

Sydney Streets

Streets Codes



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Sydney Streets

Streets Codes

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Part A

Introduction



Introduction

Part A

Introduction

The Sydney Streets Code (the Code), sets the guidelines, design coordination requirements and material palettes for public domain works on land owned or managed by the City.

A.1 Purpose

The Sydney Streets Code (the Code), sets the guidelines, design coordination requirements and material palettes for public domain works on land owned or managed by the City as well as land that will be dedicated to the City. The companion document, **Sydney Streets Code Technical Specifications** provides written specifications and standard drawings for constructing street works in the public domain in accordance with the guidelines set out in this Code.

The City's **public domain planning framework** includes a number of strategic plans, planning controls, policy codes and technical specifications that together form a holistic vision for the City (refer to figure 1). The Code forms part of a family of Design Codes within the City's broader public domain planning framework (refer to figure 1). These Design Codes provide key design guidelines and principles for all parts of the public domain.

A.2 Why review and update this code?

The Sydney Street Design Code was adopted by Council in 2013. It has always been intended that the Code would be regularly updated to account for changes to material palettes, and Australian Standards, as well as ensure alignment to the Sydney Streets Technical Specification and other City policies and guidelines.

A.3 Scope

The Code applies to all work carried out on streets which are under or will revert to the ownership or care, control and management of the City of Sydney. The City of Sydney also encourages the use of the Code in the areas within its boundary that are not under its control in order to achieve a coordinated and consistent palette of materials across the public domain.

A.4 User

The Code should be used by all stakeholders involved with planning, design and approval of public domain works for the City's streets.

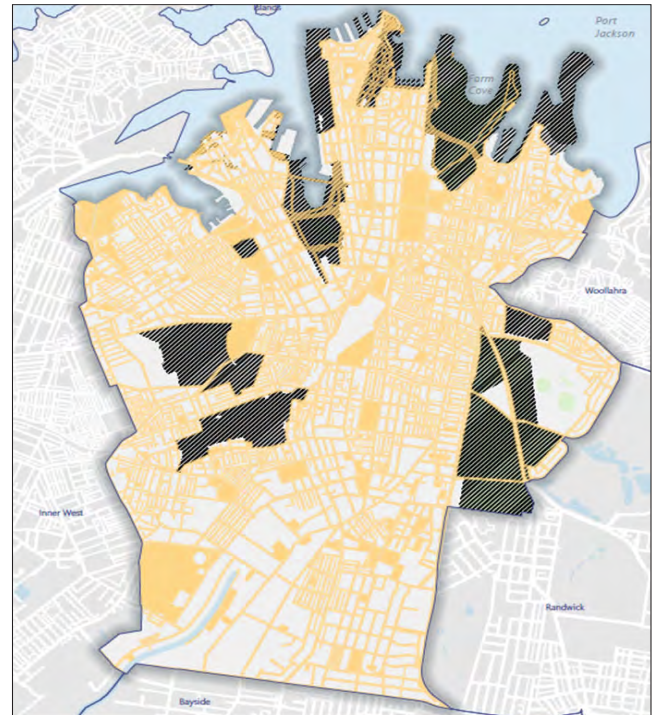


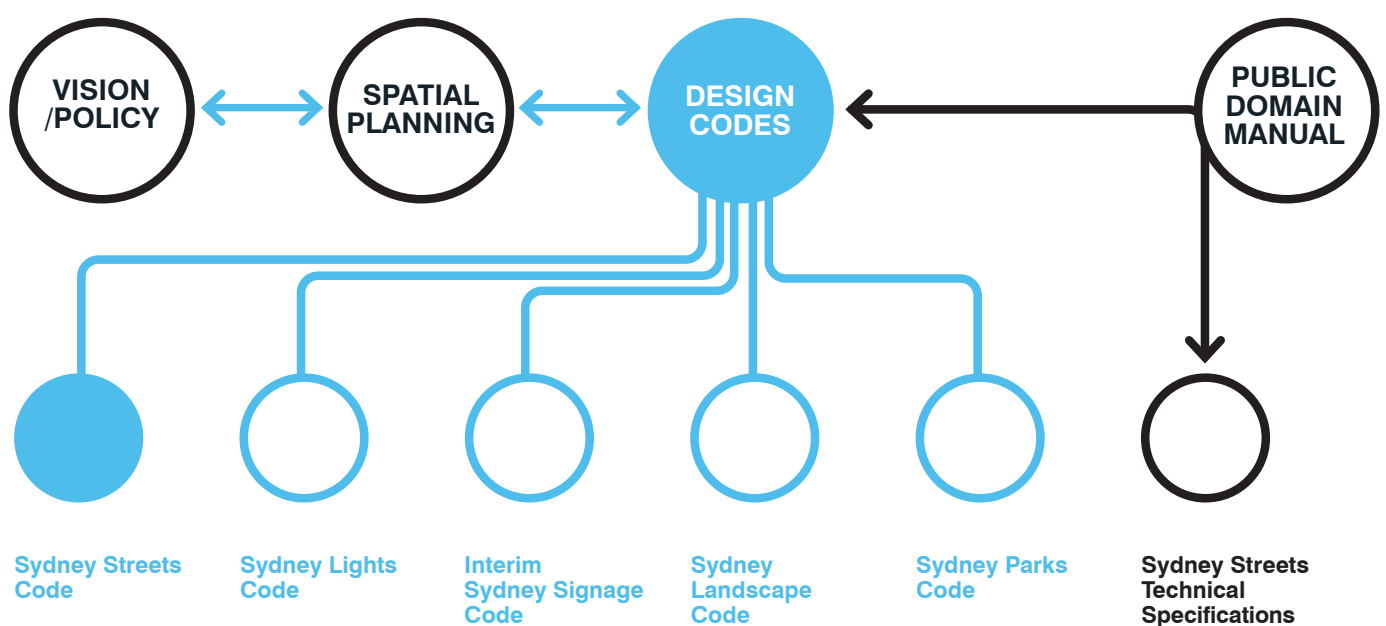
Figure 1



Not subject to this code

<https://www.cityofsydney.nsw.gov.au/development-applications/determine-which-planning-controls-apply>

Figure 2 City of Sydney Public Domain Framework



* Sydney Landscape Code covers private domain landscape treatments and interface with public domain. For access to other City documents that are part of the planning framework, refer to the City of Sydney website, www.cityofsydney.nsw.gov.au.


A5 Reading the Code

The Code must be read in accordance with other documents in the City of Sydney public domain planning framework (refer to figure 1.0, as well as relevant strategic documents and policies referenced in this document.


As the Code is a planning and design guide only, all works are subject to council approval and will be assessed on a case by case basis.

This Code relates directly to the companion document, [Sydney Streets Technical Specifications](#) which provides standard construction details and installation requirements for the selected palette of materials and elements.

The following pictograms are found throughout the document:

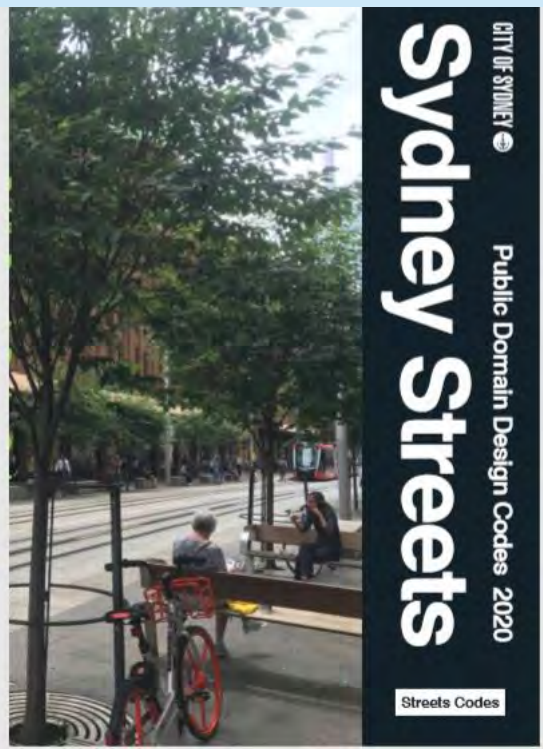


REFER
Reference to relevant documents and web links

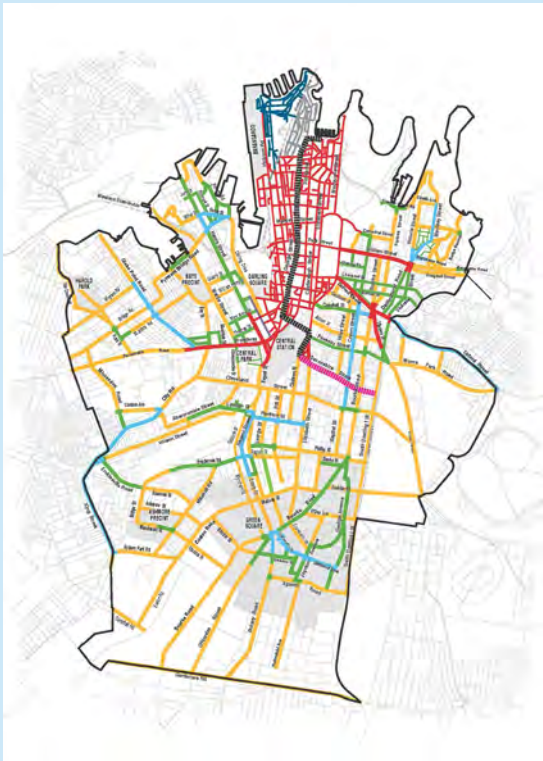


[Sydney Streets technical specifications](#)
Reference to relevant section in Sydney Streets Technical Specifications

Figure 3- Pages from the Code and the companion Sydney Streets Technical Specifications



Sydney Streets Code 2019



How to use the code



STEP 1

Review the Public Domain Approval Process (Part B) to understand the submission and approval requirements for Public Domain Plans required by the City.

STEP 2

Review Part C to understand the City's streetscape design objectives and requirements.

STEP 3

Identify and locate your street type context area by using the maps in Part D.

STEP 4

Use the relevant public domain furniture and materials palettes in Part D to inform your street design.

STEP 5

Use Part E to assist with space allocation, street design, access and coordination requirements.

Sydney Streets

Technical Specifications



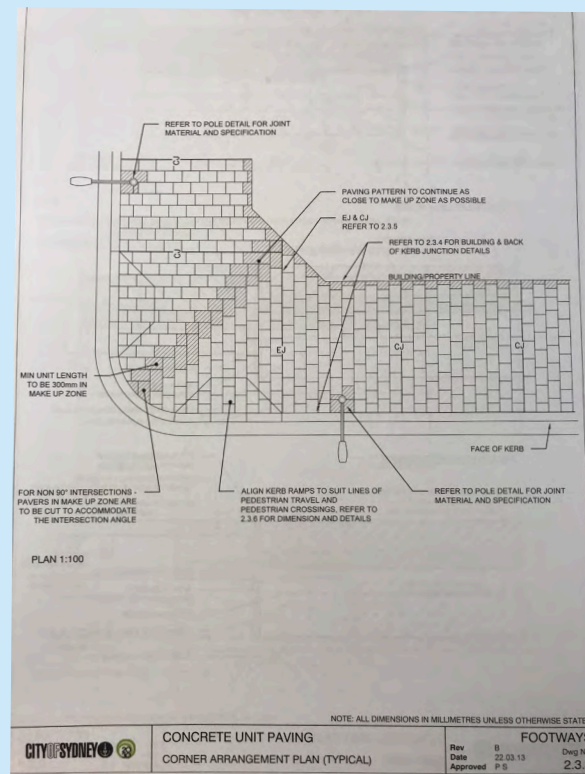
Version: 2019

Sydney Streets Technical Specifications



REFER

Sydney Streets Technical Specifications
[Sydney Streets Technical Specifications](#)



Part B

Public domain documentation approval process

Our streets are the most important public spaces in the City. The street network connects people to their homes, employment, services and recreation every day. The street is also the primary space in which people experience the urban environment.



Public domain

Part B

Public domain documentation approval process

B1 Introduction

Approval is required to carry out public domain works on land that is owned or managed by the City of Sydney, or land that will be dedicated to the City.

These works may arise from:

B1.1 Development Application

When a development application involves an impact on the surrounding public domain a condition may be applied to the development consent requiring the submission of a public domain plan.

B1.2 Voluntary Planning Agreements (VPAs) for Public Domain Works

Planning agreements (also commonly referred to as voluntary planning agreements or VPAs) form one part of the City's developer contribution system.

Public domain works that are associated with a planning agreement. These works are separate to those that may be required under a development consent. Draft planning agreements are publicly advertised before formally agreed by the City and a developer. Requirements are governed by Sections 93F- 93L of the Environmental Planning and Assessment Act and Sections 25B -25H of the Environmental Planning and Assessment Act Regulation.

B1.3 Other Works

Works may be proposed in the City of Sydney's public areas that are not associated with a development application or a planning agreement. These are known as works on the public way applications which require City approval.

Depending on the nature of works such proposals are assessed by the City either under Part 5A of the Environmental Planning and Assessment Act, S.68 of Local Government Act or under Section 138 of the Roads Act.

B1.4 State Classified Roads

State classified roads require additional co-ordination and approval by Transport NSW in particular kerb works. (Refer Appendix B)

B2 Submission and approvals process

The City's **Public Domain Manual (Appendix F)** provides information on the submission and approval process for public domain works arising from development consent conditions, Planning Agreement works or works on the public way (*Roads Act 1989*, and Part 5A approvals). The Manual includes direction on:

- documentation and plan co-ordination requirements, submission requirements for levels and gradients, stormwater drainage, road design, and public lighting.
- applicant responsibilities during the approval process to help avoid delays;
- security deposit/ performance bond requirements;
- appointment of city as principle certifying authority (pca when required);
- construction permits, hold points and inspections;
- defects, works completion and handover requirements.



REFER

[Public-Domain-Manual](#)

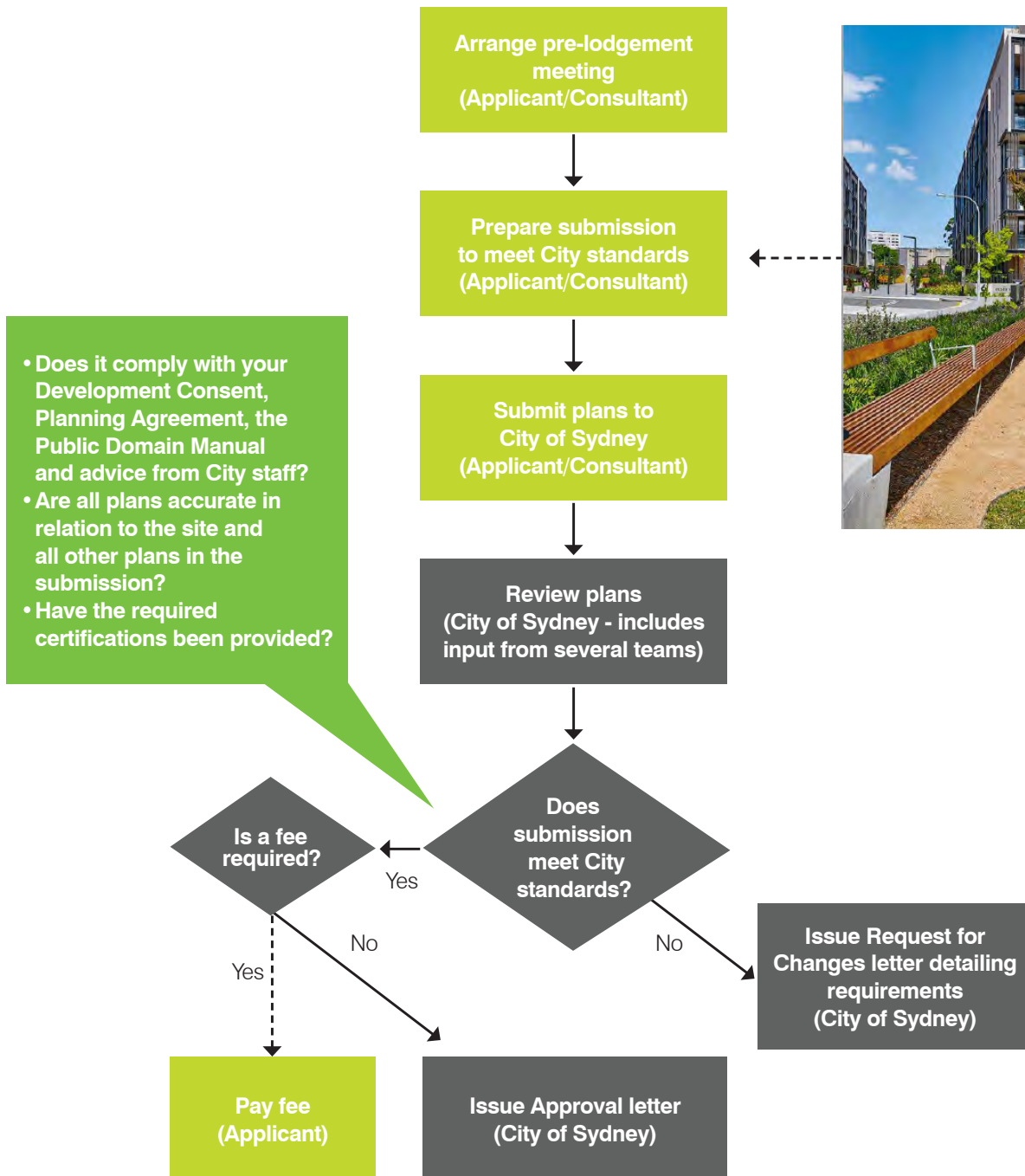


Figure 4 Approval process for works in the public domain from the Public Domain Manual 2017

B3 Reference documents

The Streets Code , Technical Specifications and Public Domain Manual are part of a series of documents that guide applicants in the preparation of a Public Domain Plan.

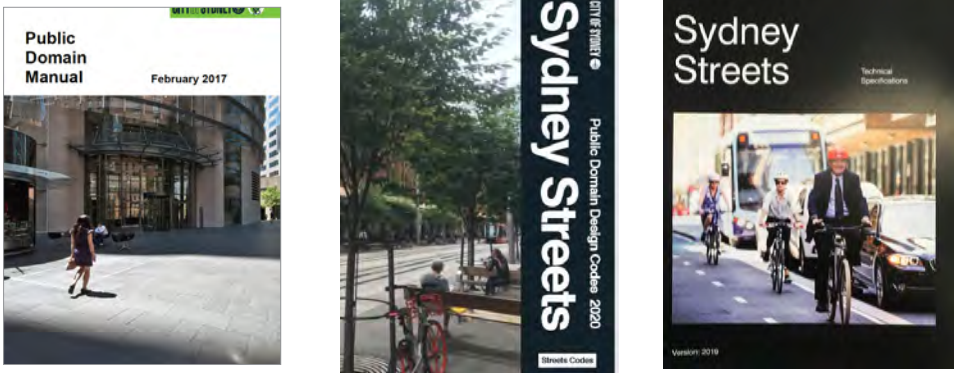


Figure 5 Public Domain Plan Reference Documents

Public domain plan requirement	Relevant document	Sustainable design technical guidelines (city delivered projects capital works)
Scope and documentation requirements to prepare a public domain plan and application for approval of footpath levels and gradient	Public Domain Manual	
	Development Consent Conditions	
Composition of the street, design principles, street palettes, design coordination	Sydney Streets Design Code	
Inclusive access requirements	Inclusive Accessible Public Domain Policy and guidelines Sydney Streets Design Code	
Public Area exterior lighting design objectives and technical requirements	Sydney Lights Code	
Stormwater requirements	Stormwater Drainage Manual	
	Consent Conditions	
Flood management requirements	Floodplain Management Policy	
	Consent Conditions	
Tree species selection and planting requirements for street trees.	Street Tree Master Plan	
Public Art requirements	Interim Guidelines For Public Art In Private Developments (Update In Progress)	
Street design construction details and specifications	Sydney Streets Technical Specifications	

B4 Public Domain submission requirements

Refer to the Public Domain Manual submission requirements



REFER

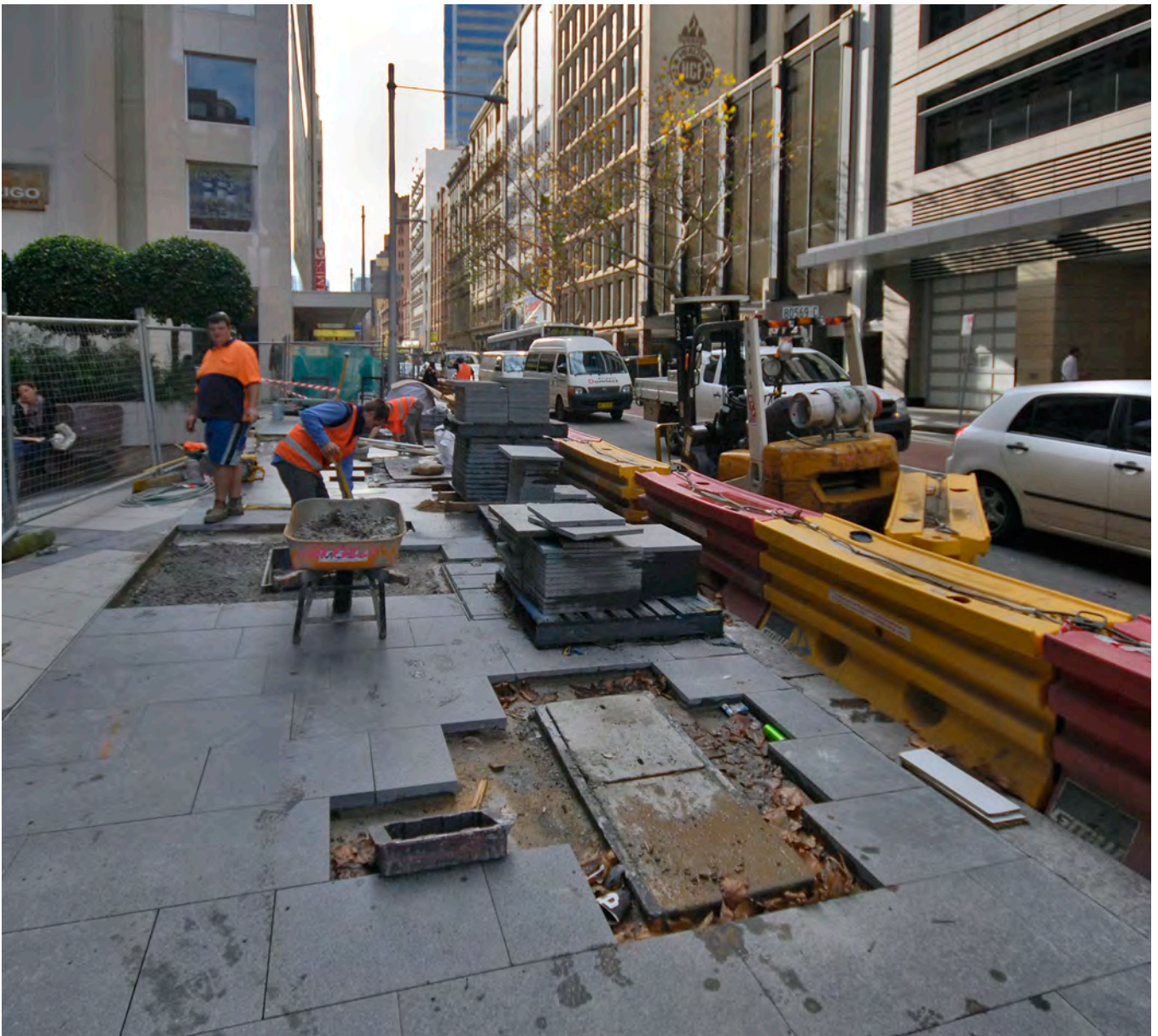
[Public-Domain-Manual](#)

B5 Security deposits

Refer to the Public Domain Manual for requirements on bank guarantees or performance bonds that might be applicable to ensure the approved works are carried out and that existing public assets are protected during construction work.

B6 Project completion and handover

Refer to the Public Domain Manual for requirements at the project completion and handover stage.



Part C

Our approach to street design



**Our approach to
street design**

Part C

Our approach to street design

Street design should not be solely focussed on moving and parking vehicles but consider pedestrian, cycle , public life and environmental benefits.

C1 Importance of streets

Our streets are the most important public spaces in the City. The street network connects people to their homes, employment, services and recreation every day. The street is also the primary space in which people experience the urban environment.

Street design needs to provide for all people, regardless of age and ability. The key functions of the City's streets are:

Place – The street has an important community function as a place for walking, meeting, shopping, playing, socialising, recreation and rest. The street provides space for formal and informal social activity and reinforce the cultural and historical identity of a place.

Movement – Streets primarily function as a network for movement of people and goods. Pedestrians, cyclists, buses, light rail and private vehicles all travel through on our streets.

Access – The street provides access to and from properties and services, public transport and recreation.

Environmental – Streets allow natural processes to continue to work by providing space for trees and vegetation, stormwater collection, management, infiltration and distribution. Trees in the street provide shade and amenity for pedestrians, reduce summer temperatures, and support activity in the street. Trees and vegetation can also make a street legible, and support a local character or 'sense of place'.

Infrastructure – streets accommodate trees, drainage, utilities, street furniture and street lighting that provide fundamental servicing requirements for neighbourhoods.

C2 Strategic Planning

C2.1 Sustainable Sydney 2030

Sustainable Sydney 2030 (SS2030) is the City's community strategic plan to help make our city green, global and connected. SS2030 emphasises the need for streets that are pedestrian and cycle friendly, green, sustainable and allow public life to flourish.

C2.2 Sustainable Sydney 2050

Currently Sustainable Sydney 2030 is being reviewed to a 2050 time horizon.

The community engagement insights report provides an analysis of the data gathered from the first phase of engagement.

The main themes identified are aligned with the City's approach to streets:

- A city for people.
- A city that moves.
- An environmentally responsive city.
- A lively, cultural and creative city.
- A city with a future focused economy

C2.3 Public Space Public Life

In 2007 Gehl Architects prepared a Public Space Public Life Study (PSPL) of the city centre, which provided recommendations for enhancing public life, walkability, accessibility and city vitality including the creation of a pedestrianised George Street.

A review has been completed in 2020 to inform directions for Sustainable Sydney 2050. The PSPL 2020 reinforces the need for reallocation of street space from vehicle/ parking functions to pedestrian, cycle, public space functions.

C2.4 City Plan 2036

The City's planning statement sets out a 20-year land use planning vision, balancing the need for housing and economic activities across the themes of infrastructure, liveability, productivity and sustainability.

Embedded across the City's strategic planning activities and thinking are common themes that influence the City's approach to streets. These include :

- **Connectivity and accessibility**
- **Promote walking and cycling**
- **Quality public domain and placemaking**
- **Environmental sustainability**
- **Urban canopy and greening**



REFER

[Sustainable-Sydney-2030](#)

[Sustainable Sydney 2050](#)

[Public Space Public Life Sydney](#)

[City Plan 2036](#)

C2 Strategic Planning

C2.5 Liveable green network

One of the key project ideas that arose from the directions set in Sydney 2030 is the Liveable Green Network.

The **Liveable Green Network** is the City's active transport plan that connects pedestrians and cyclists to the City Centre, Village Centres and local neighbourhoods as well as to public transport, education and cultural precincts, major parks and recreation facilities.

The key strategic documents supporting the Liveable Green Network are the Walking Strategy and Action Plan and Cycle Strategy and Action Plan.



Figure 6 - Liveable Green Network



REFER

[Liveable Green Network](#)

C2.6 Accessibility

An inclusive and accessible public domain is the foundation of a more liveable environment for people with a disability.

The delivery of the SS2030 direction of a City for Walking and Cycling means ensuring that our public domain is accessible for all.

The **A City for All – Inclusion (Disability Action Plan 2017-2021 and Policy)** sets out the City's commitment to being an inclusive and accessible city for everyone, now and in the future.

The Streets Code supports this commitment by the principles of inclusive participation and equitable and dignified access as embodied in the Disability Inclusion Act 2014 and the Disability Discrimination Act 1992 and the principles of Universal Design.

Key goals advocated by the Streets Code include:

- an accessible and inclusive public domain will enable inclusive participation.
- equity of access provided in the public domain for people with disability.
- people with disability will be able to navigate in the public domain with dignity and greater independence.
- consistency throughout the public domain will ensure user friendly environments that enable people to predict and navigate outdoor spaces.
- the continuous accessible path of travel will be the foundation of access in the public domain.
- legibility: spaces in the public domain should be legible and easily to navigate, locate and use.
- quality and accessible public outdoor spaces play an important role in creating a liveable and welcoming city.
- well maintained public domain infrastructure ensures ongoing access.
- innovation and sharing knowledge for the provision of an accessible public domain.
- collaboration with internal and external partners to deliver accessible public spaces.

The City recognises and respects that people with disability are the experts of their own needs with regard to using and accessing public domain spaces and infrastructure.



REFER

[Inclusive and Accessible Public domain Policy and Guidelines](#)

C2.7. Environmental sustainability

The role of streets now extends beyond the traditional movement and amenity provision to also supporting essential green infrastructure such as habitat creation, climate change responsiveness, stormwater management, and water recycling.

The **Environmental Action 2016-2021 Strategy and Action Plan** establish the City's environmental vision, goals, adopted targets and actions for the next ten years and beyond. It addresses the themes of energy and emissions, water, waste, plants and animals.

The adopted targets (Figure 7) include ambitious reductions for greenhouse emissions, energy, urban canopy and mains water for its operation across the local government area.

The City's street network will need to provide appropriate infrastructure and management regimes in order to contribute to these targets, particularly for water management and urban canopy.

Green and cool city

Trees and greening play a vital role in the health, social well-being and economic sustainability of the City, help mitigate climate change, and can positively affect the quality of life of people in urban areas.

The City's **Urban Forest Strategy 2013** has set targets to increase canopy cover from the current 18.1% coverage to 22% in 2030 and 27% in 2050.

The City's **Urban Ecology Strategic Action Plan 2014** aims to increase the overall quality and quantity of vegetation and habitats.

The City will provide urban ecology requirements for each street project based on context, opportunities and capability to positively contribute to the network of identified biodiversity linkages and habitat.

Water sensitive city

Sustainable Sydney 2030 calls for a Water Sensitive Urban Design (WSUD) approach to planning and delivering urban forms including parks. WSUD not only contributes to achieving the City's water environmental targets, it also addresses the issue of stormwater pollutants being discharged to our waterways as well as providing the benefits of contributing to cooler micro climates and biodiversity of plant species.



REFER

[**Environmental Action 2016-2021 Strategy and Action Plan**](#)



Our approach to street design

Figure 7 City Environmental Targets

City of Sydney Operations	Local Government Area
Low-carbon city	Low-carbon city
44 per cent reduction in greenhouse gas emissions by end June 2021 based on 2006 levels	70 per cent reduction in greenhouse gas emissions by 2030 based on 2006 levels
70 per cent reduction in emissions by 2030 based on 2006 levels	Net zero emissions by 2050
50 per cent of electricity from renewable sources by end June 2021	50 per cent of electricity demand met by renewable sources by 2030
Water sensitive city	Water sensitive city
Annual potable water use of 180 L/m ² of irrigated open space by end June 2021	Zero increase in potable water use by 2030 from 2006 baseline, achieved through water efficiency and recycled water
Zero increase in potable water use by end June 2021 from 2006 baseline, achieved through water efficiency and recycled water	50 per cent reduction in the annual solid pollution load discharged to waterways via stormwater by 2030
Zero increase in potable water use by 2030 from 2006 baseline, achieved through water efficiency and recycled water	15 per cent reduction in annual nutrient load discharged to waterways via stormwater by 2030
Zero waste city	Zero waste city
70 per cent resource recovery of waste from City-managed properties by end June 2021	70 per cent recycling and recovery of residential waste from the local government area by end June 2021
80 per cent resource recovery of construction and demolition waste generated and managed by City operations by end June 2021	70 per cent recycling and recovery of commercial and industrial waste from the local government area by end June 2021
50 per cent resource recovery of waste from City parks, streets and public places by end June 2021	80 per cent recycling and recovery of construction and demolition waste from the city by end June 2021
Active and connected city	Active and connected city
Zero increase in fleet emissions from 2014 baseline by end June 2021	33 per cent of trips to work during the AM peak undertaken by walking by 2030, by city residents
	10 per cent of total trips made in the city are undertaken by bicycle by 2030
	80 per cent of trips to work during the AM peak are undertaken by public transport by 2030, by city residents and those travelling to Central Sydney from elsewhere
	30 per cent of city residents who drive (with an unrestricted drivers licence) are members of a car sharing scheme by 2030
Green and cool city	Green and cool city
The average total canopy cover is increased by 50 per cent by 2030 (from 15 to 23 per cent), and increased by 75 per cent by 2050 (to 27 per cent), from a 2008 baseline	The average total canopy cover is increased by 50 per cent by 2030 (from 15 to 23 per cent), and increased by 75 per cent by 2050 (to 27 per cent), from a 2008 baseline
Plant 700 new street trees each year until 2021	
Plant 50,000 new trees and shrubs in City parks and street gardens each year until 2021	
Tree species diversity will not consist of more than 40 per cent for any particular plant family, 30 per cent for any genus or 10 per cent for any one species by 2021	
Habitat sites in the city are protected and the area of bush restoration sites is increased by 100 per cent by 2023 from a 2012 baseline of 4.2 hectares	
Indigenous fauna species diversity, abundance and distribution is maintained or increased by 2023 based on a 2012 baseline	
A progressive increase in the number of habitat features for priority fauna species is established along potential habitat linkages by 2023	



REFER

[Environmental Action 2016-2021 Strategy and Action Plan](#)

E.7 - Environmental Sustainability



Bioswale, Victoria Park

Sustainable design technical guidelines (SDTG)

The City's Sustainable Design Technical Guidelines (SDTG) are designed to assist in achieving the goals of Sustainable Sydney 2030 by highlighting relevant sustainable practices and design principles, for a broad range of projects at their various development stages. Currently the STDG applies to City delivered capital works projects only.

