



CITY OF SYDNEY  

Green Square Town Centre Public Domain Strategy

city of villages

Adopted 25 March 2013



City Design

In Association with

McGregor Coxall



Contents

1.0	Introduction	04
	1.1 Purpose	06
2.0	Strategic Context	08
	2.1 Green Square Town Centre	13
3.0	Urban Framework	14
	3.1 Active Frontages.....	16
	3.2 Built Form and Heights.....	17
	3.3 Street Typologies	18
	3.4 Public Spaces	19
	3.5 Transport and Access	20
	3.6 Pedestrian Movement	21
	3.7 Heritage	22
	3.8 Community Facilities	23
	3.9 Water Management	24
	3.10 Green Infrastructure Systems.....	25
4.0	Strategic Directions, Three Big Moves	26
	4.1 Civic Place	28
	4.2 Streets and Spaces for People	29
	4.3 Green Infrastructure	30
	4.4 Key Precincts	31
5.0	Design Coordination Considerations	32
	5.1 Street Geometry Overlay	34
	5.2 Pavement and Kerb Typology	38
	5.3 Public Domain Furniture Overlay.....	40
	5.4 Street Lighting Overlay	42
	5.5 Street Tree Typology	44
	5.6 Water Use and Water Sensitive Urban Design Overlay	48
	5.7 Green Infrastructure Overlay.	50
6.0	Defining the Public Domain	52
	6.1 Key Places and Spaces	54
	6.2 Street Sections	64
	6.3 Application of Material Palettes.....	76

1.0

Introduction



Sydney Harbour

Sydney Central
Business District

Pymont

Potts Point

Glebe

Ultimo

Darlinghurst

Central
Railway Station

Paddington

University
of Sydney

Chippendale

Surry Hills

Newtown

Redfern

Waterloo

Erskineville

Green Square
Railway Station

Alexandria

Green Square
Urban Renewal Area

Green Square
Town Centre

Zetland

Kensington

University
of NSW

St Peters

Rosebery

Sydney Airport
Railway Station

Botany Bay

Incorporating the suburbs of Zetland and Beaconsfield and parts of Roseberry, Alexandria and Waterloo, the Green Square Urban Renewal Area is located within the most important economic corridor in the country. Sitting between Sydney's City Centre and Kingsford Smith International Airport, Green Square covers 278ha of Australia's oldest industrial area and has long been considered the largest and perhaps most important renewal project in Australia.

By 2021, it is envisaged that the Green Square Urban Renewal Area will accommodate:

- A resident population of approximately 33,100;
- A workforce population of approximately 22,000;
- Approximately 1,300,000m² of residential floor space (13,000 new dwellings);
- 485,400 m² of non-residential / commercial floor space; and
- 46,000 m² of retail floor space.

1.1 Purpose

“Green Square can be designed to connect into the traditional fine grain character of surrounding neighbourhoods”

Sustainable Sydney 2030 Vision



This document has been prepared to guide the public domain design for the Green Square Town Centre. It establishes the design coordination, material palette applications and technical links necessary to facilitate broad integration between council's Sustainable Sydney 2030 Vision, Development Control Plans, Design Codes and Construction Technical Specification Manuals.

The key objectives include:

- Principles to foster place making, public amenity and safety;
- Heritage interpretation principles to support the natural, social and cultural history of the site;
- Accessibility principles to encourage and reinforce public transport, pedestrian and cyclists into and around the Town Centre; and
- Green infrastructure to deliver best practise ecological, economic and social outcomes.

It also offers practical illustrative and design co-ordination considerations necessary to develop a consistent high quality public domain. These include guidelines for:

- Street typologies;
- Integrated Transport and Access;
- Pedestrian and Cycle amenities;
- Public Art;
- Sustainable Design;
- Planting;
- Lighting;
- Green Infrastructure; and
- Materials and Public Domain Furniture.

The Public Domain Strategy is intended to be a source of reference to achieve consistent decision making for the City and developers to inform project briefs, sketch designs, concept designs, voluntary planning agreements and development applications for the Green Square Town Centre public domain.

How to Use it

Part 1

Introduction

Part 2

Sets the context and outlines the key reference documents

Part 3

Summarises the key overarching planning and urban design framework in diagrammatic form.

Part 4

Defines the 'Three Big Moves', the strategic design objectives, precinct boundaries and provides key principles for each.

Part 5

Details the design coordination considerations for the public domain.

Part 6

Defines the eight key places and spaces, street sections and material palette applications that underpin the public domain delivery of the Town Centre.

2.0

Strategic Context



Given the availability of land, transport infrastructure and synergies with adjoining areas, Green Square has been recognized as planned Major Centre in the NSW Government's Metropolitan Plan for Sydney 2036. The Sydney City Subregional Strategy identified growth targets in the areas of employment (58,000 new jobs), housing (55,000 new dwellings) and transport opportunities across the local government area.

The key driver setting the public domain agenda for Green Square is *Sustainable Sydney 2030: The Vision*.

This Public Domain Strategy translates the vision, goals and targets identified in Sustainable Sydney 2030 and supporting urban renewal policies, into a guiding blueprint for the design of the Green Square Town Centre's public spaces and streets.

Sustainable Sydney 2030 highlights the Green Square urban renewal areas as an opportunity for considerable growth, infrastructure improvements and best-practice sustainable development.

Significant contributions are expected in the areas of renewable energy, water and reduction of greenhouse emissions, including developing programs and sites to generate local electricity and secure water supplies. The integrated energy and water systems are known as Green Infrastructure- master plans for local combined heat, cooling and electricity networks (tri-generation), total water cycle management and renewable energy.

Sustainable Sydney 2030 proposes urban and sustainable initiatives that will integrate the urban renewable areas into the fabric of the city. This is to be achieved by providing a public domain that invites the community to:-

- walk and cycle;
- use and enjoy public spaces, cultural and recreational facilities;
- enjoy well-connected streets,
- use good public transport connections;
- celebrate high quality public spaces as the focus of activity, and

- range facilities to provide a shopping, business and cultural hub for the surrounding community.

Figure 2.1 shows the documents that were canvassed and have been considered to be of most influence in setting the framework for the public domain.

NSW STATE GOVERNMENT

CITY OF SYDNEY

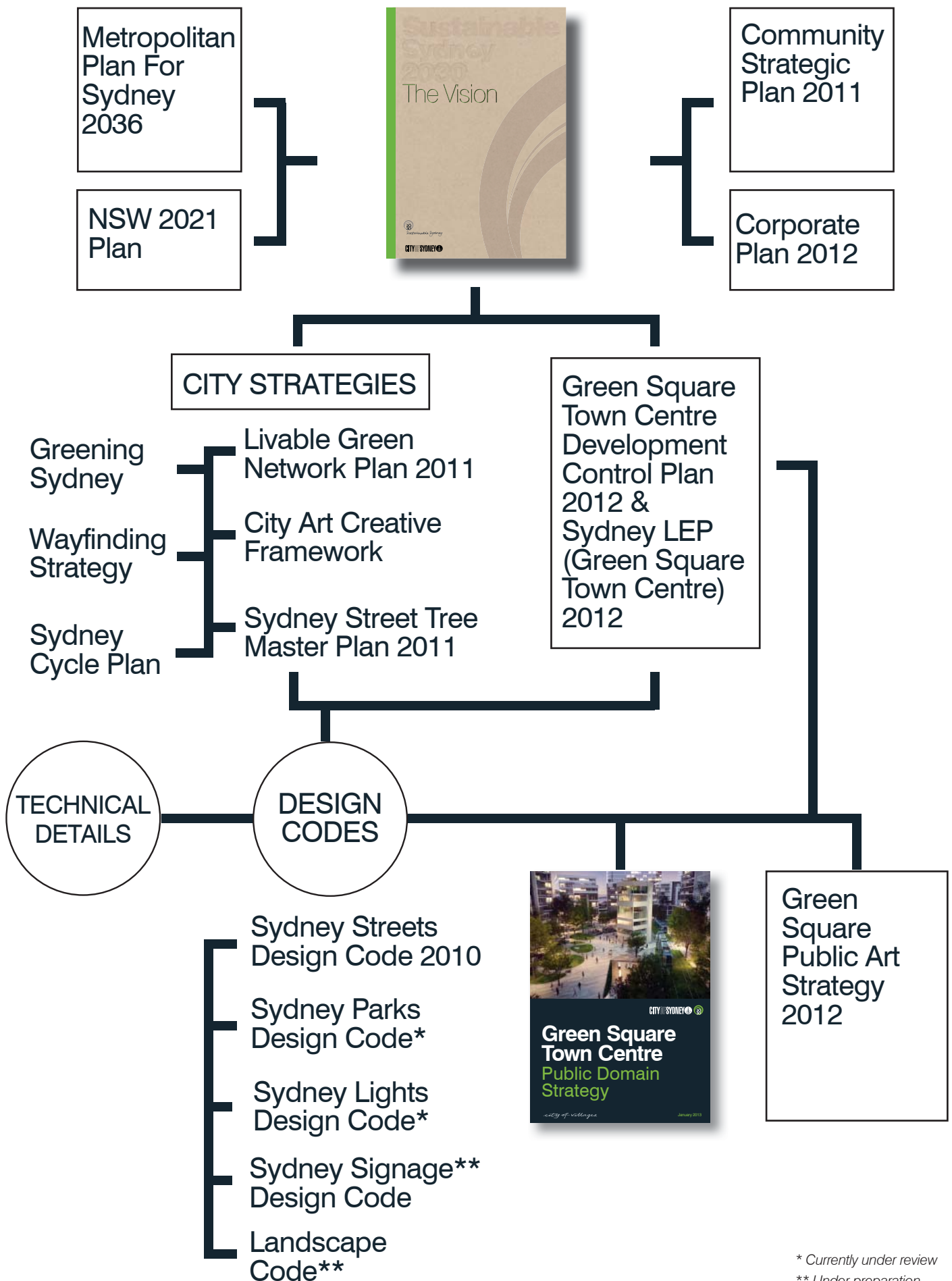


Figure 2.1: Companion Documents

Connecting Green Square



Figure 2.2: Illustrative Urban Renewal Area (Sustainable Sydney 2030 Vision).

“The area around Green Square has the potential to have the vibrancy and diversity of other City Villages, via a linked network of open spaces, including a revitalised Alexandria Canal.”

Sustainable Sydney 2030 Vision



Figure 2.3: Existing Town Centre site and surrounds 2011

Legend

- | | | |
|---------------------------------|---------------------------------------|---------------------------------|
| 1. Former Waterloo Incinerator | 3. Former NSW Police Service Centre | 5. City of Sydney Works Depot |
| 2. Waverley Council Works Depot | 4. Former Royal South Sydney Hospital | 6. Green Square Railway Station |



Figure 2.4: Town Centre DCP 2012 massing model

2.1

Green Square Town Centre

Central to the urban renewal area is the Green Square Town Centre which is primarily located in the suburb of Zetland and covers an area of 13.74 hectares and contains some large key sites owned by various public entities, both state and local, such as the former Waterloo Incinerator site, Waverley Council's Works Depot, the former NSW Police Service Centre, and the former Royal South Sydney Hospital site and Works Depot owned by the City of Sydney (Figure 2.3). The Town Centre site also contains the Green Square Railway Station and other privately owned land holdings.

These lands were earmarked by Council and the State Government for the development of a new town centre during the process of defining the Green Square Urban Renewal Area in the late 1990s. The lands were excluded by the State Government from the Stage 1 rezoning of Green Square in 1999, to allow for the integrated master planning of the Town Centre. Based on projections, the Green Square Town Centre will accommodate:

- A resident population of approximately 6,750;
- A workforce population of approximately 7,600;
- Approximately 330,800 m² of residential floor space;
- 142,00 m² of non-residential/ commercial floorspace;
- 12,760 m² of retail floor space;
- 14,000 m² of public open space;and
- 5,000 m² of community facilities.

3.0

Urban Framework



Legend

-  Community Facilities
-  Public Open Space
-  Major Existing Roads
-  Heavy Rail Transport
-  Proposed Major Boulevard
-  Proposed Streets, Shared Ways and Laneways
-  Green Square Town Centre Boundary
-  Civic Place

The Vision for the Green Square Public Domain:-

The public realm at Green Square is founded on progressive environmental principles and will actively nurture a diverse, creative working community that will in turn make a crucial contribution to the economic competitiveness of Metropolitan Sydney.

Council's Sustainable Sydney 2030 Vision, Green Square Town Centre Development Control Plan (DCP) 2011 and Design Codes outline the following overarching public domain objectives for the Town Centre:

- Achieve a strong definition of the public domain with integration of design themes and signature elements to give Green Square Town Centre a sense of place and to establish it as the focal point of the Green Square urban renewal area;
- Achieve an adaptable public domain capable of accommodating a broad range of uses and events, experience and activities;
- Establish a diverse and sustainable range of public spaces, plazas and parks throughout the centre that encourages social interaction and use by everyone;
- Achieve a variety of spaces that are inclusive of particular needs and desires of key community groups such as children, young people, senior citizens, people on low incomes and people with a disability;
- Achieve desirable public open spaces with high levels of amenity addressing safety, climate, activity, circulation, seating and enclosure;
- Integrate the Town Centre and surrounding communities by providing a community focus and spaces to meet, walk and recreate;
- Enable the provisions of appropriate facilities within the public domain to enhance the usability of the Town Centre;
- Integrate the management of stormwater and floodwater into the design of public open spaces; and
- Achieve well integrated interpretive water elements, ecological sustainable and landmark public art to create an engaging and culturally diverse public domain.

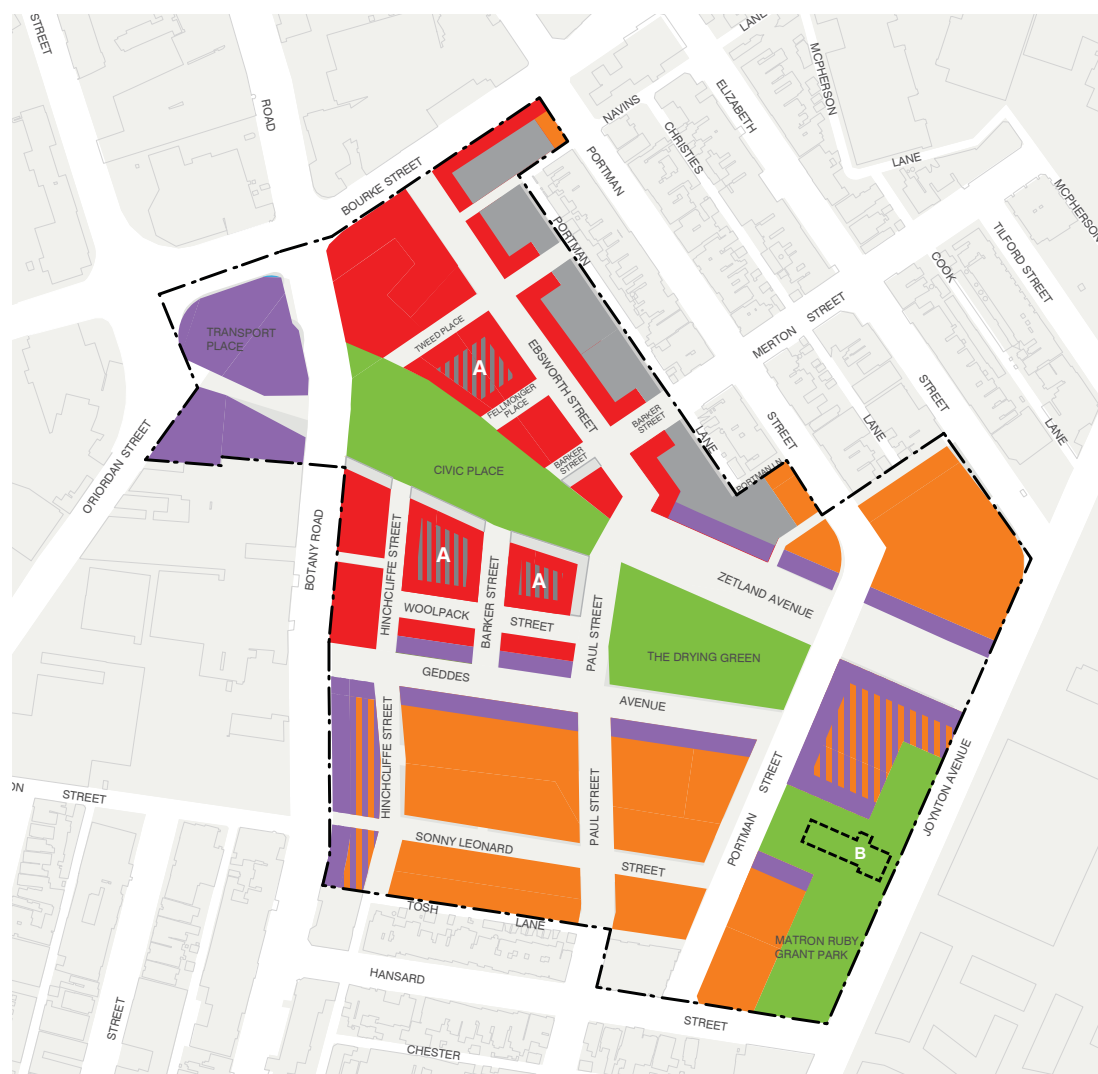
In determining the guiding principles for the public domain the following environmental overlays have been identified in Section 3.0:

- Active Frontages;
- Building Form and Heights;
- Street Typologies;
- Public Spaces;
- Public Transport and Access;
- Pedestrian Movement;
- Cultural and Heritage;
- Community Facilities;
- Water Management; and
- Green Infrastructure Systems.

3.1

Active Frontages

Ground floor commercial and retail uses are concentrated around the Civic Plaza and Ebsworth Street. This provides opportunities for the retail edges to interact with the public domain, though narrow tenancies, transparent shop fronts, multiple entries, outdoor seating, lighting, weather protection and clear pedestrian site lines. Above ground level, the Town Centre consists of mostly residential uses.



Legend

GROUND LEVEL USES

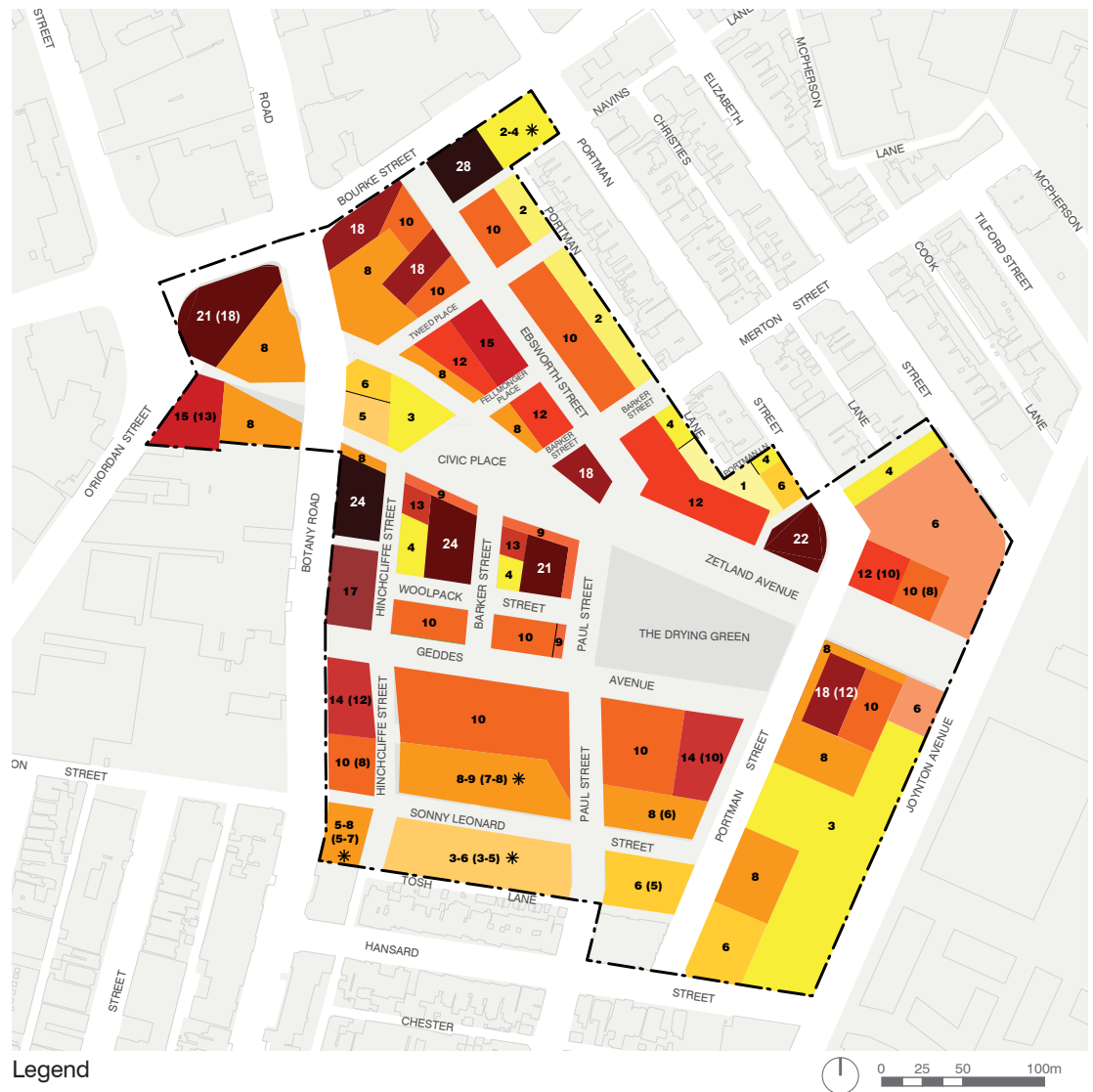
- Retail
- Residential, retail or commercial
- Retail or commercial (orange stripe - residential permissible)
- Community or open space (B - Green Infrastructure Centre)
- Car parking (A - access to upper/lower levels)

