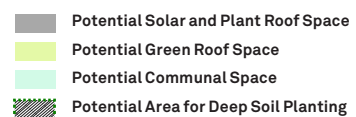


Figure 4.4.13.1
Communal Spaces, Rooftops and Deep
Soil Areas



Section 04 - General Controls



Figure 4.4.13.2

3d View of indicative communal and public open space network

- Public Open Space
- Communal Open Space (indicative only)

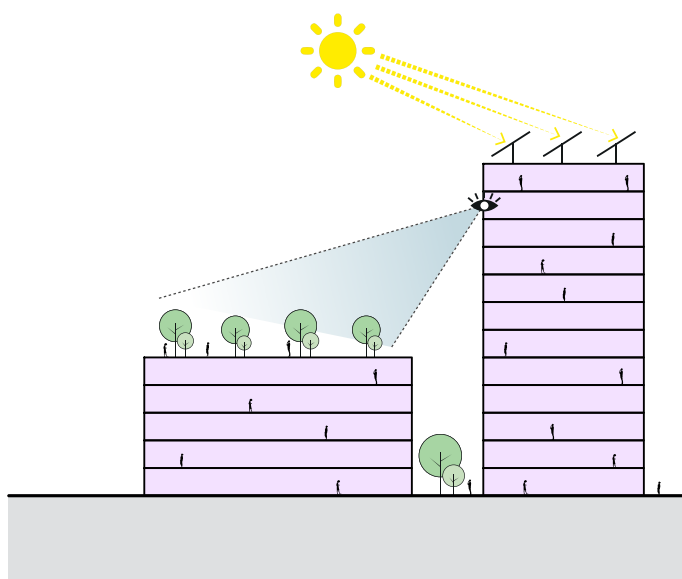


Figure 4.4.13.3

Indicative section showing communal spaces and sustainable feature for rooftops

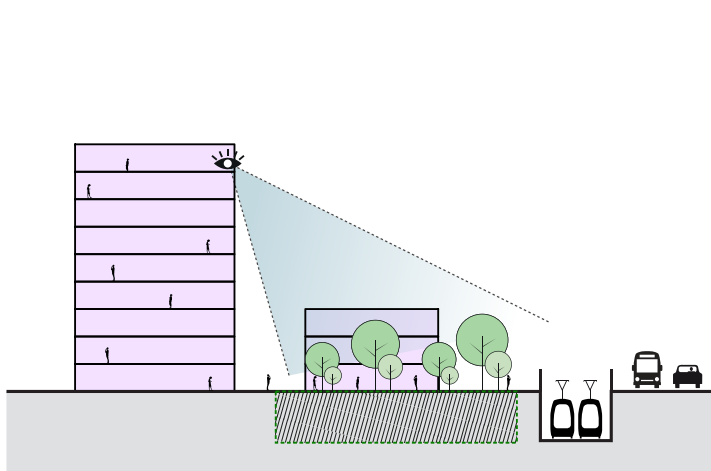


Figure 4.4.13.4

Indicative section showing communal Spaces and deep soil zones along rail corridor to mitigate noise and visual impact from Metro and Old Windsor Road

5.

TOWN CENTRE CONTROLS

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5.1

TOWN CENTRE CONTROLS

Objectives:

- A. Provide a vibrant and diverse town centre,
- B. Provide continuous business and retail uses within the Town Centre that open directly to the footpath and provide activity on the street, enhance security and passive surveillance and improves amenity of the public domain.
- C. To inform the character of buildings adjacent to open space such that the town centre becomes an active, attractive and comfortable space.
- D. Ensure that activation is maximised throughout the day, night.

5.1.1 Town Centre Experience

5.1.1. Controls:

- 1. Celebration Drive is the primary frontage for providing vehicle access to the site, and a connecting element between the town centre and riparian corridor. Where the town centre meets Celebration Dr the street should be designed for low vehicle speeds and safe pedestrian connectivity.
- 2. Mawson Avenue is the main street within the site and should be lined with active retail/residential frontages. Adjustments to the built road corridor should be designed to prioritise pedestrian movements.
- 3. Brighton Drive, Lidwell Ave and Comforth St act as primary vehicular access to the commercial lots. They should be designed as shareways to promote pedestrian connectivity and priority.
- 4. Florey Street is an active green link connecting the north Metro concourse to the riparian corridor encouraging pedestrian and cyclist connectivity.