The Guidelines includes a check based tool allows users to quickly assess various sustainability options to include in a project scope such as material specification, water management and climate control.

The SDTG are to be read in conjunction with the City's Public Domain Codes.

In addition the Local Government NSW provides further guidance on use of recycled materials in roads and pavements.



REFER

[Sustainable Design Technical Guidelines](#)

[Local Government NSW](#)

C3 Movement and place

This Code advocates a **Movement and Place** approach to street design which recognises the importance of both movement and placemaking.

Movement and Place considers the whole street including footpaths, from property line to property line. It takes into account the needs of all users of this space including pedestrians, cyclists, deliveries, private vehicles and public transport, as well as people spending time in those places, whether moving around the place or enjoying street life including outdoor dining, waiting for a bus or watching the world go by.

The Government Architect NSW and Transport for NSW are collaboratively developing the Movement and Place Framework to provide a cohesive approach to balancing the movement of people and goods with the

amenity and quality of places. A Movement and Place Practitioners Toolkit will be made available to provide guidance to stakeholders involved in planning, designing and operating street networks

Before the design process begins the use of a Movement and Place methodology approach can establish the role of the street within a wider street hierarchy.

The City will develop criteria to assist with this evaluation process which will be included in future Code updates when available.

Once the street role has been determined the design process can guide functional considerations such as vehicle speed, space allocation, frequency of crossings, width of footpaths etc.



REFER

[Movement and Place](#)



C4 Global street design guide

In 2017, the Lord Mayor on behalf of the City endorsed the Global Street Design Guide (GSDG. Produced by the National Association of City Transportation Officials' Global Designing Cities, the GSDG advocates new thinking for streets from one solely focussed on moving and parking vehicles to one of streets as places that includes pedestrian and cycle amenity, public life, inclusive access, safety, environmental quality, economic benefit and overall quality of life. Included in the Guide is a case study on the City's Bourke Street cycleway as a project exemplar of cycleway and pedestrian streetscape amenity.

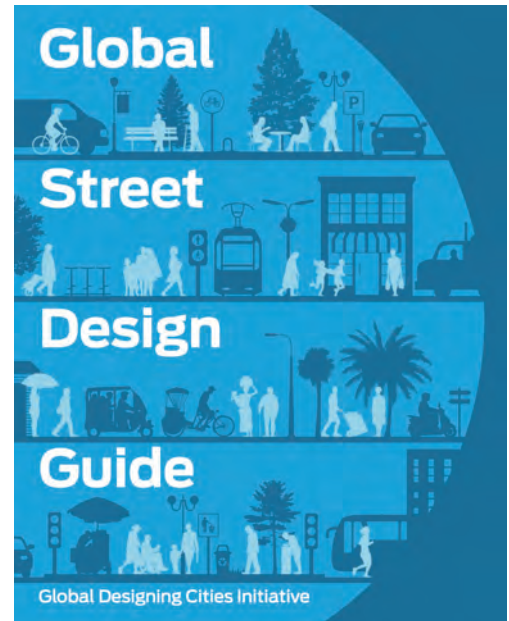
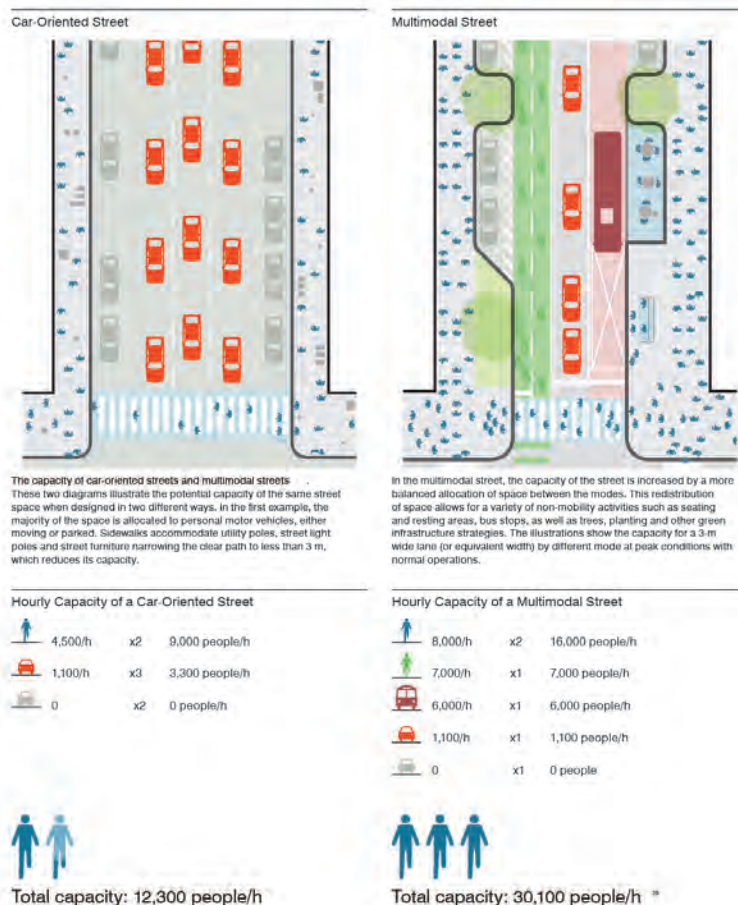


Figure 8 - Multimodal streets have the capacity to serve more people



C5 Healthy Streets

Lucy Saunders developed **Healthy Streets** through her research into the health impacts of transport, public realm and urban planning. It turns out that the key elements necessary for public spaces to improve people's health are the same as those needed to make urban places socially and economically vibrant and environmentally sustainable

10 Healthy Street Indicators™. Focussed on the human experience, these indicators show what really matters on all streets, everywhere, for everyone.

A number of tools have been developed under the Healthy Streets framework that allow street designers and managers measure proposed street designs against the 10 Healthy Streets Indicators as well as a qualitative community assessment tool assess how a street performs against the 10 Healthy Streets Indicators and identify what changes would deliver the widest benefits.

The City will be developing modified versions of these tools to suit our context. These will be incorporated into this Code when available.



Source: Lucy Saunders



REFER

[Healthy Streets](#)

C6 Key design principles

The following five key design principles guide the development of street layout and function. They support the City's strategic planning priorities to define and improve the City's streets, enhancing their role for pedestrians and public life.

Principle 1: Public spaces, public life

Streets provide a setting and backdrop for vibrant street life and activity. The Code promotes the following outcomes:

- A **comfortable and welcoming public domain** for people to meet and socialise

Martin Place, City Centre



Principle 2: Promote environmental sustainability

Streets occupy a large part of the City's public domain area. This provides significant opportunities to contribute to sustainability outcomes and City's environmental targets.

The Code promotes the following outcomes:

- **Water Sensitive Urban design (WSUD)** in the streetscape to treat urban stormwater to meet best practice water quality objectives for reuse and/or discharge to receiving waters.
- **Increased tree canopy** and landscape treatments to reduce the extent of hard surfaces and improve canopy cover, biodiversity, microclimate and the pedestrian environment.
- **Consideration of environmental impacts of materials used in street infrastructure** - low embodied energy, high recycled content, local provenance, high durability, long service life and low maintenance.
- Designing for **pedestrian, bicycling and transit use** to minimise contribution to greenhouse gas emissions.
- **Promotion of design innovation solutions that address urban heat** at street level;
- **Designing for known impacts of climate change.**

Macleay Street, Potts Point



C5 Key design principles

Principle 3: Promote inclusive design

The Code promotes the following outcomes:

- City's commitment to being an **inclusive and accessible city** for everyone now and in the future.
- **Meet the City's responsibilities** under the *NSW Disability Inclusion Act 2014* and *Commonwealth Disability Discrimination Act 1992* and continuous improvement in relation to inclusion and access for people with a disability.



Principle 4: Promote active transport

The Code promotes the following outcomes:

- A connected and legible **pedestrian and bicycle network** that facilitates safe, accessible, and convenient connections to desirable destinations; and
- **Amenities** such as seats, bubblers and bike racks to support pedestrian and bicycle use.

Bourke Street, Surry Hills



Principle 5: Respect distinctiveness and 'place'

The Code promotes the following outcomes:

- Include **response to Country** in design briefs to support integrated and successful design responses to Aboriginal culture and heritage;
- Allowing design flexibility within the materials palette to **express and reinforce the sense of place and local identity**. This may be expressed through the selection of unique materials and elements and the introduction of public art; and
- Expressing local distinctiveness and character through **retention of heritage elements** such as stone kerbs and gutters, stone sets, signage and furniture.

Thomas Street, Chinatown



C7 Street types

The following street types are common typologies located within the City and are typical across Australia and internationally. The character of these street types vary significantly however depending on site context such as adjacent landuse, building height/density, movement and access functions. These considerations influence space allocation and material palette selection as detailed in Part D and E of this Code.

C7.1 Streets

Streets support a **balanced movement function between traffic and pedestrians**. The vehicle and pedestrian zones are separated, and the street character and physical appearance respond to location (eg. city centre, land use and frontages.)

Some streets have additional movement functions such as a **separated cycleway**.

Market Street



Redfern Street



C7 Street types

C7.2 Laneways

Depending on context there are a variety of laneways within the City. These range from traditional **service rear access** ways to properties, to **shared zones** or lanes that are closed to vehicular traffic to support pedestrian connections and ground floor activation.



Ash Lane



Berwick Lane

C7.3 Shared zones

Shared Zones allow pedestrians, cyclists and vehicles limited to 10km/hr speed limit to share the same space. These areas are often pedestrian priority links, destinations for food, drink, retail and culture. Many laneways in the city centre will be converted to shared zones to improve pedestrian amenity and ground floor activation.

Shared Zone - Wilmot Street



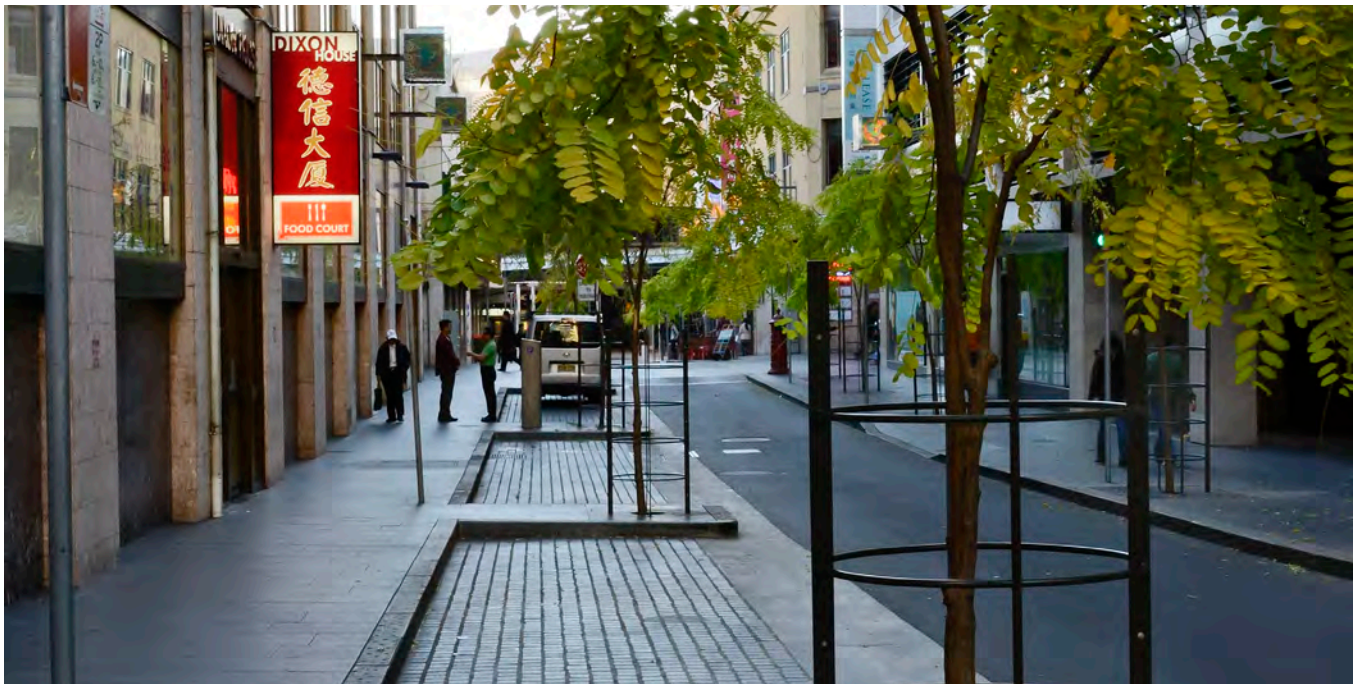
Shared Zone - Hatbox Place



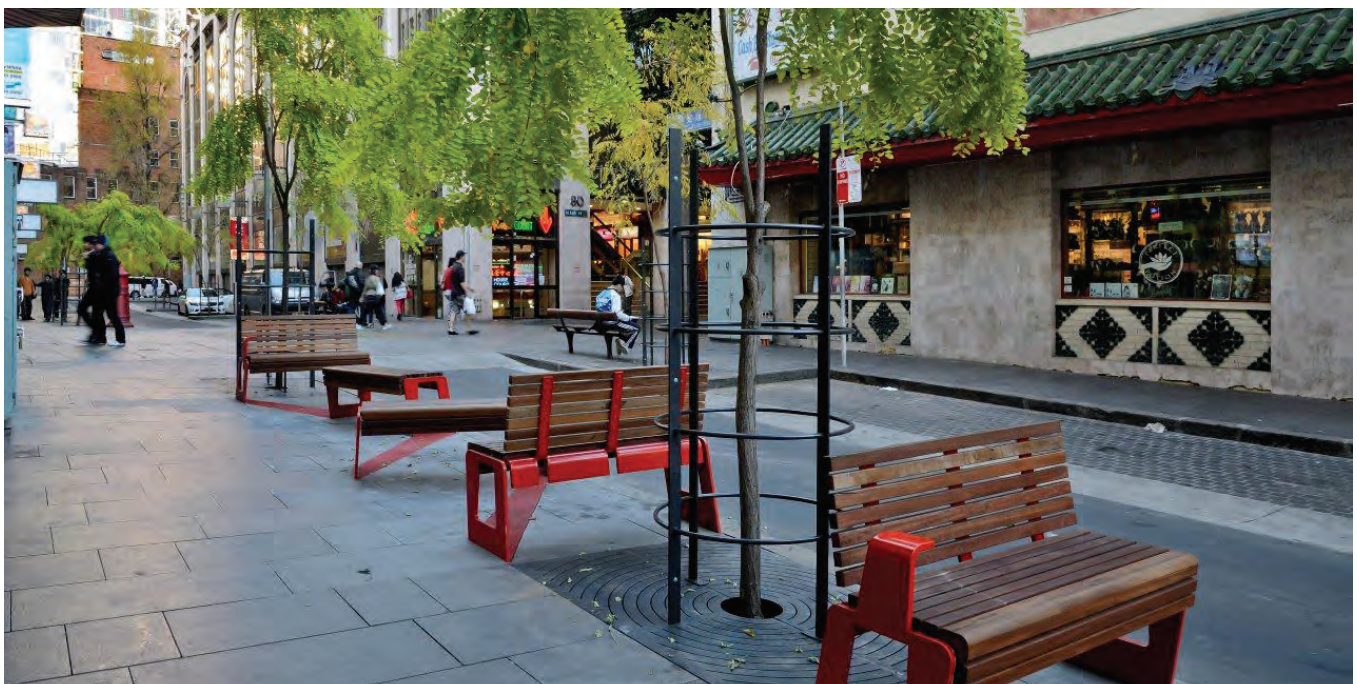
C7 Street types

C7.4 Slow streets

Slow Streets are characterised by a **reduced traffic speed, and a balance between pedestrian and vehicle access**. Footpaths are widened to accommodate pedestrian movement as well as allowing areas of seating, cycle parking and planting.



xxx



Slow Street - Little Hay Street

C7.5 Pedestrianised street

Pedestrianised streets are closed to vehicular traffic and may have limited timed vehicle access for loading and servicing activities.

Pedestrianised streets are places where people are able to gather and dwell in the City and where cultural activities can occur. Successful pedestrian streets often have multiple

functions with **active frontages** where retail or restaurant activities can spill out on the street and high quality finishes in the public domain such as seating, street trees and pedestrian lighting to support the activation during the day and at night.



Martin Place



Dixon Street, Chinatown

C7 Street types

C7.6 Public transit street

Transit streets are existing or proposed streets associated with **high priority public transport operations**. George Street and Devonshire Street are public transit streets as part of the **South East Light Rail Project**. George Street also includes sections closed to vehicular traffic.

The possible extension of light rail routes or other bus alternatives such as trackless trams in areas such as Green Square will involve existing streets being redesigned or new streets constructed as transit streets to accommodate the required public transport infrastructure.



George Street' light rail



Part D

The City Palette



The city palette

Part D

The city palette

The aim of the city palette is to promote a cohesive character and sense of identity for the City's streets

D1 Streetscape context areas

The **City Streetscape Context Areas Plan**, figure 6 shows street types defined by their location and function which form the basis for application of the City material palette selection and design responses described in this section of the Code.

The **city centre and gateway streets** is the focus of employment, public transport, entertainment, culture, tourism and residential living with high pedestrian activity both day and night. Refer D4

George Street is the City's central spine, with priority for public transport and pedestrians. A special set of design objectives and application of materials has been developed by the City, refer to the George Street Design Concept Design 2012 (or as amended.)

Main Streets are located outside the City Centre are typically areas of high pedestrian use generated by local, commercial, retail uses and public transport and includes the light rail corridors outside the City Centre Area. Main streets include **Village Main Streets, Connecting Main streets, and Neighbourhood hub streets**. Refer D5

Local Areas include a variety of street types, with the primary land use being residential and industrial. Refer D6

Pymont /Ultimo has been subject to a 1996 Public Domain Manual which requires consideration when undertaking upgrade works (refer D7)

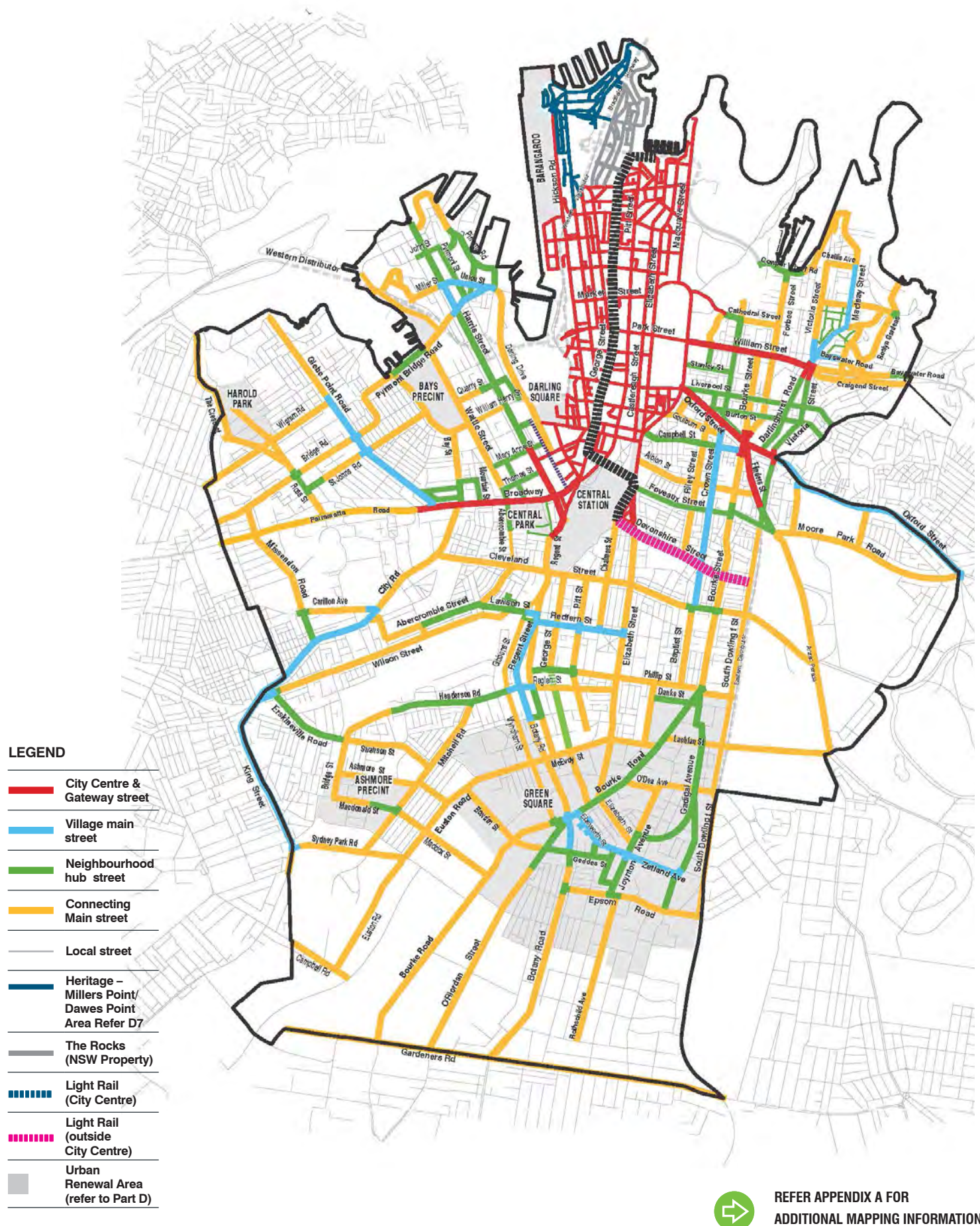
Urban Renewal Areas Many former industrial areas are being transformed into medium to high density residential and mixed use neighbourhoods. These areas include new streets that present the opportunity to be exemplars in streetscape design and sustainability. (Refer D9)

Heritage Areas occur in multiple locations across the City which have unique characters defined by cultural, landscape, geographical or social significance.

Given its State and national significance the Millers Point area is explicitly identified on the **City Palette** however many other areas have heritage streetscape fabric that need to be considered in any streetscape proposal. (Refer D8)

State classified roads State classified roads traverse various context areas . Additional co-ordination and approval are required for these roads in particular kerb works.(Appendix B)

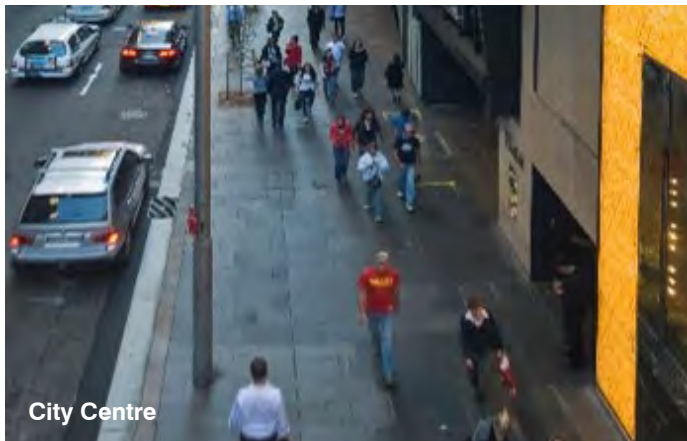
Streetscape Context Areas



REFER APPENDIX A FOR
ADDITIONAL MAPPING INFORMATION

Figure 9- Streetscape context areas

The city palette – Streetscape context areas



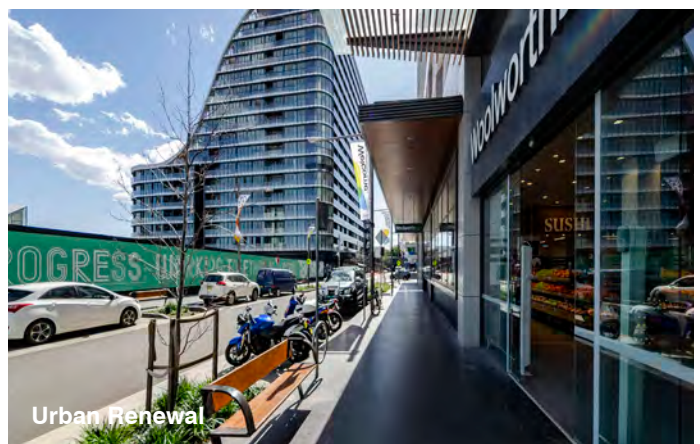
City Centre



George Street



Main Streets



Urban Renewal



Heritage



Pyrmont/Ultho



Local Areas - residential



Local Areas - industrial

D2 The city materials palette

The aim of the **City material palette** is to promote a cohesive character and sense of identity for the City's streets based on **context**. The palette allows variation where deemed appropriate, to express and articulate the diverse character and the unique functions of our City.

The key design principles of the City palette are:

- reinforce **street hierarchy and context**;
- to provide a simple, durable, manageable and **consistent palette** that is appropriate to the different street types;
- to consider **sustainability objectives** in material selections including embodied energy, life cycle costing and provenance.

The palette applications in this section accompany the Design Coordination considerations of Part E, and the construction details and standards found in the companion document, **Sydney Streets Technical Specifications**.



D3 Variations to the city palette

Some locations within the City may require a special treatment rather than a standard palette approach. Departure from the standard City palette is supported when the character of the place has a distinct or unique identity arising from the heritage, cultural, geographical, or social significance of a particular place or street .

The unique character of distinctive places can be expressed through customised designs for street lighting, furniture, paving inserts and patterns, and public art. It is imperative, however, that continuity of some base materials should be maintained to enhance legibility in the streetscape.

The City of Sydney will review on a case by case basis the merits of any deviation from the standard materials palette in order to express a distinctive place.

D4 City centre

City centre streets are major destinations. Over 600,000 pedestrians use the City Centre per day to access employment, services, retail and tourism or entertainment.

A high quality and durable palette of streetscape materials distinguishes the City Centre as a hub of cultural, tourism, business and retail industry.

This palette extends to incorporate **major city centre gateways** of William Street, Oxford Street, Flinders Street and Broadway.

D4.1 George Street

George Street accommodates light rail which reinforce the street as the main spine of the City Centre. The public domain palette varies from the standard palette in terms of special purpose Smartpoles, different sized granite pavers with various surface finishes and tones, tree planting and a creative lighting master plan overlay.



City Centre Palette Plan

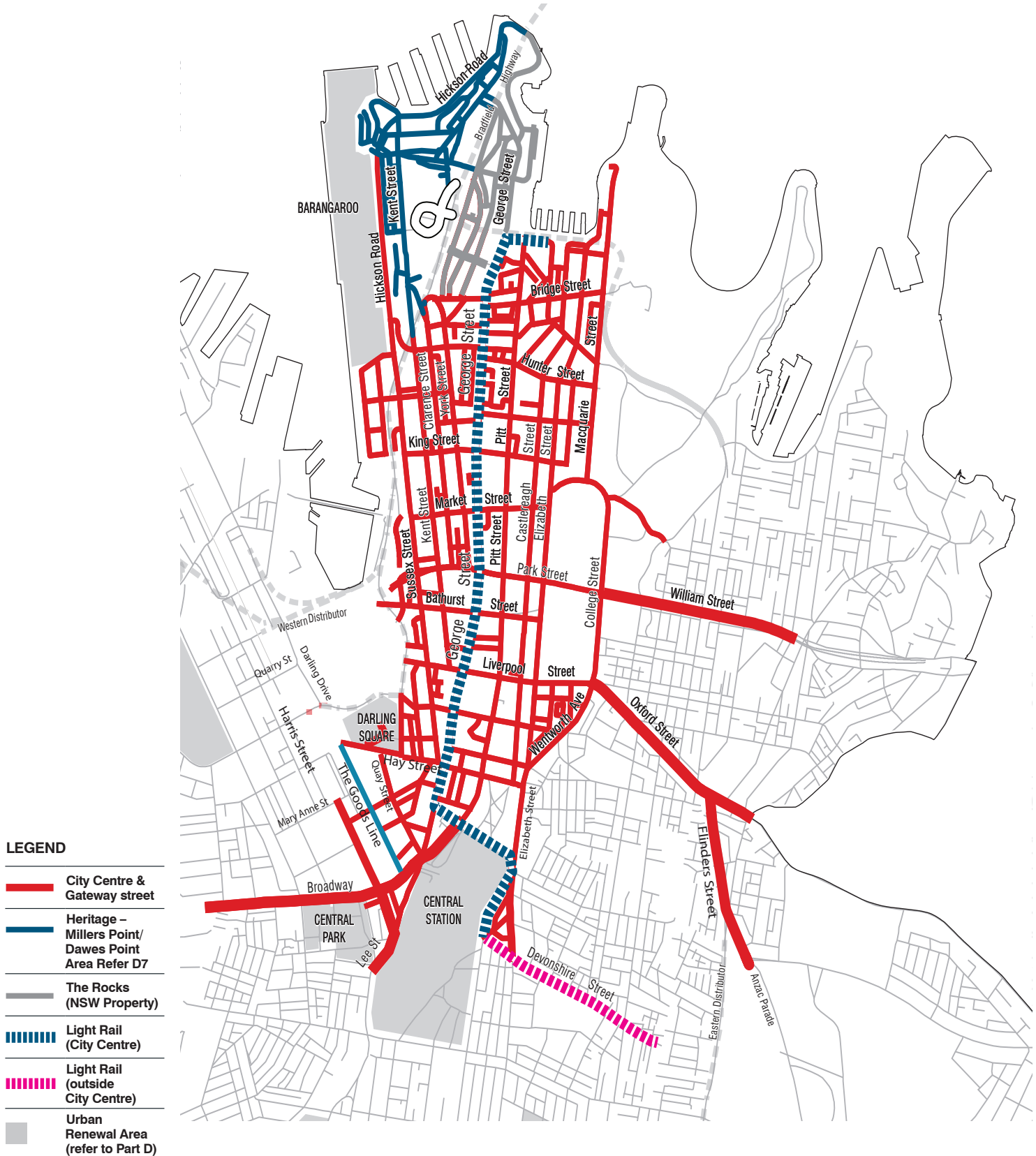


Figure 10

The city palette – Streetscape context areas

D4 City centre

D4.3 City centre, George Street and gateway materials palettes

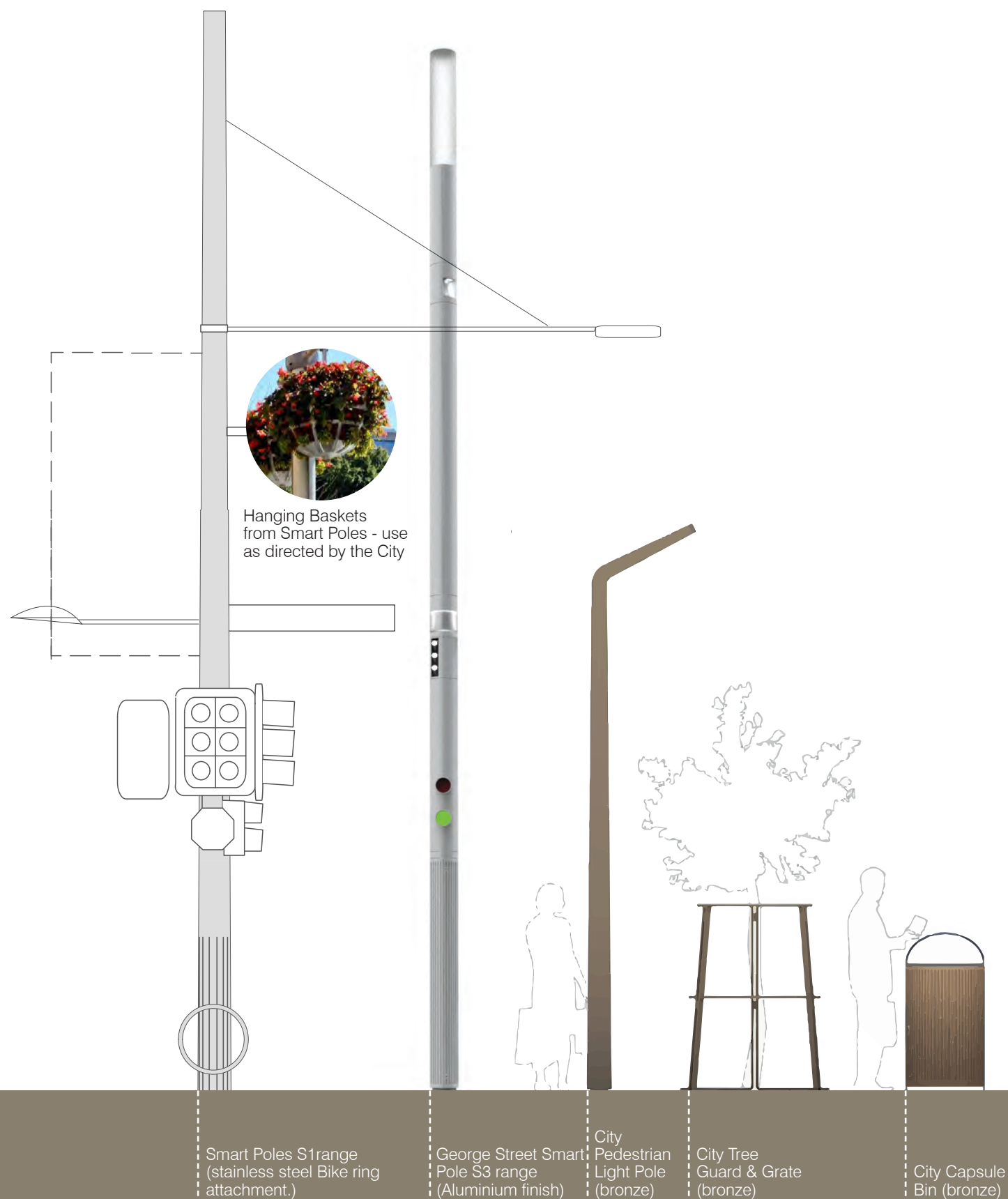
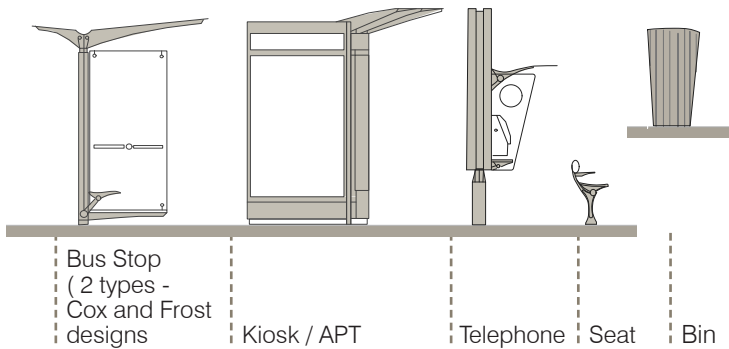


Figure 11 - Existing street furniture advertising contract palette



Note - furniture suite currently under review with new contract provider

The City's standard set of furniture for the City Centre, includes: Seats, Bollards, Bubbler, Bins, Pedestrian Lighting and Tree Guards.