3.2

Built Form and Heights

The built form strategy reflects the planning objectives to establish an east-west urban spine across the Town Centre. Higher towers are clustered around Transport place and the Civic Place, and are arranged to maximise sunlight into the plaza and setback at podium levels to improve visual and environmental amenities. To the south and west the majority

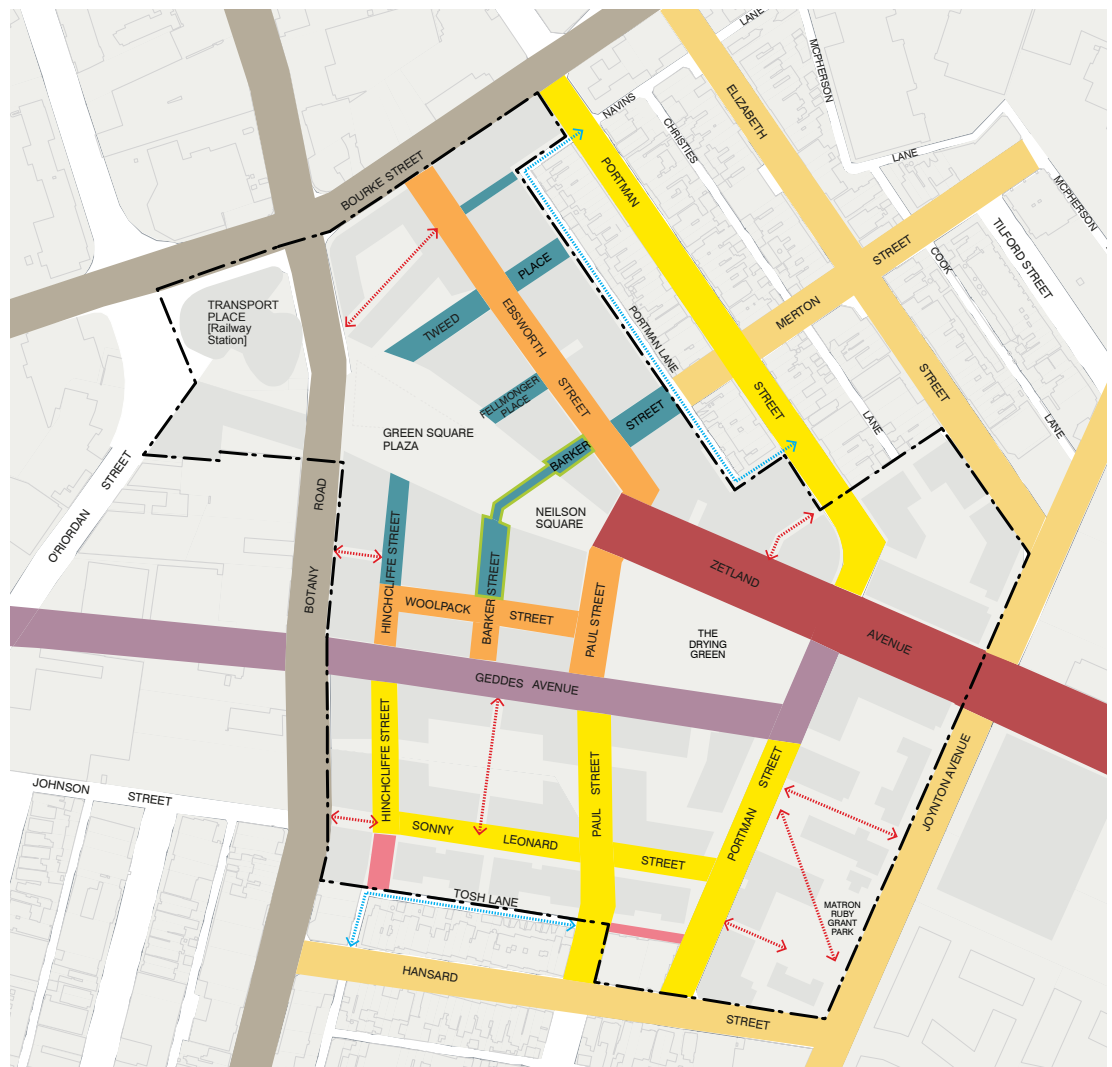
of buildings will be up to 10 storeys in and height, with lower transitional heights applied to areas of heritage or contextual value.



3.3 Street Typologies

The Village Boulevard and Avenue Streets are the primary organising streets extending across the Green Square urban renewal area and are characterised by their generous scale, mature landscape and interpretive applications. Zetland Avenue will present as the formal boulevard connecting the proposed public transport corridor to Civic Place, while Geddes Avenue will join with Botany Road to provide an alternate arrival and departure point to and from the Town Centre. Together they form the main east-west axis across the site.

Village streets and village shared zones are defined by high pedestrian priority, ground floor retail, services and entertainment. Local streets, local shared zone, through-site links and laneways will facilitate a fine urban grain allowing active residential frontages, good permeability, soft landscape and varied uses.



Legend

- Arterial Road
- Village Boulevard
- Village Avenue
- Village Street
- Village Shared Zone

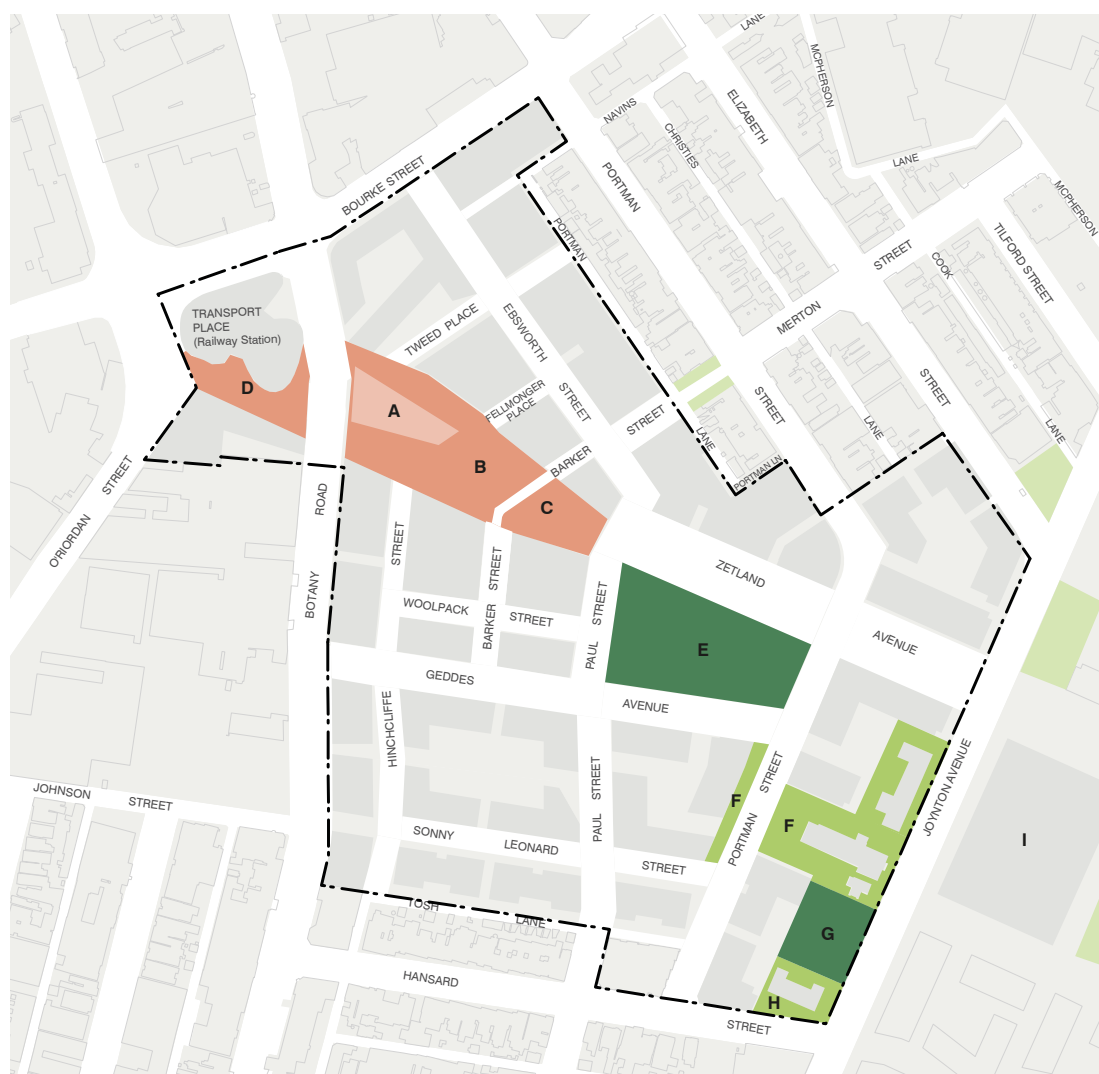
- Local Street- Special Application
- Local Street
- Local Shared Zone
- Local Laneway
- Pedestrian Through Site Link

- Shared zone application (subject to detail traffic assessment)

3.4 Public Spaces

Civic spaces will provide a focus for the higher density of mixed uses in the urban core and support the pedestrian activity associated with the railway station. These spaces will be highly flexible and carefully scaled to cater for both large events and everyday experiences. Urban spaces are local park areas for respite and recreation. They allow for informal activities such as children's play, seating, walking and local social gatherings.

Proposed public spaces will create unique opportunities to define the future character, program and focal points for the community. They should be designed to communicate and respond to key ecological, heritage, social and cultural principles.



Legend



Civic Places

- A Public Library
- B Green Square Plaza
- C Neilson Square
- D Transport Place



Urban Places

- E The Drying Green
- F Heritage Forecourt
- G Matron Ruby Grant Park
- H Creative Hub
- I Recreational Centre



3.5

Transport and Access

The Town Centre is well served by the Green Square station, Botany Road, Bourke Street, Elizabeth Street and Joynton Avenue. The east west transport corridor will expand the existing network to include bus routes along Geddes Avenue, Paul Street and Zetland Avenue. In the future Zetland Avenue and Civic Place will include provisions for a light rail system that will serve the eastern

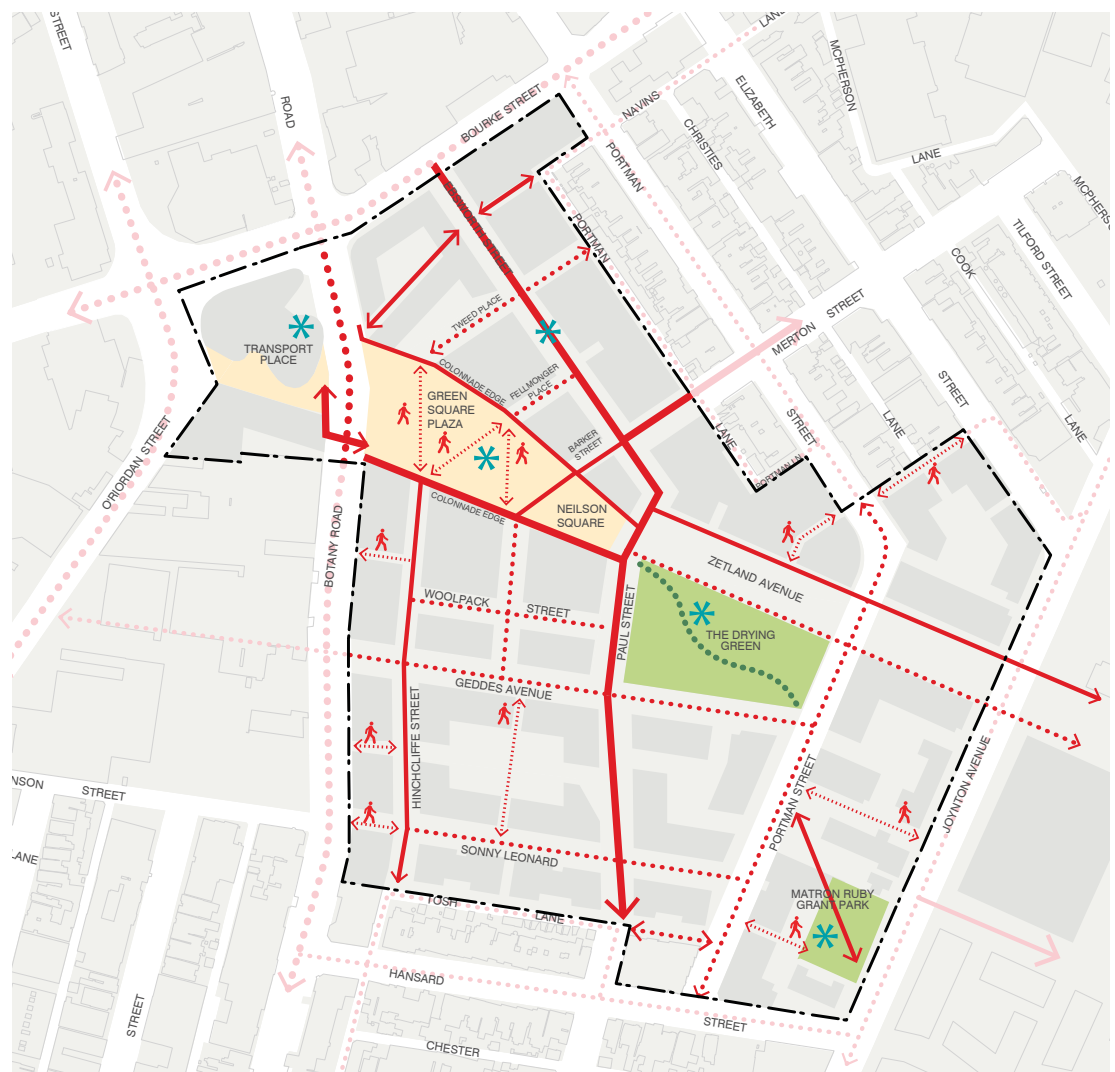
side of the urban renewal area, including Epsom Park. Separated cycleways, pedestrian priority streets and bicycle storage areas (short and long term) will be provided to promote alternative modes of green transport.



3.6 Pedestrian Movement

The east-west pedestrian spine features strongly across the Town Centre, extending along Zetland Avenue and The Drying Green towards Epsom Park. High pedestrian concentrations are expected to occur along the southern colonnade edge of the Civic Place and across Botany Road to Transport Place. Other notable areas of high pedestrian activity include Ebsworth Street, Paul Street, Hinchcliff Street, The Drying Green and the diagonal desire

lines across Matron Ruby Grant Park. It is anticipated that the majority of pedestrian movements will occur between work and home in the early morning and late afternoons. Small proportion of lunchtime office employees and local residents will congregate in the Town Centre during the day. This pattern is however reversed in the evenings and weekends, where local resident and visitors will socialise, shop and dine.



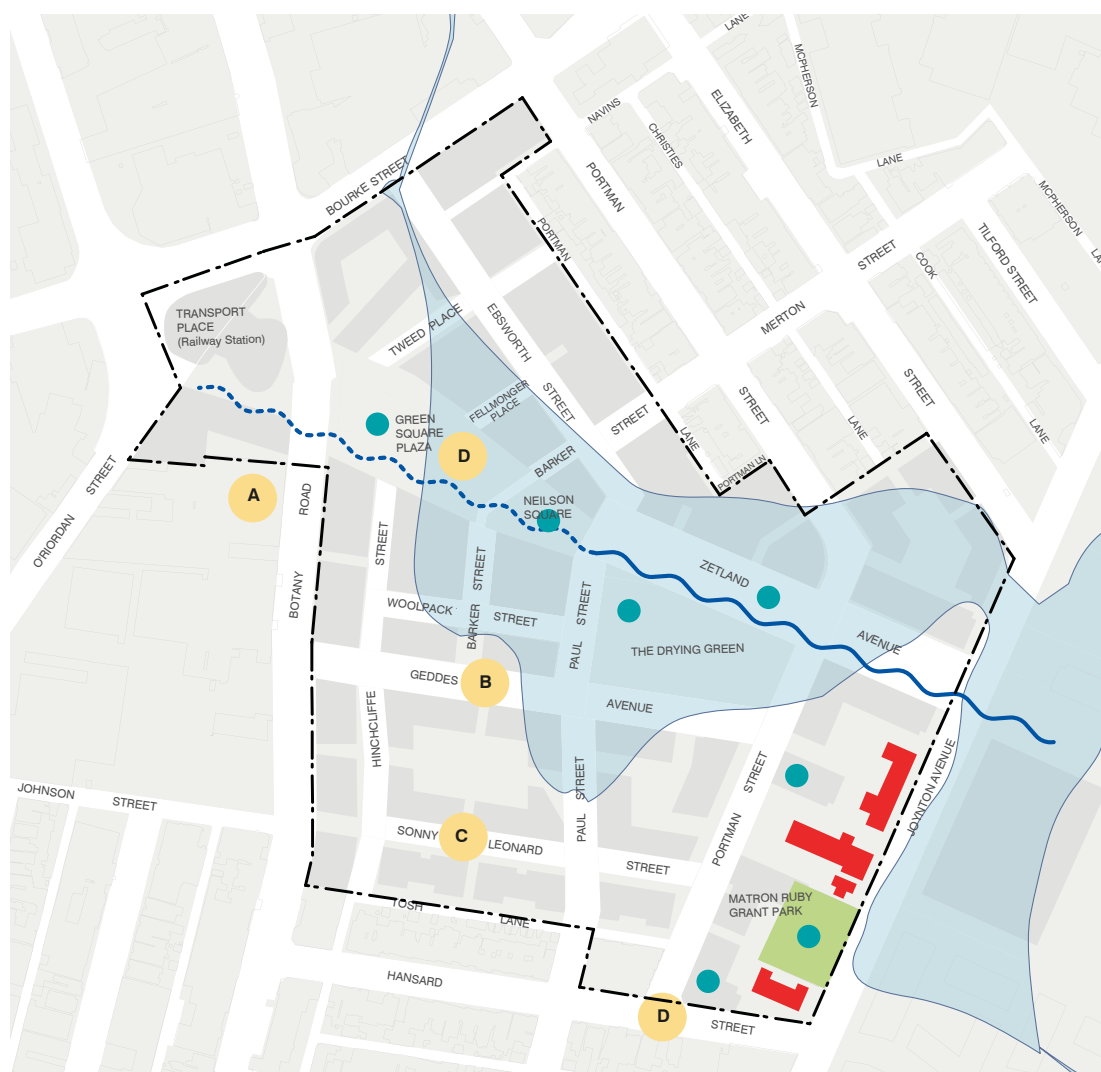
Legend

- ↔ Primary, Formal Route
- - - Secondary, Formal Route
- . . . Secondary, Informal Route
- - - Pedestrian Through Site Links
- ★ Key pedestrian destination
- Pedestrian zone

3.7 Heritage

Green Square has a rich cultural history that spans from the 1800's dams and creeks to the post-industrial landscape of the brickworks factories located across the Town Centre. The delivery of the public domain will provide a unique chance to celebrate the cultural heritage of the area through a range of initiatives, such as landscape design,

water sensitive urban design, pavement public domain furniture details and public art programs. Public art sites and interpretation opportunities have been identified and captured in the Green Square Public Art Strategy 2012.



Legend

● Heritage interpretation opportunity areas:

- A** Soapworks c. 1890
- B** Woolwash c. 1890
- C** Pottery c. 1890
- D** Brickworks c. 1940

Extent of late 1800s dams and creeks

Heritage Buildings

Ruby Grant Heritage Garden

● Public Art Opportunities

Shea's Stream WSUD Interpretation Opportunity (eg. special application of bioretention or stormwater management systems)

Shea's Stream Heritage Interpretation Opportunity (eg. use and display of water, community water play or public art initiatives)






0 25 50 100m

3.8 Community Facilities

The Town Centre social and community facilities have been developed to align with the public open space programs for the Civic Place, The Drying Green, Matron Ruby Grant Park, Epsom Park recreational facility and the heritage buildings of the former Royal South Sydney Hospital Site. Community programs will be expanded in time to adapt to the needs of the Town Centre community, including fostering opportunities for community uses to occur in private developments.