- 5. Commercial links are pedestrian east west links to commercial lots with a broad plaza experience. Office lobbies and retail should face plazas.
- 6. Retail Laneways should be designed to encourage pedestrian activity and create a fine grain character to break up the large lot size, providing an intimate human scale that provides a secondary movement from surrounding residential areas to the station and public square.
- 7. Potential for a village mews style area within lot C2.3, promoting walkability and access for local residents as well as creating a more fine grain experience.
- 8. Uses will be managed to ensure that ground floor frontages are controlled as follows:

Ground Floor Use	Compatible adjacent use
Retail	Commercial, Public facilities, Open Space
Commercial	Public Facilities, Retail, Open Space
Residential	Residential, Public Park

Section 05 - Town Centre Controls

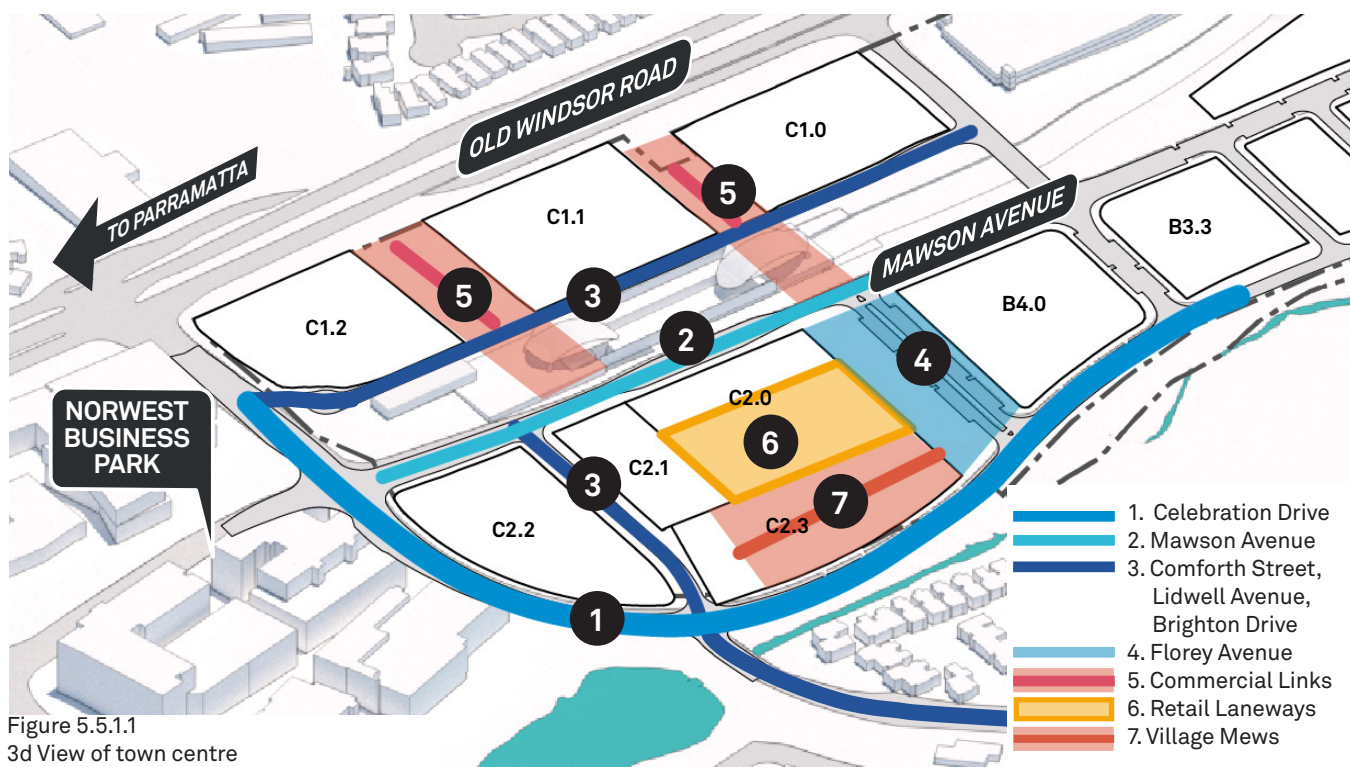


Figure 5.5.1.1
3d View of town centre



Figure 5.5.1.2
Perspective sketch of residential mews

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