Existing furniture elements under the current advertising contract include bus stops, kiosks/APTs, poster bollards and telephones.

For lighting applications refer to the City of Sydney Street Lights Code.

Unless otherwise specified the below furniture items apply to both City Centre/ Gateways areas and George Street.

Figure 12 -City of Sydney city centre and George Street public domain furniture suite



D4 City centre

D4.3 City centre, George Street and gateway materials palettes

Paving

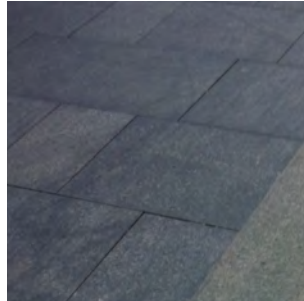


[Sydney Streets technical specifications](#)

A1 A2 B5 C2



REFER E4 - FOOTPATHS



Austral Black Granite

Vehicle crossovers



REFER E4.6 CONTINUOUS FOOTPATH TREATMENTS

REFER E4.9 DRIVEWAY CROSSOVERS



[Sydney Streets technical specifications](#)

A1 A2 B5 C2



Match adjacent granite paving



Continuous footpath treatment to match adjacent granite paving

Utility covers



REFER E11 - UTILITIES



[Sydney Streets technical specifications](#)

A1 A2 B5 C2



Paving Infill
match adjacent



Cast Iron

Kerbs



REFER E5 CARRIAGEWAY

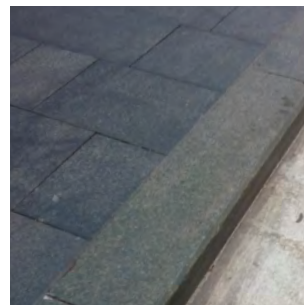


[Sydney Streets technical specifications](#)

A1 A2 B4 C1



Trachyte
retain and reuse existing stone kerb as directed by the City



Austral Verde Granite
City standard and nominated if replacement Trachyte is unavailable



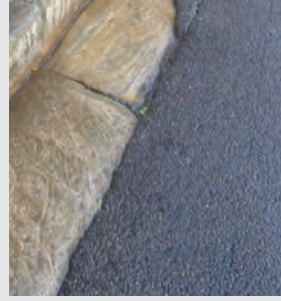
Concrete
use only if it is existing predominate material in rear access/service laneways (subject to direction by City)

D4 City centre

D4.3 City centre, George street and gateway materials palettes



Concrete with exposed aggregate



Existing Stone
retain and reuse existing
as directed by City



Austral Black Granite



Stainless Steel Discrete TGSi
Hazard warning



Stainless Steel TGSi
directions



Granite TGSi tiles
(George Street LR ped zone)



Porous Paving Infill



City Standard Tree Grate
Use as directed
by City



City tree guard
use as directed
by City

Gutters



REFER E5 CARRIAGEWAY



[Sydney Streets technical specifications](#)

A1 A2 B4 C1

Pedestrian ramps



REFER E4 FOOTPATHS



[Sydney Streets technical specifications](#)

A1 A2 B4 C2

TGSi Tactile Ground Surface Indicator



REFER E5 FOOTPATHS



[Sydney Streets technical specifications](#)

A1 A2 B4 C2

Tree base and guard



REFER E ^ URBAN CANOPY



[Sydney Streets technical specifications](#)

A1 A2 B4 C2



REFER STREET TREE MASTERPLAN

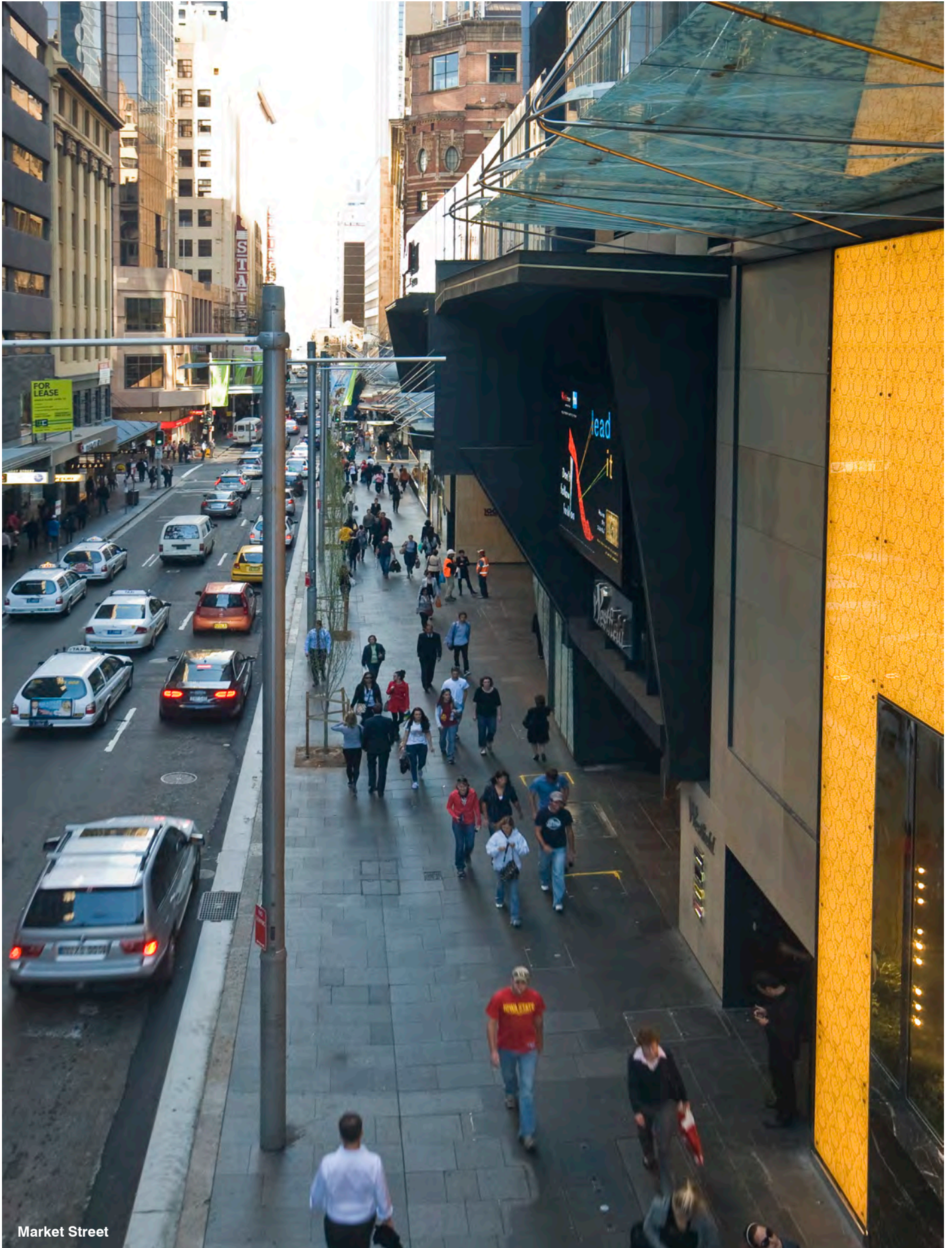
The city palette – Streetscape context areas



City Centre Gateway Street - William Street



George Street - light rail



Market Street

The city palette – Streetscape context areas

D5 Main streets

Main Streets are located outside the city centre. These areas sustain a high level of pedestrian use and are defined by ground floor retail, services, entertainment and direct access to public transport including lightrail.

These streets vary in size and use. The extent of commercial/mix use streets is largely defined by LEP zoning, intensity of commercial/retail use and transport / movement functions. There are generally three palette application types.

Palette A – Village Main Street

These are the main shopping/ commercial strips located in each Village Centre eg. Redfern Street, Glebe Point Road, Darlinghurst Road, King Street. Palette Type A also applies to light rail transit street corridor routes outside the City Centre such as Devonshire Street.

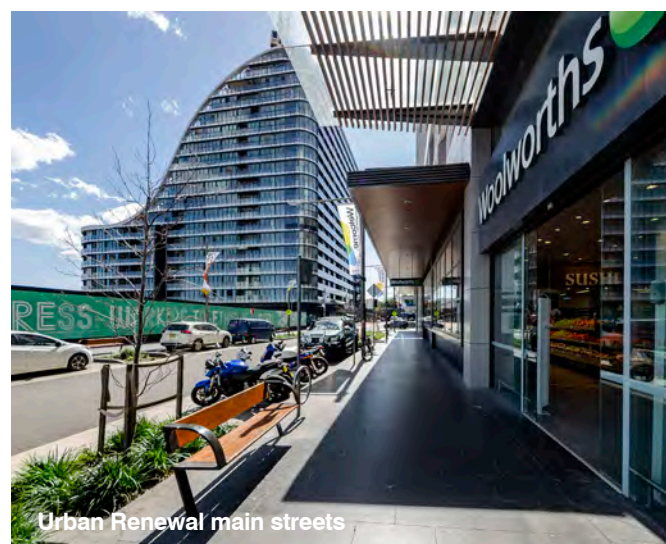


Palette B – Neighbourhood Hub Street These are smaller retail streets that service a local/ neighbourhood catchment eg Abercrombie Street

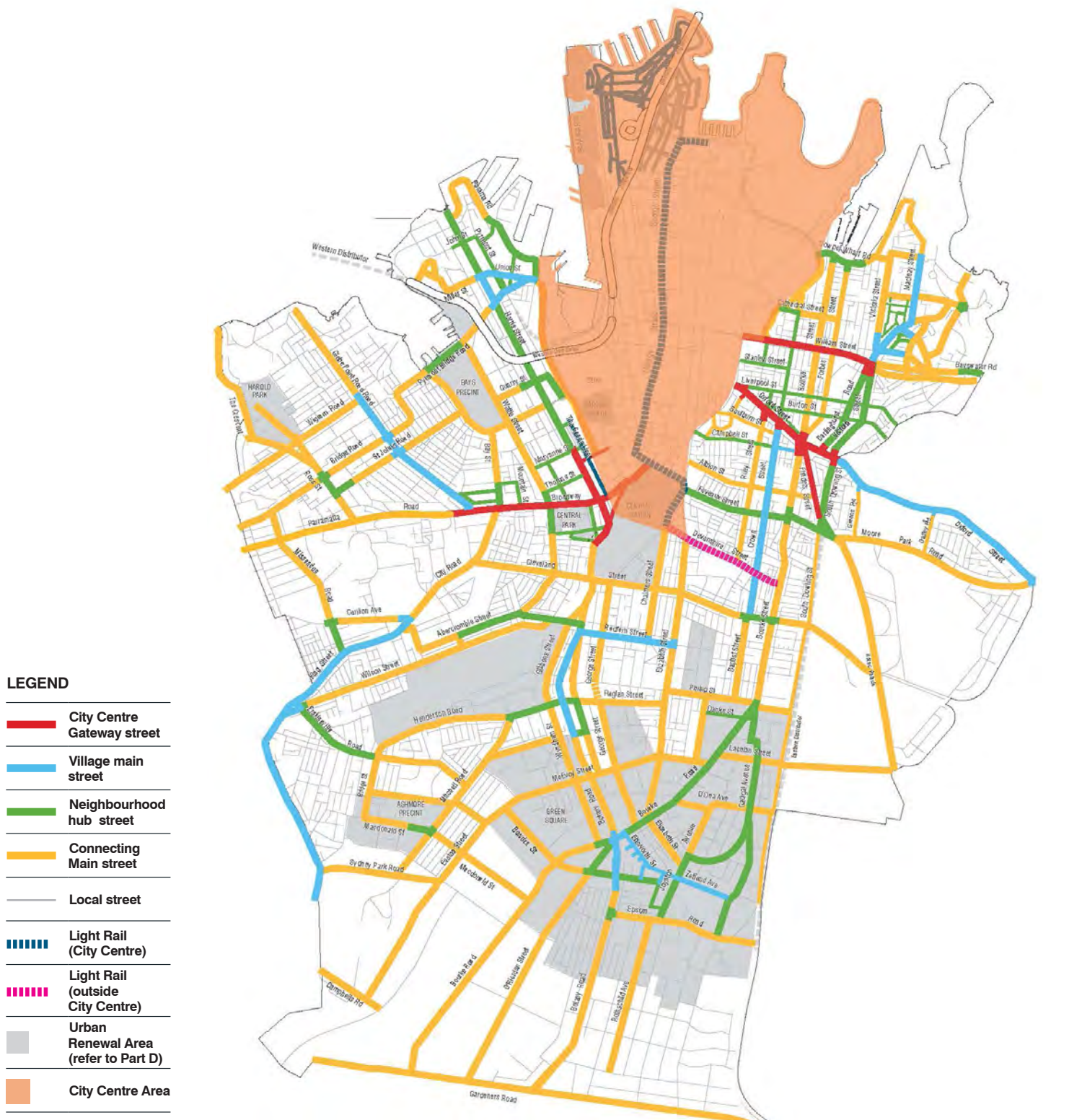
Palette C – Connecting main street

These are sections of street or RMS main roads that consist of residential and commercial/ retail land uses as well as being a focus for public transport. In many instances these areas connect sections of Village Main Street. Subject to parking and access requirements busy RMS roads provide opportunity for kerbside landscape treatments to provide a buffer for the pedestrian zone.

Urban Renewal Areas will include main streets palette (usually palette A or B) , where there is high volumes of pedestrian activity proposed associated with ground floor retail, commercial uses and public transport. Refer to Part D.8 for further information.



Main Streets Plan



note - refer to Appendix 3 for State
classified roads

Figure 13



REFER APPENDIX A FOR ADDITIONAL
MAPPING INFORMATION

The city palette – Streetscape context areas

D5 Main Streets

D5.1 Main Streets streets furniture and fixtures

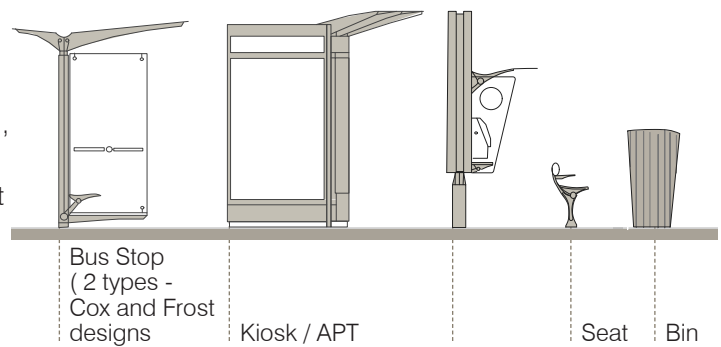
The City's standard set of furniture, includes: Seats, Bollards, Bubbler, Bins, Pedestrian Lighting and Tree Guards.

Existing furniture elements under the current advertising contract include bus stops, kiosks/APTs, poster bollards, telephones, bins and seats.

For lighting applications refer to the City of Sydney Street Lights Code.

Unless stated the furniture items apply to Village main streets, Neighbourhood hub streets and connecting streets.

Figure 14 - Existing JC Decaux furniture suite (current street furniture advertising contract)



Note - furniture suite currently under review with new contract provider

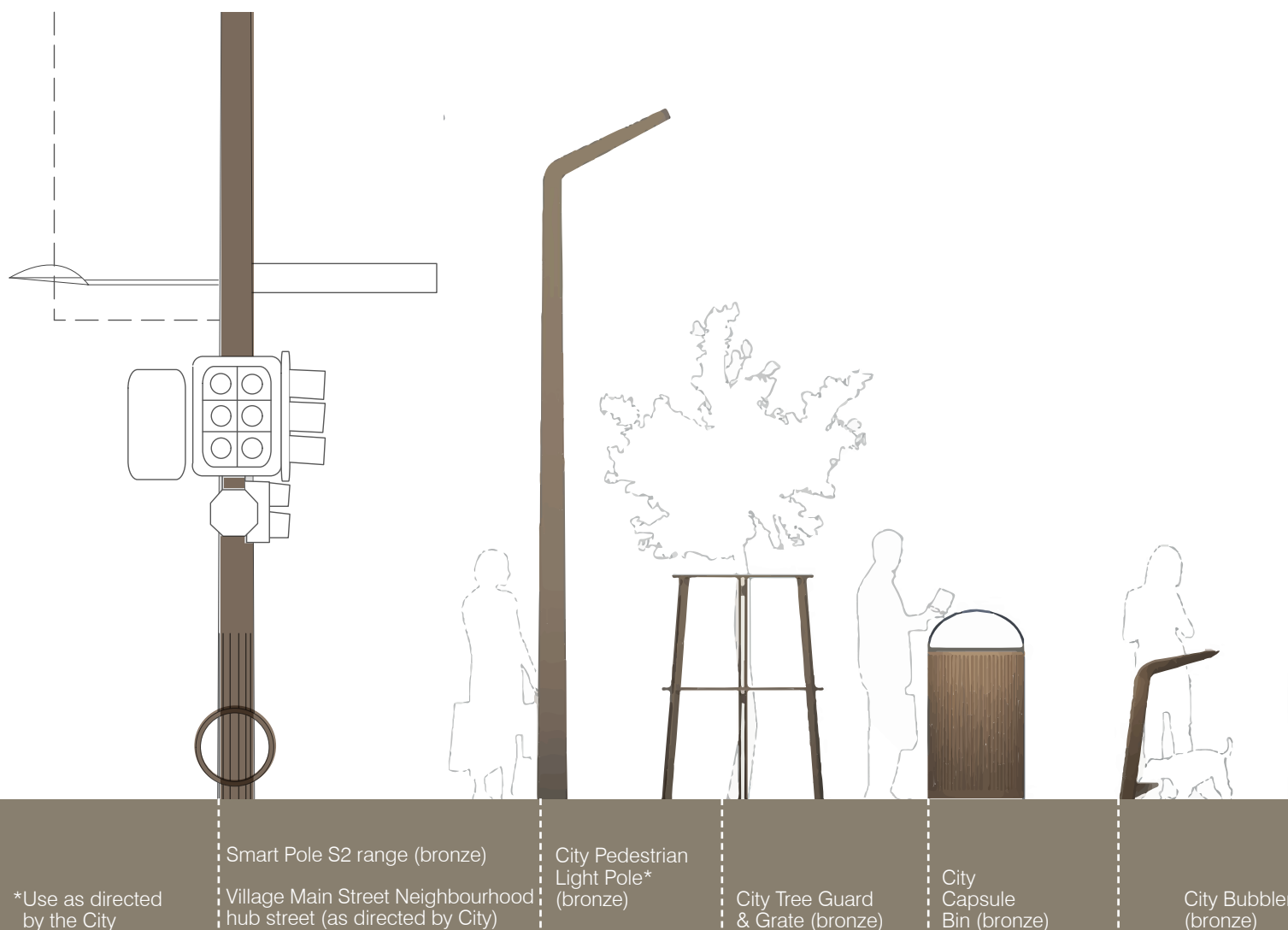


Figure 15- Alternate Light Fixtures (Neighbourhood hub streets/ connecting main street)

Alternative Pedestrian Light:
Evolve LED Post Top -
Contemporary Twin Support



Odessey LED

On City tapered round pole
See [Sydney Lights](#) Design Code



City of Sydney standard tapered steel street light pole - includes option for back of pole pedestrian light. Refer to the Sydney Lights Design Code for further information.

Figure 16 -City of Sydney Commercial/Mixed Use Streets Public Domain Furniture Suite

City Bollard
(bronze)

City Seat
(bronze)

City Wayfinding
Signage

D5 Main Streets

D5.2 Palette A – village main streets

Paving



REFER E\$ FOOTPATHS



[Sydney Streets technical specifications](#)

A1 A2 B5 C2



Concrete Unit Paving
City Standard

Vehicle crossovers



REFER E4.6 CONTINUOUS FOOTPATH TREATMENTS

REFER E4.9 DRIVEWAY CROSSOVERS



[Sydney Streets technical specifications](#)

A1 A2 B5 C1



Concrete Unit Paving
match adjacent



Concrete Unit Paving (smaller unit size)
Match adjacent paving finish

Utility covers



REFER E11 UTILITIES



[Sydney Streets technical specifications](#)

A1 A2 B5 C2



Paving Infill
recessed cover to match adjacent paving



Cast Iron

Kerbs



REFER
E5 CARRIAGEWAY



[Sydney Streets technical specifications](#)

A1 A2 B5 C2



Bluestone
use generally



Trachyte / Sandstone
retain and reuse existing
(as directed by City)

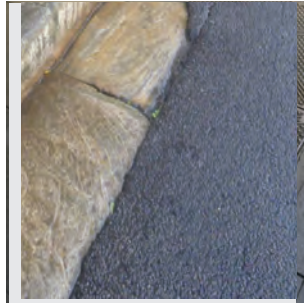
replacement sandstone for straight kerb alignments as required. Bluestone for kerb radii/ extensions

D5 Main Streets

D5.2 Palette A – village main streets



Concrete with exposed aggregate



Existing Stone
retain and reuse existing as directed by City



Concrete unit



Eco and/or Interlocking concrete Pavers use as directed by City of Sydney



Stainless Steel TGS
Hazard warning



Stainless Steel TGS
TGS - Direction indicator

Gutters



REFER E5 CARRIAGEWAY



[Sydney Streets technical specifications](#)
A1 A2 B5 C2

Pedestrian ramps



REFER E4 FOOTPATH



[Sydney Streets technical specifications](#)
A1 A2 B5 C2

Parking (located between kerb extensions)



REFER E5 CARRIAGEWAY



[Sydney Streets technical specifications](#)
A1 A2 B5 C3

TGSI Tactile ground surface indicator



REFER E4 FOOTPATH



[Sydney Streets technical specifications](#)
A1 A2 B5 C2

D5 Main Streets

D5.2 Palette A – Village main streets

Tree base and guard



REFER E6 URBAN CANOPY



REFER STREET TREE MASTERPLAN



TECHNICAL
SPECIFICATIONS
A1 A2 B5 C2



Porous paving or as directed by City



City Tree Grate
use as directed by City



City Tree Guard
use as directed by City

D5.3 Palette B – Neighbourhood hub streets

Paving

Selection as directed by City



REFER E4 FOOTPATH



[Sydney Streets technical specifications](#)
A1 A2 B5 C2



Concrete Unit Paving
City Standard



Brick Unit Paving Chestnut 40%:
Brahman Granite 30%: Maple 30%
- Austral Bowral colours or equivalent



Insitu Concrete Type "A"
as directed by city

Vehicle crossovers

- Continuous footpath treatments
- Driveway Crossovers



REFER E4.6 CONTINUOUS FOOTPATH
TREATMENTS

REFER E4.9 DRIVEWAY CROSSOVERS



TECHNICAL
SPECIFICATIONS
A1 A2 B5 C1



Concrete Unit Paving
Match adjacent



Concrete Unit Paving
Match adjacent (smaller unit
size)



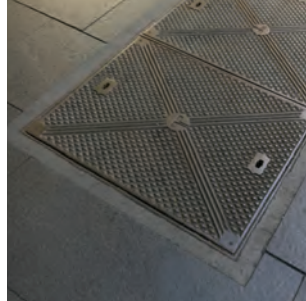
Brick Unit Paving
Match adjacent paving

D5 Main Streets

D5.3 Palette B – Neighbourhood hub streets



Paving Infill
recessed cover match adjacent paving



Cast Iron



Bluestone
use generally



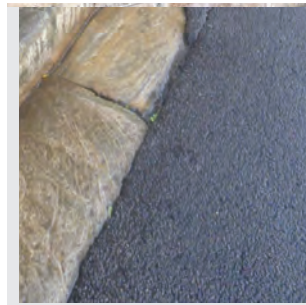
Trachyte/Sandstone
retain and reuse existing



Concrete
match existing predominant material -use as directed by City



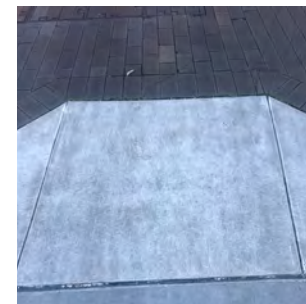
Concrete
use generally



Stone retain and reuse existing as directed



Concrete unit paver
or match adjacent



Concrete ramp for brick paved footpath

Utility covers



REFER E11 UTILITIES



[Sydney Streets technical specifications](#)

A1 A2 B5 C2

Kerbs replacement sandstone for straight kerb alignments as required. Bluestone for kerb radii/ extensions



REFER E5 CARRIAGEWAY



[Sydney Streets technical specifications](#)

A1 A2 B5 C1

Gutters



REFER E5 CARRIAGEWAY



[Sydney Streets technical specifications](#)

A1 A2 B5 C1

Kerb ramps



REFER E4 FOOTPATH



[Sydney Streets technical specifications](#)

A1 A2 B5 C2

D5 Main Streets

D5.3 Palette B – Neighbourhood hub streets

Parking (located between kerb extensions when provided)



REFER E% CARRIAGEWAY



[Sydney Streets technical specifications](#)

A1 A2 B5 C3



Eco and/or Interlocking concrete pavers use as directed by City of Sydney

TGSI Tactile Ground Surface Indicator



REFER E\$ FOOTPATH



[Sydney Streets technical specifications](#)

A1 A2 B5 C2



Stainless Steel TGSI -
Hazard warning



Stainless Steel TGSI –
Direction indicator

Tree base and guard



REFER E6 URBAN CANOPY



REFER STREET TREE MASTERPLAN

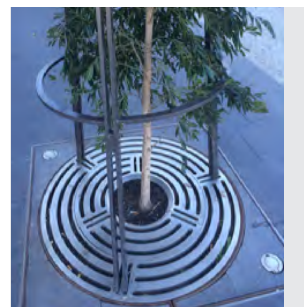


[Sydney Streets technical specifications](#)

A1 A2 B5 C2



Porous Paving Infill



City Tree Grate



City Tree Guard

D5 Main Streets

D5.4 Palette C – Connecting main streets



Insitu Concrete Type "A"



Concrete unit paving
to denote major street corners
or nodes (as directed by City)



**Continuous footpath
treatment - concrete**



**Continuous footpath
treatment - concrete
bipave/ interlock pavers**
(as directed by City)



**Driveways to match
footpath material**



Cast Iron (utility supplied)



Concrete (utility supplied)



Concrete
Standard finish



Existing Stone
retain and reuse existing

Paving



REFER E4 FOOTPATHS



[Sydney Streets technical specifications](#)

A1 A2 B5 C2

Vehicle crossovers

- Continuous footpath treatments
- Driveway Crossovers



REFER E4.6 CONTINUOUS FOOTPATH
TREATMENTS
REFER E4.9 DRIVEWAY CROSSEOVERS



[Sydney Streets technical specifications](#)

A1 A2 B5 C1

Utility covers



REFER E11 UTILITIES



[Sydney Streets technical specifications](#)

A1 A2 B5 C2

Kerb

replacement sandstone for
straight kerb alignments as
required. Bluestone for kerb
radii/ extensions



REFER E5 CARRIAGEWAY



[Sydney Streets technical specifications](#)

A1 A2 B5 C1

D5 Main Streets

D5.4 Palette C – Connecting main streets

Gutters



REFER E5 CARRIAGEWAY

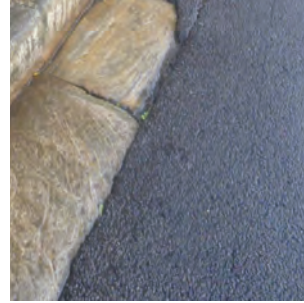


[Sydney Streets technical specifications](#)

A1 A2 B5 C1



Concrete
Standard finish



Existing Stone
retain and reuse existing as directed by City

Kerb ramps



REFER E4 FOOTPATHS



[Sydney Streets technical specifications](#)

A1 A2 B5 C2



Concrete/ match
pavement material

TGSI Tactile Ground Surface Indicator

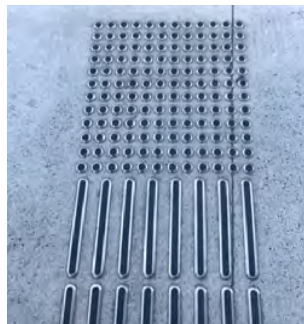


REFER E4 FOOTPATHS

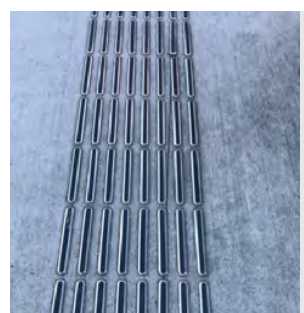


[Sydney Streets technical specifications](#)

A1 A2 B5 C2



Stainless Steel TGSI
- Hazard warning



Stainless steel TGSI
- directional



REFER STREET TREE MASTERPLAN

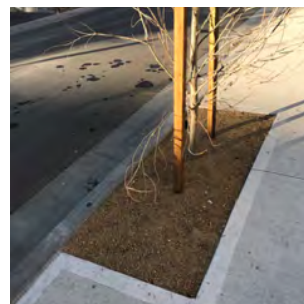


[Sydney Streets technical specifications](#)

A1 A2 B5 C2



Porous Paving Infill
use as directed by City



Decomposed granite / timber tree guard
use as directed by City



City tree guard
use as directed by City

D5 Main Streets

D5.4 Palette C –Connecting main streets

landscape treatments



REFER E6 URBAN CANOPY

Maximise opportunities for landscape



Wide building setbacks allow opportunities for additional greening and canopy

The city palette – Streetscape context areas



Palette A- Village Main Street - Crown Street



Palette B - Neighbourhood Hub Street - Abecrombie Street



Palette C - Connecting Main Street - Botany Road

D6 Local areas

Local Areas consist primarily of residential, employment and industrial land use areas.

The paving palette for the local area streets include insitu concrete (main material selection) , brick or asphalt. Selection of the most appropriate material to be approved by the City, with approved selection based on local context and current predominant paving use, fabric and heritage. (Refer Section E4.3 further palette selection guidance

In many instances local area streets provide important pedestrian connections to local amenities and destinations such as schools, parks, community centres, retail and commercial services, and public transport and so form an important part of the Liveable Green Network.

Key LGN network routes may include additional amenity such as footpath widening, kerb extensions, landscape verges, seats and pedestrian lighting for enhanced legibility and identity within the streetscape.