Legend

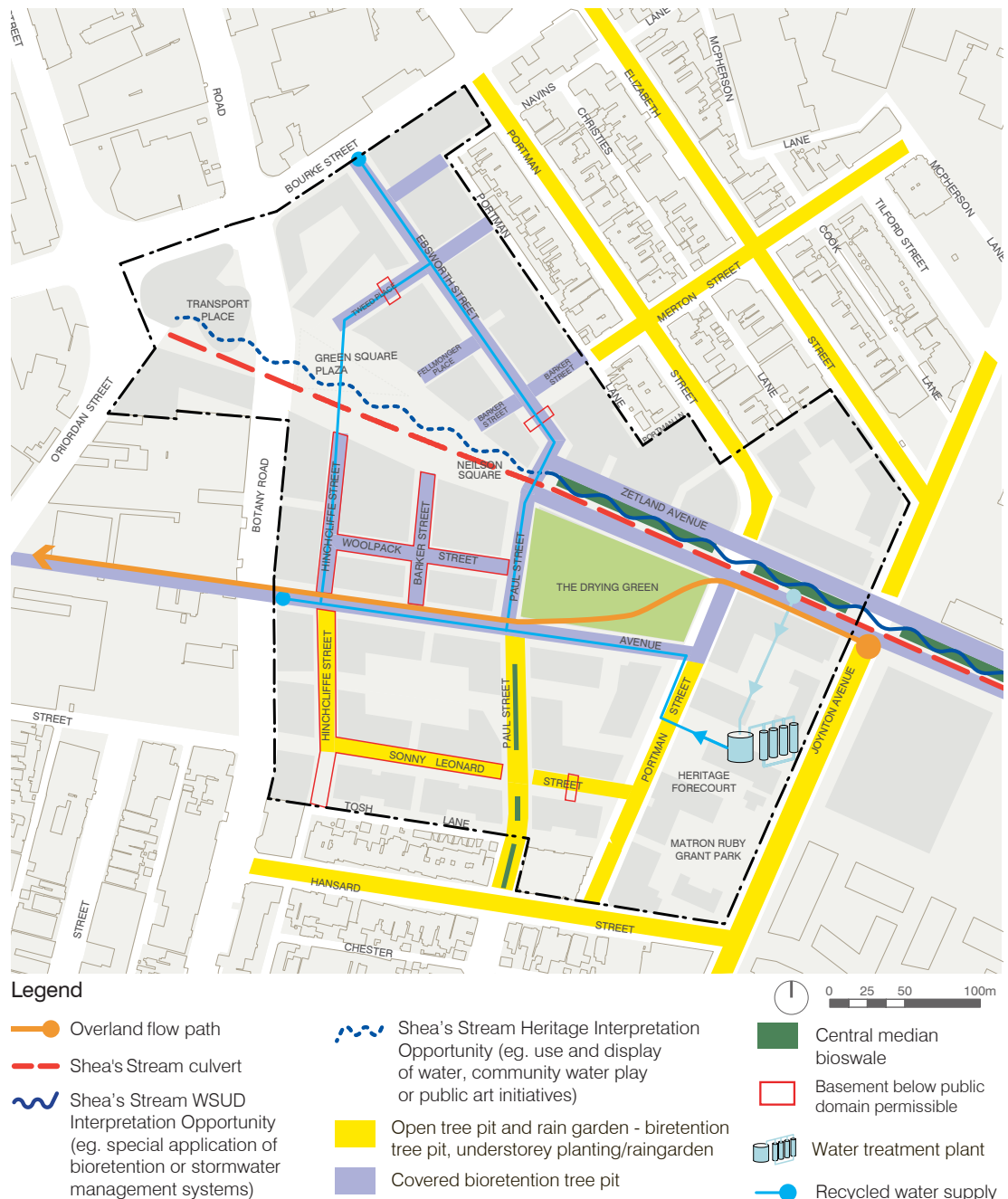
- | | | | |
|---|--|---|--|
|  | A Public Library |  | Childcare Centre Opportunity |
|  | B Green Square Plaza: formal public gathering space. |  | Community and Cultural Uses |
|  | C Neilson Square: temporary markets, informal play and performances. |  | Recreation, Health and Wellbeing related use |
|  | D The Drying Green: active play, informal seating areas, public amenities, community gardens, shade structures, children play areas and picnic facilities. |  | Public Toilets |
|  | E Matron Ruby Grant Park & 'Creative Hub' Uses: passive recreation, shade structures, informal seating, artist studios, exhibition spaces and skateable elements. | | |

3.9

Water Management

The water management strategy for the Town Centre public domain has been developed to incorporate best-practise Water Sensitive Urban Design. Localised open and covered bioretention pits, bioswales and rain gardens will offer opportunities to reduce irrigation needs and improve water quality across the precinct. A water management treatment plant located on the former Royal South Sydney Hospital

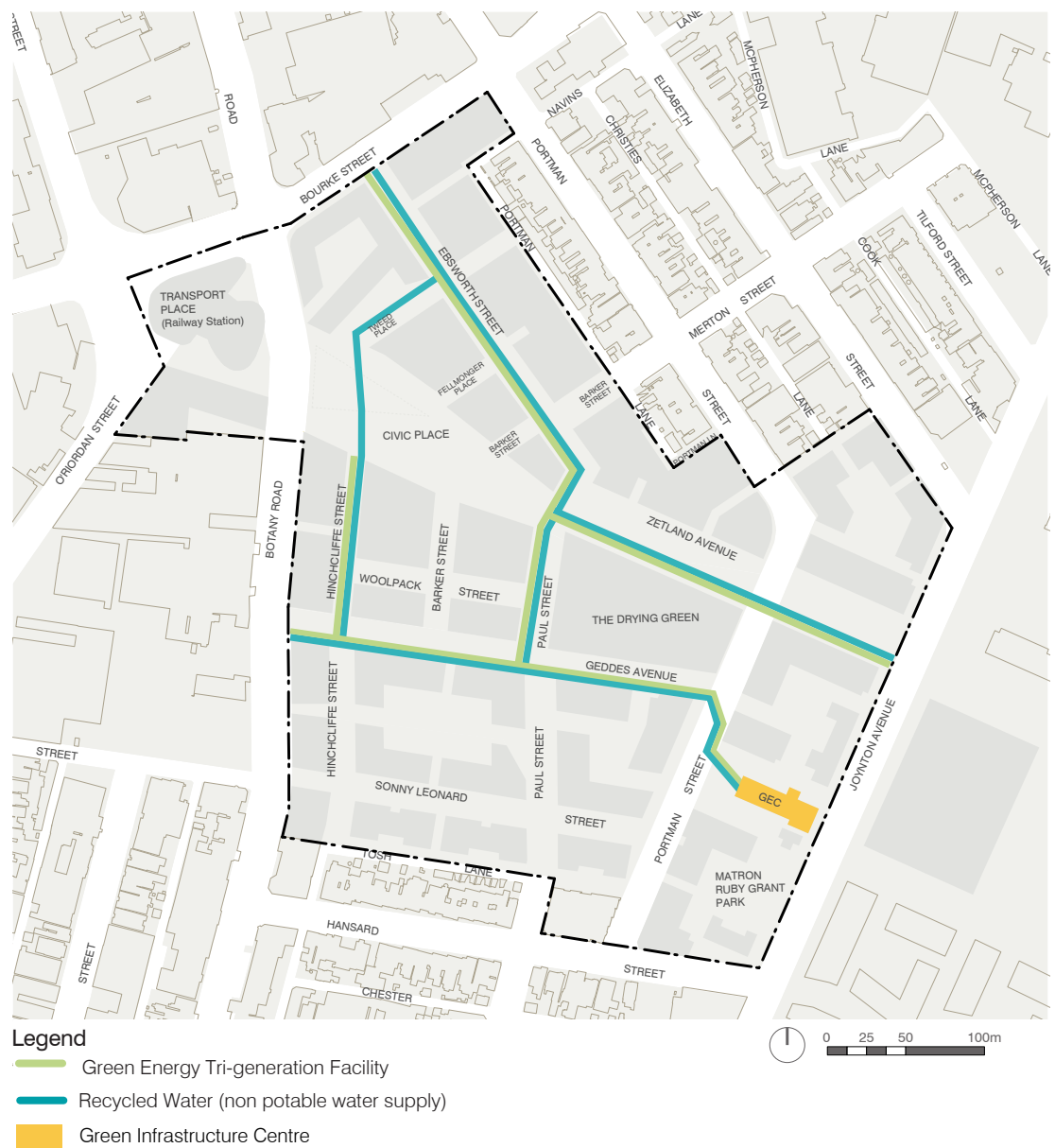
Site will provide all the non-potable water for all new Town Centre developments. Drainage design and stormwater management will be influenced by regional stormwater catchments, overland flow paths and basement car parking structures.



3.10

Green Infrastructure Systems

The Green Infrastructure Centre on the former Royal South Sydney Hospital site will contain facilities for water re-use and tri-generation energy. These services will be connected to future developments through a series of underground pipes and conduits spanning across the Town Centre public spaces and street corridors.



4.0 Strategic Directions



The three 'Big Moves' underpinning the Green Square Town Centre public domain are:



01 Civic Place (Green Square Plaza, Library and Neilson Square)

Offers a unique opportunity to create a central unifying open space with diverse ranges of public use, high public amenity and distinct design quality. As the social and cultural heart of the Town Centre, Civic Place serves as a destination or egalitarian 'living room' for the wider Green Square community. It will be defined by iconic built form features, consistent flush paving, landscaped micro climates, special urban furniture and interpretive overlays.



02 Streets and Places for People (Liveable Green Network)

Creates the best possible conditions for pedestrian and cycle friendly environments that are easily accessible by all users. The Town Centre aims to promote a people priority public realm by creating a balanced traffic environment where high considerations are given to pedestrian movements, cycling infrastructure and public activities.



03 Green Infrastructure

Recognises the opportunity to provide an integrated network of green infrastructure that will reduce the Town Centre's dependence on traditional coal-fired energy, potable water supply and waste demands. It also promotes active considerations for low emission materials, Water Sensitive Urban Design and landscape design.

Three Big Moves are the strategic design directions for the public domain. The following list establishes key public domain objectives for each.

01 Civic Place Objectives

- Establish a strong definition of the public domain with integration of design themes and special elements to give Green Square Town Centre a sense of place and to establish it as the focal point of the Green Square urban renewal area.
- Ensure safe and legible connections are made between all transport modes, which includes a transport terminus that will be used by light rail in the long term.
- Ensure the provision of appropriate community facilities within the Civic Place to enhance the usability and identity of the Town Centre.
- Achieve desirable public open spaces with high levels of amenity addressing safety, climate, activity, circulation, seating and enclosure.

02 Streets and Places for People Objectives

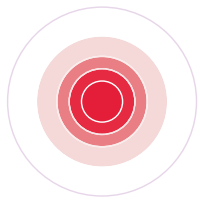
- Achieve universal access for all pedestrians, through the provision of safe, activated and well-connected streets.
- Ensure streets and intersections are designed for pedestrian priority and reduced traffic speeds.
- Establish soft edges where buildings and street frontages at ground level provide an active fine grain interface with the street.

- Create an adaptable public domain capable of accommodating a broad range of uses, events, experiences and public activities.
- Achieve a variety of spaces that are inclusive of particular needs and desires of key community groups such as children, young people, older people, people on low incomes and people with a disability.

03 Green Infrastructure Objectives

- Connect the tri-generation energy and recycled water systems to all developments in the Town Centre.
- Integrate the management of stormwater and Water Sensitive Urban Design into the design of new streets and public open spaces.
- Establish street tree canopies and understorey planting that will reinforce the visual and physical hierarchy of the street network, creating visual patterns and rhythm appropriate to specific urban and climatic conditions.
- Achieve well integrated interpretive water elements, ecologically sustainable and landmark public art to create a more visually interesting and culturally diverse public domain.

The following section describes in more detail the public domain elements and design considerations for each of the Three Big Moves.



4.1 Civic Place

The Civic Place (Green Square Plaza, Library and Neilson Square) will form the heart of the Green Square Town Centre, it comprises of a grand civic space offering communal space for play, learning, cultural events and public transport modes. Surrounding the Civic Place is an offer of retail and restaurants, above the hive of activity sits high density residential housing.

As the most important public space in the Town Centre, it will reflect a diverse range of influences including past uses, cultural overlays, natural history, landforms and climate- all of which will contribute to the uniqueness and identity of Civic place.

The Civic Place public domain presents opportunities to create a distinctive character and memorable place. Achieved through elements such as iconic built form features, landscape, special public domain furniture and lighting, consistent flush paving, cultural and public art

strategies and representation of historical memory of the site, such as the Shea's Stream watercourse.

The distinctive public domain elements (listed below), have been considered for design coordination and described in further detail in Section 5 .



Civic Place, the social and cultural centre of the Green Square urban renewal area

The key distinctive public domain elements that will define Civic Place include:

- Public art;
- Community programs;
- Design excellence;
- Use and display of water and Water Sensitive Urban Design;
- Heritage interpretation;
- High quality pavements and material palettes;
- Pedestrian amenities;
- Public transport connectivity;
- Urban furniture;
- Lighting;
- Events infrastructure;
- Landscape and planting; and
- Environmental Sustainable Design.



All streets and public spaces will be developed to prioritise pedestrian safety, create shared urban activity, and encourage the use of public transport. New streets will connect seamlessly into the surrounding neighbourhoods and, where possible, continue the hierarchy and characteristics of the existing street typologies. The Streets and Spaces for People elements (listed below), have been considered for design coordination, described in further detail in Section 5.



- Town Centre traffic speed limit of 40 km/h
- Traffic calmed inner core with applications such pedestrian only zones, shared zones, pedestrian priority intersection provisions, slow zones and reduced carriageway widths;
- Pedestrian footpath design treatments including kerb extensions, continuous footpath materials, driveway crossovers, raised thresholds and large pedestrian ramps;
- Cycle infrastructure including separated cycle paths and cycle parking;
- Safe and comfortable access to all modes of public transport;
- Signage and way finding treatments; and
- Lighting and pavement demarcation.



4.3 Green Infrastructure

In association with the Green Infrastructure objectives, the development of the Town Centre is underpinned by a commitment to progressive environmental outcomes- to the creation of a clean and green new community that will set the benchmark for innovative sustainable development.

The following additional principles will be integrated into the public domain design:

- Protect biodiversity and preservation of local flora and fauna;
- Consider material selection (embodied energy and life cycle costs);
- Achieve energy efficiency;
- Provide outdoor activities, connections to pathway networks and cycle networks for the health of the community;
- Stormwater management, water conservation and Water

Sensitive Urban Design;

- Provide opportunities for interpretation of the cultural setting and landscape, heritage and initiatives that provide a framework for on-going community development;
- Allow for production and consumption of food (community gardens, local produce markets etc);
- Maximise the use of recycled content in all steel and metals, timber and use of recycled aggregates in green concrete; and
- Choose materials and colours that consider the relationship of the immediate environment, reflecting the intent of the site use and function.

The public domain elements (listed below), have been considered for design coordination, described in further detail in Section 5.



The key public domain elements that will define Green Networks include provisions:

- Green Infrastructure Centre (tri-generation energy and recycled water);
- Water Sensitive Urban Design;
- Street trees and understorey planting;
- Low embodied energy materials;
- Health benefits, through active open spaces and community programs.

Water Sensitive Urban Design, play and landscaping contribute to active community participation and healthy lifestyles.

4.4

Key Precincts

Three precincts have been established, each responds to its site context, land use, relationship to transport networks, and to how people move and connect within it. They can be defined as:

The Activity Precinct

The central focus of community activity. This precinct comprises of a grand Civic Place offering communal space for play, learning, cultural events and public transport modes. Surrounding the Civic Place is an offer of retail and restaurants, above the hive of activity sits high density residential housing. This precinct offers direct connections to the open space of The Drying Green. The public domain is focused on creating a lively, unique civic centre to the Green Square Town Centre.

The Residential Precinct

Situated South of the Civic Place, the residential precinct offers residents a diversity of high density housing and connections to the open space of The Drying Green towards the north. The public domain is focused on establishing a strong neighbourhood identity.

The Heritage Precinct

Celebrating the cultural values and heritage of the area, this precinct offers medium density residential living set around local gardens and the heritage buildings.



5.0

Design Coordination Considerations

This section builds on the public domain objectives embodied in the three 'Big Moves' and Key Precincts. Each of the following diagrams represents a public domain typology or overlay that when coordinated will provide the elements necessary to develop a consistent high quality public domain.

Correct placement and design coordination of urban elements is essential to good streetscape and public domain design. Well placed and coordinated elements:

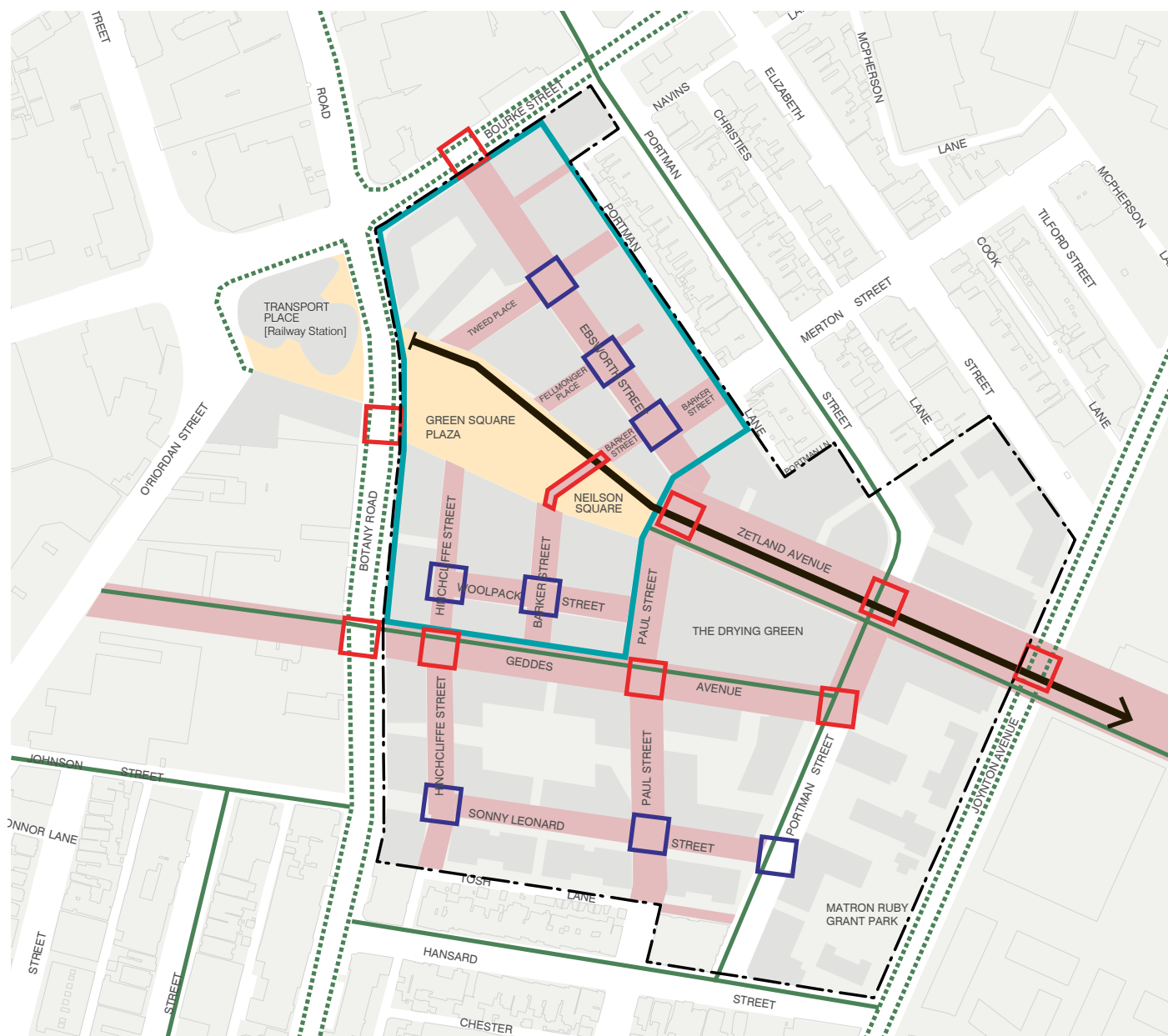
- Reinforce the street hierarchy;
- Provide required paths of travel and pedestrian priority;
- Provide a clear and direct composition that reinforces the major design elements;
- Are integrated seamlessly into the paved ground plane;
- Suit the location of other street elements; and
- Are located consistently throughout the public domain to reflect the overall special character.

The following section includes:

- 5.1 Street Geometry Overlay;
- 5.2 Pavement and Kerb Typology;
- 5.3 Public Domain Furniture Overlay;
- 5.4 Street Lighting Overlay;
- 5.5 Street Tree Typology;
- 5.6 Use of Water and Water Sensitive Urban Design Overlay; and
- 5.6 Green Infrastructure Overlay.

5.1

Street Geometry Overlay Diagram



Legend

New Streets – carriageways, pavements and kerbs.

Pedestrian only zone

Proposed transport corridor (short term- bus, medium to longer term- light rail)

Separated Cycle Path

Shared Cycleway

Traffic Calmed Inner Core: 10-30 km/hr (eg. pedestrian only zones, shared zones or slow street en

Intersection/ junction with pedestrian priority provisions (e.g marked or signalled)

Intersection with enhanced pedestrian provisions (eg. kerb/ pavement extensions, raised thresholds, PCTC devices or footpath continuity treatments)

Traffic speed limit zone- 40 km/hr



Street Geometry

Streets are critical to the liveability and sustainability of urban environments and are important places for people to meet and socialise. Street Geometry must be in accordance with the Australian Standards for Access and with the City of Sydney Streets Design Code, they must follow the design guidelines and key principles as well as:

- Reflect the street hierarchy and create different types of experience;
- Prioritise space for pedestrians and the safe crossing of carriageways;
- Allow references to the site's geographical and cultural history;
- Be sufficiently robust to withstand heavy use and be easily maintained; and
- Maximise permeability for water infiltration.



5.1

Street Elements Coordination Considerations

The public domain must meet Australian Standards for Access as defined in AS 1428.1-1428.4 for pedestrian access on footpaths.

Footpaths and Carriageways

- All footpaths to be of a minimum width of 1800mm.
- Gradients should not exceed 1:20. If steeper gradients are unavoidable, provide access guidance as outlined in AS 1428. Vertical access may be located within private domain.

Traffic and Intersection Design

- 1a** All street intersections should be designed to facilitate safe movement of pedestrian, cycleway and vehicular traffic. Particularly reducing risks of turning conflicts with fast moving vehicles.
- 1b**
- 2** Limit traffic speed to a maximum of 40 km/hr on all council owned Town Centre streets. Street carriageways to include provisions where:
 - traffic lane widths are minimised;
 - continuous footpaths treatments are extended across the carriageway; and
 - street trees are located in line with parking bays to visually narrow the width of traffic lanes.
- 3a** Traffic calmed inner core is proposed to promote a high pedestrian oriented environment. It will consist of streets and public spaces that will be designed to include the following applications:
 - slow zones where traffic speeds are reduced to 10-30 km/hr;
 - pedestrian only zones (Civic and Transport Place); and
 - shared zones- self enforcing speed limit of 10 km per hour, dedicated shared traffic environment for pedestrians, cyclist and vehicle movement and flush pavement.
- 3b**
- 4** Intersections identified with priority and enhanced pedestrian provisions are to include relevant applications for Kerb extensions, raised thresholds, continuous thresholds, PCTC devices, marked pedestrian crossings and signalised traffic lights.

(continued over)

Kerb Design

- With the exception of bus and heavy vehicle routes, corner kerbs are to be designed with a minimum turning radii for a standard 9.25 metre City of Sydney waste vehicle or equivalent.
- 5** Provide kerb extensions to enhance pedestrian safety by reducing crossing distances and provide space for landscape treatments, public domain furniture, stormwater treatments.
- Placement of urban elements are to comply with sight line requirements identified by the traffic engineer.
- 6** Place kerb ramps on all streets in accordance with AS1428 requirements - generally align the edge of the ramp with the edge of the footpath or building.
- Areas with high volumes of pedestrian movements or strong desire lines are to provide kerb ramps with a minimum width of 2m.