The Pyrmont /Ultimo area

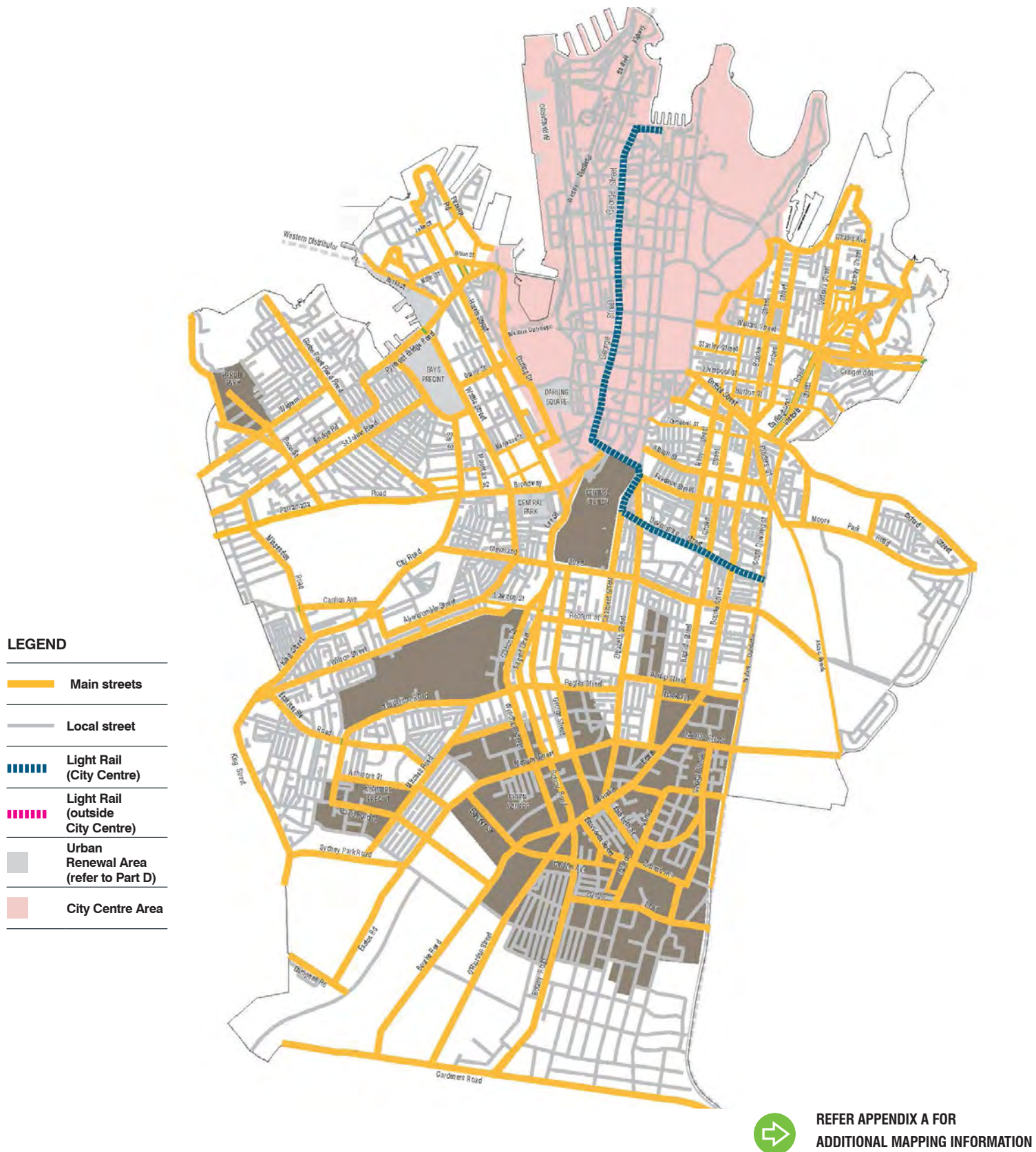
Many local streets in the Pyrmont and Ultimo area have been subject to a specific public domain manual developed in 1996. Current palette character must be considered when undertaking streetscape works in this area.



PYRMONT ULTIMO REFER D7



Local Areas Streetscape Character Plan



Note: Indicative only, all Local Areas streets will need to be assessed on a project basis.

Figure 17

The city palette – Streetscape context areas

D6 Local

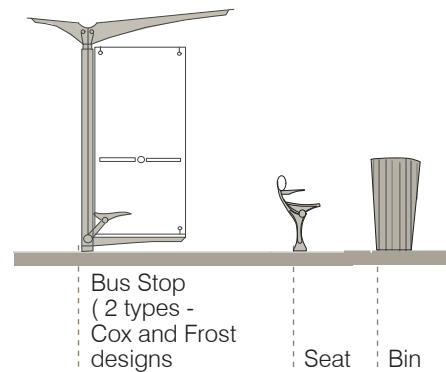
D6.1 Local areas furniture and fixtures

The City's standard set of furniture palette for local area streets includes: Seats, Bollards, Bubbler, Bins, Pedestrian Lighting and Tree Guards.

Existing furniture elements under the current advertising contract include bus stops, kiosks/APTs, poster bollards and telephones.

For lighting applications refer to the City of Sydney Street Lights Code.

Figure 18 - Existing street furniture advertising contract palette



Note - furniture suite currently under review with new contract provider

Figure 19 -Local Areas Public Domain Furniture Suite



REFER E9 PUBLIC DOMAIN FURNITURE

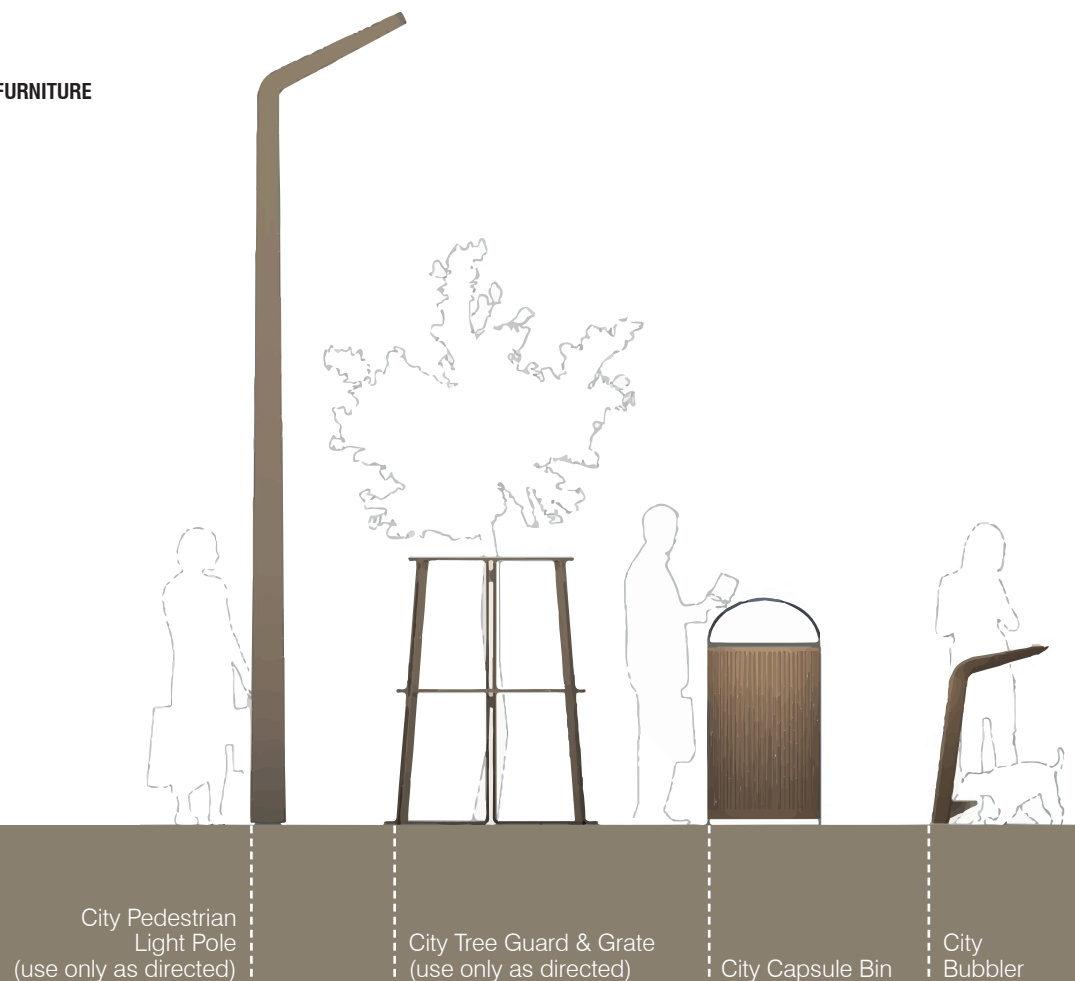


Figure 20- Light Fixtures

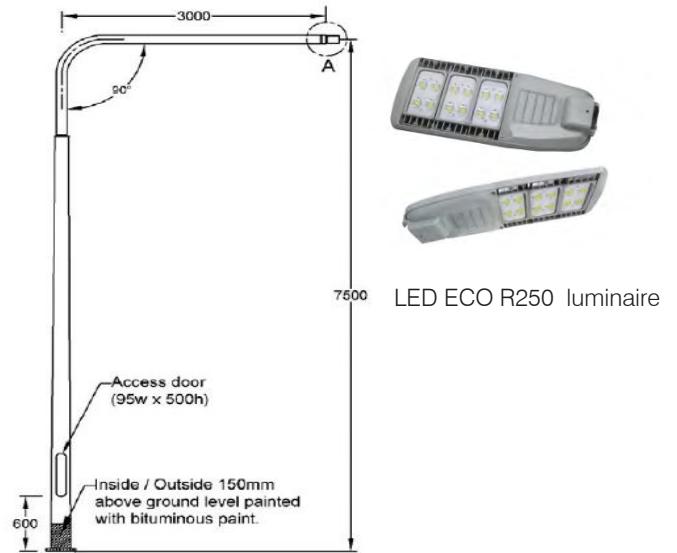


Alternative Pedestrian Light:
Evolve LED Post Top -
Contemporary Twin Support

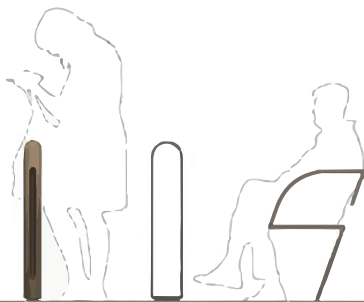


Odessey LED

On City tapered round pole
See [Sydney Lights](#) Design Code



City of Sydney standard tapered steel street light pole - includes option for back of pole pedestrian light. Refer to the Sydney Lights Design Code for further information.



City
Bollard

City
Seat



City Wayfinding
Signage



D6 Local areas

D6.2 Local areas materials palette

Paving



REFER E4 FOOTPATH



[Sydney Streets technical specifications](#)

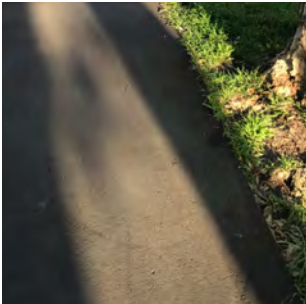
A1 A2 B5 C2



Insitute Concrete Paving
(Standard finish)



Brick Unit Paving
(use as directed by City)



Asphalt Paving
(use to match existing predominant asphalt paving as directed by the City)

Vehicle crossovers

- Continuous footpath treatments
- Driveway Crossovers



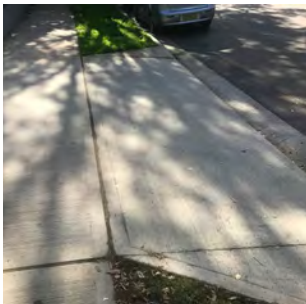
REFER E4.6 CONTINUOUS FOOTPATH TREATMENTS

REFER E4.9 DRIVEWAY CROSSOVERS

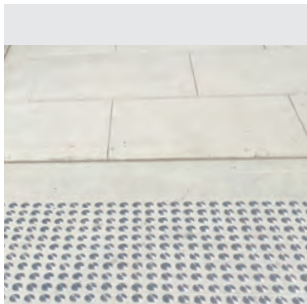


[Sydney Streets technical specifications](#)

A1 A2 B5 C1



Concrete driveway



Concrete continuous footpath treatment



Brick, interlock, or bipave continuous footpath treatments (use as directed by City)

Utility covers



REFER E11 UTILITIES



[Sydney Streets technical specifications](#)

A1 A2 B5 C2



Cast Iron
(utility authority supplied)



Concrete
(utility authority supplied)

D6 Local areas

D6.2 Local areas materials palette



Concrete
Standard finish



Existing sandstone/trachyte/bluestone
retain and reuse existing as directed by City



Concrete
Standard finish



Stone retain and reuse
existing as directed



Concrete
(match footpath)



Brick footpath
(concrete kerb ramp)



Asphalt footpath
(concrete kerb ramp)



Stainless Steel TGSI
- Hazard warning



Stainless steel TGSI
- directional

Kerbs

- replacement sandstone for straight kerb alignments as required. Bluestone for kerb radii/ extensions as directed by City



REFER E5 CARRIAGEWAY



[Sydney Streets technical specifications](#)

A1 A2 B5 C1

Gutters



REFER E5 CARRIAGEWAY



[Sydney Streets technical specifications](#)

A1 A2 B5 C1

Kerb ramps



REFER E4 FOOTPATH



[Sydney Streets technical specifications](#)

A1 A2 B5 C2

TGSI-Tactile Ground Surface Indicator



REFER E4 FOOTPATH



[Sydney Streets technical specifications](#)

A1 A2 B5 C2

D6 Local areas

D6.2 Local areas materials palette

Tree base and guard



REFER E6 URBAN CANOPY



REFER STREET TREE MASTERPLAN



Decomposed Granite (as directed by City)



Tree with mulch infill for turf verges (as directed by City)



Porous Pavement (as directed by City)



Timber tree guard (as directed by City)

Kerbside landscape treatments



REFER E6 URBAN CANOPY



Planted (as directed by City)



Turf (as directed by City)

D7 Pyrmont and Ultimo

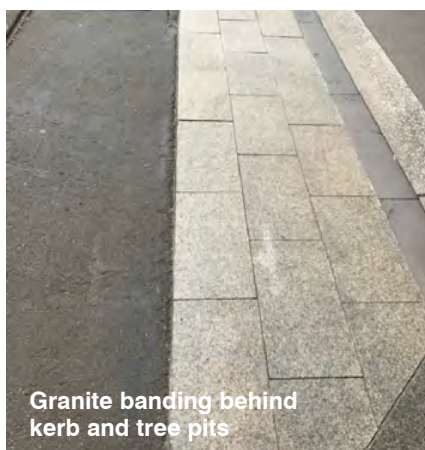
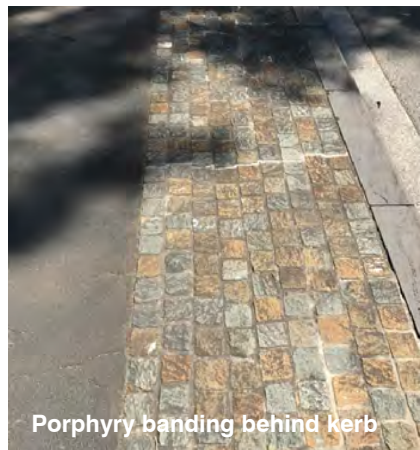
The Pyrmont /Ultimo area was previously subject to a specific public domain manual in 1996 that various footpath treatments for local residential streets that are sometimes of a higher palette finish than standard Code paving treatments for local areas.

Asphalt is usually the standard paving treatment with stone kerbs. Some streets have stone paver banding behind the kerb. Porphyry setts are also used to denote minor street intersection treatments.

When works are proposed in Pyrmont/Ultimo local residential streets the following needs to be undertaken.

- Site inspection to ascertain current palette of footpath and kerb materials.
- Assessment of current condition and design life of existing paving materials;
- Feasibility assessment of retaining current standard of finish.

If works involve substantial footpath reconstruction of entire street blocks assess the merit of reinstating current finish or reverting to Street Design Code standard finish for local streets. The aim is to ensure new works maintain the existing public domain character of the area.



D8 Heritage elements

Extensive areas of the City are protected under Heritage Conservation Zones.

Areas such as Millers Point are also of State and National heritage significance.

Use of the heritage context palette is appropriate only for the areas where the existing area or streetscape warrants a palette to retain and enhance unique heritage features. The City of Sydney will assess the proposed streetscape selection of heritage context items on a case by case basis.

Pavement selection

Pavement selection should aim to match the existing predominant paving type in the locality. In many instances this will be asphalt paving.

Retention of heritage features

Many city streets contain unique heritage features that reinforce a sense of place and local identity. These can include stone kerbs and gutters, heritage stone setts and cubes, turpentine paving blocks, street name signage, carriageway steel inserts, steel angle bars to protect kerb faces, central stone dish drains, cast iron service pit lids, light blocks to basements, and old style furniture.

When undertaking upgrade and asset renewal works there is a need to ensure that heritage elements are identified and assessed for retention or reuse as part of the new works. The merit of salvaging items for recycling and reuse in other projects also needs to be considered.



Kerbs/gutters

The City of Sydney has a legacy of heritage stone kerbs in trachyte, bluestone and sandstone that makes an important contribution to the streetscape character and sense of place. Key design coordination considerations for use of heritage kerbs use include:

- where possible retain and consolidate existing stone kerb in-situ;
- lift/repair/reset existing serviceable stone kerbs during upgrade works;
- where possible replace damaged sections from the city of sydney stockpile of trachyte and sandstone; and
- where possible (dependant on availability retain and provide additional sandstone, trachyte, austral verde or bluestone kerb to match adjoining to create continuous sections of stone kerb material that is not interrupted by concrete kerbing.

NOTE : Sandstone should not be used in new radial alignment/corner sections / kerb extension due to its susceptibility to vehicle impact damage. Bluestone should be used instead.



Sandstone kerb and gutter



Trachyte Kerb



Retention of heritage street features



Retention of sandstone kerb alignments



Angle bars



Signage



Retain unique features and elements

D8 Heritage elements

D8.1 Heritage places materials palette

Paving



REFER E4 FOOTPATH



TECHNICAL
SPECIFICATIONS
A1 A2 B5 C2



Asphalt Paving
subject to assessment &
City approval



Brick Unit Paving
(use as directed by City
approval)

Vehicle crossovers

- continuous footpath treatments
- driveway crossovers



REFER E5 CARRIAGEWAY



TECHNICAL
SPECIFICATIONS
A1 A2 B5 C2 C3



Match adjacent footpath
treatment



Asphalt driveway with
heritage stone sets



Stone porphyry sets
subject to assessment and
City direction

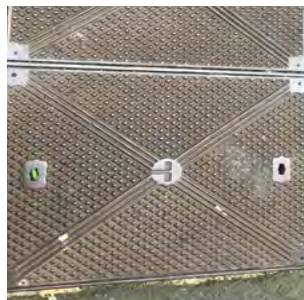
Utility covers



REFER E11 UTILITIES



TECHNICAL
SPECIFICATIONS
A1 A2 B5 C2



Cast Iron(utility authority
supplied)

Kerb



REFER E5 CARRIAGEWAY



TECHNICAL
SPECIFICATIONS
A1 A2 B5 C1



**Existing Trachyte/or
Sandstone**
retain and reuse existing;



Bluestone replacement
stone as required when
Trachyte not available and
use on corner radii.



For replacement sandstone
use for straight kerb
alignments as required with
bluestone for kerb radii/
extensions

D8 Heritage elements

D8.1 Heritage places materials palette



Stone
reuse and retain where possible



Concrete
for new construction



match footpath material
with stone drop kerb



Concrete with dark
admixture / stone drop kerb



**Stainless Steel Discrete
TGSi** - Hazard warning



**Stainless Steel Directional
TGSi** - Direction indicator



City tree grate(as
directed by City)



Decomposed granite (as
directed by City)



Porous(as directed by
City)

Gutters



REFER E5 CARRIAGEWAY



TECHNICAL
SPECIFICATIONS
A1 A2 B5 C1

Kerb ramps



REFER E4 FOOTPATHS



TECHNICAL
SPECIFICATIONS
A1 A2 B5 C2

TGSi -Tactile Ground Surface Indicator



REFER E4 FOOTPATHS



TECHNICAL
SPECIFICATIONS
A1 A2 B5 C2

Tree base



REFER E6 URBAN CANOPY

Street Tree Masterplan#

D8 Heritage elements

D8.1 Heritage places materials palette

Furniture



REFER E9 PUBLIC DOMAIN FURNITURE



TECHNICAL
SPECIFICATIONS
A1 A2 B5 C4 C5



City furniture suite (as
directed by City)



Heritage Seat (as directed
by City)



**Rocks type pedestrian
pole light** (as directed by
City)



Heritage Bollard
(as directed by City)



D9 Urban renewal areas

Urban renewal areas often include the creation of new streets, which provide the opportunity to incorporate Water Sensitive Urban Design (WSUD) initiatives, pedestrian and bicycle amenity, biodiversity and tree canopy cover often without the constraints associated with retrofitting the existing street network.

Within urban renewal areas there may be scope to express distinctiveness of place, however it is imperative, that streets become extensions of the City streets rather than be perceived as privatised portions of large developments. Consequently, streets in urban renewal areas need to be in accordance with the appropriate City Palette according to its location and adjacent landuse.

The following pages describe the recommended public domain intent for the urban renewal areas of:

- Green Square Town Centre
- Green Square – Urban Renewal Area
- Ashmore Precinct
- Harold Park
- Central Park
- Barangaroo
- Bays Precinct and
- Central to Eveleigh.



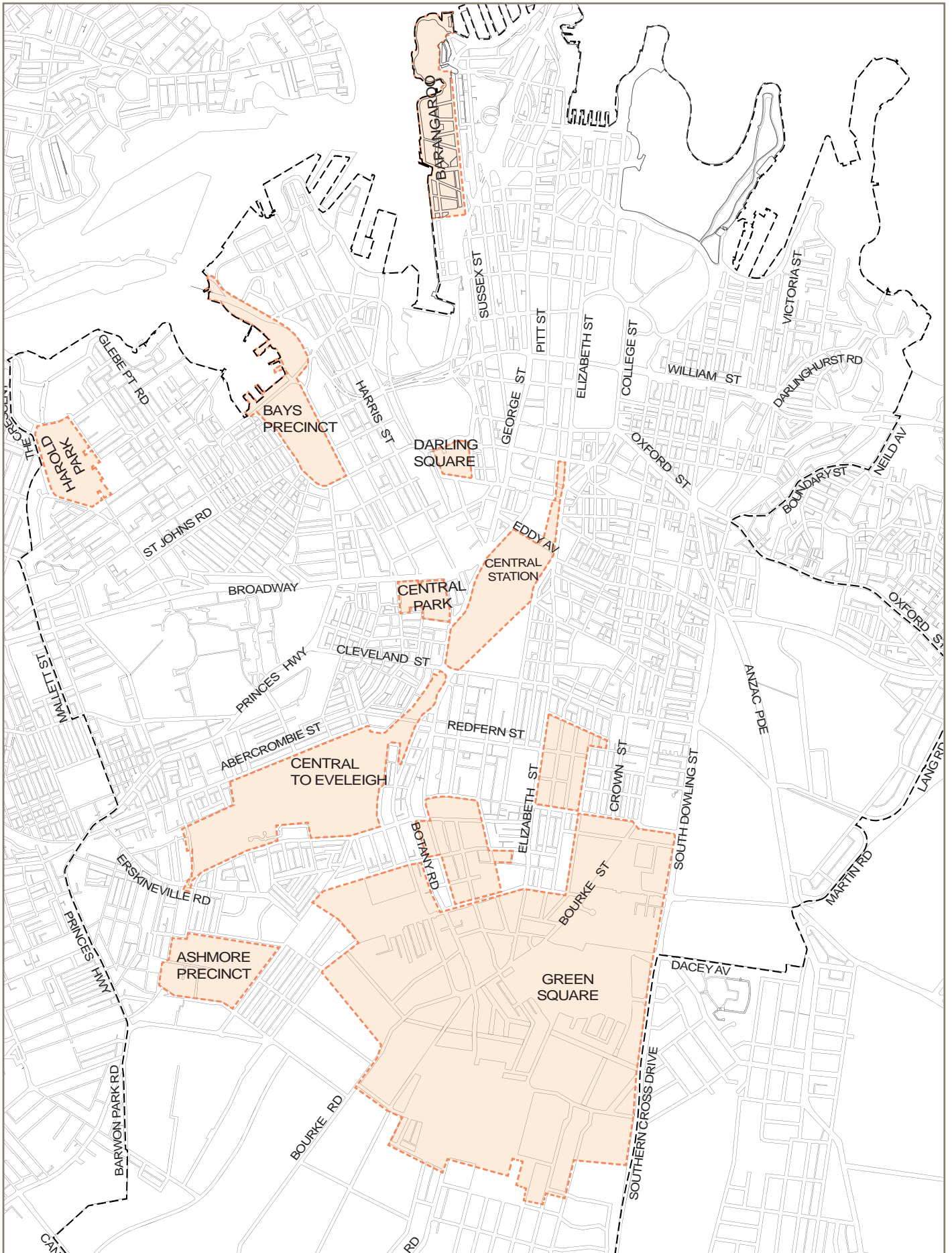


Figure 21 Urban Renewal Areas Plan

D9 Urban renewal areas

D9.1 Green Square town centre

Site overview

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, community and residential use. At the heart of the Town Centre is Civic Place, offering a range of public domain programs, which will be formed to include a community library, transport exchange and formal public space.

The City has prepared the Green Square Public Domain Strategy 2013 to guide the public domain design for the Green Square Town Centre. This document provides design coordination and material palette applications to facilitate public domain delivery. (refer to the cityofsydney.nsw.gov.au for a full version).

Streetscape character

New streets and lanes will connect and extend with the existing street network creating connectivity within the public domain.

Zetland Ave will be a grand street connecting Green Square Town Centre with the wider renewal areas particularly Epsom Park Precinct. The scale of the street will reinforce its identity as the primary street connecting all major public spaces and parks and links them into adjacent neighbourhoods.

A network of fine grain streets and lanes are centred around Civic Place and are defined by high pedestrian priority, ground floor retail, services and entertainment. North of the Civic Plaza these streets are Village Main Streets, Ebsworth Street which will be the main retail street.

Paving and materials

The Green Square Town Centre Public Domain Strategy 2013 provides the paving and materials palette for the Town Centre.

Furniture specification

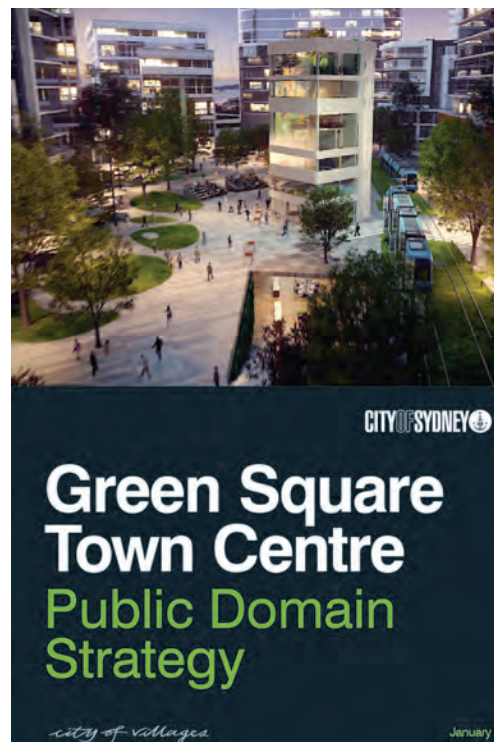
The standard City public domain furniture suite applies. There are opportunities such as Civic Place and The Drying Green to provide unique design responses.

Street trees and landscaping

Street Trees are in accordance with the Green Square Town Centre Public Domain Strategy (2013).

Public art

The Green Square Public Art Strategy 2013 outlines the process and opportunities for the Green Square Public Art program.



REFER

[Green Square Town Centre Public Domain Strategy](#)



Ebsworth Street



Figure 22 Green Square Town Centre

	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)

D9 Urban renewal areas

D9.2 Green Square urban renewal area

Site overview

Outside the Town Centre, the Green Square urban renewal areas will be a mixed use precinct with an emphasis on residential land use. The area includes a number of different precincts including Victoria Park, Lachlan Precinct and Epsom Park Precinct.

The area will provide a network of new streets which will achieve a highly permeable street pattern that integrates pedestrian, cycle and vehicular movements, WSUD, and flood management.

Streetscape character

The street typologies range from large scale boulevard streets such as Zetland Ave, a main north south public transport link (Amelia Street, activity strips and nodes with ground floor retail such as Archibald Ave, local residential access streets, to small scale quiet residential laneways that will be either fully pedestrianised or have shared vehicle access.

Paving and materials

Public domain strategies and concept design plans have been prepared by the City of Sydney for the Epsom Park and Lachlan Precincts.

Paving and public domain elements will be used to reinforce the legibility, hierarchy and character of streets in the Green Square Urban Renewal Area. Paving selections are based on **Main Street and Local Street palette** selections. Use Main Street palette will recognise specific site conditions formed by active ground floor uses, major pedestrian links and future light rail / public transport corridors.

Residential streets will use the Local Street palette that includes use of insitu concrete and trihex interlock concrete paving materials.

Water Sensitive Urban Design in the form of median bioswales and raingardens will be a characteristic of the urban renewal streets.

Intersection thresholds and shared zone treatments will include use of concrete interlocking pavers, and where appropriate permeable eco tri-hex pavements.

Furniture specification

The Standard City Palette.

Street trees and landscaping

Street Trees are in accordance with the Street Tree Master Plan and Lachlan and Epsom Public Domain Plans.

Public art

Where deemed applicable public art proposals will be developed in liaison with the City's Green Square Public Art curator and approval by City of Sydney. The Green Square Public Art Strategy outlines the process and opportunities for the Green Square Public Art program.

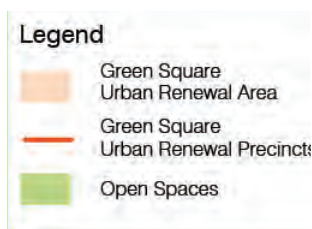


REFER

[Lachlan Public Domain Strategy](#)



Figure 23 Green Square Urban Renewal Context Area



The city palette – Streetscape context areas

Green Square - urban renewal area



Main street palette for retail /commercial areas



Shared zone/ slow street typologies for pedestrian friendly public domain



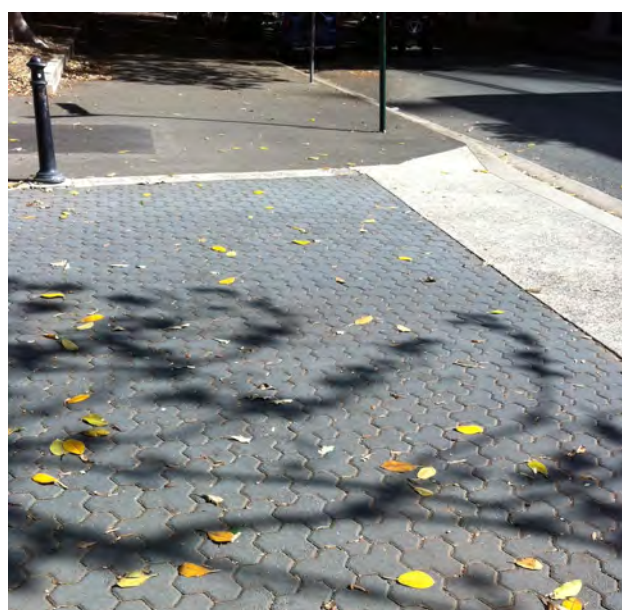
City furniture palette



Bioswale/ WSUD treatments



Separated cycleways



Continuous footpath treatments



Maximise tree canopy and greening

D9 Urban renewal areas

D9.3 Ashmore precinct

Site overview

Ashmore Precinct is located in Erskineville and on the border of Alexandria. The 17 hectare site will comprise of new residential neighbourhood consisting of terraces, apartments, and live-work accommodation with local shops and cafés. The site is bounded by Ashmore Street, Mitchell Road, Coulson Street and the Bankstown rail line.

Streetscape character

The street network will consist of a main east west street (Macdonald Street) and a north south street that provides connections to the surrounding area as well as accommodate stormwater functions, local access streets, and laneways that will be either shared zones or fully pedestrianised.

A retail area with cafes will be next to a new large park, providing a focal point for residents.

Paving and materials

A Public Domain Strategy and Concept Design Plan have been prepared by the City of Sydney for the Ashmore Precinct.

Paving and public domain elements based on the **City Main Street and Local Area palette** will be used to reinforce the hierarchy and character of streets in the Precinct.

Use of the Code's Local Area palette will provide integration with the surrounding neighbourhoods. Brick paving will be used to characterise the precinct and to reinforce the main street connections, activity nodes and pedestrian areas. Shared Zone treatments will include use of concrete interlock pavers.

Water Sensitive Urban Design elements including bioswales and raingardens will also be a defining feature of some streetscapes.

Furniture specification

The Standard City Palette.

Street trees and landscaping

Street Trees are in accordance with the Street Tree Master Plan 2011, with the future Public Domain Strategy, and the concept design for Ashmore Precinct.

Public art

In locations deemed appropriate public art proposals will be developed in liaison and approval by City of Sydney.

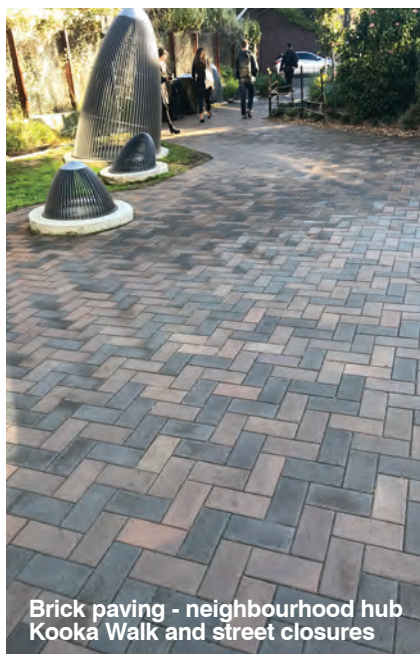


REFER

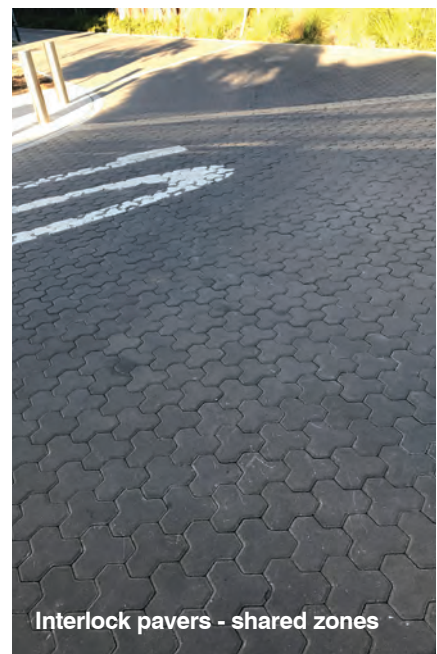
[Ashmore Precinct](#)



Insitu concrete footpaths



Brick paving - neighbourhood hub
Kooka Walk and street closures



Interlock pavers - shared zones

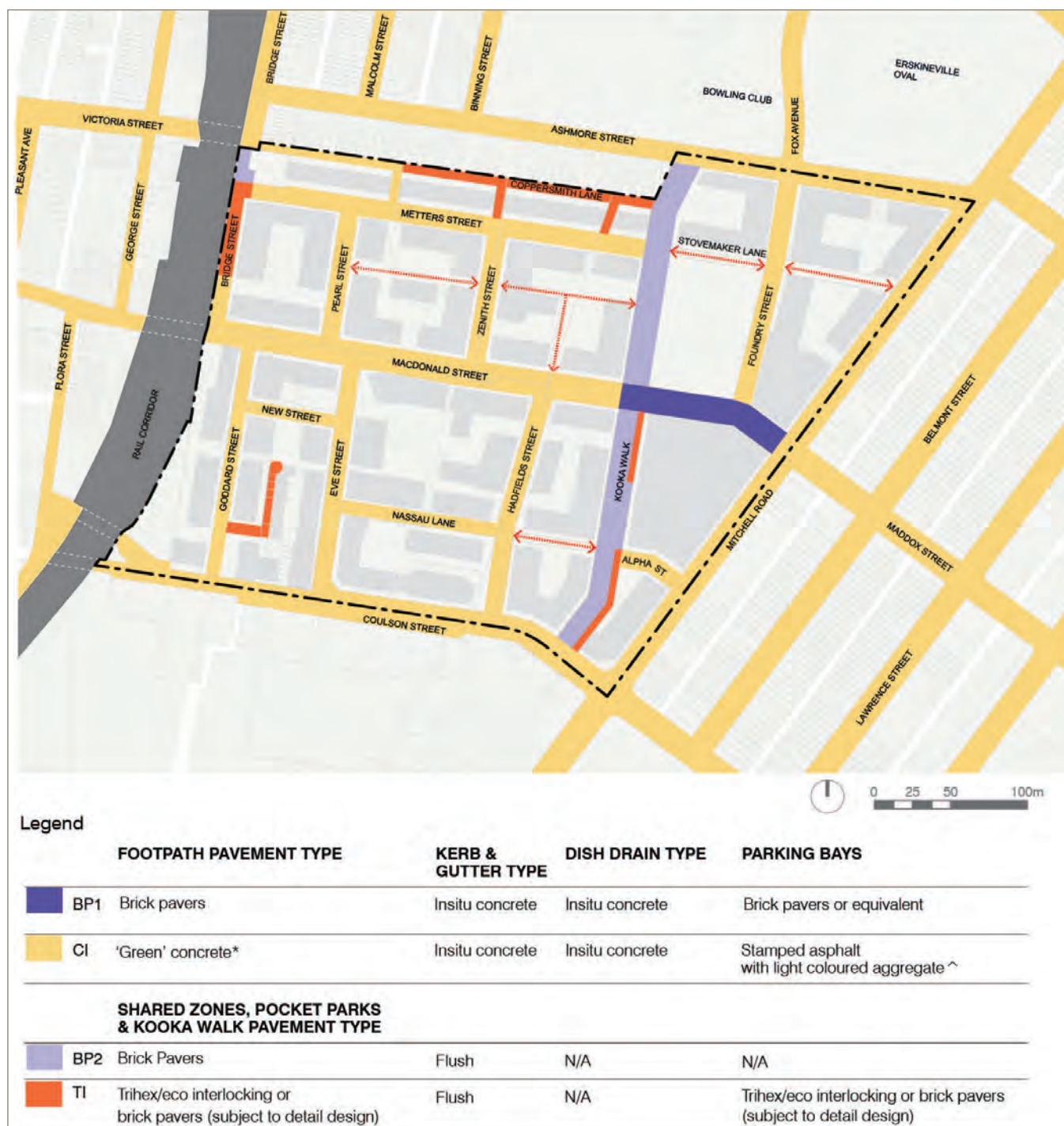


Figure 24 Ashmore Precinct Palette Green concrete refers to sustainable concrete mixes as specified the street technical manual

D9 Urban renewal areas

D9.4 Harold Park

Site overview

The Harold Park urban renewal project is in Forest Lodge, near Glebe and Annandale on the former Harold Park Paceway site.

The City adopted planning controls Sydney Development Control Plan (Harold Park 2011 include provision of a new street network and dedication of 3.8 hectare parkland that will link with surrounding suburbs and Bicentennial, Federal and Jubilee Parks.

Streetscape character

A new network of streets will be delivered that complements the adjacent street network and responds to key pedestrian and bicycle desire lines (principally Ross St to Jubilee Park). Streets will be designed to create a high quality pedestrian and pedestrian amenity and low vehicle speeds.

Water Sensitive Urban Design in the form of the bioswale medians and raingardens will be a feature of the street network.

Paving and materials

The Local Street palette will be applicable to footpath treatments with brick paving being the characteristic pavement of the precinct.

Furniture specification

The Local Areas Standard Palette applies.

Street trees and landscaping

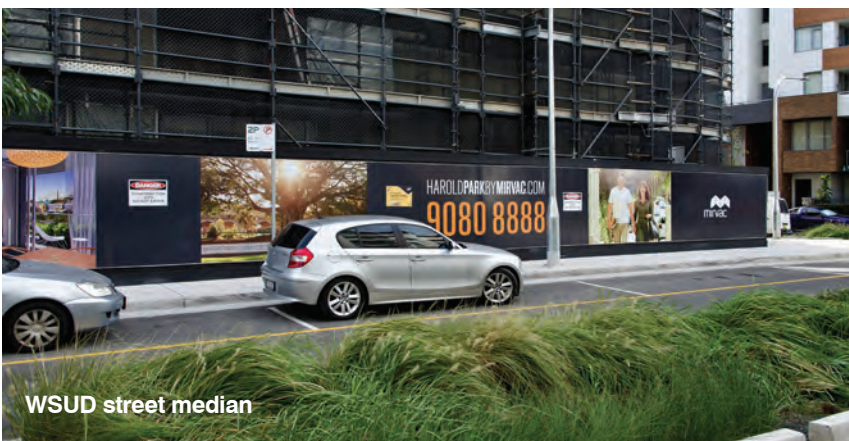
Street Trees are in accordance with the Street Tree Master Plan 2011, with the future Public Domain Strategy, and the concept design for Harold Park.

Public art

Public art proposals required by planning consent will be developed in liaison and approval by City of Sydney, refer to The Draft Public Art in New Development Policy and Guidelines 2013.



Figure 25 Harold Park Paving Materials Plan



D9 Urban renewal areas

D9.5 Central Park

Site overview

Central Park occupies nearly 6 hectares on the site of the former Carlton and United Brewery on Broadway. It is a mixed use urban development project that will include commercial, retail, cultural and residential components. Chippendale Green, a large public park on the northern fringe of O'Connor Street, approximately 6,500 m² is size includes a significant component of public artwork.

Streetscape typologies

The development includes the delivery of new streets for local access as well as the upgrade and renewal of existing streets and laneways that comprise the boundaries of the precinct.

A main walking and cycling link will run through the centre of the park connecting Balfour Street in Chippendale across to Broadway.

Paving and materials

Palette selection will include City Centre treatment for the Broadway frontage and Balfour Street entrance into the precinct. The Commercial/Mixed Use street palette will define the majority of streetscape treatments. Local Area use of brick paving interlock pavers will define smaller scale laneways streets that interface with the existing neighbourhood.

Furniture specification

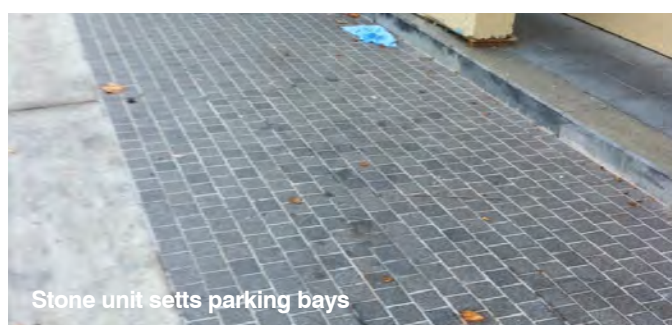
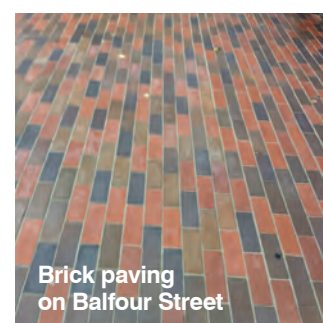
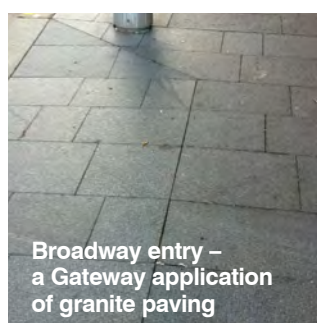
City of Sydney Standard Palettes appropriate for street type for public domain owned by City of Sydney.

Street trees and landscaping

Street Trees are in accordance with the Street Tree Master Plan.

Public art

The precinct has a number of significant public art works guided by the Central Park Public Art Strategy.



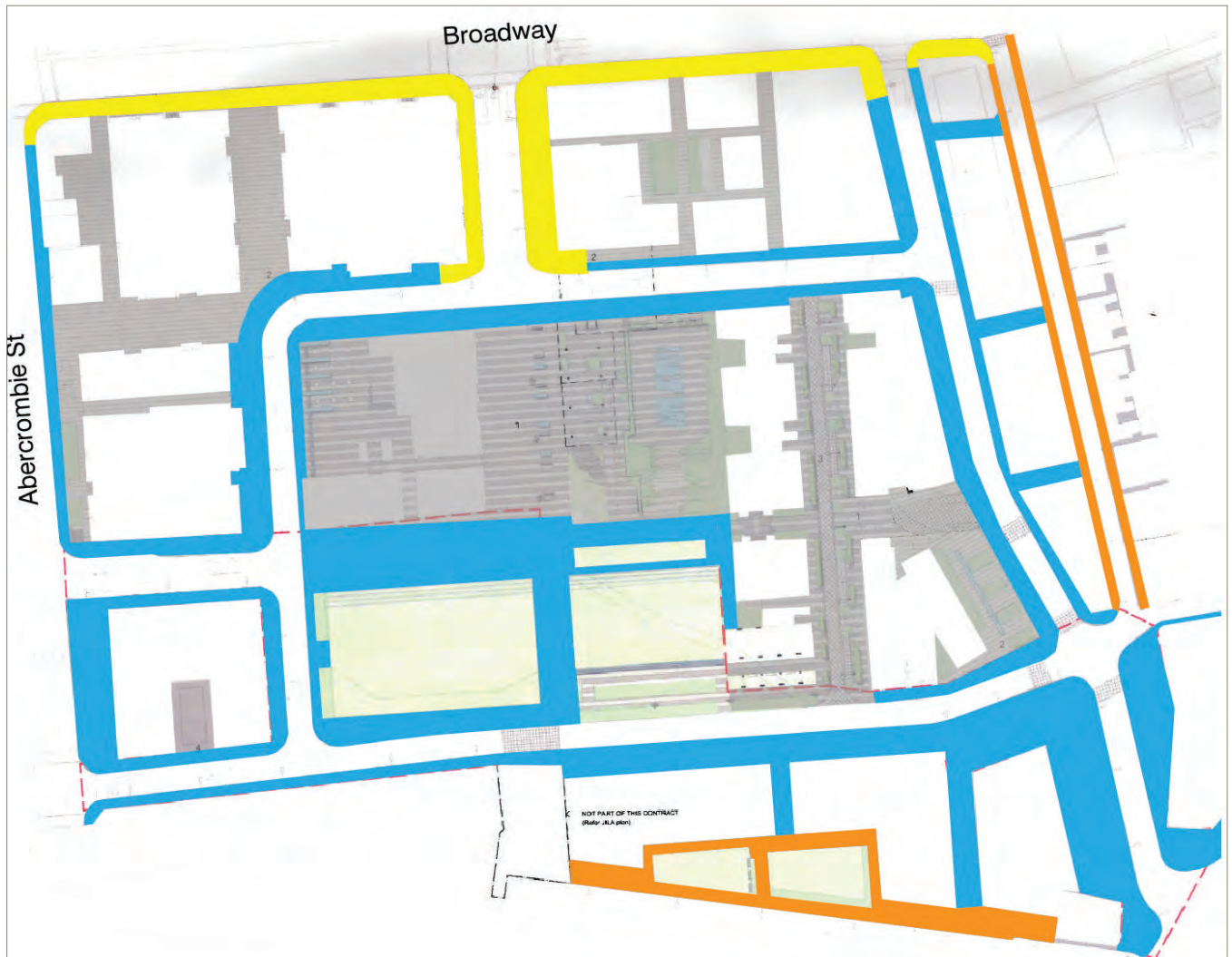


Figure 26 Central Park Paving Plan

Materials Application
Legend

- City Centre and Gateways
- Village main street palette
- Local Area (Brick

D9 Urban renewal areas

D9.6 Barangaroo

Site overview

Barangaroo is a large-scale urban development located along the western harbour between King Street Wharf and Walsh Bay. The project delivery is managed by the state government through the Barangaroo Delivery Authority.

Streetscape typologies

The development will include provision of new streets, waterfront promenade, public spaces and parkland.

Within the context of the Code, the Barangaroo precinct is largely a Distinctive Place with specific public domain outcomes developed by the Barangaroo Development Authority through its Barangaroo Public Domain Technical Manual.

However from the City's perspective the materials palette should link to surrounding City streets. East west street links and The Hungry Mile should reflect the City Centre design palette, and within the site north south streets and waterfront areas there are opportunities to reflect an unique Barangaroo character.

Paving and materials

The palette selection includes city centre treatments of granite paving and smartpoles for streets, with distinctive place treatments along the waterfront. The interface areas at Munn Reserve, Towns Place, Argyle Street are within a heritage precinct and a sensitive approach to new work and materials has been undertaken.

Furniture specification

Use of the City's Standard public domain furniture and wayfinding elements is encouraged throughout the precinct.

Public Art

The City's City Art - Public Art Strategy 2011 stress the importance of connectivity between Barangaroo and the City Centre. Public art has the potential to strengthen these connections.

D9.7 Hickson Road

Hickson Road is wide street that will undergo significant change with the redevelopment of Barangaroo and metro station. The City is advocating for a high quality boulevard that includes:

- use of city centre palette;
- pedestrian amenity both sides of street;
- active street frontage and outdoor use along western side;
- separated cycle lane;
- maximise a balanced urban canopy on both sides of street;
- explore creative lighting opportunities for eastern escarpment and tree canopy;
- water sensitive urban design;



Figure 27- Barangaroo Concept Master Plan



D9 Urban renewal areas

D9.7 Street design in State government planned urban renewal areas

The redevelopment of these large sites will result in a significant intensification of land use, placing much higher demands on the streets, particularly from pedestrians.

Streets must be designed to be highly functioning and multi-purpose, accommodating space for pedestrians and cycle movement, space for public life including public seating and outdoor dining, standard street furniture, trees and planting.

Incorporation of WSUD into the street network will also place a high demand as many of the urban renewal areas are flood affected.

Vehicular movements and volume should be minimised in the efficient planning of the streets and circulation across each precinct, in order to maximise the potential of streets to serve the environmental, movement and social needs of the people who will live and work in the area.

It is expected that a hierarchy of streets will be delivered, from traditional profiles to shared zones.

The appropriate location and width of streets will be informed by:

- connections to existing surrounding network of streets, lanes and through site links
- public domain strategy identifying key pedestrian and cycle connections, public places and areas of activity, street hierarchy
- tree strategy including retention of significant existing trees
- traffic and transport strategy
- WSUD strategy
- built form strategy including:
 - distribution and type of land uses; and
 - building heights and form

Principles for setting out street alignments in urban renewal areas:

- align new streets so that they provide clear, legible and functional connections with the surrounding existing street network.
- allocate appropriate footpath space for each type of street as per the space allocation guidance set out in this streets code (insert ref location?)
- precinct-wide traffic strategy designed to manage access for public transport, service vehicles, share cars and private cars. the strategy should allocate traffic movements in each street in such a way that vehicle movements and volumes are minimised, conflicts with pedestrians and cyclists are avoided and pedestrian movement and safety is prioritised.
- ensure that adequate space is provided for pedestrians standing at intersections
- ensure that parks have a street edge on all sides.
- provide extra space at public transport nodes including stations and light rail stops.
- provide adequate space for collection and management of stormwater, including various wsud measures, and in appropriate locations as per a precinct-wide wsud strategy.
- provide a hierarchy of streets that have a different levels and types of activity, in conjunction with ground floor building uses.
- provide appropriate frontage and address to buildings according to type and use, allowing additional space on commercial or mixed use streets.
- provide adequate width in proportion to the height of buildings, to ensure sunlight and daylight will reach the street level.

Subdivision alignments should be informed by street width and alignment as established by the principles above.

Key streetscape considerations:

- highly permeable streets connected to existing city street network
- promote pedestrian and bicycle priority
- create street hierarchy and legibility through use of city palette;
- universally accessible;
- space to accommodate green infrastructure - street trees, WSUD;
- spaces for social interaction and public life.

D9 Urban renewal areas

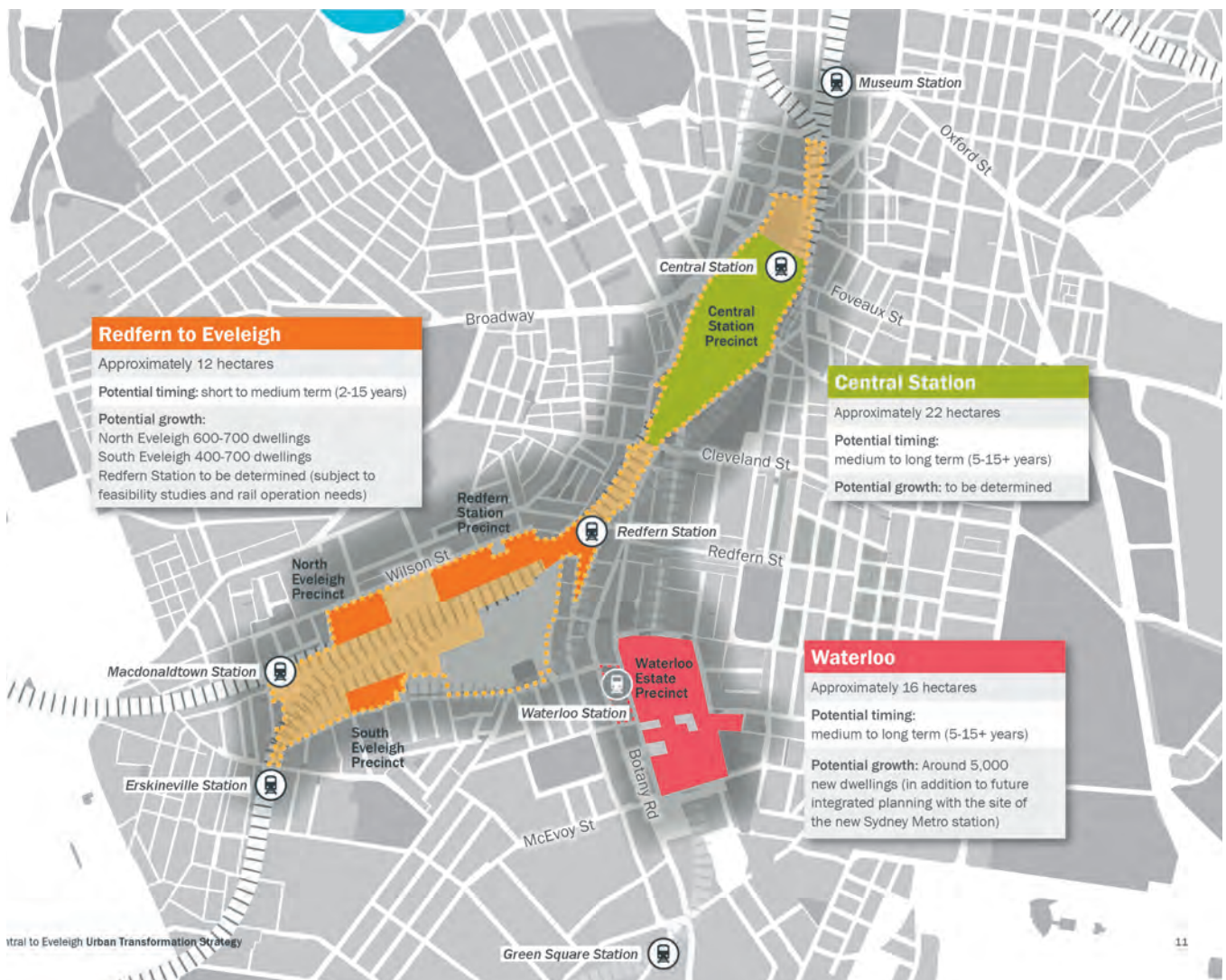
D9.8 Central to Eveleigh

The Central to Eveleigh Transformation Program is a 30-year project that aims to gradually transform 80 hectares of largely under-used government owned land in and around the rail corridor from Central to MacDonalddtown and Erskineville stations. It includes renewal of social housing estates at Waterloo, Redfern, and South Eveleigh, through the replacement of existing social housing and adding new market housing. Growth scenarios range up to 28,000 new dwellings and 56,000 new residents, with between 14,000 to 25,000 new jobs.

Key streetscape considerations

- highly permeable streets connected to existing city street network
- promote pedestrian and bicycle priority
- create street hierarchy and legibility through use of city palette;
- universally accessible;
- space to accommodate green infrastructure - street trees, wsud;
- spaces for social interaction and public life.

Figure 28 Central to Eveleigh Precinct Areas



D9 Urban renewal areas

D9.9 Waterloo Estate

The Redfern and Waterloo urban renewal areas are primarily state owned developments. The existing streets are owned and managed by the City and it is expected that any future streets will also be owned and managed by the City..

Streetscape typologies

It is envisaged that the proposed development will be mixed use, dominated with residential uses to the eastern edge of the site and commercial uses along the western boundary at Botany Road and above the future Metro Station.

George Street will be a major pedestrian / cycle street that will form the main north south spine of the estate. Local streets within the development will be a combination of slow streets, shared zones and pedestrian only street typologies..

Paving and materials

Concrete unit paver with bluestone kerbs on primary mixed use streets, streets with transport functions, including Botany Road, Cope Street, Raglan Street, Wellington Street, and George Street.

Furniture

Bronze City Palette for smart poles, seats and bollards.

Street tree and landscaping

Maximising tree canopy and greening within the streetscape will be a key objective.

Existing significant trees should be retained and buildings set back from the street as required to accommodate the canopy and root zone.

Public art

A Public Art Strategy should be prepared for the precinct and submitted to the City for approval.



REFER

[Waterloo Precinct](#)



Figure 29 The City's alternative approach for the Waterloo housing estate features buildings of 12 to 13 storeys on the streets around a 2.2 hectare park with plenty of sun. The majority of the rest of the buildings will be 7 to 8 storeys



Figure 30 The City's approach would see a widened, tree-lined George Street in Waterloo designed to be safe for people walking and riding bikes. It will be lined with buildings of 7 to 8 storeys with shops and cafes on the ground floor.

The city palette – Streetscape context areas

D9.8 Bays precinct

The Bays Precinct consists of 5.5 kilometres of harbour front, 95 hectares of mostly government-owned land, and 94 hectares of waterways. Urban transformation at the Bays Precinct is a one-off opportunity to create high-quality waterfront destinations, workplaces, public spaces and promenades that will shape the inner-harbour for now and for future generations. Urban Growth propose to deliver the Bays Precinct as 8 distinct destinations, in accordance with the Bays Precinct Transformation Plan. (October 2015).

Key streetscape considerations

- highly permeable streets connected to existing city street network and waterfront;
- promote pedestrian and bicycle priority
- create street hierarchy and legibility through use of city palette;
- universally accessible;
- space to accommodate green infrastructure - street trees, wsud;
- spaces for social interaction and public life.

Figure 31 Bays Precinct Destination and Linkages





View to Bays precinct from Pyrmont

Part E

Street design requirements

The design and composition of all elements within the street is a significant contributor to the character and appearance of a place as well as providing an accessible and comfortable public domain.

Street design requirements



E1 Street design requirements

E1 Introduction

E2 Key considerations

- E2.1 Design co-ordination
- E2.2 Accessibility
- E2.3 General street layout and space prioritisation
- E2.4 Street Space allocation frameworks
- E2.5 Pedestrian network amenity
- E2.6 Cycle network provision
- E2.7 Environmental sustainability
- E2.8 Designing with Country
- E2.9 Heritage
- E2.10 Stormwater and flood management





Contents

Part E

Street design requirements

The design and composition of all elements within the street is a significant contributor to the character and appearance of a place as well as providing an accessible and comfortable public domain.

E1 Introduction

The design and composition of all elements within the street is a significant contributor to the character and appearance of a place as well as providing an accessible and comfortable public domain.

The City requires a design approach that considers the multi faceted role streets play in our environment beyond the movement function.

This section is divided into sub chapters to provide ease of reference for different streetscape components and requirements.

This section must be read in conjunction with the Sydney Streets Technical Specifications. Within this section, the blue boxes (shown left, relate to the chapter reference numbers within the Technical Specifications.

Where relevant this section includes Objectives for Access which define the access outcome to be achieved for particular streetscape components. Performance Standards provide additional specific design guidance on access requirements for various streetscape components.



REFER

Refers to relevant document and weblinks that will provide further guidance on City requirements



[Sydney Streets technical specifications](#)

This section must be read in conjunction with the Sydney Streets Technical Specifications. Within this section, the blue boxes (shown left, relate to the chapter reference numbers within the Technical Specifications.

E2 Key considerations

E2.1 Design co-ordination

A primary factor resulting in sub-standard documentation and constructed outcomes is poor co-ordination between design disciplines involved with a streetscape project .

Design co-ordination is a process to ensure the review and communication necessary between design professionals. Attention to this process will minimise the incidence of errors, omissions and inconsistencies to achieve the best constructed outcome for a streetscape project. In many cases adjoining new development and interface treatments need to be considered as part of project scope.

Key co-ordination tasks include assessment of alignment levels to adjoining built form and streets, review of proposed location of underground services, service pits, lighting , furniture, signage ,utility kiosks for any detrimental impacts to visual amenity, accessibility, and existing or the location of proposed trees.

The location and feasibility of street trees are frequently compromised in the design and delivery process due to poor design co-ordination.



E2 Key Considerations

E2.2 Accessibility

The Streets Code is informed by the principles of inclusive participation and equitable and dignified access

Where full compliance accessibility requirements cannot be achieved, the following decision making framework should be applied.



REFER

[Inclusive and Accessible Public domain Policy and Guidelines](#)



E2 Key Considerations

Principles for addressing complex design scenarios

Maximise Compliance

Where full compliance is not possible, ensure the design complies with as many of the relevant performance standards and access standards set out in this Code and Inclusive and Accessible Public Domain Guidelines as is practicable:

- document the reasons why full compliance could not be achieved. They may include but are not limited to competing interests arising from issues of risk, safety, security, heritage, space constraints, engineering constraints, cost constraints, aesthetic design objectives, topography and public domain boundaries.

Alternative Solutions

Where full compliance with the performance standards is not possible, consider an alternative solution. This alternative solution:

- must be informed by the principles of the public domain access and inclusion policy
- must meet the relevant objectives as defined by the guidelines/design code, and
- may include non-design solutions, for example, management strategies which provide equitable access.
- where alternative solutions are used, document the decisions around which alternative solution was used.

Further Advice

In circumstances where an alternative solution cannot be identified, seek further independent advice. Sources include:

- Independent Access Consultants
- peak bodies representing people with disability (see Appendix 1-Inclusive and Accessible Public Domain Guidelines)
- City of Sydney's Inclusion (Disability) Advisory Panel
- City of Sydney's Design Advisory Panel
- Fire, Access and Safety Panel

Where barriers remain

Where access barriers in the public domain cannot be addressed through design or alternative solutions, ensure quality information is provided about the level of access available, so that people with disability can make informed decisions about their journey. This can be through:

- appropriate precinct signage
- wayfinding signage
- online information about access features and barriers in the public domain and route planning tools.

Figure 32

E2 Key considerations

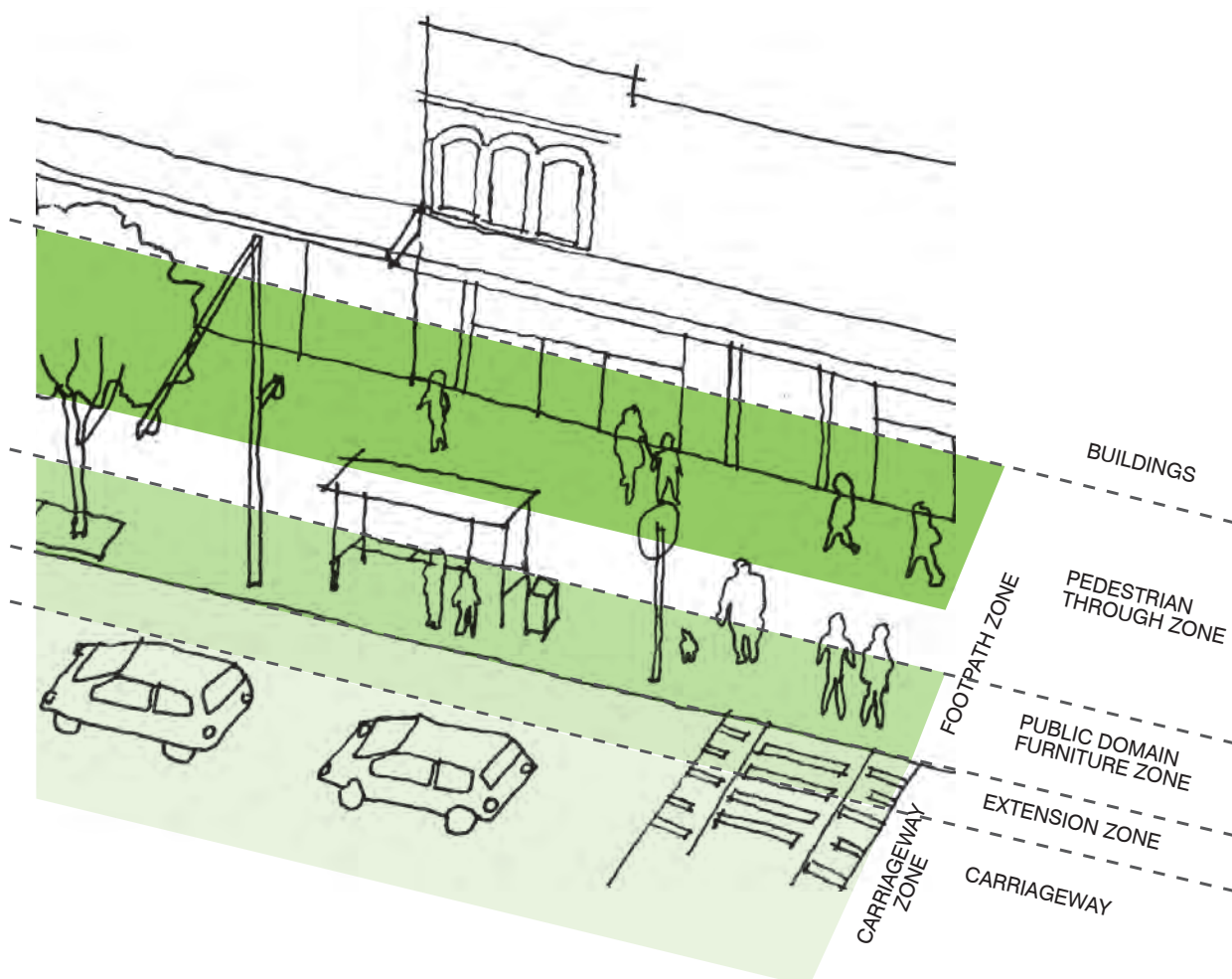
E2.3 General street layout and space prioritisation

Broadly, a common streetscape consists of:

- the public footpath zone; its width, spatial layout, physical finishes, furniture and landscaping treatment; (Refer E.3
- the buildings; framing the street corridor and setting up a transition zone from public to private; and
- the carriageway; its width, use, surface treatment and volume of traffic flow. The carriageway can also include dedicated cycleway lanes.

The indicative streetscape figure 33 further illustrates the relationship of these zones and their contribution to the quality of the public domain.

Figure 33 Cross section showing the street zones and reflecting space allocation considerations.