Thresholds

- 7** Paved threshold treatments to demarcate entrance to slow street environment
- 8** Raised pedestrian crossings make crossing easier and safer for pedestrians by increasing visibility and requiring vehicles to slow down. When used in combination with kerb extensions to reduce crossing width the articulation of the crossings depends on the stormwater overland flow detail design.

Dish Drain and Parking Bays

- Dish drains provide a demarcation of parking bays for accessibility and in combination with street trees will visually narrow the width of traffic lanes.

Separated Cycle Paths

- 9** Separated bi-directional cycleway infrastructure proposed to be provided along Geddes Avenue, Zetland Avenue and Portman Street.
- 10** Recommended that the form of separation be a double step configuration or at grade with footpath and separated by a horizontal buffer of planting/paving treatments.



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5.2 Pavement and Kerb Typology Diagram



Legend

	PAVEMENT TYPE	KERB TYPE	DISH DRAIN TYPE	PARKING BAYS
SC	Special, Distinctive Place	Special	Special	N/A
CU	Concrete Unit	Bluestone	Insitu Concrete	Stone Setts
SS	Stone Setts	Flush	Stone Setts	Stone Setts
C	Insitu Concrete	Bluestone	Insitu Concrete	Concrete Unit Setts
CL	Insitu Concrete	Concrete	N/A	Asphalt
TI	Trihex Interlocking	Flush	Insitu Concrete	Trihex Interlocking

OTHER Possible kerb edge (subject detail traffic assessment)



Pavement and Kerb

The City of Sydney Streets Design Code defines three main palettes in relationship to the street typologies overlay (refer to diagram 3.3), the Village Streets, Local Streets, Shared Zones and a Special palette for distinctive streets or spaces. The street pavements and materials palettes must be consistent with the design objectives and key principles of the City of Sydney Streets Design Code and Australian Standards for access. Variations to the Sydney Street Code have been included for kerb details in local streets to extend the high pedestrian amenity to the residential and heritage precincts.

The design principles for the choice of paving and kerb materials include:

- Sustainable, locally sourced, high durability, low embodied energy;
- Flexible and easy to remove and re-lay;
- Create a high quality pedestrian environment with materials that are robust, durable and easy to maintain; and
- Reinforce streetscape hierarchy, uses and character of the Town Centre.



5.2

Pavement and Kerb Design Coordination Considerations

Pavements

- 1** Special paving treatment given to the Green Square Civic Plaza and Neilson Square to reinforce it as the central community activity hub.
- Village Streets – High quality concrete unit paving as per the City of Sydney Street Design Code for Village Centres.
 - Local Streets – Exposed aggregate in situ concrete paving, honed with saw cut joints and aligned with other streetscape elements.
 - Village Shared Zones – Stone setts (flush).
 - Local Shared Zones – Precast trihex interlocking pavers (flush).

Kerbs and Kerb Ramps

- All kerbs are natural stone (Bluestone).
- All kerb ramps use unit paving to match footpath.

Pit Lids

- 2** All Streets – Infill lids with adjacent pavement type. All service pits to be aligned with pavement coursing and expansion joints.

Driveway Crossovers

- Vehicle crossovers to maintain adjacent pavement type to reflect pedestrian priority.

Parking Bays

- Village Street – Stone unit setts to delineate parking bay and to visually reduce width of road carriageway.
- Local Street – Concrete interlock pavers in format that match the stone setts of Village Streets.

Dish Drain

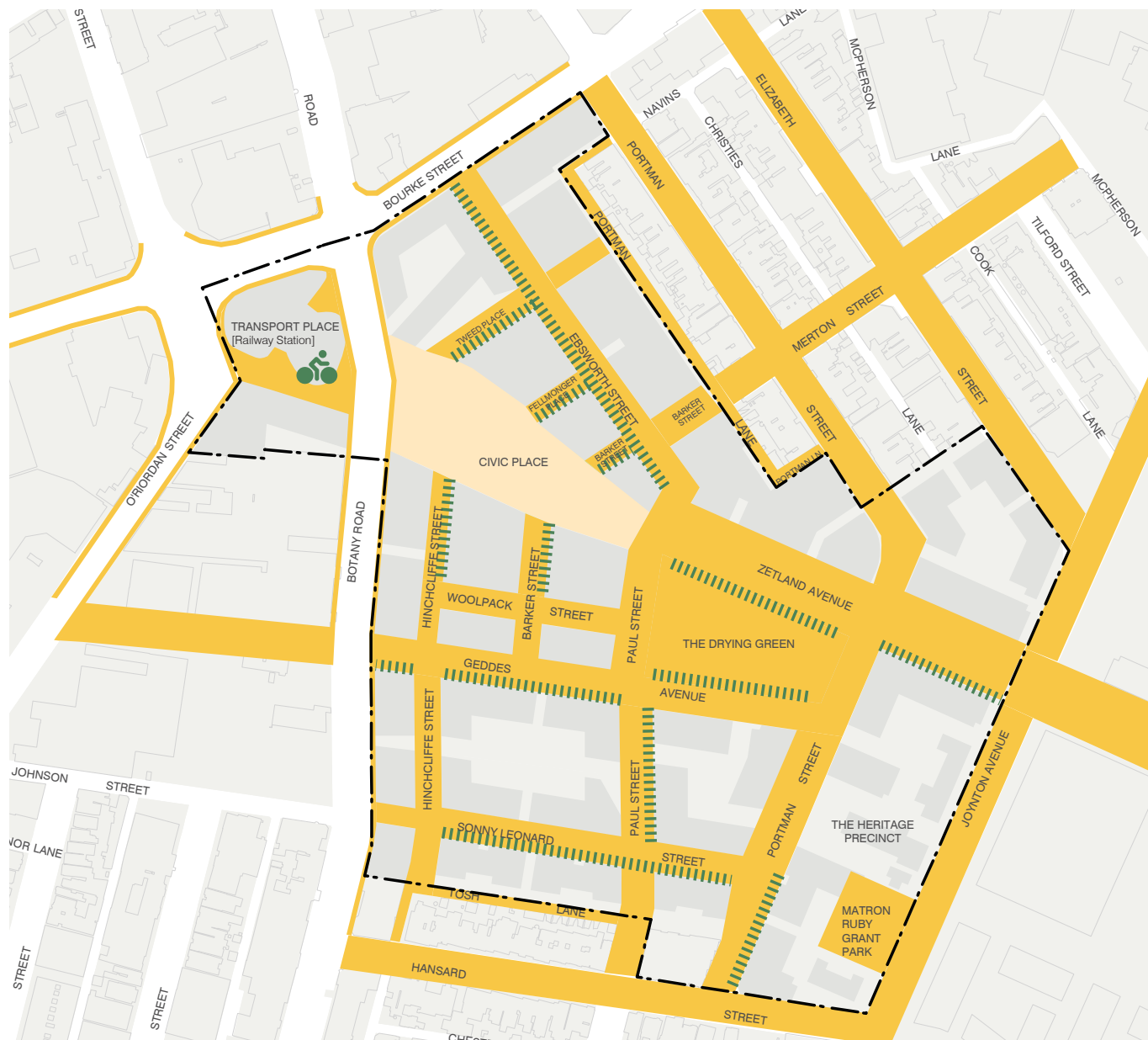
- Village Street – Insitu Concrete.
 - Local Street – Insitu Concrete.
- 3** Village Shared Zone – Stone setts.
 - Local Shared Zone – Insitu Concrete.

Transition Treatments

- 4** Village Street – Continue unit paving around the corner of a block and terminate at building property or kerb radius transition point.

5.3

Public Domain Furniture Overlay Diagram



Legend

FURNITURE TYPE

- S, Special, Distinctive Place
- CS, City Standard Furniture Palette
- STC, Short and Mid Term Cycle Storage Opportunities
(bike rings fitted to poles and u-bar racks)
- 🚲 PTC, Permanent Cycle Storage Opportunities
(covered parking, bike cages)



Public Domain Furniture

Public domain furniture selection is to be in accordance with the City of Sydney Street Design Code. Unless it is specified as a distinctive place which provides the opportunity for unique design responses. The key public domain furniture objectives are to:

- Reinforce the public domain character by providing adequate amenities to add functionality and vitality to the public realm;
- Coordinate all furniture so that streets remain uncluttered; and
- Provide both, City of Sydney standard palette furniture as well as purpose built elements that help identify the site's geographical and cultural history.

In order to avoid street clutter and to create focus points for communal activity, public domain furniture should be co-located with street trees, utilising generous tree blisters as locations for reduced pedestrian movement.

Cycle parking has been nominated on the streets shown in Diagram 5.3, temporary cycle racks must be located at regular intervals along the streets.



5.3

Street Furniture Coordination Considerations

The public domain furniture palette is currently under review, future product selection should be undertaken in accordance with the most recent Sydney Street Code 2010.

- 1 The following public domain furniture will be required:
 - a. Seating;
 - b. Cycle parking;
 - c. Bollards;
 - d. Bins;
 - e. Bus Shelters;
 - f. Bubblers;
 - g. Parking meters;
 - h. Streetscape signage, wayfinding, traffic and parking signs; and
 - i. Tree grates.

Laneways and Shared Zones

- Public domain furniture should function as linear elements providing opportunities for grouped seating, plant display and bike storage.
- Location of public domain furniture, street trees and planting should be consistent with shared zone treatments to encourage self enforcing 10 km/h vehicular speeds.

Distinctive Places

- Public domain furniture in Distinctive Places must choose appropriate public domain furniture for functionality and visual appearance and must consider minimal life cycle costs and maintenance requirements.

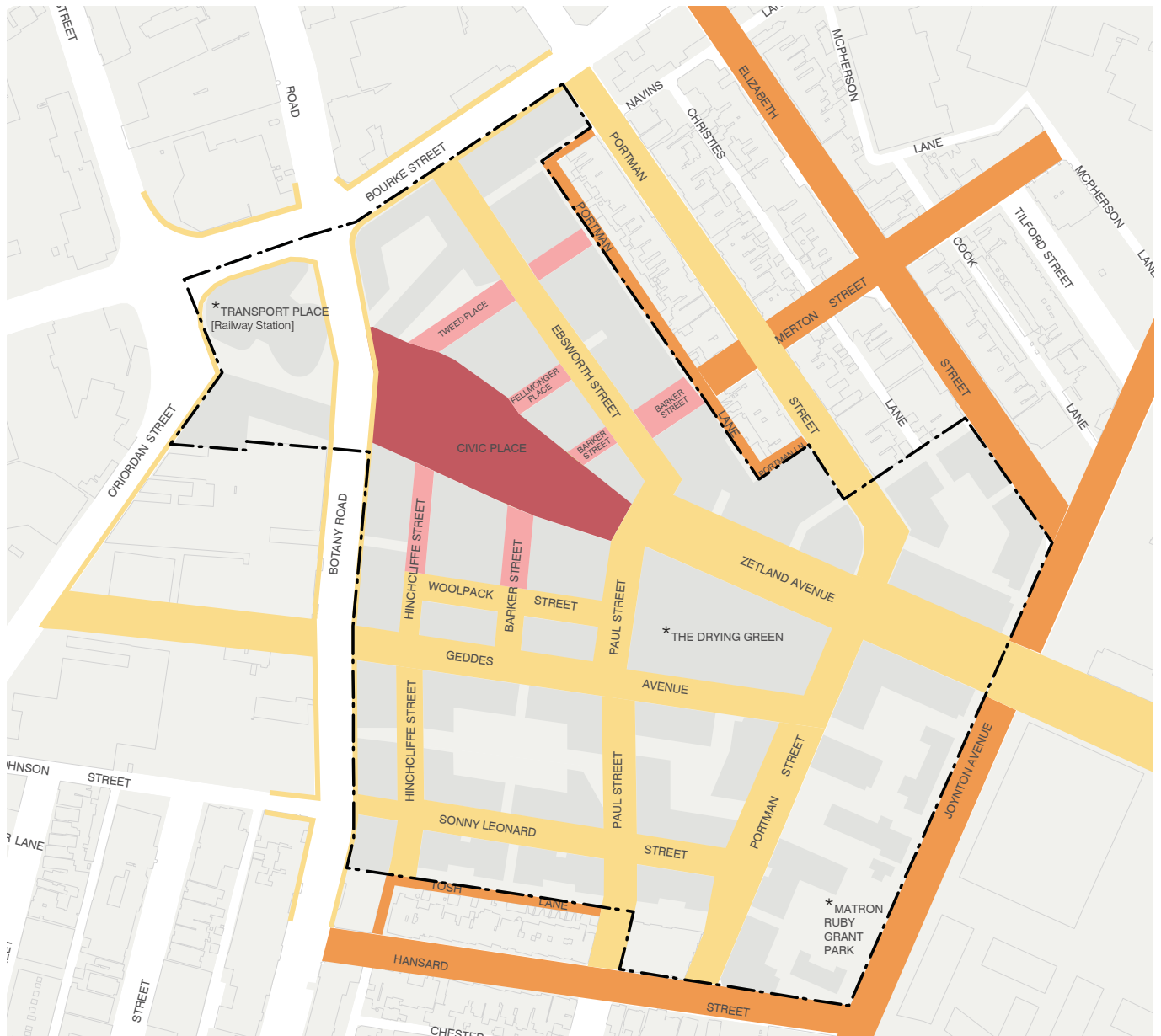
Cycle Parking

- Short term, temporary parking is to be provided on poles and/or cycle u-ring racks.
- Permanent cycle parking is to be covered and provided as cycle cages.

Tree Grates

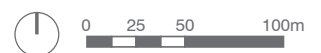
- Opportunity to develop unique language for tree pits as a response to the site geographical and cultural history.

5.4 Street Lighting Overlay Diagram



Legend

- S, Special, Distinctive Place
- SP, Bronze Smart Pole 2 (use of Smart Pole 1 subject to detail design)
- WM, Wall Mounted - catenary or outreach
- EA, Existing Energy Australia lighting pole



* For detail lighting provisions for public spaces and parks- refer to the Interim City of Sydney Street Lights

Street Lighting

Street lighting works in conjunction with street trees as an organising element to establish the rhythm of the streetscape. The Green Square lighting strategy specifies three types; special, Smart Pole, Laneway (refer to Diagram 6.4) and place based decorative lighting .

The key lighting objectives for the public domain are:

- Provide illumination at night to ensure public safety, public enjoyment, architectural appreciation, and night-time entertainment;
- Create a site specific identity of the Town Centre by utilising ambient lighting;
- To implement high environmental lighting standards to conserve energy and minimise the unnecessary emission of light pollution and greenhouse gases;
- Promote a glare free environment for traffic and pedestrians; and
- Utilise the latest technology for effective conversion of light into illumination.

All lighting will be fitted with low energy demanding LED or similar technology. To further reduce energy consumption and light pollution, the lighting levels may be staged in a way to provide safely lit movement corridors and areas of reduced lighting levels elsewhere.



5.4

Street Lighting Coordination Considerations

Refer to the Interim City of Sydney Street Lights Code 2006 (or as amended).

Street Lighting

- 1 S1 and S2 Smart Poles must be co-ordinated with street tree locations to achieve the required lighting levels relevant with the latest Australian Standards.

Distinctive Place Lighting

- 2 The lighting system for the Civic Place should be designed to allow for maximum flexibility of the spaces. This may be achieved by the reduction of use of pole mounted lighting and could include catenary systems, decorative/ interpretive themed lighting and wall mounted lighting when close to buildings.


















Laneways and Shared Zones

- 3 In the shared zones and laneways a pole free system should be used. This can be achieved by either a catenary system or by mounting outreach arms to building walls. The aim in all laneways should be to create a pleasant level of ambient light whilst achieving safety.
- 4 Laneways and shared zones provide opportunity for lighting coordination with public art installations.

5.5 Street Tree Typology Diagram



Legend

Tree Species		Tree Species		Tree Species		Tree Species				
	Ab	Acer buergerianum (Trident Maple)		Em	Eucalyptus microcorys (Tallow Wood)		Pch	Pistacia chinensis (Chinese Pistachio)		Special - Subject to Plaza Design
	Ar	Agathis Robusta (Queensland Kauri)		Fg	Fraxinus griffithii (Evergreen Ash)		Pa	Platanus acerifolia (London Plane)		Basement below public domain permissible
	Ba	Brachychiton acerifolius (Illawarra Flame Tree)		La	Livistona australis (Cabbage Tree Palm)		Rf	Robinia pseudoacacia (Golden Robina)		
	Cm	Corymbia maculata (Spotted Gum)		Lc	Lophostemon confertus (Brush Box)		Up	Ulmus parvifolia 'Todd' (Chinese Elm)	*	Zetland Avenue is subject to detail design.
	Ca	Celtis australis (Southern Hackberry)		Lt	Liriodendron tulipifera (Tulip Tree)		Zs	Zelkova serrata (Green Vase)		

Street Tree and Planting

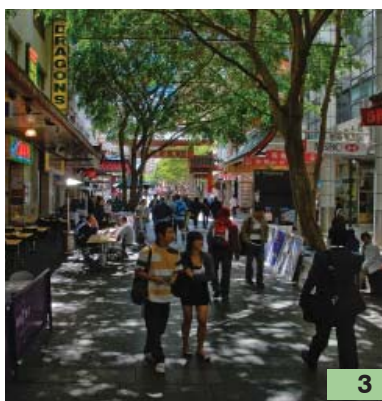
Street trees are one of a city's most important natural assets. They are crucial to maintaining the high quality of our public realm and achieving the Sustainable Sydney 2030 strategy, by assisting the creation of green corridors and increased canopy cover.

Street trees are the predominant elements that define the character and atmosphere of the public domain. However, they must withstand often harsh conditions such as low light levels due to building heights, strong winds and soil compaction.

The street tree species have been chosen based on the following set of objectives:

- Street tree planting establishes a green street character, reinforcing the visual and physical connectivity of the street network, creating a distinctive visual pattern and rhythm of the street;
- Tree species selection can connect the new development with the adjacent neighbourhoods;
- The choice of the species must be in response to the micro climates created by the adjacent developments (building heights, street widths, land uses) and maximise winter sun in public plazas and parks;
- Tree selection to consider solar access to future residential and commercial buildings and maximise light penetration to street level; and
- Preserve and protect existing significant trees where possible.

(continued over)



5.5

Street Tree Planting and Planting Coordination Considerations

Planting details and installation for sizes are specified in the City of Sydney Street Tree Master Plan 2012.

Tree Spacing and Form

- Set spacing to allow for sun infiltration between trees; spacings of 2-3 car parks in between.
- Zetland Avenue and Geddes Avenues will have a regular and formal pattern of tree planting.
- Village Streets and Local Streets can achieve green corridors through clump plantings or strategically placed planting.

Village Streets

- 1 The pattern and rhythm of the street tree planting should contribute to the overall establishment of successful landscape canopies. It should be coordinated with other urban elements to allow open visual connections to shop fronts, residential entries and key pedestrian desire lines.

Local Streets

- 2 Provide a softer, greener street character through underlay planting at street edge and within the front setbacks.
 - 3 Consider sun penetration to ground level and lower level residential units.
- Establish a strong, continuous street character by spacing and set out of trees in a consistent rhythm.

Laneways and Shared Zones

- 4 Provide ornamental, smaller scale tree planting in order to define sub zones within the laneways to demarcate public seating.
- Utilise trees with open canopies to allow for maximised sun penetration.
 - Location of public domain furniture, street trees and planting should be consistent with shared zone treatments to encourage self enforcing 10 km/h vehicular speeds.

(continued over)

5.5 (continued)

Street Tree and Planting Coordination Considerations

Water Sensitive Urban Design Tree Pits

- 5** Establish tree pits as Water Sensitive Urban Design bioretention devices for passive irrigation, water retention and filtration.
- 6** Tree planting in bioswale and raingarden devices.

Understorey Planting

- 7** Continuous planting of Water Sensitive Urban Design elements will enable the break up the layer of fine sediments that eventually will reduce water infiltration capacities and for pollutant absorption.
- 8** Local Streets – Maximise softscape in tree pits within residential streets.
 - Utilise 100% native flora to secure endemic ecosystems.

There are opportunities to include understorey and shrub planting to further define spaces and create habitats. Considerations include:

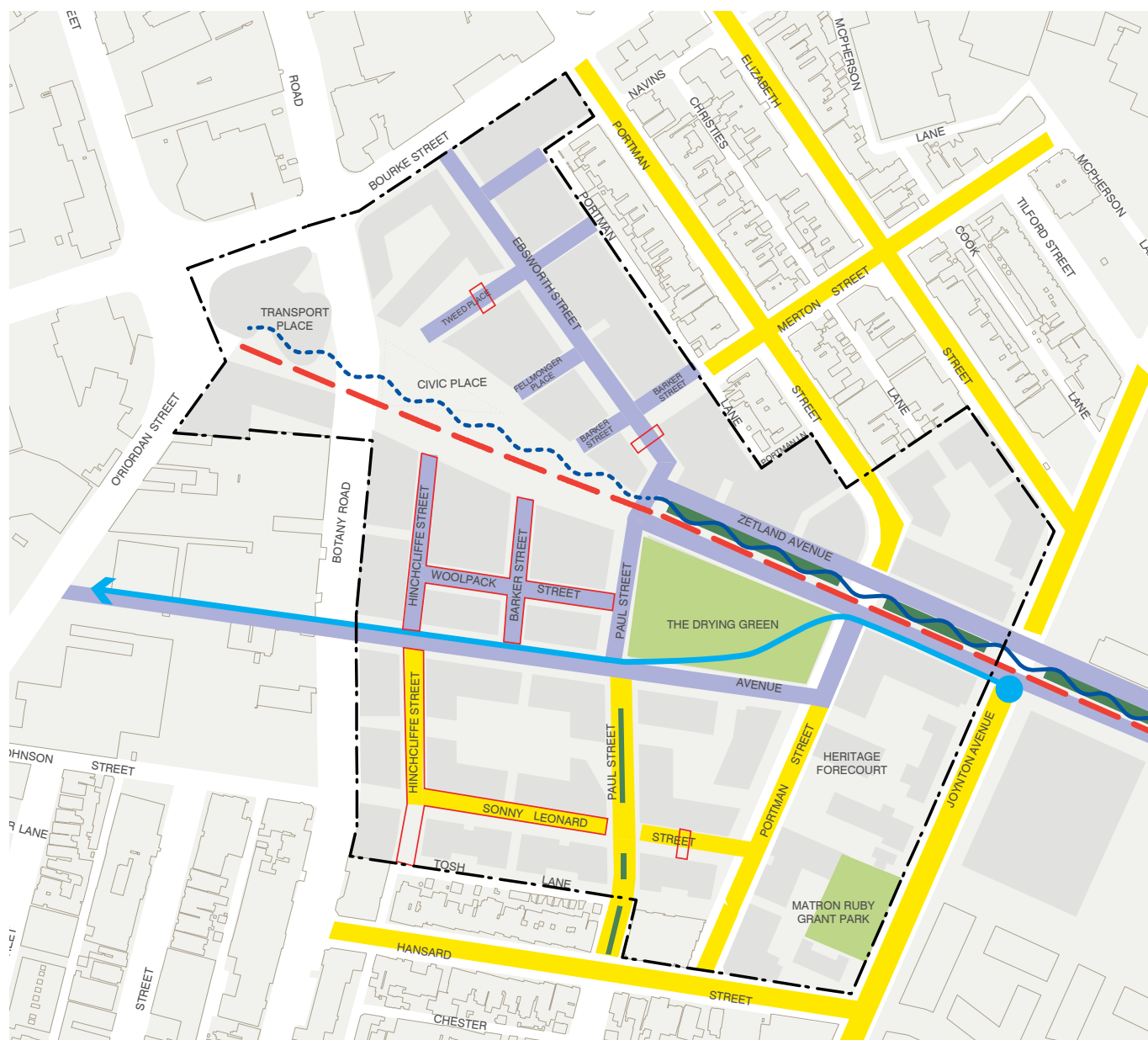
- Utilise native species (locally indigenous);
- Maximise use of provenance stock to retain and increase local biodiversity;
- Avoid mono cultural planting. Plant mixes provide more diversity and ensure long term success; and
- Incorporate a rich palette of different plant communities in relationship to their location (eg. use of native riparian species in rain gardens and retention swales).



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5.6

Water Use and Water Sensitive Urban Design Overlay Diagram



Legend

- Overland flow path
- Shea's Stream culvert
- Shea's Stream WSUD Interpretation Opportunity (eg. special application of bioretention or stormwater management systems)

- Shea's Stream Heritage Interpretation Opportunity (eg. use and display of water, community water play or public art initiatives)
- Open tree pit and rain garden - bioretention tree pit, understorey planting/raingarden
- Covered bioretention tree pit

- Central median bioswale
- Basement below public domain permissible



Use and Display of Water and Water Sensitive Urban Design

Water is one of the elements that can contribute to the character of the Green Square Public Domain. The design of the public domain will provide reference to the historical watercourses and water bodies once within the area, including Shea's Stream and the Waterloo Dam. Shea's Stream in pre-European times was part of a system of creeks and wetlands. It was confined into a stormwater culvert during the industrial development of the area. Today, the stream can be reinterpreted through the use and display of water and through Water Sensitive Urban Design initiatives.

The Water Sensitive Urban Design Strategy for the Green Square Town Centre Public Domain will make best use of the public domain areas, to treat as much stormwater as possible. Stormwater from the site itself will be treated to best practice targets.

A recycle water system is being developed for supply of non-potable water for both the private and public domain. This is based on extraction of low flows from the culvert and treatment centralised within a plant facility (the Green Infrastructure Hub) near the proposed Matron Ruby Grant Park on the former Royal South Sydney Hospital site.

It is anticipated that all stormwater run off from the private domain is treated and harvested within the building boundaries as local treatment and may further reduce water demands by providing water for irrigation of the private domain.



5.6

Use and Display of Water and Water Sensitive Urban Design Coordination Considerations

Targets

- Base targets for the water reuse scheme indicate a reduction of use of mains water by 40%, stretch targets are set to supply 100% of non-potable water to the Green Square Town Centre.
- Maximise target by installation of high water efficient devices within the private and public domain as an integrated implementation strategy.

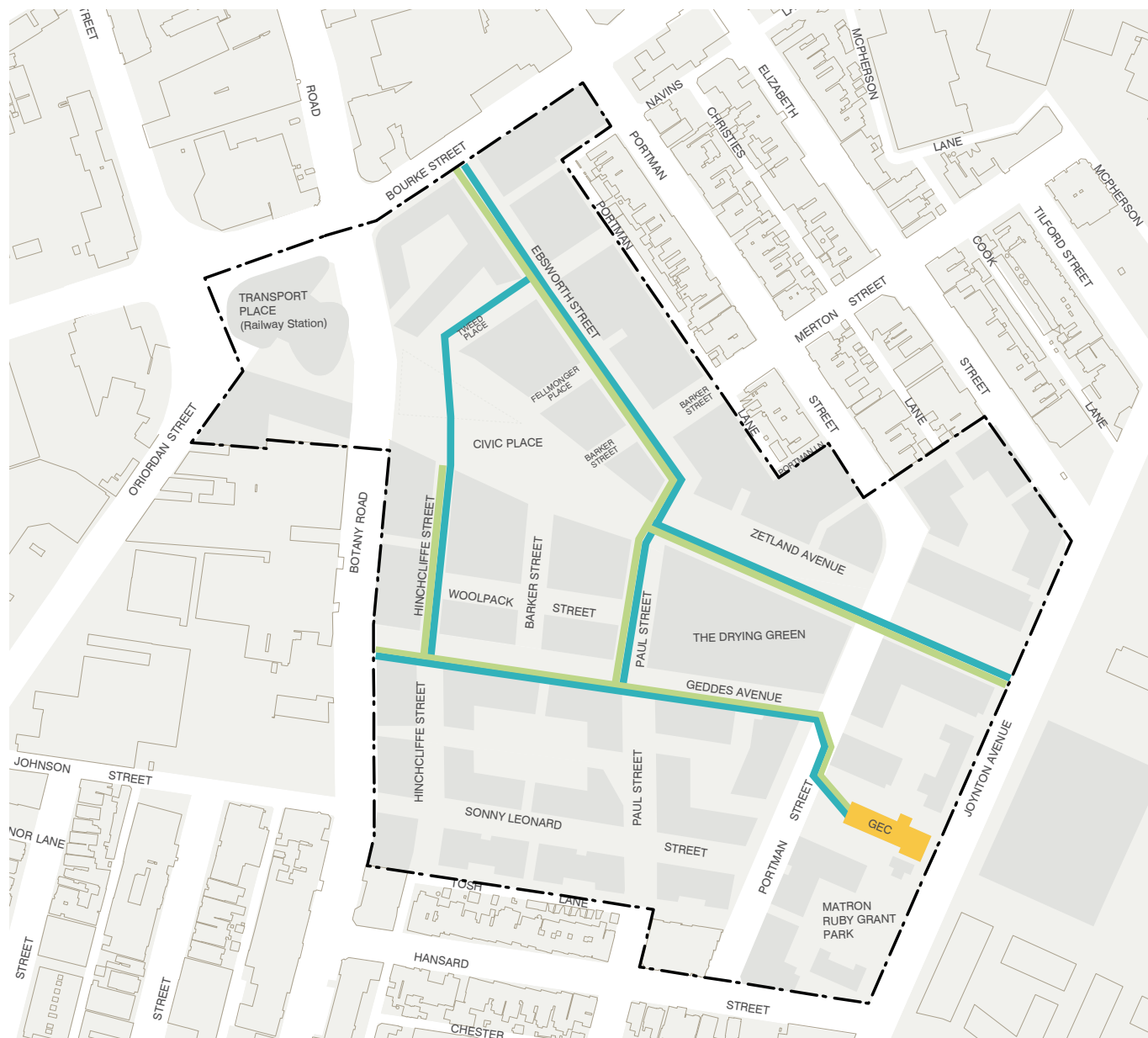
Water Sensitive Urban Design Tree Pits and Raingardens

- 1** Activity Precinct – The language for these tree pits can be developed as a reference to the site's geographical and cultural history. Covers in metal grate or timber planks may refer to the former wetland ecology and be interpretations of boardwalks or decks. Provision of small scale community hubs by coordinating public domain furniture such as seating and bike parking.
- 2** Residential Precinct – Within the residential precinct, a softer, vegetated approach is to be established. Open raingardens with maximised footprint. Native undercover and shrub planting.
- 3** Covered tree pits and open tree pits must be coordinated with the location of all public domain furniture within the street.

Bioswales

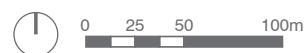
- 4** Bioswales are to be implemented to intercept and treat stormwater flows along Zetland Avenue and Paul Street.

5.7 Green Infrastructure Overlay Diagram



Legend

- Green Energy Tri-generation Facility
- Recycled Water (non potable water supply)
- Green Infrastructure Centre



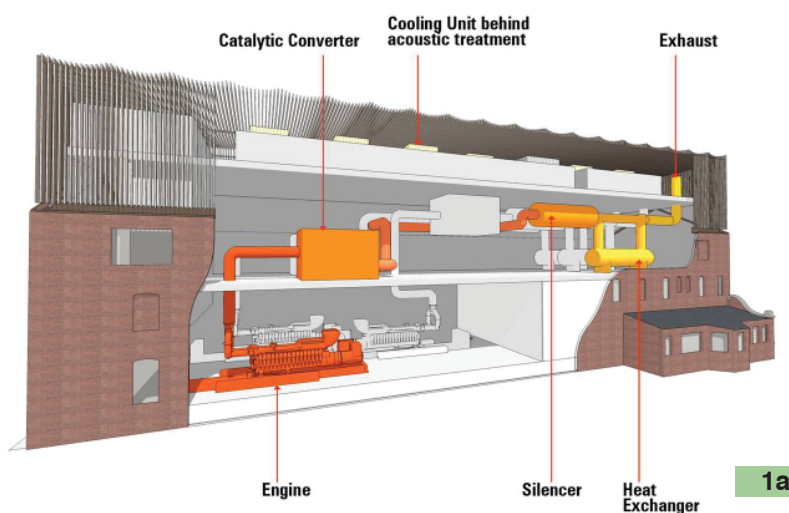
Green Infrastructure

The City of Sydney is seeking to provide a Green Infrastructure Centre (GIC) on the former Royal South Sydney Hospital (No.3 Joynton Avenue), to contain a Tri-generation and a Water Re-use facility. These green infrastructure uses will be connected to future residential and commercial buildings through a series of underground pipes and conduits.

The trigeneration facility will provide for a more sustainable energy source, while the water recycle facility will allow substantial water re-use in the Green Square Town Centre for non-potable uses.

The following principles to reduce energy demands within the public domain are proposed:

- Utilise high energy efficiently street lighting such as LED technology;
- Utilise materials that are low in embodied energy; and
- Provide solar energy production as shade structure component in park facilities and bus shelters.



5.7

Green Infrastructure Design Coordination Considerations

All Energy coordination considerations must be in accordance with the Green Square Town Centre Development Control Plan 2012.

1 The Heritage Precinct will deliver:

- a. Trigeneneration facility
- b. Water Re-use facility

Connected to all development sites through underground pipes and conduits.

- All underground pipes and servicing will be coordinated with above ground placement of street elements such as street tree planting and lighting poles.
 - For building maintenance and to future proof the building to enable infrastructure upgrades, heating and cooling infrastructure is to be consolidated into a centralised basement location near the street frontage within residential developments.
 - In multi-floor or multi-tenant or strata-subdivided developments, electricity sub-metering is to be provided for light, air conditioning and power within each floor and/or tenancy and/or strata unit. Locations are to be identified on the development plans.
 - Facilitate the use of energy and carbon efficient transport facilities such as car sharing, small car parking and electric vehicle charging stations.
- #### 2 Car parking areas should be designed and constructed so that electric vehicle charging points can be installed in future.

Tools

- Encourage improved environmental performance through the voluntary use of industry recognised building rating tools, such as Green Star.
- Encourage energy and water efficiency and water recycling in non BASIX affected development.

6.0

Defining the Public Domain

This section of the document guides the design and resolution for key places and spaces, precinct character and street element details. It should be read in conjunction with Section 3.3 for Street Typologies, Section 4.0 for strategic direction and 5.0 for design coordination considerations. It provides detail for public spaces, street dimensions, paving material palette, street tree planting, public domain furniture, lighting, Water Sensitive Urban Design and Green Infrastructure.

6.1

Key Places and Spaces



KEY PLACES & SPACES

- | | | | |
|---|--------------------------------------|---|----------------------|
| 1 | Green Square Plaza & Neilson Square | 5 | Ebsworth Street |
| 2 | Transport Place & Transport Corridor | 6 | Zetland Avenue |
| 3 | Shea's Stream Corridor | 7 | Geddes Avenue |
| 4 | The Drying Green | 8 | Heritage Forecourt & |

- Activity Precinct
- Residential Precinct
- Heritage Precinct

The Green Square Town Centre is envisaged to provide a multi-layered and active place by providing a mix of uses within each building including retail, commercial and/or residential. A fine grain street network and ground floor street activation, will guide residents and visitors through the Green Square Town Centre and to their key destinations.

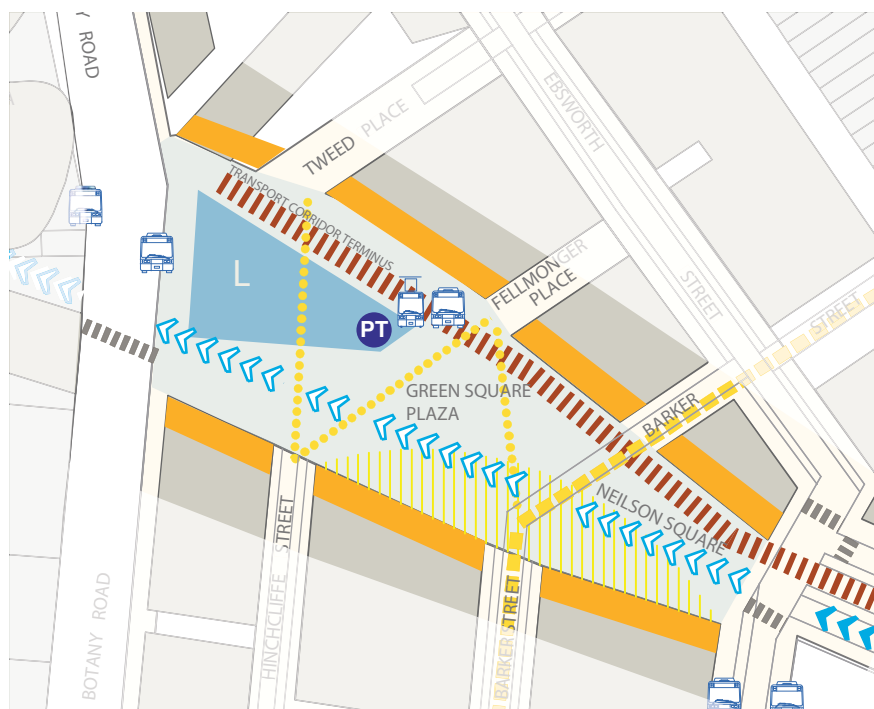
The following principles have been developed to define the primary components underpinning the Town Centre's public domain:

- A destination point for pedestrians within the Town Centre;
- A centrally located transport corridor providing direct access by bus or light rail (future stage);
- A connected place, which includes an integrated public transport hub connecting all modes of transport to the city network;
- A diverse range of public spaces, each with its own functionality and character;
- A unified interpretive water course running through the Green Square Civic Plaza and connecting all four major spaces across the Town Centre;
- An active place, where all buildings and street frontages at ground level provide an active fine grain interface with the street;
- A place where colonnades along the southern edge of the plaza offer outdoor amenity for outdoor dining; and
- A place that reflects the cultural, environmental, landscape and heritage values of the community.

To support the above principles, eight key places and spaces have been selected to illustrate and guide the delivery of the public domain, they include :-

- Civic Place;
- Transport Place and Transport Corridor;
- Shea's Stream Corridor;
- The Drying Green;
- Ebsworth Street;
- Zetland Avenue;
- Geddes Avenue; and
- The Heritage Precinct.

Key Places and Spaces | Civic Place



Envisaged as the heart of the Green Square Town Centre, Civic Place offers a range of public domain programs, that will be formed to include a community library, transport terminus and formal public spaces. Activities will spill out from the library to meet the plaza spaces and seamlessly integrate towards the built form edges. The edges will be activated by a fine grain retail use with transparent entryways and shopfronts. A two storey colonnade along the entire length of the southern edge provides weather protection and opportunities to install alfresco dining. Large areas of the plaza will benefit from sun penetration all year around, providing ample opportunities for public events and everyday activities to occur at street level.

Neilson Square, will compliment the main Plaza by providing a softer and more intimate space, creating opportunities for informal play, community events and local markets.

Objectives

- Establish Civic Place as the heart of the Town Centre to bring activity and a unique identity to the site.
- Create spaces that are safe, legible and pedestrian oriented.
- Create a high quality, unique and memorable identity for Civic Place.
- Integrate the architectural form of the library with the plaza's public domain.
- Provide functional spaces, programmed to support a variety of public programmes and events such as markets, cinemas and social gatherings.
- Ensure safe and legible connections are made between all transport modes and between the transport corridor and the Transport Place.

Considerations

Opportunities exist to:

- Integrate public art (e.g. as interpretation of the Shea's Stream);
- Provide public amenities such as public toilets, change rooms and bike storage within the library;
- Provide inground water, power supply for market stalls;
- Provide fixed and temporary outdoor seating along the plaza edges;
- Consider provision of WSUD integrated in the Shea's Stream interpretation;
- Consider integration of formal and informal play facilities; and
- Provide unique material and furniture palettes for the spaces to define their special function within the public domain.

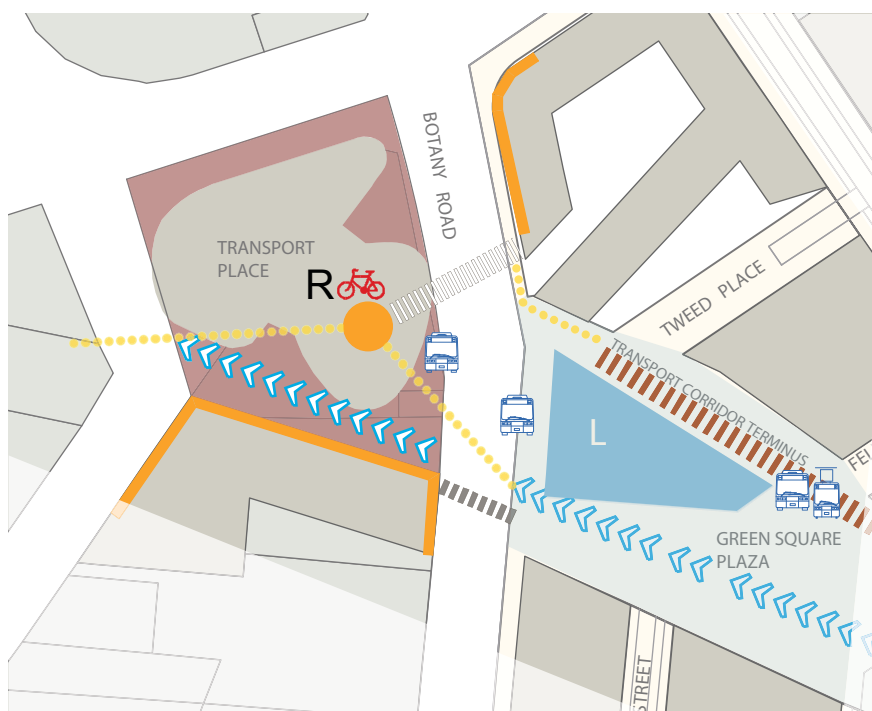
Key Principles

-  Design for the Transport Corridor and public transport stops along the northern edge.
-  Locate the community library at the western end (subject to international design competition).
-  Activate the ground floor with fine grain retail use. Allow for awnings, colonnades and entryways.
-  Provide safe pedestrian street crossings at Botany Road and other streets for maximised pedestrian permeability.
-  Integrate all pedestrian desire lines across Civic Place.
-  Create Shea's Stream as a heritage interpretation of the original creek, including uses such as water play, themed landscapes and public art elements.
-  Maximise and utilise sun penetration to ground level where possible.
-  Integrate the vehicular driveway on Barker Street as a single skin shared traffic zone across Civic Place to maximised pedestrian permeability between Green Square Plaza and Neilson Square (subject to traffic assessment).
-  Provide and locate public toilets in areas that compliment public events and community activities.



Civic Place and Transport Corridor. Artistic Impression

Key Places and Spaces | Transport Place and Transport Corridor



Transport Place will form an iconic gateway for commuters travelling on the public transport network. The environment will be highly accessible for pedestrians and cyclists, and become a key attractor for the Green Square Town Centre. Transport Place will offer an on-grade pedestrian crossing on Botany Road, directly connecting pedestrians to Green Square Plaza, library and the transport terminus.

The Transport Corridor is a key east-west directional element that provides a carriageway for temporary bus transport, and future light rail infrastructure across the Civic Place, Zetland Avenue and greater Green Square.

These two distinct places will provide opportunities to cultivate a unique sense of arrival, pedestrian priority, design excellence and urban life.

Objectives

- Create a sense of place and arrival through the use of public domain elements and integrated architectural form.
- Design for a high quality pedestrian environment, encouraging a variety of mixed uses and functionality of spaces.
- Design for a 24-hour environment experience, promoting security and safety addressed through Crime Prevention Through Environmental Design (CPTED) principles.
- Create a Transport Corridor that will be used by buses in the short term and light rail in the long term.