E2 Key considerations

E2.4 Street space allocation frameworks

To develop a street layout the consideration of function, place, access, environment and infrastructure, all combine. Through careful consideration of all elements within the streetscape, life and vitality is created in the public domain.

Most streets have limited space and many competing functional uses that need to be considered for a streetscape design project.

Although streets differ in their function and character maximising opportunities for walking, safe cycling and social interaction is a priority.

A Movement and Place framework. can assist in making space allocation decisions that includes consideration of :

- available pedestrian and vehicle through movement space;
- anticipated pedestrian volumes;
- opportunities for sitting/ dwelling spaces;
- anticipated traffic volumes and speeds;
- safety and accessibility for all users;
- anticipated public transport function;
- anticipated cycleway use;
- street tree canopy and landscape including adequate space for soil volumes and
- necessary street infrastructure including WSUD.

Each street will vary depending on its unique balance of all functions and require individual assessment and approval by the City.

Another useful framework to develop project objectives is **Healthy Streets**. The Healthy Streets Approach puts people and their health at the centre of decisions in the design, management and use public spaces.

The Approach is based on 10 Indicators of a Healthy Street which focus on the experience of people using streets. (Figure 34)

Based on these frameworks the City will develop street space allocation criteria for use in design of streets which will be included in future Code updates when available.



REFER

C3 Movement and Place
[Movement and Place](#)



Source: Lucy Saunders

Figure 34 - Healthy Streets Framework



REFER

[Healthy Streets](#)



1 Pedestrians

The number one priority for all streets is to provide pedestrian space that is safe and accessible for all.

2 Street trees

There should be a presumption for street trees in all streets.

3 Infrastructure

Most streets will require lighting, generally from power poles or mounted to buildings if space is very tight.

4 Parking and loading

On-street parking and loading zones need to be considered in areas for local business, retail and residential.



5 Seating and outdoor dining

Streets with high activity, food and beverage uses need to provide additional footpath space allocated for public seating and outdoor dining.

6 Additional social and ecological uses

Any additional space should be used for social and ecological uses such as, rain gardens, landscaping and seating.

7 Cyclists, public transport, vehicles

The aim for motor vehicle movement is to provide the minimum possible space to support through movement, at safe traffic speeds. For streets nominated in the City of Sydney Cycle Strategy and Action Plan 2018-2028, space to be allocated for separated cycleways.

When there are low volumes of traffic assessed, and a lack of space separation for balance between pedestrian and vehicle movement, a Shared Zones should be considered.

E2 Key considerations

E2.5 Pedestrian network amenity

The Walking Strategy and Action Plan prioritises key actions to support people of all ages to walk more, boosting the local economy and people's health. It is designed to make walking quicker, more convenient, inviting and easy. A crucial component is the delivery of infrastructure to create a comprehensive, connected, high quality pedestrian network.

The Liveable Green Network provides the basis of the City's pedestrian network planning to ensure that streets connect pedestrians to the city centre, between villages and major open space and recreation opportunities.

Development of the pedestrian network will largely be undertaken through current project programs developed for the Pedestrian Cycling and Traffic Calming (PCTC) plans, main street upgrades, pedestrian lighting program, Greening Sydney Program, wayfinding signage program, footway improvement programs, and street furniture program.

In urban renewal areas such as Green Square the planning controls will deliver new streets that further develop and link the network across the City.



REFER

[Walking strategy and Action Plan](#)



Village Main Street Improvements



E2 Key considerations

E2.6 Cycle network provision

The City is committed to making bicycle transport easier and safer, to make it attractive and feasible for more people.

Our Sustainable Sydney 2030 target for 10 per cent of all trips in the city to be made by bike. This strategy builds on the progress made over the last 10 years in developing the network and keeps us moving toward this target.

The City's bicycle network as detailed in **Toward a City for Cycling - Cycling Strategy and Action Plan 2018-2028** (consists of local and regional routes along separated cycleways, shared paths and low-traffic streets. These connect popular destinations in and beyond our local area.

The range of bicycle infrastructure that is being rolled out to deliver the network that has implications on street layout and design includes:

- separated uni and bi directional bicycle lanes
- shared paths
- marked lanes on roads
- bicycle parking
- wayfinding signage.

“Light touch” cycleway treatments that involve minimal adjustment of existing kerbs and drainage works will be a focus by the City for many projects to deliver cycle connections faster. This will include the use of precast concrete separators.

The City's cycling team will advise on the infrastructure requirements for each project.



“Light touch” cycleway treatments

Cycle guidelines under preparation include a range of cycleway treatments to inform streetscape design including:

- Cycleway Typologies
 - separated cycleways
 - local connections
 - signalised intersections
 - bend out intersections
 - shared path environment
 - protected
- Other treatments
 - bus stops
 - loading zones
 - tree diversions
 - driveway crossovers
 - lighting
 - shared path linemarking guide
 - bicycle network directional signage masterplan.

The guidelines when available be included in updates to this Code.



REFER

[Cycling Strategy and Action Plan](#)



[Sydney Streets technical specifications](#)

C3



Figure 35 Proposed regional bike network map

**REFER**

City of Sydney Toward a City for Cycling. Cycling Strategy and Action Plan 2018-2028.

Street design and coordination





E2 Key considerations

E2.7 Environmental sustainability

The importance of considering the environmental impacts of materials

Materials selection is an important aspect of the City of Sydney's commitment to environmental sustainability. Material selection, from the concept development and early design stage right through to manufacture and installation, should be informed by the 'circular economy' approach: The circular economy is based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems.

The materials used for City of Sydney assets and infrastructure, should endeavour to: incorporate recycled content, be recyclable at end of life, not contain hazardous materials, not be energy intensive in the manufacture phase, be durable and, if containing timber elements, use only environmentally certified timber where the source of the timber is known and verifiable.

An evidence base should be available to support environmental performance claims made by materials providers and manufacturers rather than reliance upon generic statements ('green', 'environmentally friendly', 'environmentally safe'). The Australian Competition and Consumer Commission provides useful guidance in relation to environmental performance claims.

The promotion of design innovation /solutions that address urban heat at street level.

The Urban Heat Island (UHI) effect is a well-established phenomenon whereby an urban area is significantly warmer than its surrounding areas due to human activities. The Cooling Sydney Strategy address the need to 'live with our climate'. The report provides urban overheating mitigation recommendations based on in-depth research conducted by the Cooperative Research Centre for Low Carbon Living (CRCLCL) and the University of New South Wales (UNSW).

Designing for the known impacts of climate change

Across the Sydney metropolitan area rainfall events are confidently predicted to become less frequent as a result of locked-in climate change impacts. But when storms occur they will may be more intense.

There will be an increase in the number of extreme heat days (where temperatures exceed 35 degrees Celsius) per year and more frequent and extended heatwave events (three or more days of high maximum and minimum temperatures that

are unusual for the location).

Storm events are likely to intensify – meaning heavier rainfall, stronger winds, stronger gusting and larger hail events.

In designing street infrastructure the City and its service providers must factor in these known changing conditions to ensure materials and structures can cope with these more extreme conditions.

Green infrastructure utility provision

Streets provide the means to accommodate underground utilities for distribution of recycled water or renewable energy to connected properties. As the distribution networks become more widespread there will be requirements for selected streets to accommodate additional utilities in order to future proof the network.

The City's Decentralised Water Masterplan promotes future development of the City's recycled water network as an environmental initiative to reduce the city's reliance on potable water and prepare the city for future drought events which may be more severe with climate change.

As part of this plan the George street light rail project will accommodate a recycled water pipeline which will form the basis of a distribution network in the city centre.

REFER



[Cooling Sydney Strategy](#)



REFER

E.7 - Environmental sustainability



E2 Key considerations

E2.8 Designing with Country

The City's Eora Journey is a visionary project that celebrates the living culture of the Aboriginal and Torres Strait Islander communities in Sydney

The Recognition in the Public Domain program component of the Eora Journey aims to recognise and celebrate the culture and practices of Aboriginal and Torres Strait Islander people in the public domain of the City of Sydney local government area.

Drawing on inspiration from the Eora Journey it may be appropriate to consider a response to Country and culture in the design process when preparing a brief for a public domain and streetscape project.

Designing with Country processes are not possible without engaging with and guided by Aboriginal community and recognised knowledge holders.

The Government Architect NSW have released a discussion paper **Designing with Country** that encourages all stakeholders – designers, clients, communities, planners and developers – to consider how they respond to Aboriginal cultural connections to Country when they are designing and planning new projects.

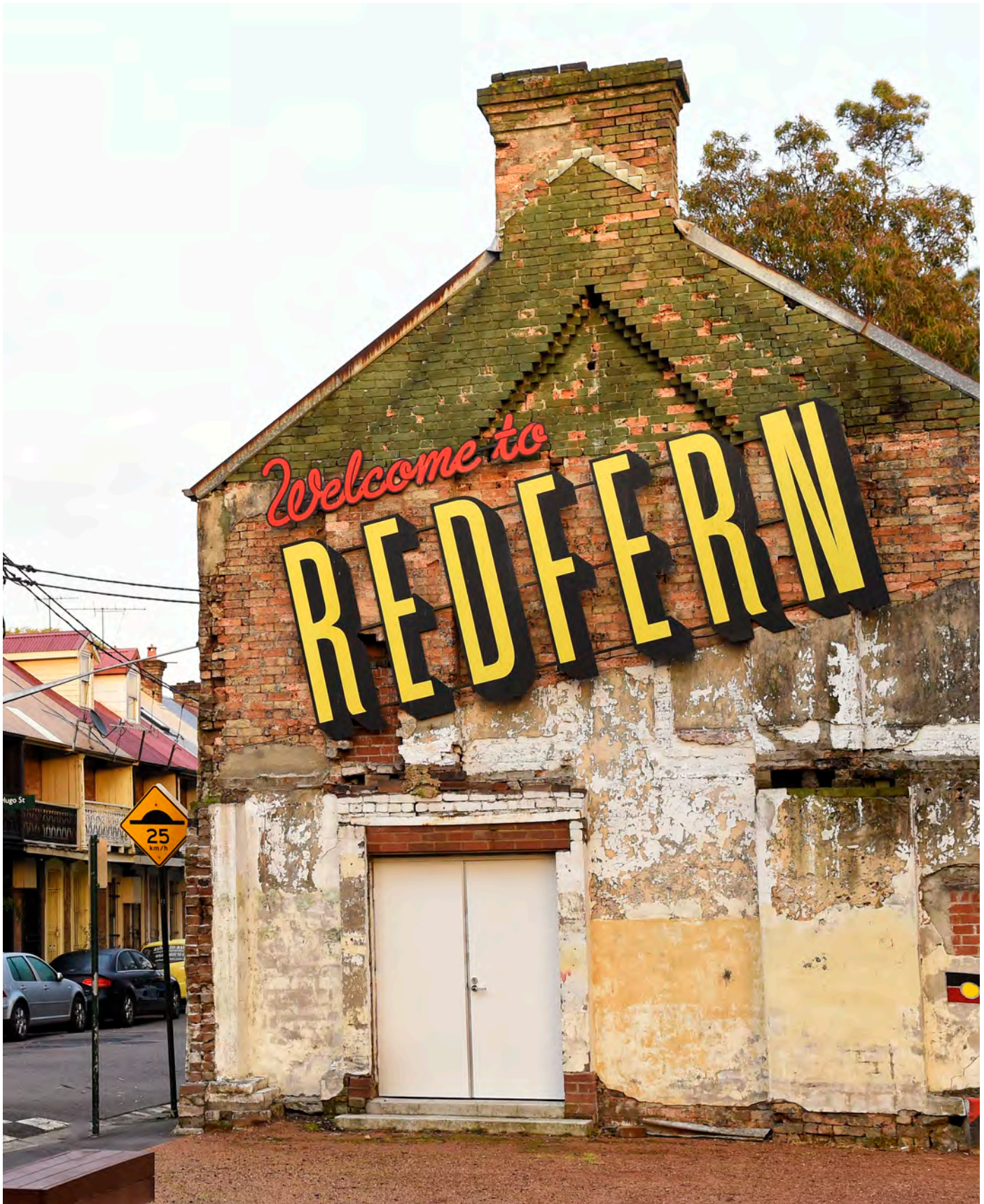
In addition **The Australian Indigenous Design Charter** launched in 2018 aims to facilitate accurate and respectful representation of Australian Aboriginal and Torres Strait Islander culture in the design process.



REFER

[Design with Country Government Architect NSW](#)

[Eora Journey](#)



Welcome to Redfern - artist Reko Rennie

E2 Key considerations

E2.9 Heritage

Retention of heritage features

Many City Streets contain unique heritage features that reinforce a sense of place and local identity. These can include stone kerbs and gutters, heritage stone setts and cubes, turpentine paving blocks, street name signage, carriageway steel inserts, steel angle bars to protect kerb faces, central stone dish drains, cast iron service pit lids, light blocks to basements, and old style furniture and signage elements.

When undertaking upgrade and asset renewal works there is a need to ensure that heritage elements are identified and assessed for retention or reuse as part of the new works. Salvaging items for recycling and reuse in other projects also needs to be considered.

Kerbs/gutters

The City of Sydney has a legacy of heritage stone kerbs in trachyte, bluestone and sandstone that makes an important contribution to the streetscape character and sense of place. Key design coordination considerations for use of heritage kerbs use include:

- where possible retain and consolidate existing stone kerb in-situ;
- lift/repair/reset existing serviceable stone kerbs during upgrade works;
- where possible replace damaged sections from the city of sydney stockpile of trachyte and sandstone; and
- where possible (dependant on availability retain and provide additional sandstone, trachyte, austral verde or bluestone kerb to match adjoining to create continuous sections of stone kerb material that is not interrupted by concrete kerbing.



REFER

[City of Sydney Heritage Guidelines](#)



Skittle Lane

E2 Key considerations

E2.10 Stormwater and flood management

Under the NSW Government's flood prone land policy the City is required to manage flooding issues and put plans into place to safeguard flood-prone areas.

In response to this requirement Council endorsed its draft interim floodplain management policy in May 2014 and has developed floodplain management plans for the City of Sydney

The plans include flood mitigation measures and what can be done to help affected areas.

Changes to existing road geometry such as reducing vehicle lanes, provision of continuous footpath treatments, medians or elimination of raised kerbs may have implications on stormwater and flood management for an area by changing runoff patterns and the stormwater storage capacity afforded by a kerb and gutter street.

It is critical that streetscape proposals are assessed to ascertain any impact on existing stormwater runoff and flooding implications on neighbouring properties, or public safety.

Assessment of stormwater and flood management will inform project scope including need to increase capacity or replace ageing stormwater pipes, and additional pit requirements.

The design and location of all drainage components must be visually unobtrusive and integrated with site landscaping to ensure they do not detract from the visual amenity of the streetscape.

Water sensitive urban design provides opportunities to maximise infiltration, irrigate landscape areas and rain and clean stormwater prior to release into the system.

Flood models

The City has an extensive suite of flood models that were developed to prepare the flood studies.

Applicants can make a formal request to access the flood models for a small fee and subject to a data sharing agreement.



REFER

[City of Sydney Floodplain Management](#)



E4 Footpaths

- E4.1** Footpath zone space requirements
- E4.2** Footpath zone access & inclusion requirements
- E4.3** Footpath paving material selection guidance
- E4.4** Footpath paving design quality outcomes
- E4.5** Footpath paving interface and transition treatments
- E4.6** Footpath continuity treatments
- E4.7** Shared pathways
- E4.8** Stairs and ramps
- E4.9** Driveway crossovers and widths
- E4.10** Kerb ramps
- E4.11** Kerb extensions
- E4.12** Tactile ground surface indicators
- E4.13** Lifts
- E4.14** Bridges with pedestrian facilities



Footpaths



E4 Footpaths

The City aims to create streets with high standard footpaths that provide for pedestrian movement as well as space for sitting, eating and socialising.

The footpath zone comprises the following spaces that provide specific functions. (Figure 35)

Building Interface Zone. This zone forms a transition from the public to the private built form facade and its interface with the footpath.

This interface area provides a shore line for people who are blind as well as opportunity for people to gather, window shop and engage in conversation.

Pedestrian Through Zone is an area to provide for the Continuous Accessible Path of Travel and must be clear of obstacles including street furniture, street trees, outdoor dining and driveway ramping.

Public Domain Furniture Zone acts as a buffer between the active pedestrian through zone and street traffic. Street furniture, trees and other landscaping, street lights, signage and other furnishings should be consolidated in this zone. The zone also has the potential to be utilised for outdoor dining. Consideration also needs to be made for people accessing parked cars.

Extension zone

refers to the specific conditions where the footpath extends into the parking lane through kerb extensions. The extension zone may accommodate landscape treatments, seating, street furniture and outdoor dining.

Kerb zone

Refers to the zone approximately 600mm between the kerb edge and Public Furniture Zone.

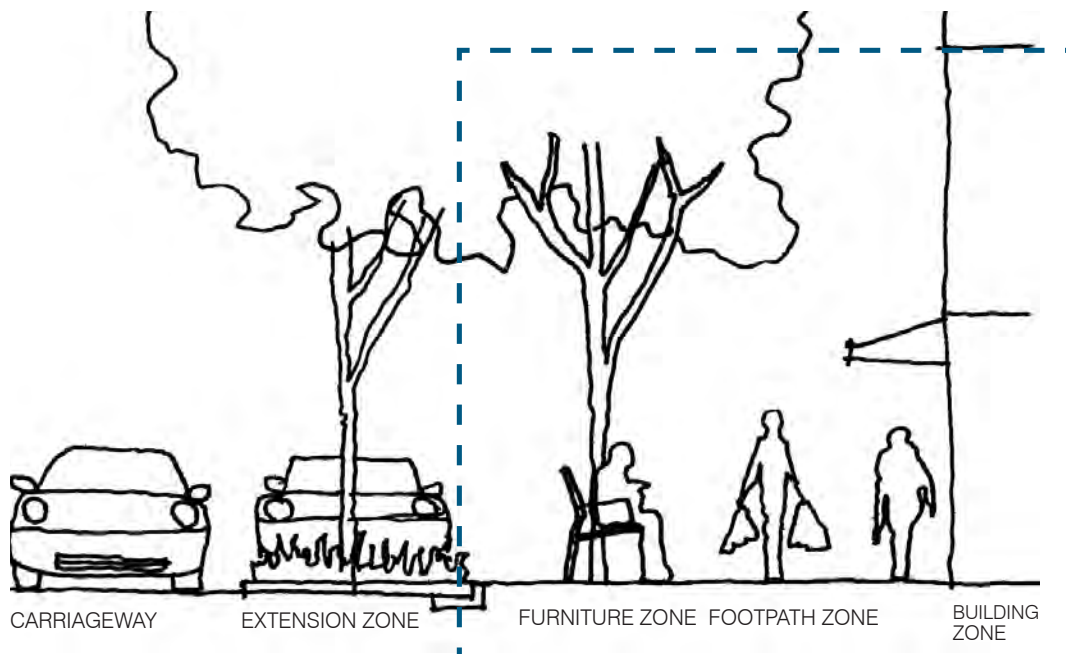


Figure 35

E4 Footpaths

E4.1 Footpath zone space requirements

The City aims to optimise the footpath zone for pedestrian movement as well as provide space for social activity and green infrastructure .

It is important to note that most of the City's footpaths are not consistent in width and constraints can occur where existing street elements and servicing utilities are located.

When planning a street upgrade, it is important to consider the required footpath widths necessary to allow for unobstructed travel paths and for inclusive access requirements, such as allowing enough width for movement of a wheelchair and a person to pass safely and minimum clearance spacing for elements such as street trees.

Widening footpaths may require significant changes to drainage infrastructure as well as the relocation of utilities and must be reviewed on an individual project basis. Where possible, the widening of footpaths may be achieved by narrowing and/or removing vehicular travel lanes or parking lanes, or establishing setbacks as part of redevelopment.

Transport for NSW have published the **NSW Walking Space Guide**. The footpath zone is to be assessed in accordance with the guide including consideration of the kerbside traffic buffer.

The City's space allocation requirements are shown in Figure 37 are aligned to this Guide.

COVID 19 and Public Space

COVID 19 has brought to the fore a health objective of providing enough space to make it easier to maintain a safe distance from each other in public.

When public health needs to be considered footpath space requirements may need to be beyond the recommendations in this Code to provide safe mobility and social interaction.

Space reallocations may be temporary and tactical in the short term however these measures may present the opportunity to assess and measure benefits to support the funding of permanent public domain outcomes.



REFER

[NSW Walking Space Guide](#)

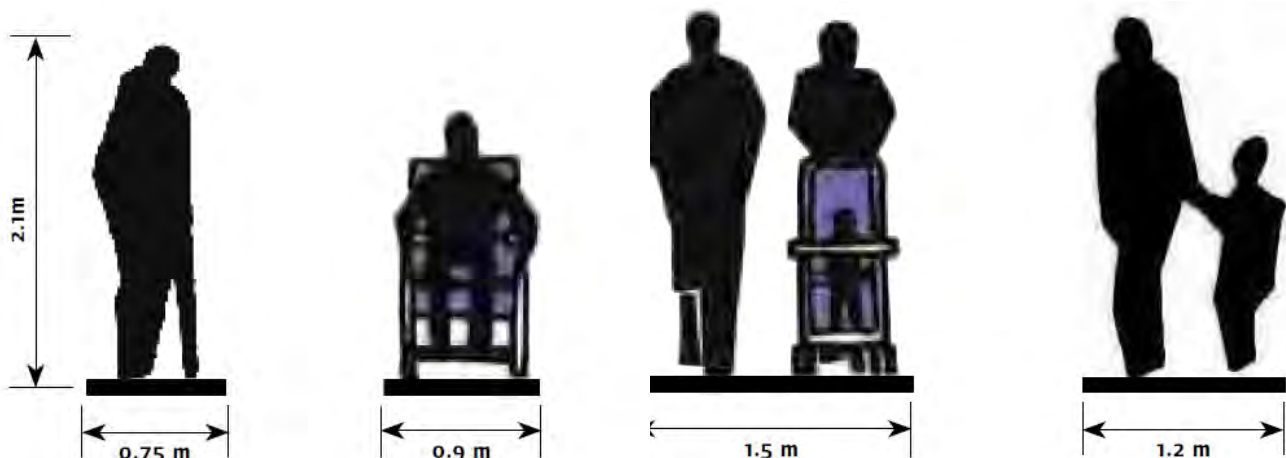


Figure 36 - Space requirements for people on footpaths

E4 Footpaths

E4.2 Footpath zone access and inclusion requirements

- Continuous accessible path of travel is the clear path of travel.
- Public Domain Furniture Zone - where lighting, street trees and seating are positioned.
- Minimum footpath widths are based on the City's minimal provision for a comfortable pedestrian access, and for two wheelchairs to pass.
- Preferred footpath widths are desired City dimensions for providing better pedestrian comfort and amenity and full inclusion for street trees, verge landscaping and public domain furniture.
- Street upgrades will need to be assessed for minimal and preferred widths on a project basis.
- The State Government Transport for NSW standard is an absolute 1.2m minimum (with frequent 1.8m wide passing opportunities for people passing in wheelchairs).
- * The City recommends a more comfortable preferred width of at least 2.3m.
- ** If the footpath does not meet the minimum Transport NSW standard of 1.2m then a Shared Zone should be considered.

STREET TYPES	Public Domain Furniture ZONE (m)		Continuous Accessible Path of Travel (m)	
	Preferred	Minimum	Preferred	Minimum ^
General Streets City Centre Streets	2.0+	1.25	4.0 + achieve <9.5 PPMM	3.0m less or equal to 18PPMM
Main Streets	1.5 +	1.25	3.7-3.9m	2.7m
Local Streets (mid-high activity streets)	1.5 +	1.25	3.2 +	2.3m*
Local Streets (low-mid activity streets)	1.5 +	0.6	2.3m + 0.6m passing zone	1.6m+0.6m passing zone
New Streets	2.0 +	1.25	3.5+	2.5
Shared Zones	2.0 +	1.25	3.2 +	2.8m
Slow Streets	1.5+	1.0	3.5 +	2.0m

Note - PPMM means People per Metre per Minute during the peak hour

The passing zone can be in line with street tree planting or other street furniture

Figure 37- Footpath Space allocation

E4 Footpaths

E4.2 Footpath zone access and inclusion requirements

The following pages outlines the access and performance standards for the City's footpaths.

Objectives for access

1. Footpaths will allow for a continuous accessible path of travel so that people with a range of disabilities are able to use it without encountering barriers or hazards.
2. The continuous accessible path of travel on the footpaths should be consistent and predictable.
A predictable path of travel is one where the location can be anticipated by users through predictable layout or environmental cues.
3. Where a hazard exists or protrudes within the continuous accessible path of travel, additional hazard warnings will be included to alert people who are blind or have low vision.
4. People who are blind or have low vision be able to navigate along the footpath.



E4 Footpaths

E4.2 Footpath zone access and inclusion requirements

Access performance standards	Reference
<p>Continuous accessible path of travel</p> <ol style="list-style-type: none"> 1. A continuous accessible path of travel should be the most commonly used and direct path of travel. 2. Features such as stairways, escalators, street furniture, landscaping and moving pathways, where they exist, should be located adjacent to and should not obstruct the continuous accessible path of travel. 3. In most circumstances, footpath widths will be consistent with widths outlined in Table 37 of the Sydney Streets Code 4. Where the widths required in the Sydney Streets Code cannot be met, a minimum of 1200mm (with frequent 1800mm passing opportunities for people passing in wheelchairs) is acceptable. In addition: <ol style="list-style-type: none"> a) Frequent passing opportunities should be provided at intervals of no less than every 20m where a direct line of sight is not available. b) A minimum clearance of 900mm between the back of a tree pit and the property boundary is permitted only on narrow residential footways where there is a street tree. 5. A minimum of 2000mm height clearance should be provided and maintained on all continuous accessible paths of travel, except where the path of travel is also a shared path, in which case it should be 2400mm. 	<p>Australian Human Rights Commission (2013 Advisory Note on Streetscapes, public outdoor areas, fixtures, fittings and furniture Clause 8.2.10 AS 1428.2 Clause 6.5a and Street tree Masterplan Part D</p>
<p>Footpath gradient and crossfall</p> <ol style="list-style-type: none"> 6. While a footpath necessary follows the natural topography of the area, in the best possible circumstances a continuous accessible path of travel will: <ol style="list-style-type: none"> a) Have a gradient of no steeper than 1 in 20 b) Have a cross fall of no steeper than 1 in 40 c) Be as smooth as possible without raised or cracked paving or tree root damage b) Have a slip resistant surface during dry and wet conditions. Specifically, footpath materials will have a minimum slip resistance rating <ol style="list-style-type: none"> i) P5 for ramps and footpaths steeper than 1:14 gradient ii) P4 for ramps and footpaths less 1:14 gradient. 7. Wherever possible the continuous accessible path of travel should extend from the property line with no obstructions or projections in order to provide the most predictable and best possible shore line for all users including people who are blind or have low vision 8. Where a hazard exists, or protrudes within the continuous accessible path of travel, additional hazard warnings will be included to alert people who are blind or have low vision. These may include but are not limited to: <ol style="list-style-type: none"> a) a higher luminance contrast (45-60% of obstacle with surrounding paving materials); and b) appropriate use of Hazard TGSIs to warn of obstacle. 9. Tactile Ground Surface Indicators - Refer to E.4.12 	<p>Australian Human Rights Commission Frequently asked questions: A AS 4586 (2013) Australian Human Rights Commission (2013 Advisory Note on Streetscapes, public outdoor areas, fixtures, fittings and furniture Clause 8.7 Australian Human Rights Commission: Access to Premises – Frequently Asked Questions</p>

E4 Footpaths

E4.3 Footpath paving material selection guidance

A consistent palette of paving materials creates a clear, coherent public domain structure that provides a unified, recognisable character. For the city centre the paving selection is limited to granite. However in some City streets the selection of a paving material may not always be definitive with some of our local areas possessing a varied paving palette of insitu concrete, asphalt and brick.

Selection of the most appropriate material to be approved by the City, will need to consider local context and current predominant paving use, fabric and heritage, provision of verge planting or turf nature strip

The Table below provides some higher level guidance for paving material selection.

Insitu Concrete type “A”

Higher level of finish with surface scoring Used for connecting main streets or local streets that are high pedestrian priority



[Sydney Streets technical specifications](#)
B5 C2



Insitu Concrete type “B”

Standard City palette selection for local area streets to be used in most instances particularly if including a landscape strip.



[Sydney Streets technical specifications](#)
B5 C2



Brick

Brick paving-consideration for Neighbourhood hub streets or in local areas where there is existing predominate historical use of brick that warrants further use to retain existing character.



[Sydney Streets technical specifications](#)
B5 C2



E4 Footpaths

E4.3 Footpath paving material selection guidance

Asphalt

For use in heritage streetscapes/precincts that predominantly consist of asphalt footpath paving with stone kerb;

For use undertaking works that do not entail entire repaving of a street blocks that is predominantly existing asphalt paving and introduction of a secondary material such as insitu concrete or brick would be visually discordant.

For pavement adjacent heritage sandstone kerb - asphalt appropriate to achieve neater edge finish.



Use of asphalt paving in sections of insitu concrete footpaths where a flexible pavement is deemed the most appropriate solution to avoid damage to tree roots.



[Sydney Streets technical specifications](#)

B5 C2



Pymont/ Ultimo

The Ultimo Pymont Technical Manual 1997 has resulted in some local streets having a higher level of finish than standard local streets across the City. Refer to Section D7 for directions.



[Sydney Streets technical specifications](#)

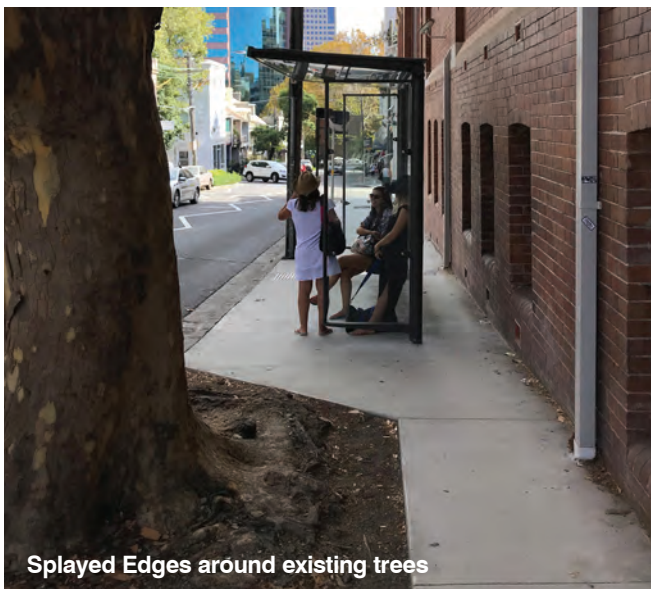
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E4 Footpaths

E4.4 Footpath paving design quality outcomes

Refer to details and specification requirements in Streets Technical specification.



Street design and coordination



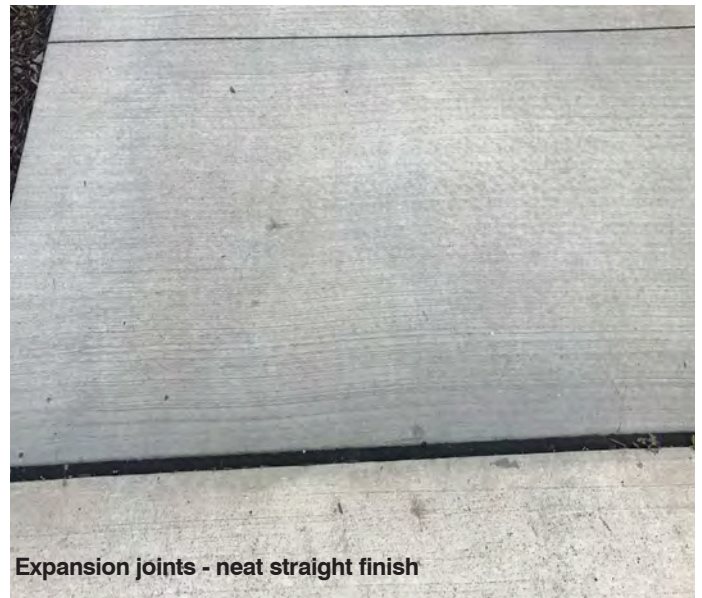
Stepping pavers across landscape verges



Avoid Small Paving unit cuts



Alignment of utility pits



Expansion joints - neat straight finish

E4 Footpaths

E4.5 Footpath paving interface and transition treatments

Key design considerations for paving interface and transition treatments include:

- providing a legible and continuous pathway for pedestrian movement
- where there is a transition change in the footpath, for example at the street corner the street with higher activity takes precedence for paving treatment, and must wrap the corner into the minor street
- providing a logical termination of paving types at either at the radius transition point or building property line.