Considerations

Opportunities exist to:

- Create a high quality public domain that promotes a 24-hour active environment and a sense of arrival;
- Integrate Transport Place, Civic Place and the Transport Corridor, through continuous paths of travel, special material palettes and consistent public domain furniture elements;
- Provide public domain elements that will not restrict movement along pedestrian desire lines, such as at-grade pedestrian street crossing on Botany Road; and
- Consider the extension of the Shea's Stream interpretation and its future possible connection to Alexandria Canal.

Key Principles

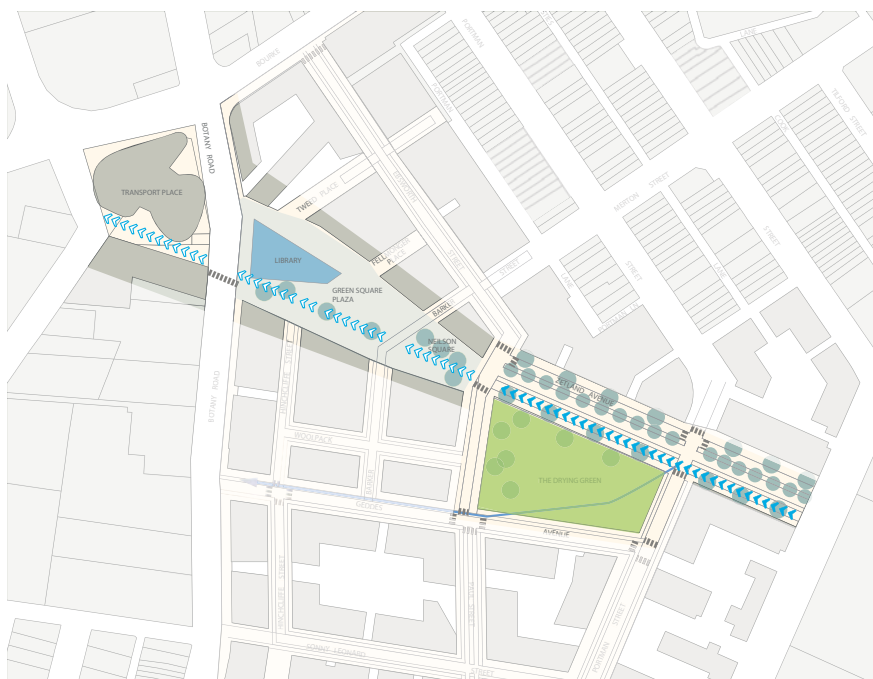
- R** Identify Transport Place as an iconic transportation hub for Green Square.
- |||||** Transport Corridor (bus and light rail) should be designed to ensure pedestrian safety by providing kerbs, bollards or changes in material to demarcate its extent. Design levels adjacent to the Transport Corridor must respond to the maximum gradients required to accommodate all modes of future light rail.
-** Maintain visual desire lines to existing station entry points.
- Provide active frontages along ground floor retail uses, station/building entries and railway concourse.
- |||||** Provide at grade pedestrian crossing on Botany Road.
- |||||** Integrate existing underground access path in new development and pedestrian desire lines.
- 🚲** Integrate all modes of travel. Provide secure bike parking facilities.
- 👉👉👉** Integrate the Shea's Stream Corridor in the design of Transport Place. Opportunity for formal water display, water play, themed landscapes and public art elements.



far left: Berlin Potsdamer Platz Subway Station Entry

left: London Cannon Station Entry with commercial above

Key Places and Spaces | Shea's Stream Corridor



Shea's Stream is the name of the open waterway that in pre-european times crossed the site. Alexandria Canal to the west still is a remnant of this waterway. A large concrete culvert has replaced the open waterway when the lands were accessed for industrial developments.

Shea's Stream can be understood as the soul of the Town Centre. A long linear element that reinterprets, re-addresses and maybe even reopens the original waterway in order to provide a unique and site specific identity that connects all public domain spaces including Zetland Avenue, The Drying Green and Civic Place and offers a hint to the site's history and origin.

It provides opportunities to interpret the stream through a range of mediums, including natural and decorative water features, public art elements, themed landscapes, water play and water sensitive urban design initiatives.

Objectives

- Design Shea's Stream as a consistent continuous element that connects all public spaces within the Town Centre.
- Integrate clues of the site history as a medium to create an identity of the place and identification.
- Integrate all stormwater management controls to mitigate flooding risks in a functional and creative way.

Considerations

Opportunities exist to:

- Integrate public art and an interpretive strategy (refer to the Green Square Public Art Strategy 2012);
- Provide provision of Water Sensitive Urban Design into plaza and park designs ;
- Target high environmental sustainable design benchmarks by designing the Sheas' Stream as a water harvesting element to provide water for re-use in the public domain; and
- Provide direct pedestrian desire lines along the Civic Place and Zetland Avenue to maximise activation of the plaza colonnade and alfresco dining edges.

Key Principles



Interpret Shea's Stream through Water Sensitive Urban Design elements such as bioswales, rain gardens and open bioretention systems.



As part of the overall stormwater management strategy, design and integrate the diversion of overland flows into The Drying Green and Geddes Avenue.



Create sub spaces within Civic Place and Transport Place that provide intimately scaled spaces, controlled micro climates and shade.

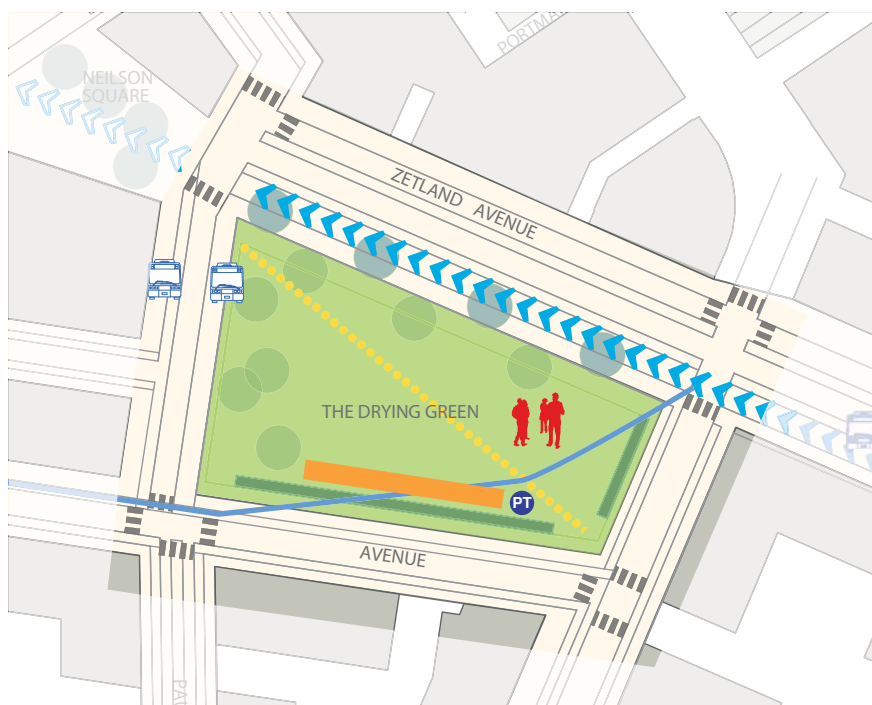
Combine Water Sensitive Urban Design elements as part of the interpretive strategy, including water features, public art and water play.



far left : Lynne Robert/ Goodwin Tank Stream, public art installation Sydney

left: Taylor-Cullity-Lethlean Auckland Waterfront

Key Places and Spaces | The Drying Green



The Drying Green can be defined as the 'Green Lungs' of the Town Centre. The 5,500 square metre local park will serve to extend the landscape character of Zetland Avenue and form a strong contrast to the paved, formal, multi functional urban environments of Civic and Transport Place.

As the physical centre of the Town Centre the park will maximise opportunities to connect pedestrian desire lines across the Heritage Precinct and Civic Place.

The local park will enable a range of community uses to occur, including open lawns for active play, children's playgrounds, community farms, public toilets, seating areas, shade structures and picnic facilities.

Objectives

- Establish the Drying Green as the local community hub and foster community activities such as active play, gardening and casual seating.
- Design a minimum area of 50% to allow sun penetration to ground level every day between 11am and 2pm.
- Foster community engagement and understanding with local environments and the site's history (wetlands, wool production and the history of water).
- Achieve Water Sensitive Urban Design outcomes by providing localised stormwater water collection, treatment, storage and display.
- Ensure safe and direct pedestrians desire lines through the park.

Considerations

Opportunities exist to:

- a. Display and utilise Water Sensitive Urban Design for community education and engagement;
- b. Integrate public art into park elements, such as themed play areas, shading elements or community facilities structures;
- c. Consider the relationship of shading tree canopies and open space to retain the required open space and controlling sun filtration; and
- d. Consider an appropriate relationship between Water Sensitive Urban Design elements and space for recreation.

Key Principles

-  Maximise and provide a well defined open green space to allow for different active activities such as lunchtime sports and smaller local produce markets.
-  Utilise different planting to assist in framing the open lawn creating a natural threshold to Geddes and Zetland Avenue.
-  As part of the overall stormwater management strategy, design and integrate the diversion of overland flows into The Drying Green and Geddes Avenue.
-  Connect the Water Sensitive Urban Design elements with the Shea's Stream Corridor interpretive strategy.
-  Provide community facilities such as a public play ground with formal and informal play facilities.
-  Provide hardscaped walkways to allow for all pedestrian desire lines through the park.
-  Provide safe pedestrian crossings at the key entry points into the park.
-  Provide shade structures associated with play, picnic and bbq areas.
-  Provide public toilets.



far left: Joynton Park Victoria Park, Hassel Architects

left: Drying Green Artistic Impression MCGC 2008

Key Places and Spaces | Ebsworth Street



Ebsworth Street forms the main retail strip in Town Centre and is comparable to such streets as Oxford Street in Paddington and King Street Newton. The 19 metre wide street corridor accesses a variety of fine grain and larger retail facilities. The Village Street is programmed to become the buzzing shopping strip within the Town Centre, able to accommodate high numbers of pedestrians activities. The adjacent laneways and shared zones will provide extensions for al-fresco dining and protected seating areas.

Clustered placement of deciduous trees in association with urban furniture and Water Sensitive Urban Design elements will assist in creating pedestrian zones of respite and social interaction.

Objectives

- Design and program the street to become the main retail street within the precinct with high pedestrian priority applications.
- Establish trees that will positively contribute to the microclimate and built form character of the street.
- Maximise pedestrian comfort by:
 1. Providing a fine grain street frontage at ground level;
 2. Providing awnings along the street frontage for weather protection; and
 3. Encouraging outdoor uses.



Considerations

Opportunities exist to:

- a. Select street trees to maximise sun penetration at street level;
- b. Utilise street planting that will offer high levels of tolerance to varied wind conditions, limited sunlight and wide ranging soil profiles;
- c. Combine tree locations with public domain furniture and WSUD applications to create pods of special uses;
- d. Consider raised pedestrian thresholds at street entry points and at strategically important locations such as laneway crossings; and
- e. Consider the integration of public art into the overall street design.



Key Principles



Provide a street with 2 travel lanes, 2 parking lanes for short term and special parking such as car sharing and electric fuel etc., shared bicycle traffic and wide footpaths.



Activate street frontage with fine grain retail facades and awnings.



Use street trees strategically in combination with public domain furniture and WSUD applications to create pods of special uses.



Create safe and legible pedestrian priority crossings (raised paved crossings or similar.) where large volumes of pedestrian movement is expected.

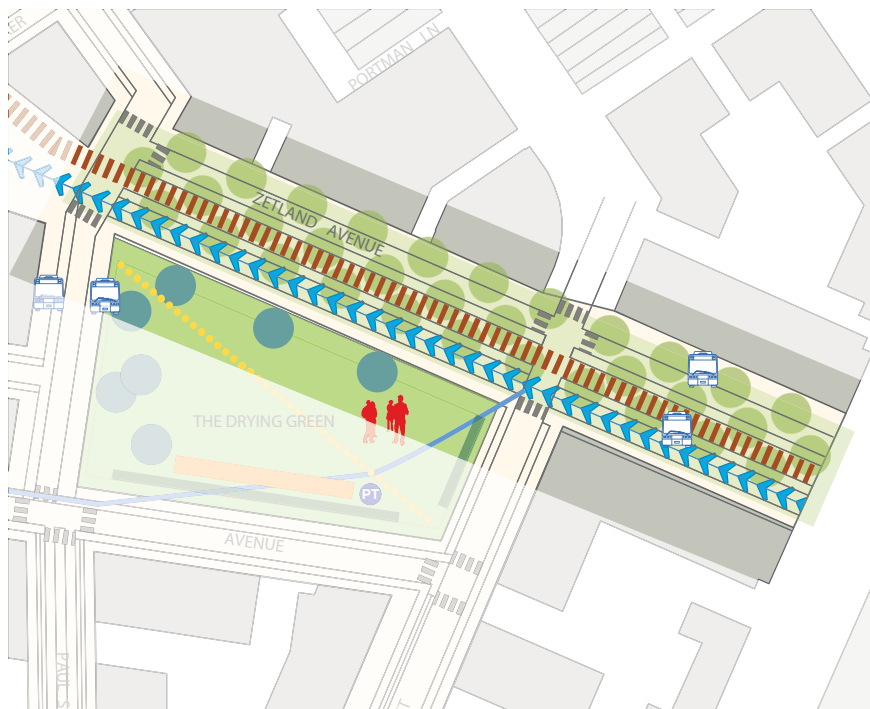


Create a pedestrian priority environment by providing the preferred arrangement of driveway thresholds across the footpath. Extend the design language of adjacent special places into the street.

far left: Bourke Street Mall Melbourne

left: Angel Place Sydney

Key Places and Spaces | Zetland Avenue



Zetland Avenue is the grand boulevard and the most important street in the Town Centre. The 36 metre wide boulevard is the major east west street that provides access between the north south running arterials of Botany Road, Southern Cross Drive and lower volume Joyton Avenue. The boulevard forms the gateway into Green Square Town Centre from the East and connects all major public spaces and parks and linking them into the adjacent neighbourhoods.

Zetland Avenue is designed as a classic boulevard and should draw associations to the grand boulevards of the world, such as the Ramblas in Barcelona, Spain. The Avenue is characterised by wide generous footpaths, separated bicycle paths, active retail and commercial frontages, vegetated verges and formal tree planting. A transport corridor through the centre will provide the infrastructure required to cater for all modes of public transport, such as temporary buses and future light rail.

Objectives

- Establish Zetland Avenue to become the major access corridor into the Town Centre.
- Ensure key intersections are designed for pedestrian and cycleways priority and reduced traffic speeds.
- Maximise street activation along the northern edge through retail and commercial uses.
- Create a street corridor that is well defined along the different edge conditions [open edge to the park, active frontages to the built form].
- Establish a mature street tree canopy that will reinforce the primacy of Zetland Avenue.
- Integrate all required water Sensitive Urban design initiatives.
- Achieve a formal and unified green street utilising asymmetrical and formal tree planting.



Considerations

Opportunities exist to:

- Select plant communities along the south edge as part of the bioswale, Shea's Stream Interpretation;
- Utilise large, symmetrical, narrow foliage street trees to define the formal character of Zetland Avenue;
- Investigate options to increase short to medium term tree foliage, including strategies for denser tree spacing, mature tree transplants or fast growing tree species;
- Install the light rail corridor as a green turfed carriageway as current best practice overseas in order to minimise surface sealing by providing wheel tracks only for both stages with green/ turf infill; and
- Utilise light rail catenary to replace pole lighting and for fixing of banners and feature lighting.



Key Principles



Provide a street with 2 transit lanes for public transport (short term buses and long term light rail), 2 travel lanes, 1 parking lane, separated bi-directional bicycle lane, interpretive bio swale.



Connect the Water Sensitive Urban Design elements with the Shea's Stream Corridor interpretive strategy.



Locate pedestrian priority intersections and junctions (marked or signalled) where high pedestrian movement is expected.



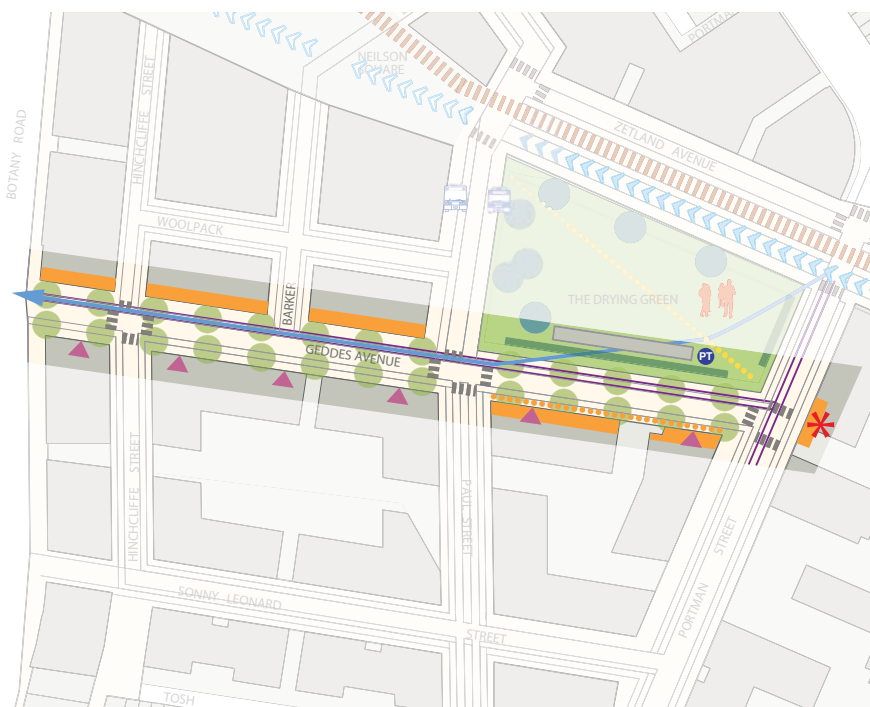
Create a regular grid of street trees coordinated with street lighting and car parking for an even set out of the street.

Provide large, symmetrical and narrow foliage street trees to define the formal character of Zetland Avenue.

far left: Swanston Street Melbourne

left: Ramblas Barcelona

Key Places and Spaces | Geddes Avenue



Geddes Avenue functions to compliment Zetland Avenue as main east-west connection through the Town Centre. The street is characterised by formal street tree planting, on street parking, bus corridor and bi-directional separated cycleway. It forms the southern edge to The Drying Green park and the activity precinct.

The street corridor is planned to be extended towards the west connecting into the major artery roads of Bourke Street and McEvoy Street. To the east, the heritage precinct forms a natural visual termination point for Geddes Avenue and The Drying Green.

Objectives

- Ensure key intersections are designed for pedestrian and cycleways priority and reduced traffic speeds.
- Align the street to connect across Botany Road extending westwards into McEvoy Street.
- Establish trees that will positively contribute to the microclimate and built form character of the street.
- Create a continuous streetscape based on a regular grid for lighting, trees, public domain furniture and parking.
- Form a strong and legible edge to the Drying Green Park.

Considerations

Opportunities exist to:

- Select street trees to maximise sun penetration at street level;
- Utilise street planting that will offer high levels of tolerance to varied wind conditions, limited sunlight and wide ranging soil profiles;
- Combine tree locations with public domain furniture and WSUD applications to create pods of special uses;
- Consider the integration of public art into the overall street design;
- Create a visual termination point at the heritage precinct;
- Larger set backs to residential building blocks provide opportunity for a softer, landscaped character of the street.

Key Principles



Provide a street with 2 travel lanes, 1 parking lane, bio-directional separated cycleway and paved footpaths.



Activated edges with retail and commercial landuses.



Locate residential building entries at street level.



Achieve a unified green street and canopy by a regular formal planting pattern. Use street trees strategically in combination with public domain furniture and Water Sensitive Urban Design elements to create pods of special uses.



As part of the overall stormwater management strategy, design and integrate the diversion of overland flows into The Drying Green and Geddes Avenue.



Locate pedestrian priority intersections and junctions (marked or signalled) where high pedestrian movement is expected.



Create a visual termination point at the heritage precinct.



Maximise and utilise sun penetration to ground level where possible.



left: Bourke Street Melbourne

far left: Spitaler Strasse Hamburg

Key Places and Spaces | Heritage Precinct



The Heritage Precinct is focused around the former Royal South Sydney Hospital Site. To celebrate the heritage and cultural values of the site, existing buildings will be upgraded for reuse as community facilities and to accommodate Green Infrastructure, contributing to the Town Centre's character. The innovative Green Infrastructure Centre, will provide the Town Centre with more sustainable energy and water re-use. At the southern end of the site, a more intimate green space, Matron Ruby Grant Park will offer residents direct access for passive and recreational use.

The Heritage Precinct is defined by the existing streets of Joynton Avenue to the east, Portman Street to the west and Hansard Street to the south and Zetland Avenue to the north. The precinct provides multiple pedestrian pathways connecting across the site and directly to The Drying Green. Activities in this precinct will provide a community focus, supporting small scale events, open air vending and include childcare services.

Objectives

- The precinct presents a unique opportunity to incorporate an interpretive strategy, including public domain elements that reflect the cultural, environmental and heritage values of the site.
- Ensure heritage buildings on site will be re-used to house places of public use, including community and green infrastructure facilities, cultural spaces (Creative Hub) and public amenities.
- Ensure safe and direct pedestrians desire lines through Matron Ruby Grant Park and forecourt spaces.

Considerations

Opportunities exist to:

- Integrate public art into key elements of the park and buildings, such as shade canopies, Water Sensitive Urban Design, seating areas or community structures;
- Provide community facilities such as, passive recreation, shade structures, informal seating, public toilets, artist studios, exhibition spaces, and skateable elements;
- Create smaller, more intimate, green spaces for informal 'campus' like activities; and
- Create themes for combining the 'old' (heritage buildings and existing mature trees) and the 'new' (Green Infrastructure Centre), through choices of material for paving, lighting, furniture and landscape.

Key Principles



Provide safe and direct pedestrians routes through Matron Ruby Grant Park and forecourt spaces.



Locate community uses (Creative Hub) in existing heritage buildings.



Provide public toilets at street level.



Integrate ground floor childcare services with neighbouring housing complex.



Above: artist impression of the Green Infrastructure Centre and Matron Ruby Grant Park

6.2 Street Sections



- | | | | |
|---|---|--|---|
| Village Boulevard | Village Street | Local Street-Special Application | Local Shared ways |
| Village Avenue | Village Shared Zone | Local Street | Shared zone application (subject to detail traffic assessment) |

Street Section A - Zetland Avenue (Transport Corridor- Bus Mode)*



Shea's Stream WSUD Interpretation Zone

Key Public Domain Elements

Street Type

Refer to Diagram **3.3** - Village Boulevard

Street Geometry

Refer to Diagram **5.1**

Footpath, Kerb & Carriageway

Refer to Diagram **5.2** - CU

Footpath pavement: Concrete unit paver (honed exposed aggregate) – Pebble crete PPX254:400 or equivalent unit size 600x400x60mm.

Parking bays: Stone sett paving (mixed honed, sawn or sandblasted). Austral black granite 105 x 105 x 80mm split face setts or alternative dimension subject to City assessment and approval.

Kerb: Deerpark bluestone units 300 X 300 x 1200 with 15mm chamfered edge to gutter side. Cut to radii as specified. Stormwater lintel to match kerb material.

Carriageway: Asphalt concrete with light coloured aggregate.

Separated Cycleway: Two-step cross section. 400 x 300 bluestone units with 15mm chamfer.

Kerb Ramps: To match pavement material.

Pit Lids: 30mm thick unit paver inset to match adjacent pavement type.

Dish Drain: Insitu concrete.

TGSI's (tactiles): Type 316 grade solid stainless steel tactile with slip resistant engraved sides and mill top finish.

Furniture Type

Refer to Diagram **5.3** - CS

Lighting Type

Refer to Diagram **5.4** - SP

Bronze Smartpole Type S2 (use of S1 subject to detail design), LED luminaire GE R250LED.

Street Tree Type

Refer to Diagram **5.5** - Ar, La, Ba (subject to detailed design)

WSUD & Tree Base Treatments

Refer to Diagram **5.6**

Planting detail: Covered bioretention tree pits, 1400 x 1400 cast Iron or galvanised steel tree grates (to comply with AS1428 for max gap) and permeable paving base.

Shea's stream interpretation zone and central median: Open bioretention tree pits, raingardens and swales.

Opportunity to integrate all elements into the interpretive strategy subject to City assessment/ approval.

Green Infrastructure

Refer to Diagram **5.7**

*Transport Corridor- bus/light rail service modes and alignments are subject to detail design.

Street Section B - Geddes Avenue



Key Public Domain Elements

Street Type

Refer to Diagram 3.3 - Village Avenue

Street Geometry

Refer to Diagram 5.1

Footpath, Kerb & Carriageway

Refer to Diagram 5.2 - CU

Footpath pavement: Concrete unit paver (honed exposed aggregate) – Pebble crete PPX254:400 or equivalent unit size 600x400x60mm.

Parking bays: Stone sett paving (mixed honed, sawn or sandblasted). Austral black granite 105 x 105 x 80mm split face setts or alternative dimension subject to City assessment and approval.

Kerb: Deepark bluestone units 300 X 300 x 1200 with 15mm chamfered edge to gutter side. Cut to radii as specified. Stormwater lintel to match kerb material.

Carriageway: Asphalt concrete with light coloured aggregate.

Separated Cycleway: Two-step cross section. 400 x 300 bluestone units with 15mm chamfer.

Kerb Ramps: To match pavement material.

Pit Lids: 30mm thick unit paver inset to match adjacent pavement type.

Dish Drain: Insitu concrete.

TGSI's (tactiles): Type 316 grade solid stainless steel tactile with slip resistant engraved sides and mill top finish.

Furniture Type

Refer to Diagram 5.3 - CS

Lighting Type

Refer to Diagram 5.4 - SP

Bronze Smartpole Type S2 (use of S1 subject to detail design), LED luminaire GE R250LED.

Street Tree Type

Refer to Diagram 5.5 - Up

WSUD & Tree Base Treatments

Refer to Diagram 5.6

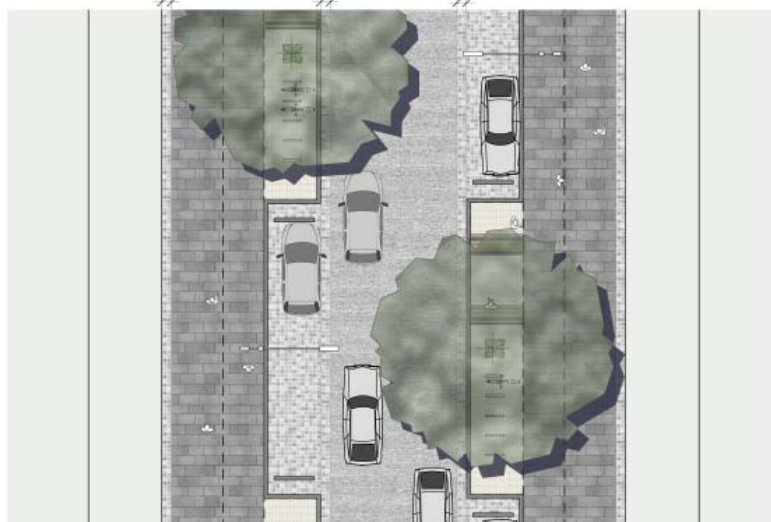
Planting detail: Covered bioretention tree pits, 1400 x 1400 cast Iron or galvanised steel tree grates (to comply with AS1428 for max gap) and permeable paving base.

Opportunity to integrate all elements into the interpretive strategy subject to City assessment/ approval.

Green Infrastructure

Refer to Diagram 5.7

Street Section C1 - Ebsworth Street



Key Public Domain Elements

Street Type

Refer to Diagram **3.3** - Village Street

Street Geometry

Refer to Diagram **5.1**

Footpath, Kerb & Carriageway

Refer to Diagram **5.2** - CU

Footpath pavement: Concrete unit paver (honed exposed aggregate) – Pebble crete PPX254:400 or equivalent unit size 600x400x60mm.

Parking bays: Stone sett paving (mixed honed, sawn or sandblasted). Austral black granite 105 x 105 x 80mm split face setts or alternative dimension subject to City assessment and approval.

Kerb: Deerpark bluestone units 300 X 300 x 1200 with 15mm chamfered edge to gutter side. Cut to radii as specified. Stormwater lintel to match kerb material.

Carriageway: Asphalt concrete with light coloured aggregate.

Kerb Ramps: To match pavement material.

Pit Lids: 30mm thick unit paver inset to match adjacent pavement type.

Dish Drain: Insitu concrete.

TGSI's (tactiles): Type 316 grade solid stainless steel tactile with slip resistant engraved sides and mill top finish.

Furniture Type

Refer to Diagram **5.3** - CS

Lighting Type

Refer to Diagram **5.4** - SP

Bronze Smartpole Type S2 (use of S1 subject to detail design), LED luminaire GE R250LED.

Street Tree Type

Refer to Diagram **5.5** - Lt

WSUD & Tree Base Treatments

Refer to Diagram **5.6**

Planting detail: Covered bioretention tree pits, 1400 x 1400 cast Iron or galvanised steel tree grates (to comply with AS1428 for max gap) and permeable paving base.

Opportunity to integrate all elements into the interpretive strategy subject to City assessment/ approval.

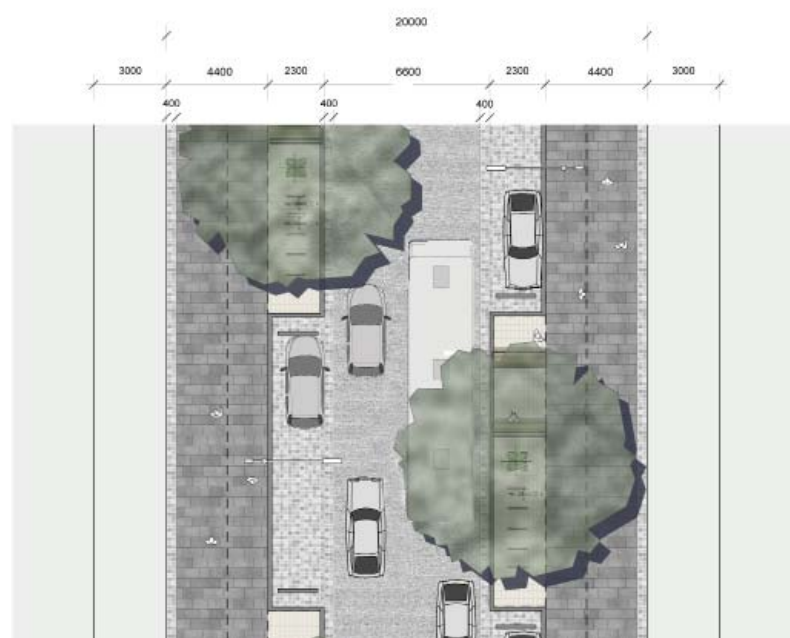
Green Infrastructure

Refer to Diagram **5.7**

Indicative Illustration

1. Carriageway (asphaltic concrete)
2. Parking bays (stone setts)
3. Dish drain (Insitu concrete)
4. Kerb (Bluestone)
5. Footpath (concrete unit paving with frontage zone in stone setts)
6. WSUD, planting and furniture module
7. Smart Pole lighting

Street Section C2 - Paul Street (North)



Key Public Domain Elements

Street Type

Refer to Diagram 3.3 - Village Street

Street Geometry

Refer to Diagram 5.1

Footpath, Kerb & Carriageway

Refer to Diagram 5.2 - CU

Footpath pavement: Concrete unit paver (honed exposed aggregate) – Pebble crete PPX254:400 or equivalent unit size 600x400x60mm.

Parking bays: Stone sett paving (mixed honed, sawn or sandblasted). Austral black granite 105 x 105 x 80mm split face setts or alternative dimension subject to City assessment and approval.

Kerb: Deepark bluestone units 300 X 300 x 1200 with 15mm chamfered edge to gutter side. Cut to radii as specified. Stormwater lintel to match kerb material.

Carriageway: Asphalt concrete with light coloured aggregate.

Kerb Ramps: To match pavement material.

Pit Lids: 30mm thick unit paver inset to match adjacent pavement type.

Dish Drain: Insitu concrete.

TGSI's (tactiles): Type 316 grade solid stainless steel tactile with slip resistant engraved sides and mill top finish.

Furniture Type

Refer to Diagram 5.3 - CS

Lighting Type

Refer to Diagram 5.4 - SP

Bronze Smartpole Type S2 (use of S1 subject to detail design), LED luminaire GE R250LED.

Street Tree Type

Refer to Diagram 5.5 - Lt

WSUD & Tree Base Treatments

Refer to Diagram 5.6

Planting detail: Covered bioretention tree pits, 1400 x 1400 cast Iron or galvanised steel tree grates (to comply with AS1428 for max gap) and permeable paving base.

Opportunity to integrate all elements into the interpretive strategy subject to City assessment/ approval.

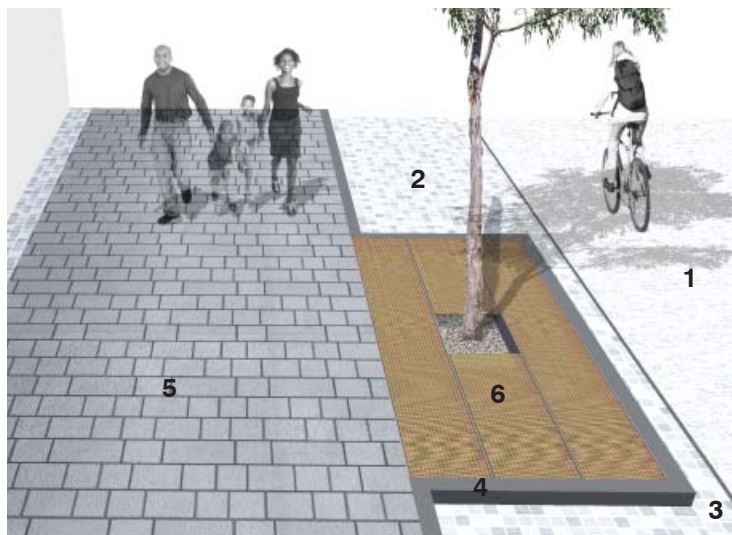
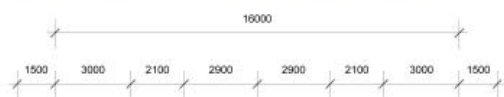
Green Infrastructure

Refer to Diagram 5.7

Indicative Illustration

1. Carriageway (asphaltic concrete)
2. Parking bays (stone setts)
3. Dish drain (Insitu concrete)
4. Kerb (Bluestone)
5. Footpath (concrete unit paving with frontage zone in stone setts)
6. WSUD, planting and furniture module
7. Smart Pole lighting

Street Section D - Woolpack Street



Key Public Domain Elements

Street Type

Refer to Diagram **3.3** - Village Street

Street Geometry

Refer to Diagram **5.1**

Footpath, Kerb & Carriageway

Refer to Diagram **5.2** - CU

Footpath pavement: Concrete unit paver (honed exposed aggregate) – Pebble crete PPX254:400 or equivalent unit size 600x400x60mm.

Parking bays: Stone sett paving (mixed honed, sawn or sandblasted). Austral black granite 105 x 105 x 80mm split face setts or alternative dimension subject to City assessment and approval.

Kerb: Deerpark bluestone units 300 X 300 x 1200 with 15mm chamfered edge to gutter side. Cut to radii as specified. Stormwater lintel to match kerb material.

Carriageway: Asphalt concrete with light coloured aggregate.

Kerb Ramps: To match pavement material.

Pit Lids: 30mm thick unit paver inset to match adjacent pavement type.

Dish Drain: Insitu concrete.

TGSI's (tactiles): Type 316 grade solid stainless steel tactile with slip resistant engraved sides and mill top finish.

Furniture Type

Refer to Diagram **5.3** - CS

Lighting Type

Refer to Diagram **5.4** - SP

Bronze Smartpole Type S2 (use of S1 subject to detail design), LED luminaire GE R250LED.

Street Tree Type

Refer to Diagram **5.5** - Zs

WSUD & Tree Base Treatments

Refer to Diagram **5.6**

Planting detail: Covered bioretention tree pits, 1400 x 1400 cast Iron or galvanised steel tree grates (to comply with AS1428 for max gap) and permeable paving base.

Opportunity to integrate all elements into the interpretive strategy subject to City assessment/ approval.

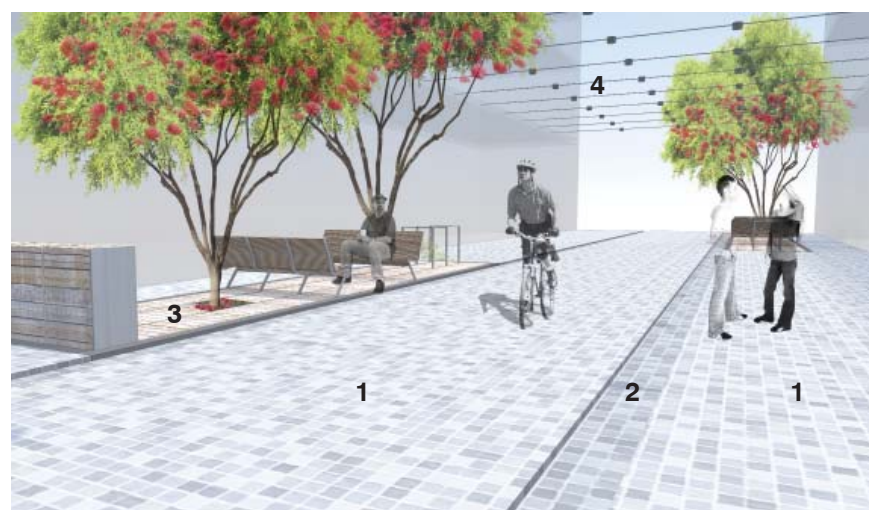
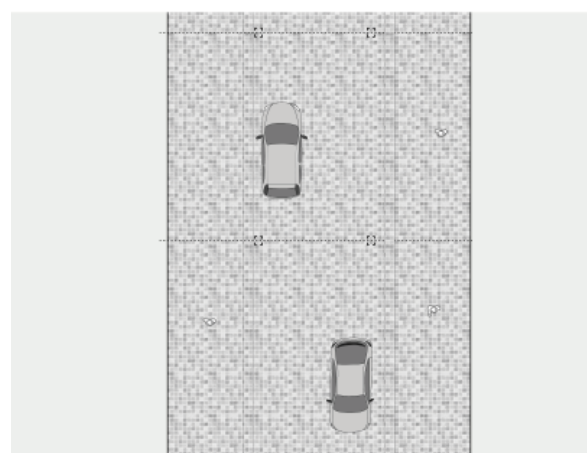
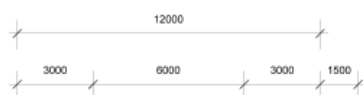
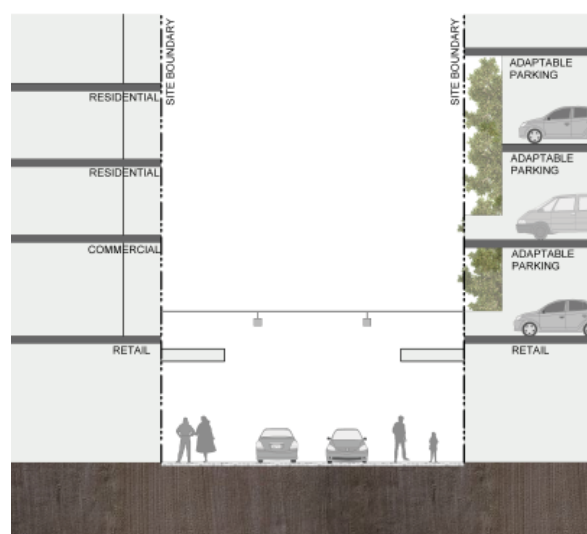
Green Infrastructure

Refer to Diagram **5.7**

Indicative Illustration

1. Carriageway (asphaltic concrete)
2. Parking bays (stone setts)
3. Dish drain (Insitu concrete)
4. Kerb (Bluestone)
5. Footpath (concrete unit paving with frontage zone in stone setts)
6. WSUD and planting module

Street Sections E and F - Tweed Place and Barker Street (North)*



*Barker Street shared zone application (subject to detail traffic assessment)

Key Public Domain Elements

Street Type

Refer to Diagram 3.3 - Shared Zone

Street Geometry

Refer to Diagram 5.1

Footpath, Kerb & Carriageway

Refer to Diagram 5.2 - SS

Footpath pavement: Stone Sett Paving (mixed honed, sawn or sandblasted). Austral black granite split face setts. 105 x 105 x 80mm split setts.

Parking bays: To match the footpath pavement material.

Kerb: To match footpath pavement material.

Carriageway: To match the footpath pavement material.

Kerb Ramps: To match the footpath pavement material.

Pit Lids: 30mm thick unit paver inset to match adjacent pavement type.

Dish Drain: To match the footpath pavement material.

TGSI's (tactiles): Type 316 grade solid stainless steel tactile with slip resistant engraved sides and mill top finish.

Furniture Type

Refer to Diagram 5.3 - CS

Lighting Type

Refer to Diagram 5.4 - WM

Catenary or wall mounted lighting subject to City assessment and approval.

Street Tree Type

Refer to Diagram 5.5 - Zs and Ba

WSUD & Tree Base Treatments

Refer to Diagram 5.6

Planting detail: Covered bioretention tree pits, 1400 x 1400 cast iron or galvanised steel tree grates (to comply with AS1428 for max gap) and permeable paving base.

Opportunity to integrate all elements into the interpretive strategy subject to City assessment/ approval.

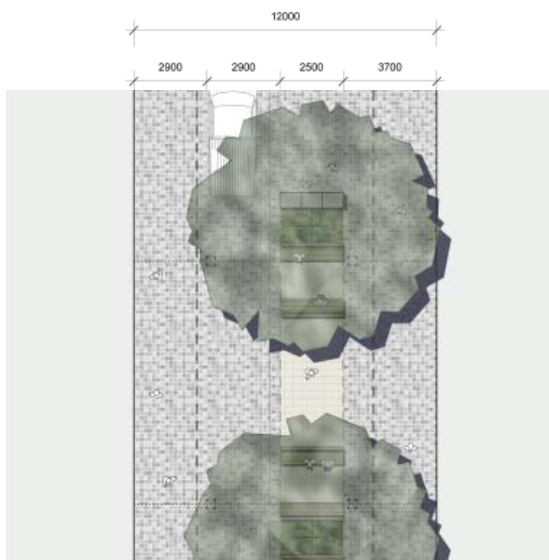
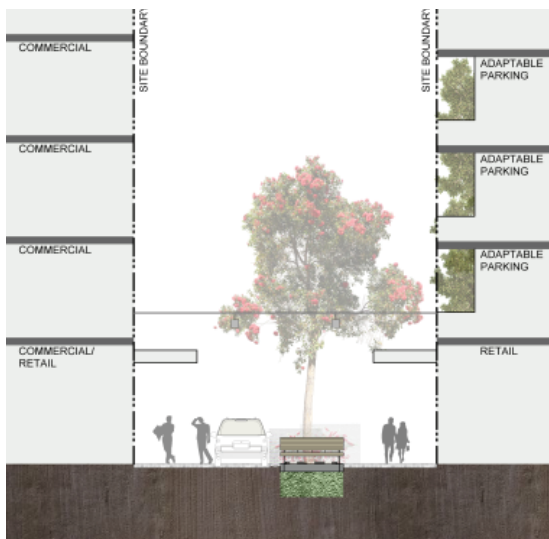
Green Infrastructure

Refer to Diagram 5.7

Indicative Illustration

1. Shared zone (stone setts)
2. Dish drain (stone setts)
3. WSUD, planting and furniture module
4. Catenary or wall mounted lighting

Street Section G - Hinchcliffe Street (North)



Key Public Domain Elements

Street Type

Refer to Diagram **3.3** - Shared Zone

Street Geometry

Refer to Diagram **5.1**

Footpath, Kerb & Carriageway

Refer to Diagram **5.2** - SS

Footpath pavement: Stone Sett Paving (mixed honed, sawn or sandblasted). Austral black granite split face setts. 105 x 105 x 80mm split setts.