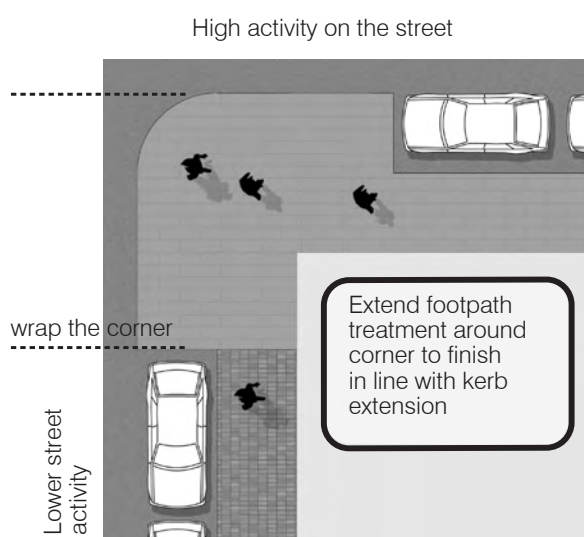
Public vs private interface

Many developments choose to use the City material palette within the private property boundary. This is encouraged. Consideration should be given to:

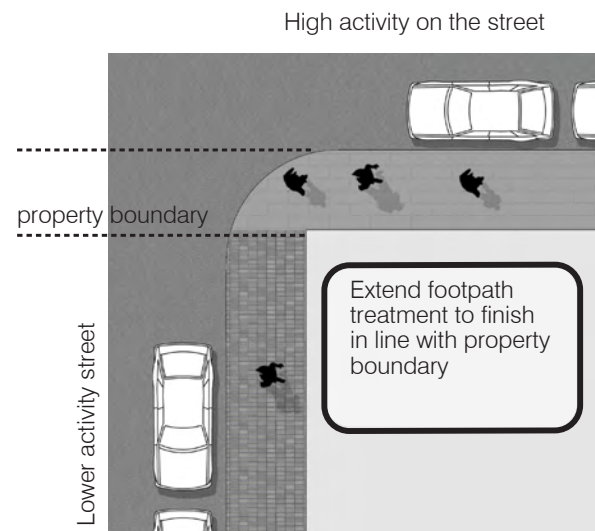
- non city palette paving on private property adjacent to public footway must not extend across into the public footpath zone
- where building setbacks provide a section of widened footpath, the materials and paving used must be integrated with the existing footpath zone paving, and use the city palette
- when using city palette in private property clear demarcation is to be provided with header course or joint line.



**TECHNICAL
SPECIFICATIONS**
B5 C2



Footpath Material Junction with Kerb Extension

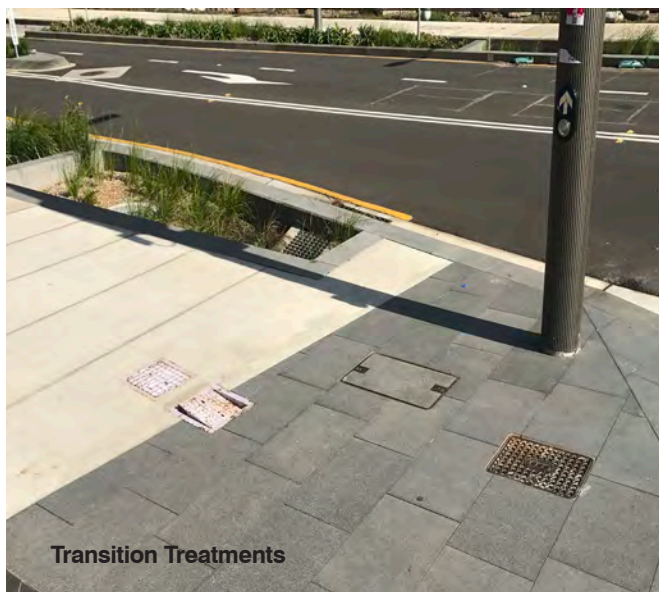


Footpath Material Junction without Kerb Extension

Figure 39

E4 Footpaths

E4.5 Footpath paving interface and transition treatments



E4 Footpaths

E4.6 Footpath continuity treatments

Where vehicle traffic volumes are relatively low at minor street intersections pedestrian priority may be provided by continuous footpath treatments which are a continuation of the footpath parallel with the main street, at grade, without colour or texture change, across side street intersection.

Footpath continuity treatments are beneficial to people using a wheelchair or frame or pushing strollers as they remove the need to manoeuvre across grade changes.

RMS Technical Direction 05 – August 2013 – Continuous Footpath Treatments provides details on considerations and application of using these treatments for a streetscape proposal including requirements for driveway layback widths, use of bollards and TGSIs.



REFER

RMS Technical Direction 05 –August 2013

Accessibility considerations

Traditionally, the kerb edge acts as a key orientation cue to the blind and vision impaired indicating that they are entering a traffic environment.

A continuous pavement treatment with no grade change and no kerb ramp indicates to those who are blind or have vision impairment that there will be a clear, safe and continuous accessible path of travel in front of them.

Use of TGSIs are necessary to give an indication of potential traffic interaction. (Refer to E.4.12)

Approvals

Traffic Committee approval is required for the use of footpath continuity treatments.



TECHNICAL SPECIFICATIONS B5 C2

Performance Standards	Reference
a. Where continuous footpath treatments are provided, Hazard TGSIs shall be provided in accordance with AS1428.4.1 (2009) Clause 2.5.	Sydney Streets Technical Specifications RMS Technical Direction No 5

Material selection

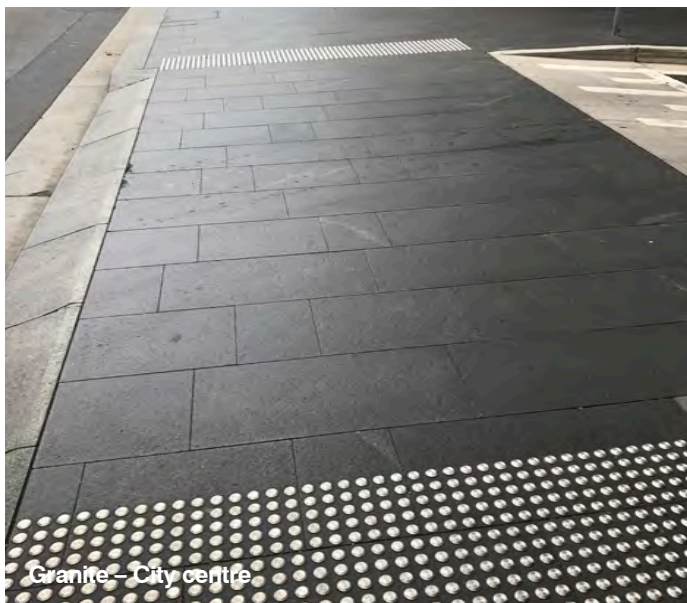
Paving material selection for a footpath continuity treatment will in most cases be the same as the adjacent footway.

However for local streets insitu concrete footpaths the continuity treatment may consist of concrete interlock or bipave units, particularly if the intersecting street is a designated shared zone.

For structural or vehicle loading considerations smaller unit sizes of the paving material or interlock pavers may be required. In some instances the paving surface may be different such as the use of porphyry setts in heritage areas.

For footpath continuity treatments that also intersect with a separated cycleways to create a shared zone area refer to section E5.11.

Street design and coordination



Granite - City centre



Concrete Unit - Village Main Streets



Concrete - Connecting/main streets / local Streets



Brick - Neighbourhood hub streets / local streets



Concrete bi pave - local streets



Concrete Interlock - local streets

Sydney Streets Design Code © City of Sydney / 143

E4 Footpaths

E4.7 Shared pathways

Shared paths are footpaths used by pedestrians and people riding bicycles.


Shared paths are created primarily in situations where there is not adequate space to accommodate a separated cycleway.

Objectives for access

- 1. Shared paths will be designed meet design specifications that create conditions for a continuous accessible path of travel, and consider the volume of pedestrian and cyclist activity.
- 2. The use of bollards if required at the terminal points of shared paths will be detectable to people with low vision
- 3. The placement of bollards at the terminal points of shared paths will provide adequate clearance to maintain the continuous accessible path of travel.

Performance standards	Reference
<p>1. Shared paths will be designed in accordance with the City of Sydney Standard Cycleways Treatments Overview. Specifically shared paths will meet design criteria of a continuous accessible path of travel.</p> <p>Key considerations include:</p> <ul style="list-style-type: none">• width of path desirable more than 2.0m, less than 2.0m for pinch points for a length of no more than 20m;• height clearance minimum 2.4m;• crossfall 1 in 40 maximum;• clear width from doorways minimum 1.6m;• setbacks varies – from 0.4m;• lighting australian standard P2• surface tolerances (adjacent and perpendicular to path of travel 5mm.	<p>City of Sydney Cycle Strategy and Action Plan 2018- City of Sydney Standard Cycleways Treatments Overview</p> <p>Roads and Maritime Service (2005 NSW Bicycle Guidelines Austroads Guide to Road Design Part 6A: Pedestrian and Cyclist Paths</p>

E4 Footpaths

Performance standards	Reference
<ol style="list-style-type: none"> Shared paths on the streetscape will incorporate a series of pavement markings in accordance with the City of Sydney Shared Pathways Pavement Markings Guide. The guide provides a tiered approach to signage that aims recognises different levels of risk in different contexts, and requires signage responses to address those risks. <ol style="list-style-type: none"> All shared paths to have mandatory shared path markings, line markings, symbols and text elements Common zones of higher risk to be managed by an incremental system. <ol style="list-style-type: none"> Driveways: <ul style="list-style-type: none"> Type 1 - Commercial - low use. Type 2 - Industrial / Commercial - frequent use. Type 3 - Parking on/adjacent path Bus Shelters: <ul style="list-style-type: none"> Type 1 - All bus stops on the shared pathways. Type 2 - Limited width for travel behind the shelter. Type 3 - Limited width for travel in front of the shelter only Occasional points of increased risk where regulatory messages may be necessary. The use of bollards across shared path must comply with Austroad's Guide to Road Design Part 6A: Paths for Walking and Cycling (2017 Edition). They will provide minimum clearance of 1400mm between bollards. 	<p>City of Sydney Shared Pathways Pavement Markings Guide</p>
	

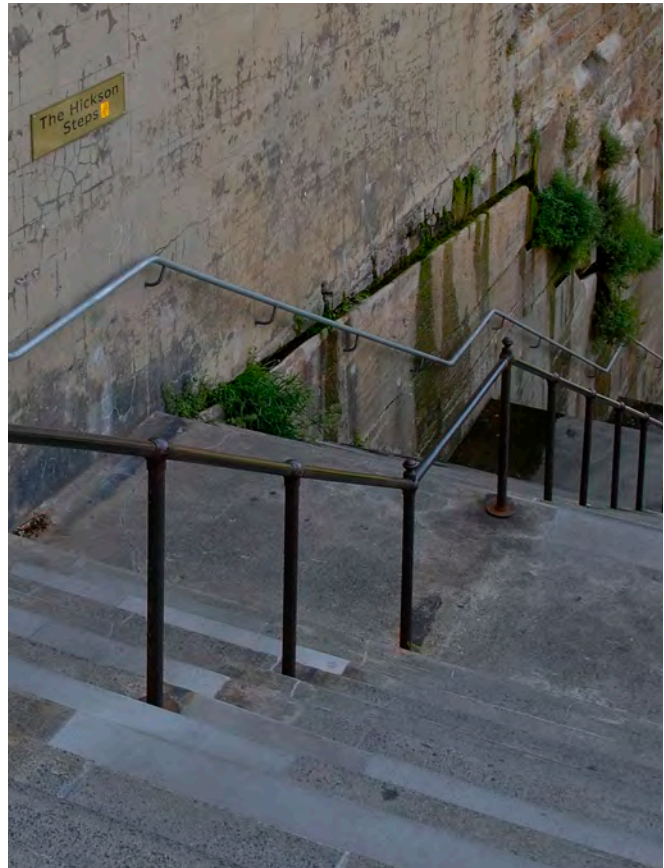
E4 Footpaths

E4.8 Stairs and ramps



With the natural topography of a city like Sydney, it is not always possible to provide a continuous accessible path of travel in the public domain. In settings where stairs are required, every effort practicable should be made to maximise the accessibility of the area.

Objectives for access

1. Stairways, where they exist, should not be part of a continuous accessible path of travel and should be located adjacent to the continuous accessible path of travel.
2. Where the primary path of travel contains a topographical barrier requiring stairs, an alternative accessible route should be available nearby to ensure equity of access. This should be clearly signposted.
3. People who are blind or have low vision will be able to detect the presence of stairs before they have stepped onto them, to allow adequate warning and facilitate their safe use of the stairs.
4. Stairs will include handrails to assist those who need additional support to climb and descend stairs safely.
5. Ramps will be designed to provide accessible gradients and cross fall and appropriate turning points and landings, and handrails where appropriate.
6. Hazards adjacent to or underneath stairs and ramps will be detectable by people who are blind or have low vision.



E4 Footpaths

Performance standards	Reference
<p>1. Stairs will be designed to be compliant with AS1428.1 and AS1428.4.1, specifically:</p> <ul style="list-style-type: none"> a) Handrails should be provided for all stairs in the public domain. They shall be designed to be compliant with AS1428.1 Clauses 11.2 and 12 b) Stairs shall be set back by a minimum of 900mm so that the handrail and the TGSIs do not interrupt the continuous path of travel. AS1428.1 Clause 11.1 part (a) c) Stairs shall have opaque risers in accordance with AS1428.1 Clause 11.1 part (c) d) Open risers should not be used on stairways e) Stair nosings shall have a minimum 30% luminance contrast with surrounding stair materials to make them visually detectable for people who have low vision. AS1428.1 Clause 11.1 part (f) f) TGSIs shall be installed at the top and bottom of stairways, ramps, escalators, and moving walks in accordance with AS1428.4.1. Clause 2.4 	<p>AS1428.1 (2009 Clause 11.2 AS1428.1 (2009 Clause 12 AS1428.1 (2009 Clause 2.4</p> <p> TECHNICAL SPECIFICATIONS B5 C2</p>
<p>2. Where stairs are provided, an alternative accessway such as a ramp should be provided as close as possible (less than 50m to ensure equity of access. In addition:</p> <ul style="list-style-type: none"> a) Where stairs cannot be avoided in a public domain setting and where the alternative accessway is more than 50m away, wayfinding information will direct pedestrians to the nearest accessible alternative route b) The use of stair lifts should be avoided, as they don't provide an equivalent experience for wheelchair users and many users find them undignified as they draw attention to the user. 	<p>Disability (Access to premises – Building Standards 2010</p>
<p>3. In accordance with AS1428.4.1 Clause 2.6, where there are impediments or hazards with less than 2000mm height clearance within or adjacent to the continuous accessible path of travel (e.g. under a stairway or walkway contact with overhead hazard shall be prevented by a suitable barrier such as:</p> <ul style="list-style-type: none"> a) Enclosing the area, or b) Providing handrails with kerb rails in accordance with AS1428.1 c) In the absence of a suitable barrier, TGSIs shall be installed. 	<p>AS1428.4.1 (2009 Clause 2.6</p>
<p>4. Ramps will be designed to be compliant with AS1428.1 and AS1428.4.1, specifically:</p> <ul style="list-style-type: none"> a) Where a ramp is provided it will design in accordance with AS1428.1 Clauses 10.3 and 10.8 and AS1428.4.1 Clause 2.4 to ensure the appropriate gradients, width, cross fall, use of TGSIs, handrails and landing platforms b) Ramps will be set back from the site boundary by 900mm so that the handrail and TGSIs do not protrude into the continuous path of travel. AS1428.1 Clause 10.3 part (f) c) Maximum gradient 1:14 with horizontal landing to provide rest area at every 9.0m and each change in direction. Handrails and kerbs both sides. d) Gradients greater than 1:20 allow more generous allowances for horizontal landing provisions. <p>5. Where stairs in the public domain are provided on sloping topography resulting with diminishing risers, both stair risers and stair nosing's shall have a minimum 30% luminance contrast with surrounding stair materials.</p>	<p> TECHNICAL SPECIFICATIONS B5 C2</p> <p>AS1428.1 (2009) Clause 10.3 AS1428.4.1 (2009) Clause 2.4</p>

E4 Footpaths

E4.8 Stairs and ramps



E4 Footpaths

E4.9 Driveway crossovers and widths

Driveway crossovers form part of the footpath and can impact the pedestrian flow of movement. They must be designed to a minimal width and maintain a continuous paving type, to reinforce pedestrian priority.

Key design considerations for driveway crossovers include:

- the location and widths of driveways on all pedestrian priority streets must be minimised to maintain footpath continuity and avoid impacts on existing or potential streetscape elements such as street trees;
- driveways should not interrupt the pathway of pedestrian movement, footpath pavement material must be continuous across the driveway rather than emphasise vehicle priority;
- driveways that accommodate industrial use, must seek direction from the City on appropriate materials selection and detailing; in some cases a reinforced concrete driveway maybe deemed appropriate;
- layback to be short as possible to meet the pedestrian zone height at the kerb side of the cross section to ensure footpath level and crossfall is maintained.
- be designed to minimise impact on existing street trees and to maximise opportunities for new street trees.

In some instances frequent heavy vehicle use may require additional consideration of material selection. The City will advise when an alternative approach warrants consideration.

•

Driveway Widths

Wherever practicable, vehicle access and egress is to be a single crossing with a maximum width of 3.6m over the footpath, and perpendicular to the kerb alignment .

Driveway Ownership

Works on public land, including the construction, replacement or repair of driveways require the City's approval. Section 138 of the Roads Act 1993 refers. However in some circumstances driveways are paved by the City to meet the overall objectives of streetscape upgrade projects.

Approvals to undertake driveway works rely on vehicle access to the property already existing or having a valid planning approval.

The property owner is responsible for the costs of constructing or maintaining a driveway. Section 218 of the Roads Act 1993 refers.

Paving

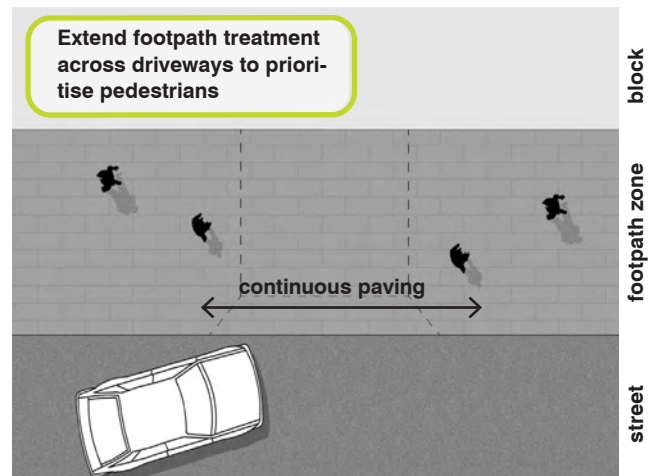


Figure 40



Extending footpath paving treatment across driveway



[Sydney Streets technical specifications](#)

B5 B6 C1

E4 Footpaths

E4.9 Driveway crossovers and widths

Objectives for access

1. Pedestrians will have prioritised access over driveways.

Performance standards

- 1 Driveways will be designed to prioritise pedestrian movement over vehicular movement through the provision of continuous accessible path of travel and continuous paving treatments over driveways.
- 2 Layback to be short as possible to meet the Pedestrian Zone height at the kerb side of the cross section to ensure footpath level and crossfall is maintained.

Reference



[Sydney Streets technical specifications](#)

B5 B6 C2



E4 Footpaths

E4.10 Kerb ramps

Kerb ramps support wheelchair users, people with limited mobility and parents with prams to smoothly transition from the footway to the pedestrian street crossing environment in a safe and dignified way.

Kerb ramps also enable people who are blind or have low vision to detect that they are about to cross a street. When properly designed kerb ramps allow people who are blind or have low vision to orient themselves to the direction of travel across the road.

Pedestrian crossing in all directions must be facilitated at intersections with kerb ramps. Planting and WSUD is not to be located where it will reduce crossing opportunities at intersections.

Facilitate safe frequent mid block crossing opportunities with kerb extensions and kerb ramps wherever possible

Material Section

For unit paved footpaths the kerb ramp should match the footpath material selection.

For insitu concrete and asphalt footpaths the kerb ramp is to be concrete. There is an option for charcoal admixture to be provided for kerb ramps with asphalt footpath.



[Sydney Streets technical specifications](#)
B5 C2

Objectives for access

1. Kerb ramps will be designed to be detectable to people who are blind or have low vision, to allow them to discern that they are at a road crossing, either by appropriate gradient of ramp or use of TGSIs.
2. Kerb ramps will assist people who are blind or have low vision to safely cross the road by indicating the safe direction of travel through appropriate orientation and alignment of the kerb ramp with the direction of travel.
3. Kerb ramps will be designed to accommodate all pedestrians including wheelchair users without hazard.



Intersection assessment

For all projects that include intersections and mid street crossing points an assessment of kerb ramp provision, alignment and placement needs to be undertaken.

In many instances challenging constraints of service utilities or street geometry may not result in an optimal kerb ramp arrangement however recognition of direction of travel and desire lines through the provision of safe crossing points and kerb ramps needs to be of prime focus.

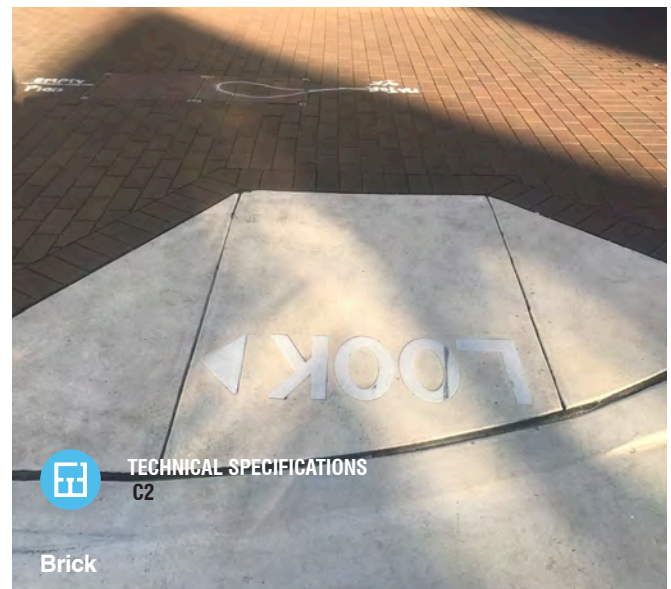
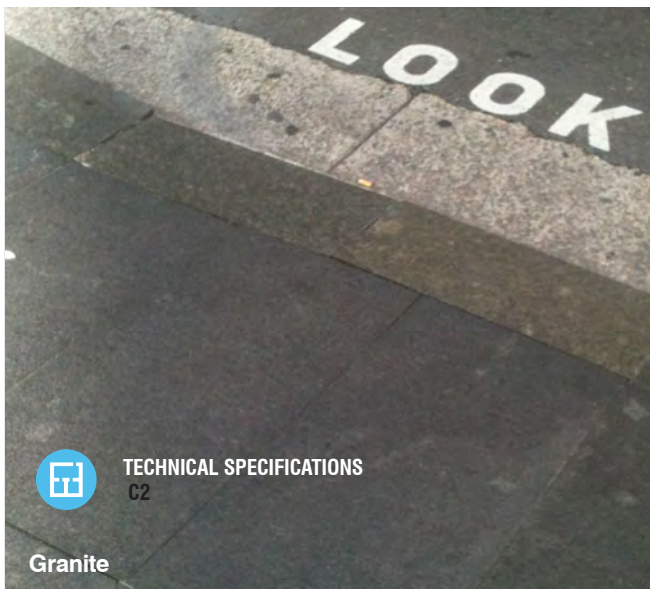
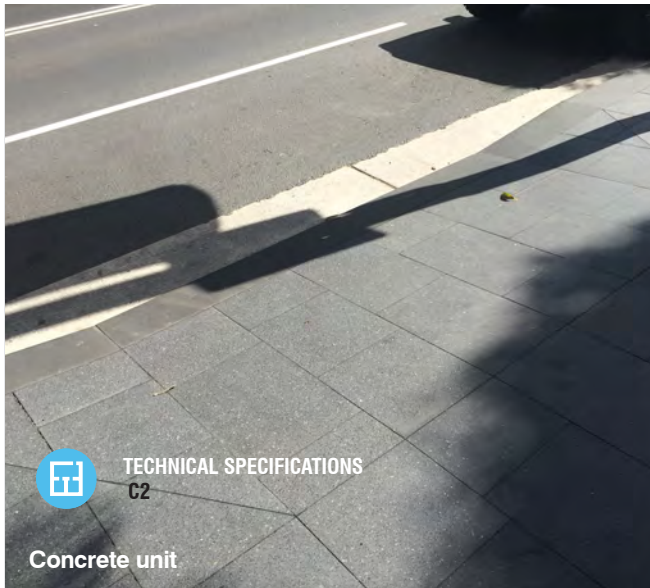
E4 Footpaths

E4.10 Kerb ramps

Performance standards	Reference
<p>1. Public footpaths will have kerb cuts with appropriate kerb ramps in accordance with AS1428.1. In particular, kerb ramps will:</p> <ul style="list-style-type: none">a) be oriented in the direction of travel. Ramps on both sides of a carriageway must be aligned to one another and the direction of travel. In particular the crease between the ramp and the wings must align with the safe direction of travel to allow people who are blind or have low vision to orient themselves in the direction of travelb) ensure a smooth transition from the roadway to the ramp with minimum of lip.	<p>AS1428.1 (2009) Clause 10.7</p> <p> Sydney Streets technical specifications B5 C2</p>
<p>2. Tactile Ground Surface Indicators will be fitted at kerb ramps in accordance with AS1428.4.1 appendix C3 which emphasises that use of TGSIs should be minimised at kerb ramps.</p> <ul style="list-style-type: none">a) In particular warning TGSIs will be provided on kerb ramps:<ul style="list-style-type: none">i) where the gradient is shallower than 1 in 8.5, andii) that do not comply with the requirements of AS1428.1.	<p>AS1428.4.1 (2009) Appendix C3</p> <p> Sydney Streets technical specifications B5 C2</p>
<p>3. Both directional and hazard TGSIs will be provided with kerb ramps where the top of the AS1428.1 compliant ramp is more than 3000m from the property line or the ramp is not aligned with the building line, directional indicators will be provided from the property line to the top of the ramp.</p>	<p>AS1428.4.1 (2009) Appendix C3</p>
<p>4. TGSIs will NOT be installed at kerb ramps where the following circumstances are met, as these conditions provide adequate change in level and orientation to be detectable by people who are blind or have low vision:</p> <ul style="list-style-type: none">a) the distance between the building line/boundary and the top of the kerb ramp is less than 3m;b) the change in gradient between that of the pedestrian surface at the top of the kerb ramp and the gradient of the kerb ramp surface lies between 1 in 8 to 1 in 8.5m;c) the kerb ramp is aligned with the building line and in the direction of travel across the carriageway.	<p>AS1428.4.1 (2009) Appendix C3</p>

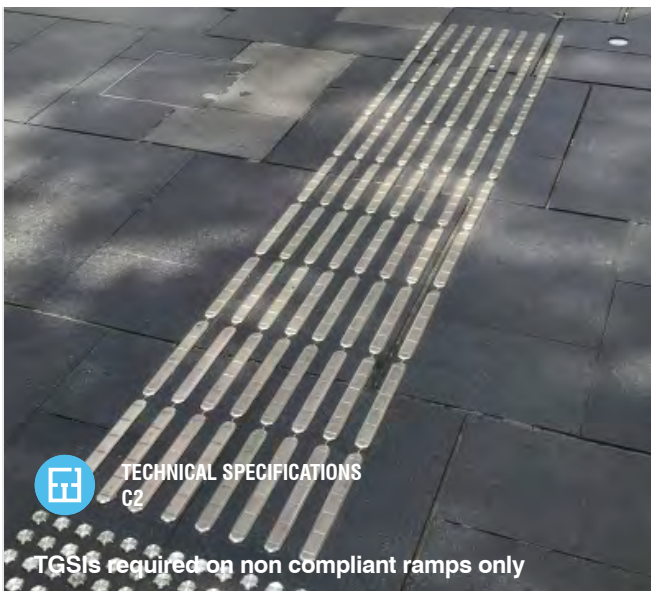
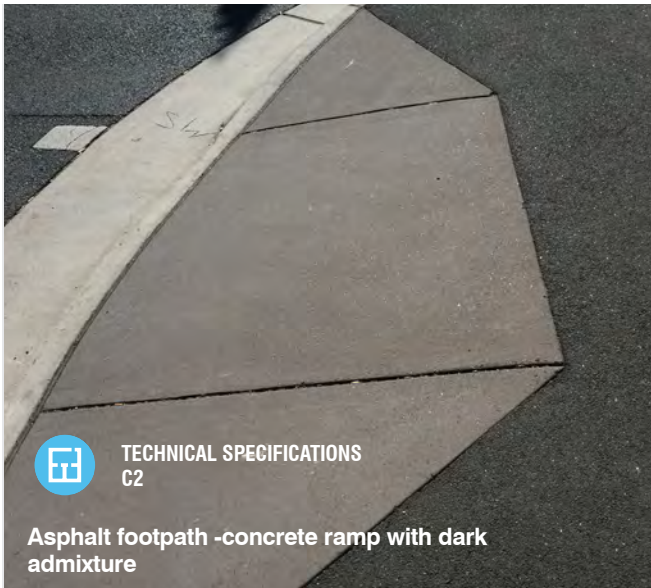
E4 Footpaths

E4.10 Kerb ramps – palette



E4 Footpaths

E4.10 Kerb ramps – palette



E4 Footpaths

E4.11 Kerb extensions

Kerb extensions are used to extend footpath space, increase visibility for pedestrians, reduce crossing distance, slowing traffic as well as provide additional space for greening and social activities.

Key design coordination considerations for kerb extensions include:

- assessment and management of drainage and stormwater arising from change of kerb alignment.
- developed according to an overall street plan that takes into account the relevant urban design, heritage, and traffic issues;
- opportunities for tree planting, landscaping, seating, outdoor dining, cycle parking, stormwater management and provision of kerb ramps associated with on street mobility parking;
- pedestrian safety by increasing visibility, shortening crossing distance, slowing turning vehicles and visually narrowing the roadway;
- materials should form a seamless whole, matching features and materials of the existing footpath; and
- the length of footpath extensions vary and depend on the different conditions of the intersection and must be assessed on project case basis by the City.



[Sydney Streets technical specifications](#)

B6 C1

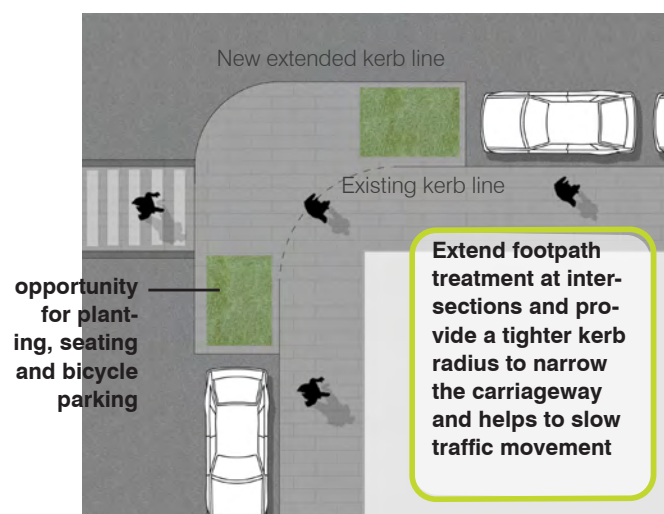
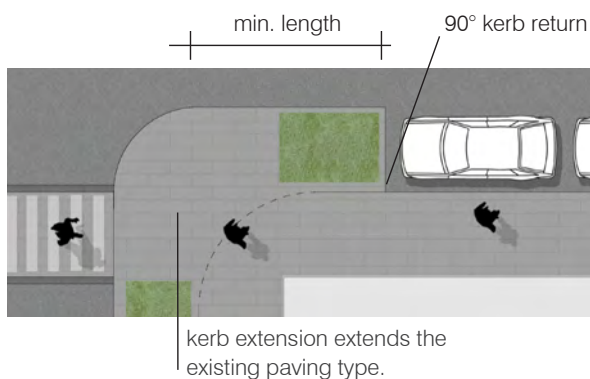


Figure 41

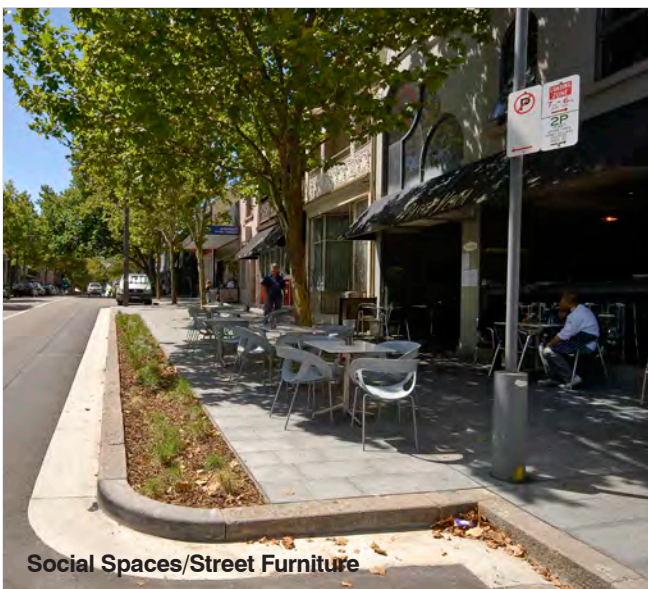
E4 Footpaths

E4.11 Kerb extension applications



E4 Footpaths

E4.11 Kerb extension applications



E4 Footpaths

E4.12 Tactile ground surface indicators


Tactile Ground Surface Indicators (TGSIs) are installed on the ground or floor surface, designed to provide pedestrians who are blind or vision-impaired with warning or directional orientation information.