Parking bays: To match the footpath pavement material.

Kerb: To match footpath pavement material.

Carriageway: To match the footpath pavement material.

Kerb Ramps: To match the footpath pavement material.

Pit Lids: 30mm thick unit paver inset to match adjacent pavement type.

Dish Drain: To match the footpath pavement material.

TGSI's (tactiles): Type 316 grade solid stainless steel tactile with slip resistant engraved sides and mill top finish.

Furniture Type

Refer to Diagram **5.3** - CS

Lighting Type

Refer to Diagram **5.4** - WM

Catenary or wall mounted lighting subject to City assessment and approval.

Street Tree Type

Refer to Diagram **5.5** - Ca

WSUD & Tree Base Treatments

Refer to Diagram **5.6**

Planting detail: Covered bioretention tree pits, 1400 x 1400 cast iron or galvanised steel tree grates (to comply with AS1428 for max gap) and permeable paving base.

Opportunity to integrate all elements into the interpretive strategy subject to City assessment/ approval.

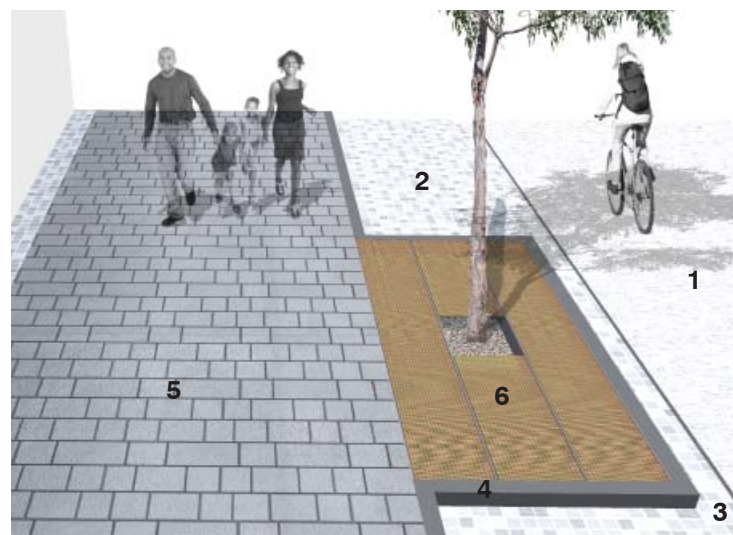
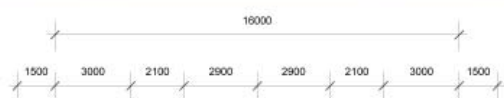
Green Infrastructure

Refer to Diagram **5.7**

Indicative Illustration

1. Shared zone (stone setts)
2. Dish drain (stone setts)
3. WSUD, planting and furniture module
4. Catenary or wall mounted lighting

Street Section H - Barker Street (South)



Key Public Domain Elements

Street Type

Refer to Diagram **3.3** - Village Street

Street Geometry

Refer to Diagram **5.1**

Footpath, Kerb & Carriageway

Refer to Diagram **5.2** - CU

Footpath pavement: Concrete unit paver (honed exposed aggregate) – Pebble crete PPX254:400 or equivalent unit size 600x400x60mm.

Parking bays: Stone sett paving (mixed honed, sawn or sandblasted). Austral black granite 105 x 105 x 80mm split face setts or alternative dimension subject to City assessment and approval.

Kerb: Deepark bluestone units 300 X 300 x 1200 with 15mm chamfered edge to gutter side. Cut to radii as specified. Stormwater lintel to match kerb material.

Carriageway: Asphalt concrete with light coloured aggregate.

Kerb Ramps: To match pavement material.

Pit Lids: 30mm thick unit paver inset to match adjacent pavement type.

Dish Drain: Insitu concrete.

TGSI's (tactiles): Type 316 grade solid stainless steel tactile with slip resistant engraved sides and mill top finish.

Furniture Type

Refer to Diagram **5.3** - CS

Lighting Type

Refer to Diagram **5.4** - SP

Bronze Smartpole Type S2 (use of S1 subject to detail design), LED luminaire GE R250LED.

Street Tree Type

Refer to Diagram **5.5** - Ba

WSUD & Tree Base Treatments

Refer to Diagram **5.6**

Planting detail: Covered bioretention tree pits, 1400 x 1400 cast Iron or galvanised steel tree grates (to comply with AS1428 for max gap) and permeable paving base.

Opportunity to integrate all elements into the interpretive strategy subject to City assessment/ approval.

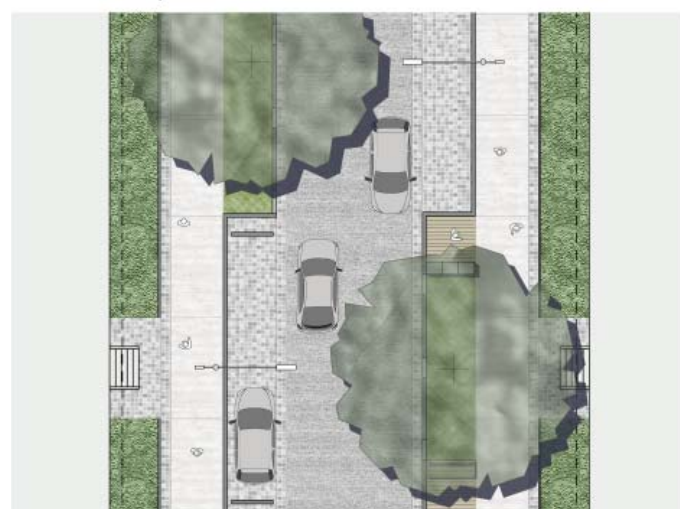
Green Infrastructure

Refer to Diagram **5.7**

Indicative Illustration

1. Carriageway (asphaltic concrete)
2. Parking bays (stone setts)
3. Dish drain (Insitu concrete)
4. Kerb (Bluestone)
5. Footpath (concrete unit paving with frontage zone in stone setts)
6. WSUD and planting module

Street Section I - Sonny Leonard Street



Key Public Domain Elements

Street Type

Refer to Diagram **3.3** - Local Street
(Special Application)

Street Geometry

Refer to Diagram **5.1**

Footpath, Kerb & Carriageway

Refer to Diagram **5.2** - C

Footpath pavement: Insitu concrete (honed with sawcut joints and exposed aggregate finish). Product type to include low embodied energy 'green concrete'.

Parking bays: Concrete interlock pavers in format to match Stone Setts of Village Streets.

Kerb: Deepark bluestone units 300 X 300 x 1200 with 15mm chamfered edge to gutter side. Cut to radii as specified. Stormwater lintel to match kerb material.

Carriageway: Asphalt concrete with light coloured aggregate.

Kerb Ramps: To match pavement material.

Pit Lids: 30mm thick unit paver inset to match adjacent pavement type.

Dish Drain: Insitu concrete.

TGSI's (tactiles): Type 316 grade solid stainless steel tactile with slip resistant engraved sides and mill top finish.

Furniture Type

Refer to Diagram **5.3** - CS

Lighting Type

Refer to Diagram **5.4** - SP

Bronze Smartpole Type S2 (use of S1 subject to detail design), LED luminaire GE R250LED.

Street Tree Type

Refer to Diagram **5.5** - Cm

WSUD & Tree Base Treatments

Refer to Diagram **5.6**

Planting detail: Open bioretention tree pits and raingardens.

Green Infrastructure

Refer to Diagram **5.7**

Indicative Illustration

1. Carriageway (asphaltic concrete)
2. Parking bays (Concrete interlock pavers in format to match Stone Setts of Village Streets)
3. Dish drain (Insitu concrete)
4. Kerb (Bluestone)
5. Footpath (insitu concrete with frontage zone in stone setts)
6. WSUD and planting module
7. Smart Pole lighting

Street Section J - Paul Street (South)



Key Public Domain Elements

Street Type

Refer to Diagram **3.3** - Local Street
(Special Application)

Street Geometry

Refer to Diagram **5.1**

Footpath, Kerb & Carriageway

Refer to Diagram **5.2** - C

Footpath pavement: Insitu concrete (honed with sawcut joints and exposed aggregate finish). Product type to include low embodied energy 'green concrete'.

Parking bays: Concrete interlock pavers in format to match Stone Setts of Village Streets.

Kerb: Deerpark bluestone units 300 X 300 x 1200 with 15mm chamfered edge to gutter side. Cut to radii as specified. Stormwater lintel to match kerb material.

Carriageway: Asphalt concrete with light coloured aggregate.

Kerb Ramps: To match pavement material.

Pit Lids: 30mm thick unit paver inset to match adjacent pavement type.

Dish Drain: Insitu concrete.

TGSI's (tactiles): Type 316 grade solid stainless steel tactile with slip resistant engraved sides and mill top finish.

Furniture Type

Refer to Diagram **5.3** - CS

Lighting Type

Refer to Diagram **5.4** - SP

Bronze Smartpole Type S2 (use of S1 subject to detail design), LED luminaire GE R250LED.

Street Tree Type

Refer to Diagram **5.5** - Lt and Em (median)

WSUD & Tree Base Treatments

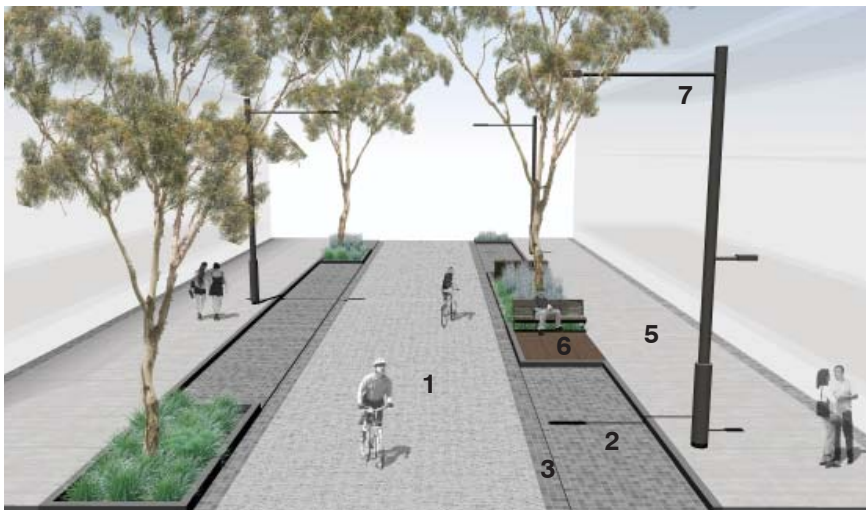
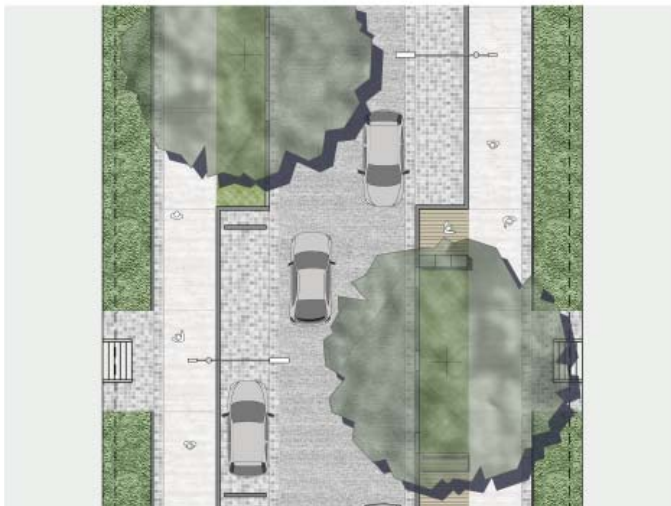
Refer to Diagram **5.6**

Planting and median detail: Open bioretention tree pits, raingardens and swales.

Green Infrastructure

Refer to Diagram **5.7**

Street Section K - Hinchcliffe Street



Key Public Domain Elements

Street Type

Refer to Diagram **3.3** - Local Street
(Special Application)

Street Geometry

Refer to Diagram **5.1**

Footpath, Kerb & Carriageway

Refer to Diagram **5.2** - C

Footpath pavement: Insitu concrete (honed with sawcut joints and exposed aggregate finish). Product type to include low embodied energy 'green concrete'.

Parking bays: Concrete interlock pavers in format to match Stone Setts of Village Streets.

Kerb: Deerpark bluestone units 300 X 300 x 1200 with 15mm chamfered edge to gutter side. Cut to radii as specified. Stormwater lintel to match kerb material.

Carriageway: Asphalt concrete with light coloured aggregate.

Kerb Ramps: To match pavement material.

Pit Lids: 30mm thick unit paver inset to match adjacent pavement type.

Dish Drain: Insitu concrete.

TGSI's (tactiles): Type 316 grade solid stainless steel tactile with slip resistant engraved sides and mill top finish.

Furniture Type

Refer to Diagram **5.3** - CS

Lighting Type

Refer to Diagram **5.4** - SP

Bronze Smartpole Type S2 (use of S1 subject to detail design), LED luminaire GE R250LED.

Street Tree Type

Refer to Diagram **5.5** - Ca

WSUD & Tree Base Treatments

Refer to Diagram **5.6**

Planting detail: Open bioretention tree pits and raingardens.

Green Infrastructure

Refer to Diagram **5.7**

Indicative Illustration

1. Carriageway (asphaltic concrete)
2. Parking bays (Concrete interlock pavers in format to match Stone Setts of Village Streets)
3. Dish drain (Insitu concrete)
4. Kerb (Bluestone)
5. Footpath (insitu concrete with frontage zone in stone setts)
6. WSUD and planting module
7. Smart Pole lighting

6.3

Application of Material Palettes

	Village- Boulevard, Avenue and Streets	Village Shared Zones
FOOTPATH & KERBS		
Footpath Paving	Concrete unit paver (honed exposed aggregate) – Pebble Crete PPX254:400 or equivalent Unit size 600x400x60mm.	Stone Sett Paving (mixed honed, sawn or sandblasted). Austral black granite split face setts. 105 x 105 x 80mm split setts.
Kerb	Bluestone – “Deerpark Bluestone” Units 300 X 300 x 1200 with 15mm chamfered edge to gutter side. Cut to radii as specified. Stormwater lintel to match kerb material.	N/A – formed as a dish drain
Gutter	Insitu Concrete	N/A – formed as a dish drain
Dish Drain	Insitu concrete dish drain 900mm wide.	Stone unit paving setts / or stone unit segments.
Parking Bays/ Threshold	Stone Sett Paving (mixed honed, sawn or sandblasted). Austral black granite 105 x 105 x 80mm split face setts or alternative dimension subject to City assessment and approval.	N/A
Kerb Ramps	Concrete unit paver to match footpath. Drop kerb across footpath.	N/A
Driveways	To match footpath material. Drop kerb across driveway.	To match laneways/ shared ways material. Drop kerb across driveway
TGSIs (Tactiles)	Type 316 Grade solid stainless steel tactile with slip resistant engraved sides and mill top finish.	Type 316 Grade solid stainless steel tactile with slip resistant engraved sides and mill top finish.

Service Pits Covers	30mm thick unit paver inset to match adjacent pavement type.	30mm thick unit paver inset to match adjacent pavement type.
CARRIAGEWAY	Asphalt Concrete with light coloured aggregate.	Stone Sett Paving (mixed honed, sawn or sandblasted). Austral black granite split face setts. 105 x 105 x 80mm split setts.
WSUD	Covered bioretention tree pits and permeable paving base. Bioswale median as indicated in diagram 6.6	Covered bioretention tree pits and permeable paving base.
SEPARATED CYCLEWAY	Two-step or at grade with footpath cross section. 400 x 300 bluestone units with 15mm chamfer. Cycleway kerbs, medians, thresholds treatments or similar are subject to City assessment/ approval.	N/A
STREET TREES	400L	400L
TREE BASE TREATMENTS	1400 x 1400 Cast Iron or Galvanised Steel Grates- to comply with AS1428 for max gap. Opportunity to integrate into the Interpretive Strategy subject to City assessment/ approval.	1400 x 1400 Cast Iron or Galvanised Steel Grates- to comply with AS1428 for max gap. Opportunity to integrate into the Interpretive Strategy subject to City assessment/ approval.
PUBLIC DOMAIN FURNITURE		
Bollards	New City Standard*	New City Standard*
Rubbish Bins	New City Standard*	New City Standard*
Seat	New City Standard*	New City Standard*
Bus Shelters	New City Standard*	New City Standard*
Drinking Fountains	New City Standard*	New City Standard*
Bicycle Racks	CoS Standard Bike ring. Bike Rack – inverted “U” 800 wide/ 750 high/50 dia. grade 316 SS pipe.	U rails.
LIGHTING		
Street Lighting	Bronze Smartpole Type S2 (use of S1 subject to detail design), LED luminaire GE R250LED.	Catenary / Wall Mounted lighting subject to City assessment and approval.
* Item currently subject to design development process		

	Local Street (Special Application)	Local Shared Zones
FOOTPATH & KERBS		
Footpath Paving	Insitu concrete (honed with sawcut joints and exposed aggregate finish). Product type to include low embodied energy 'green concrete'.	Precast trihex interlocking pavers 88 x 181 x 80mm or equivalent.
Kerb	Bluestone – “Deerpark Bluestone” Units 300 X 300 x 1200 with 15mm chamfered edge to gutter side. Cut to radii as specified. Stormwater lintel to match kerb material.	N/A – formed as a dish drain.
Gutter	Insitu Concrete.	N/A – formed as a dish drain.
Dish Drain	Insitu Concrete dish drain 900mm wide.	Insitu Concrete dish drain 900mm wide.
Parking Bays/ Threshold	Concrete interlock pavers in format to match Stone Setts of Village Streets.	N/A
Kerb Ramps	Insitu Concrete paving to match footpath. Drop kerb material across footpath.	N/A
Driveways	To match footpath material. Drop kerb across driveway.	To match laneways/ shared ways material. Drop kerb across driveway.
TGSIs (Tactiles)	Type 316 Grade solid stainless steel tactile with slip resistant engraved sides and mill top finish.	Type 316 Grade solid stainless steel tactile with slip resistant engraved sides and mill top finish.
Service Pits Covers	30mm thick unit paver inset to match adjacent pavement type.	30mm thick unit paver inset to match adjacent pavement type.
CARRIAGEWAY	Asphalt Concrete with light coloured aggregate.	Precast trihex interlocking pavers 88 x 181 x 80mm or equivalent.
WSUD	Open bioretention tree pits and raingardens. Bioswale median as indicated in diagram 6.6	Covered bioretention tree pits and permeable paving base or Open bioretention tree pits and raingardens. Subject to detail design/ City assessment and approval.
SEPARATED CYCLEWAY	N/A	N/A

STREET TREES	400L	400L
TREE BASE TREATMENTS	N/A – refer to WSUD	N/A – refer to WSUD
PUBLIC DOMAIN FURNITURE		
Bollards	New City Standard*	New City Standard*
Rubbish Bins	New City Standard*	New City Standard*
Seat	New City Standard*	New City Standard*
Bus Shelters	New City Standard*	New City Standard*
Drinking Fountains	New City Standard*	New City Standard*
Bicycle Racks	CoS Standard Bike ring. Bike Rack – inverted “U” 800 wide/ 750 high/50 dia. grade 316 SS pipe.	U rails
LIGHTING		
Street Lighting	Bronze Smartpole Type S2 (use of S1 subject to detail design), LED luminaire GE R250LED.	Catenary / Wall Mounted lighting subject to City assessment and approval.
	* Item currently subject to design development process	

	Civic Plaza (Special Distinct Place)	Parks
PAVING & KERBS		
Paving	Special Stone Paving – including Austral Black Granite.	Subject to detail design/ City assessment and approval.
Kerb (Barker Street- subject to detail traffic assessment)	Bluestone – “Deerpark Bluestone” Units 300 X 300 x 1200 with 15mm chamfered edge to gutter side. Cut to radii as specified. Stormwater lintel to match kerb material.	N/A
Dish Drain	Stone unit paving. Austral black granite split face setts.	Subject to detail design/ City assessment and approval.
Kerb Ramps	Selected to match paving materials footpath. Drop kerb across footpath.	Subject to detail design/ City assessment and approval.
TGSIs (Tactiles)	Type 316 Grade solid stainless steel tactile with slip resistant engraved sides and mill top finish.	Type 316 Grade solid stainless steel tactile with slip resistant engraved sides and mill top finish.
Service Pits Covers	30mm thick unit paver inset to match adjacent pavement type.	30mm thick unit paver inset to match adjacent pavement type.
WSUD	Subject to detail design/ City assessment and approval.	Subject to detail design/ City assessment and approval.
TREES	Subject to detail design/ City assessment and approval.	Subject to detail design/ City assessment and approval.
TREE BASE TREATMENTS	1400 x 1400 Cast Iron or Galvanised Steel Grates- to comply with AS1428 for max gap. Opportunity to integrate into the Interpretive Strategy subject to City assessment/ approval.	Subject to detail design/ City assessment and approval.
PUBLIC DOMAIN FURNITURE		
Bollards	New City Standard* or special element subject to City assessment and approval.	New City Standard*
Rubbish Bins	New City Standard* or special element subject to City assessment and approval.	New City Standard*

Seat	New City Standard* or special element subject to City assessment and approval.	New City Standard*
Bus Shelters	New City Standard* or special element subject to City assessment and approval.	New City Standard*
Drinking Fountains	New City Standard* or special element subject to City assessment and approval.	New City Standard*
Bicycle Racks	CoS Standard Bike ring. Bike Rack – inverted “U” 800 wide/ 750 high/50 dia. grade 316 SS pipe.	U rails
LIGHTING		
Lighting	New City Standard* or special element subject to City assessment and approval.	New City Standard*
* Item currently subject to design development process		