TGSIs are discerned underfoot, by cane tip or by their contrasting colour. There are two types of TGSIs:

- raised dots are hazard or warning tgsis which indicate a nearby hazard.
- parallel raised lines are directional TGSIs, which indicate the direction of travel.

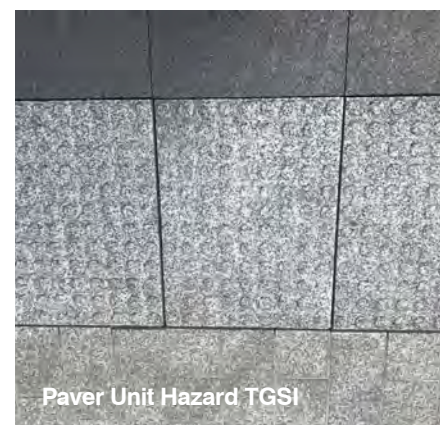
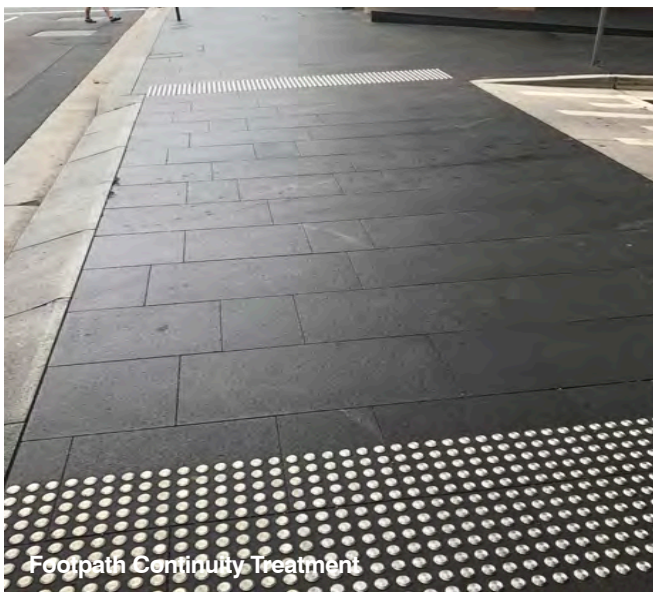
Objectives for access

1. Tactile ground surface indicators will be provided where there are insufficient tactile environmental cues to navigate to key destinations safely.

Performance standards	Reference
<p>In accordance with AS1428.4.1 (2009, directional Tactile Ground Surface Indicators will only be used in circumstances where there are insufficient tactile environmental cues (such as handrails, walls, building lines, and bollards, or a defined continuous accessible path of travel as per clause 5 available to assist people to navigate to key destinations safely, and it is supported and required by AS1428.4.1, specifically:</p> <ul style="list-style-type: none">• at mid-block crossings to indicate the position of crossings, bus or tram stops;• at intersections that incorporate slip lane crossings to indicate the position of the crossing and the direction of travel across the island where the path of travel has not been cut through the island;• at intersections where the point of entry to the road is more than 3000mm from the property line; and• across in open space from point A to point where there are no other tactile or environmental cues	<p>Alternative Solution AS1428.4.1 (2009, Appendix A.3 and C</p>  <p>Sydney Streets technical specifications C2</p>
Kerb Ramps Refer Section E.4.10	
Pedestrian Crossings and Shared Zones Refer Section E. Refer Section E 5.10 and E 5.13	

E4 Footpaths

E4.12 Tactile ground surface indicators



E4 Footpaths

E4.13 Lifts

From time to time lifts in the public domain provide access in areas with challenging topography, making areas accessible to wheelchair users, people with prams and people with limited mobility.

The provision of a lift or other mechanical access devices for public domain use will require a comprehensive feasibility and benefit assessment and approval by the City.

Objectives for access

1. New public domain lifts, escalators and moving walkways will be designed to be accessible in accordance with current Australian standards
2. Circulation space at the entrance of public domain lifts will consider nearby hazards
3. Public domain lifts, escalators and moving walkways will be easily located.

Performance standards	Reference
1 Public domain lifts will be designed to be compliant with AS1735.12 (1999).	AS1735.12 (1999)
2 Walkways and escalators will be designed in accordance with AS1428.1 (2009) clause 2.4.	AS1428.4.1 (2009 Clause 2.4
3 Public domain lifts, walkways and escalators will be connected to a continuous accessible path of travel	Australian Human Rights Commission (2013 Advisory Note on Streetscapes, public outdoor areas, fixtures, fittings and furniture Clause 8.2.2
4 Appropriate and safe circulation space at the entrance of lifts shall be provided in accordance with AS1428.1 (2009 clause 13.	AS1428.1 (2009) Clause 13
5 Where the circulation space is adjacent to descending stairs, additional circulation space should be provided to ensure safe circulation space for wheelchair users, and a landing area for people climbing the stairs.	



Lift facility - access from Pyrmont Street to Harris Street

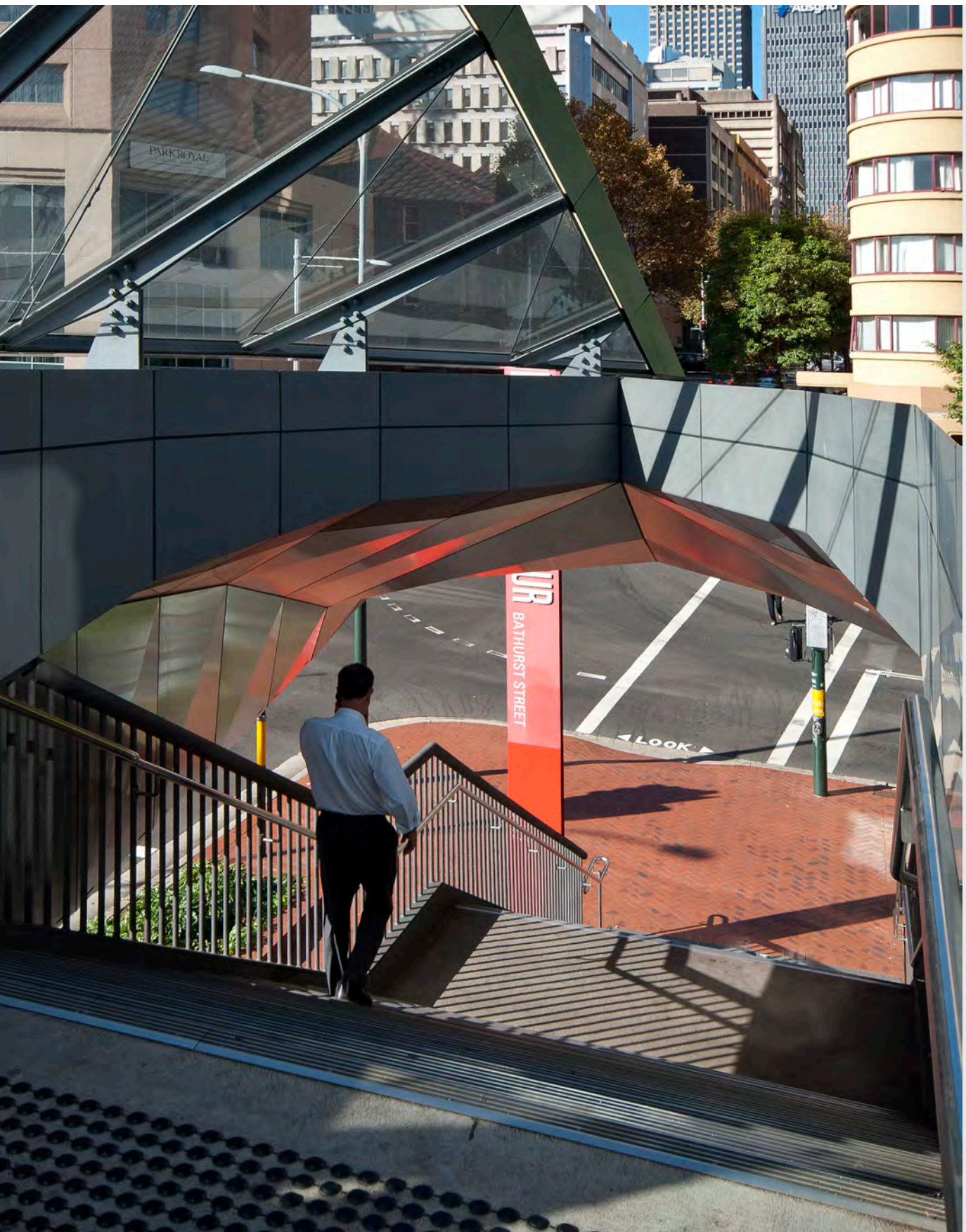
E4 Footpaths

E4.14 Bridges with pedestrian facilities

Dedicated pedestrian bridges provide safe access for pedestrians (and cyclists to cross major roads with several lanes of traffic or railway infrastructure. These are commonly designed and built by the RMS / state transport agencies however there are some circumstances where the City will manage the facility.

Objectives for access

1. Bridges with pedestrian facilities should be designed to incorporate a continuous accessible path of travel. They will provide step free access.
2. Circulation space at the entrance to bridges with pedestrian facilities will consider nearby hazards.
3. Bridges with pedestrian facilities should be designed to provide a safe shoreline for pedestrians who are blind or have low vision.
4. Bridges with pedestrian facilities will provide resting points where appropriate that don't obstruct the continuous accessible path of travel.
5. People who are blind or have low vision should be able to detect hazards such as stairs and bollards that may obstruct or be connected to the path of travel.



Darling Harbour

E4 Footpaths

E4.14 Bridges with pedestrian facilities

Performance standards	Reference
<p>1. Bridges with pedestrian facilities should be designed to be connected to and incorporate a continuous accessible path of travel:</p> <ul style="list-style-type: none"> a) In most circumstances, bridges with pedestrian facilities should have a minimum clear width of 2000mm at the narrowest point and a minimum clear height of 2000mm with nothing encroaching into that envelope. b) Where a bridge with pedestrian facilities is less than 20 metres in length, the path of travel may have a minimum width of 1200mm, but 2000mm is still preferred. 	<p>Australian Human Rights Commission (2013) Advisory Note on Streetscapes, public outdoor areas, fixtures, fittings and furniture Clause 8.2.10</p>
<p>2. The surface of the pedestrian facilities on bridges will have a slip resistant surface during dry and wet conditions. Specifically, footpath materials will have a minimum slip resistance rating:</p> <ul style="list-style-type: none"> a) P5 for ramps and footpaths steeper than 1:14 gradient b) P4 for ramps and footpaths less than 1:14 gradient c) Where permeable surfaces for pedestrian facilities are required, they will be designed to be heel proof, in consideration of AS1428.1 Clause 7.5. 	<p>Australian Human Rights Commission: Access to Premises – Frequently Asked Questions AS1428.1 Clause 7.5</p>
<p>3. Where a bridge with pedestrian facilities is greater than 60 metres in length, consideration should be given to the provision of resting points with appropriate seating where the seating does not obstruct the continuous accessible path of travel.</p> <p>4. Where seating is provided on a bridge with pedestrian facilities, it will be designed to be compliant with AS1428.2 Clause 27.2 Seating in pedestrian areas, so that a minimum of 500mm away from the path of travel, so as to create an obstruction on the continuous accessible path of travel.</p>	<p>AS1428.2 (1992 Clause 7 (e –see note.) AS1428.2 (2009 Clause 27</p>
<p>6. Appropriate and safe circulation space at the entrance of lifts shall be provided in accordance with AS1428.1 (2009 clause 13:</p> <ul style="list-style-type: none"> a) Where the circulation space is adjacent to descending stairs, additional circulation space should be provided to ensure safe circulation space for wheelchair users, and a landing area for people climbing the stairs. <p>7. If a bridge can only be accessed via stairs, signage indicating the alternative accessible route and distance shall be provided.</p>	<p>AS1735.12 (1999) Australian Human Rights Commission: Access to Premises – Frequently Asked Questions</p>

E4 Footpaths

E4.14 Bridges with pedestrian facilities

Performance standards	Reference
<p>8 Bridges with pedestrian facilities will provide a shoreline. This should be provided either through either:</p> <ul style="list-style-type: none"> a) An adjacent wall or fence that is continuous to the path so it is cane detectable, or b) An adjacent raised kerb edge with a minimum height of 150mm as per AS1428.1 (2009 Clause 10.2) 	<p>Sports and Recreation Victoria (2015 Design for Everyone)</p> <p>AS1428.1 (2009 Clause 10.2)</p>
<p>9 People who are blind or have low vision should be able to detect hazards such as stairs and bollards in the path of travel:</p> <ul style="list-style-type: none"> a) Where pedestrian bridges feature stairs, hazard TGSIs will be provided in accordance with AS1428.1 b) The use of bollards across a continuous accessible path of travel should be avoided as far as possible. 	<p>AS1428.1 (2009)</p>
<p>10 Bridges with pedestrian facilities should provide step free access. Where access is provided via a ramp, it will be compliant AS1428.1 and AS1428.4.1, specifically:</p> <ul style="list-style-type: none"> a) Where a ramp is provided it will be designed in accordance with AS1428.1 Clause 10.3 and AS1428.4.1 Clause 2.4 to ensure the appropriate gradients, width, cross fall, use of TGSIs, handrails and landing platforms b) Ramps will be set back from the site boundary by 900mm so that the handrail and TGSIs do not protrude into the continuous path of travel. AS1428.1 Clause 10.3 part 	

E5 Carriageways

- E5.1 Design speed
- E5.2 Design vehicle
- E5.3 Lane widths
- E5.4 Intersections
- E5.5 Corner and kerb radii
- E5.6 Kerbs and gutters
- E5.7 On street parking
- E5.8 Taxi ranks
- E5.9 Medians
- E5.10 Slow streets
- E5.11 Shared zones
- E5.12 City centre laneways
- E5.13 Pedestrian crossings
- E5.14 Signalised pedestrian crossings
- E5.15 Pedestrian refuge island
- E5.16 Light rail streets



carriageways



E5 Carriageways

E5.1 Design speed

Dedicated pedestrian bridges provide safe access for pedestrians (and cyclists to cross major roads with several lanes of traffic. These are commonly designed and built by the RMS however there are some circumstances where the City will manage the facility.

Bridges built for traffic, rail or light rail purposes usually include pedestrian facilities. In these circumstances they are often designed and built by state government transport agencies however again there are some circumstances where the City will manage the facility.

Designing for high design speeds often results in poor streetscape outcomes with reduced pedestrian comfort, larger kerb radii, wider travel lanes, on street parking restrictions and clear zones.

The Code therefore aims to provide a balanced approach to movement in the City for all users by designing for a self reinforcing lower vehicle speed environment (30km per hour for local streets.

Designated shared zones will have interventions to facilitate a design speed of 10km per hour.

The City aims to achieve appropriate vehicle speeds through an integrated design approach rather than just through retrofitting traffic management devices.

E5.2 Design vehicle

While designs must account for the challenges of larger vehicles especially emergency vehicles these infrequent users should not dominate the safety and comfort of the majority of street users.

Kerb radii designed for the largest possible vehicle at the highest possible speed degrades the pedestrian environment and creates longer crossing distances.

Designs should allow infrequent vehicles to use the whole of the intersection so as to allow a more compact design that reduces the turning speed of regular vehicles.

E5.3 Turning, parking and manoeuvring- designing for low speed

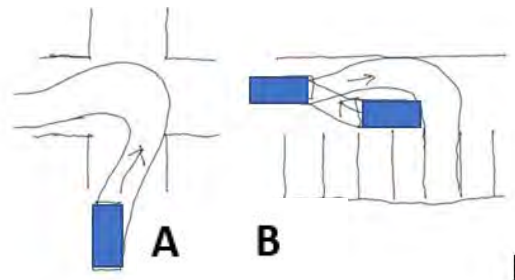
A key design objective is to minimise carriageway width and intersection radii and **create a low speed environment** that is safe for people walking (the most vulnerable road users).

The City will develop the feasibility of the below approach with relevant stakeholders. Application is subject to individual project risk assessment and relevant required approvals

Local Streets

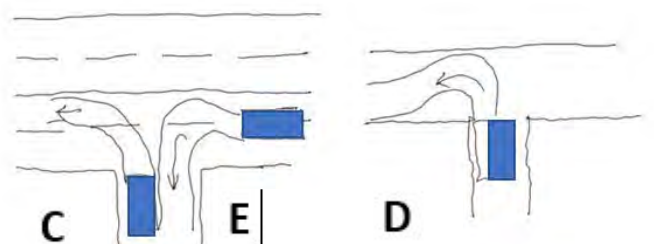
For local streets the design is to assume that the largest design vehicle for that manoeuvre will use the whole carriageway. (A – large vehicle turning left)

Local streets are generally not to use centre lane markings – this is to signify that vehicles travelling in either direction may (using appropriate judgement) utilise the whole carriageway (i.e. the whole carriageway operates in both directions as a yield street environment). (B – an example of a vehicle using the whole carriageway to park).

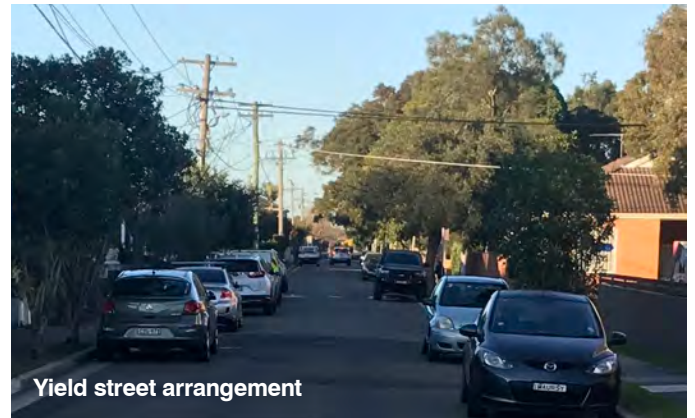


Higher order streets (regional and state roads)

When turning into a high order street with more than one traffic lane in the direction of travel the design is to assume both receiving lanes will be utilised (C). When turning into a high order street with one lane in each direction the design is to assume that the vehicle will position itself in the centre of the street at the beginning of the manoeuvre (D). When turning from a high order street with more than one traffic lane in the direction of travel to a local street the design is to assume that larger vehicles will position themselves partially across both lanes at the initiation of the manoeuvre (E).



Toolbox to reduce traffic speed in City managed streets



E5 Carriageways

E5.3 Lane widths

Carriageway widths should be appropriate for the particular context and uses of the street.

The City encourages minimal traffic and parking lane widths to achieve a higher level of pedestrian amenity.

Key factors to take into consideration include:

- the volume of vehicular traffic;
- traffic flow direction -one or two way.
- number of lanes;
- level of pedestrian activity;
- traffic composition particularly if dedicated public transport bus route;
- the demarcation if any between carriageway and footpath (for example street trees or planting and public domain furniture;
- whether parking is to take place in the carriageway and if so, distribution, arrangement, the frequency of occupation, and the likely level of parking enforcement;
- the design speed;
- the curvature of the street (bends require greater width to accommodate the swept path.

The carriageway widths shown in Figure 42 should be considered as maximum for new construction, major reconstruction and retrofit street upgrades.

The carriageways have been classified using the RMS functional road classification system. This system recognised the needs of different road users and the transport and non-transport functions of the roads.

Design exceptions may be required for some width values on State owned roads.

Presence of consistent use by heavy vehicles is a key consideration when using minimum carriageway widths.

Wider lane widths are appropriate in locations with high consistent volumes of heavy vehicles such as buses.

A collaborative judgement between planners, designers and engineering is necessary to make final determinations regarding lane widths.



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E5 Carriageways

Figure 42- Carriageway widths

Preferred maximum vehicle widths

RMS classification	Primary traffic lane	Additional traffic lanes	Parking
Sub-Arterial Roads (subject to RMS requirements including bus/heavy vehicle routes (assumes multiple lanes of traffic in each direction	3.2m	2.8–2.9m	2.3m ^
Local Roads			
Two lanes of traffic in either direction	2.9m	2.9m	2.2m
One lane of traffic in either direction	2.75m	None	2.1m
Single lane, bi-directional streets and lanes (passing bays required in parking zone	3.2m	None	2.1m
Single lane, one-way streets and lanes (or adjacent to median	3.0m	None	2.1m
Shared Zones	2.8m (min	None	Varies

Preferred minimum cycleway widths

RMS classification	Preferred lane width	Minimum lane width	Minimum kerb width
Separated Bi-directional Cycleway	3.0m	2.4m	0.4m
Separated One-way Cycleway		2.0	0.4m
On-street painted cycle lane		*	None
Shared Path (cycle and pedestrian		2m (min. 1.2 at pinch points	None

Notes

The City Design vehicle is 9.25m waste collection vehicle except on a dedicated bus or heavy vehicle route.

* For mixed traffic in low speed environments, the painted on-street cycle lane should accommodate suitable width to allow for deflection of a parked car door swing.

^ Decisions regarding parking lane width when adjacent to bike lanes should consider parking turnover rates and vehicle types.

E5 Carriageways

E5.4 Intersections

Intersections are the focal point of activity and decision making as well as being a major conflict point if not designed carefully.

The City of Sydney aims to reduce the risks of turning conflicts with fast moving vehicles by removing slip lanes where possible and extending kerbs to allow for reduced corner kerb radii. This presents greater opportunity to enhance pedestrian safety by increasing pedestrian visibility, shortening crossing distances, slow down turning vehicles, and visually narrowing the roadway.

To address these aims the design intention is that intersections are as compact as possible to promote pedestrian safety and comfort.

One of the key considerations is the location of pedestrian crossing kerb ramps and raised pedestrian crossings.

All upgrades or intersection geometry must be in accordance with the Australian Standards for Access as defined in AS 1428.1-1428.4 for pedestrian access on footpaths.

Visibility/ sight distances

Intersection design should facilitate eye contact between street users.

Sightline standards for intersections should be determined by using target speeds in order to prevent wide setbacks and designs that increase speeds and endanger pedestrians.

Major/minor street intersections

Where a major street meets a minor street the transition should be defined with kerb extensions, continuous footpath treatments and tight kerb radius to reinforce to motorists that they are entering a lower speed environment.



[Sydney Streets technical specifications](#)

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E5 Carriageways

E5.5 Corner and kerb radii

The design of corners and kerb radii are essential to enable safe, convenient pedestrian travel access. The corners and kerb radii vary within the different street types and form a significant impact on how well an intersection serves the diversity of carriageway users.

The City reviews intersections for function and safety and will support smaller kerb radii to benefit pedestrians by increasing the size of the pedestrian waiting areas and reducing crossing widths.

The following design considerations for corners and kerb radii include:

- maximise pedestrian safety, and comfort by minimum kerb radii while providing adequate accommodation for vehicles;
- assessment of specific project requirements including vehicle access and existing street constraints. Where designated bus and heavy vehicle routes the max. design vehicle is 9.25 long ; and
- with the small corner radii, large vehicles may need to use the full carriageway width to turn. Swept path analysis to be used to determine the minimum dimensions required.
- For the tight part of the turn (that heavy vehicles use) the kerb should be 45 degrees to scourage cars / smaller vehicles from using a very wide swept path at high speed

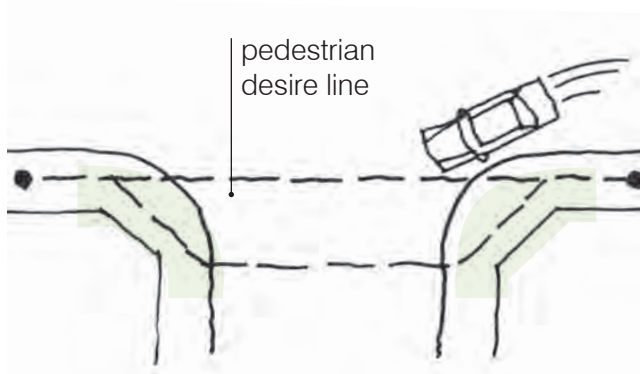


[Sydney Streets technical specifications](#)
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Notes

For turning manoeuvres the design vehicle is 9.25m waste collection vehicle except on a dedicated bus or heavy vehicle route.

Assume a turning/manoeuvre speed of 5km/hr or less



large radius

- pedestrian desire line is deflected
- detour required to minimise crossing distance
- vehicle turning angle is reduced, therefore vehicles turn faster



small radius

- pedestrian desire line is maintained
- vehicle turning angle is increased, therefore vehicles turn slowly

Figure 42

E5 Carriageways

E5.6 Kerbs and gutters

A variety of kerb types are currently used in City streets. Selection of the required kerb type will depend on street profile, drainage and accessibility requirements. Selection will be subject to City approval.

Consideration of accessibility to ensure that paths of travel are provided with kerb ramps or other devices to ensure inclusive crossing opportunities.

Heritage stone kerbs and gutters

The City has a legacy of heritage stone kerbs and gutters in trachyte, bluestone, and sandstone that makes an important contribution to the streetscape character and sense of place. Key considerations include:

- Where possible retain and consolidate stone kerb insitu
- Lift/repair existing serviceable stone kerbs during upgrade works
- Where possible replace damaged sections from the City of Sydney stockpile of trachyte and sandstone
- Aim to provide continuous sections of stone kerb not interrupted by concrete kerbing.

New radial stone kerb considerations

The provision of new kerb alignments and extensions require consideration of existing stone kerb material.

Sandstone kerb should not be used in new radial kerb alignments / extensions due to susceptibility vehicle impact damage. Bluestone should be used instead.



**Sydney Streets technical
specifications**
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Retention of heritage kerb line

E5.6 Kerb types



Barrier 150mm



Barrier 125mm



Segmented saw tooth



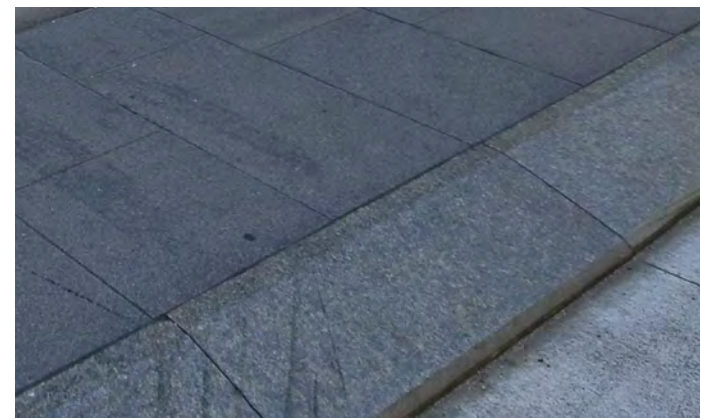
Segmented



Dish



Heritage stone kerb retained



Mountable



TECHNICAL SPECIFICATIONS
Reference to relevant documents
and web links

E5 Carriageways

E5.7 On-street parking

In addition to supplying parking for businesses and homes, on-street parking provides an important buffer for pedestrians.

Parked vehicles limit the effect of passing traffic from pedestrians on the sidewalk.

On-street parking may also help to calm traffic speeds as it reduces the width of the carriageway available for travel, and drivers are required to slow down or stop to let others park.

The parking lane may also be configured to provide a variety of streetscape and pedestrian amenities, such as landscaping, tree planting, bicycle parking and flexible use.

Designated on-street mobility parking

Where opportunities allow, and taking into consideration the availability of on-site mobility parking spaces provided by the destination, designated on street mobility parking spaces should be provided at the following key destinations: :

City centre

Main Streetss – commercial, retail, business hubs;

Public Transport – Railway stations, bus/rail/Ferry interchanges;

Community/Cultural – Near civic centres, cultural institutions, town halls, libraries, community centres, senior citizens' clubs, and health care;

Parks/Recreation – destination/ high visitation facilities such as swimming pools, leisure centres regional/ district parks, foreshore, and sporting venue;


Education – Schools, Tertiary institutions.

Residential areas

Designated on street mobility parking spaces may be provided in residential areas to provide residents with Mobility Parking Scheme permits with appropriate parking near to their home.

Objectives for access (designated constructed on street mobility parking)

1. As far as is practicable, new or relocated on street mobility parking spaces will be designed to be accessible to people with a range of disabilities, ambulant and non-ambulant.
2. The placement of designated on street mobility parking spaces will take into consideration the accessibility of the street environment and existing infrastructure to ensure access outcomes are maximised.

Performance standards	Reference
<p>1 New or relocated on street mobility parking spaces will be compliant with AS2690.5 (1993 Parking Facilities Part 5: On Street Parking. In particular:</p> <ul style="list-style-type: none"> a) As far as is possible, ensure spaces are the required between 5.5m and 6.7m as required by AS2690.5 b) As far as possible, ensure the width of the space is 3.2m, as required by AS2690 	<p>AS2890.5 (2009)</p> <p> Sydney Streets technical specifications A3 B6 C1</p>
<p>2 The most accessible mobility parking space within the each vicinity should be provided. The following considerations will be made to maximise access outcomes for each space:</p> <ul style="list-style-type: none"> a) Mobility parking spaces should be placed at the end bay in the block to provide close proximity to kerb ramps at intersections b) The placement of new mobility parking spaces will take into consideration objects and infrastructure on the footway adjacent to the mobility parking space to ensure there are no obstructions to access between the parking space and the kerb c) Future mobility parking spaces will not be placed on uphill gradients, to avoid the risk of wheelchair users rolling back as they enter and exit the vehicle d) Future mobility parking spaces will not be placed on bending roads with low visibility. 	<p>Additional Guidance</p>



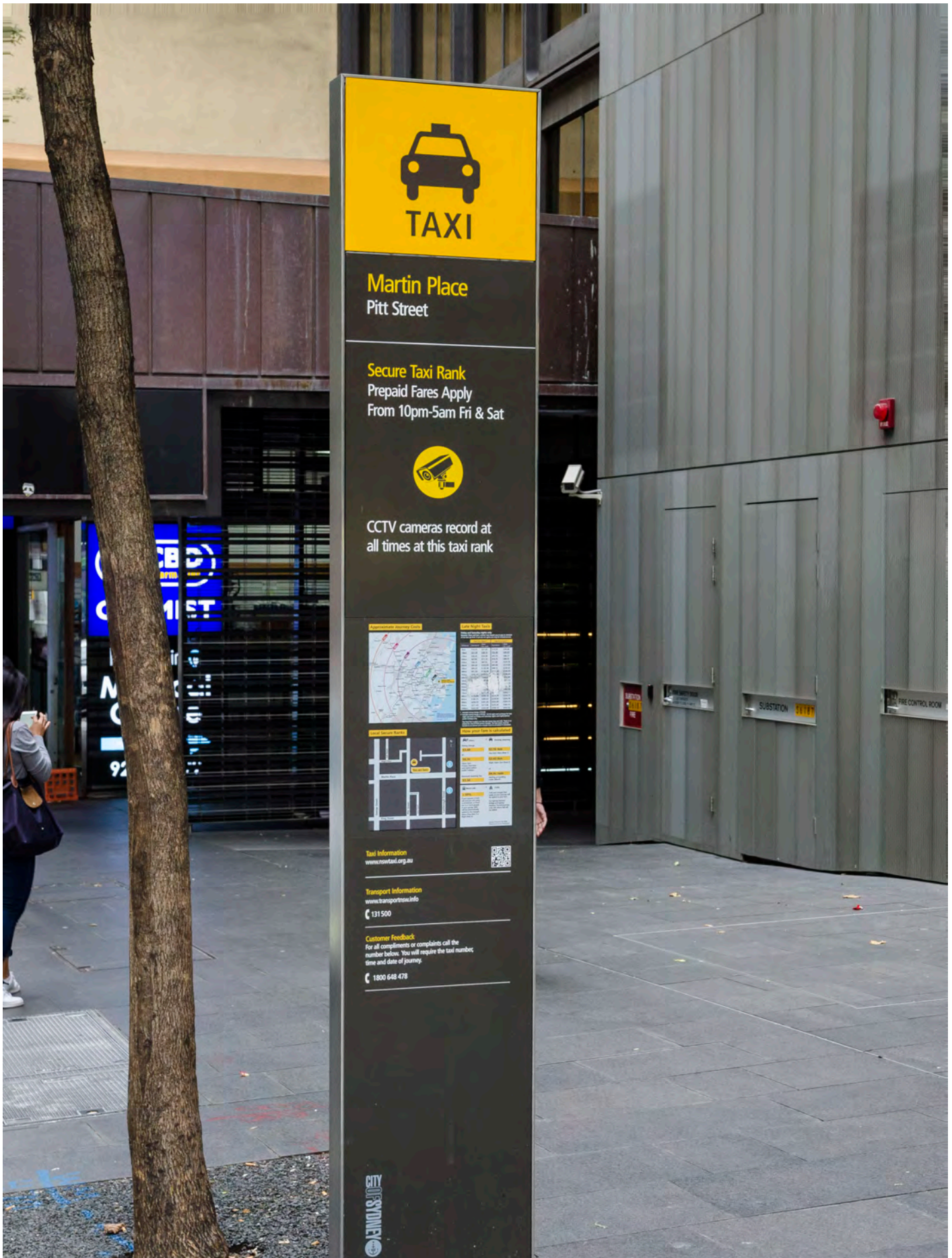
E5 Carriageways

E5.8 Taxi ranks

Objectives for access

1. Super taxi ranks will be designed to be safe and accessible for wheelchair users.
2. Taxi ranks will be designed to be accessible and safe for wheelchair users
3. Taxi ranks will be detectable for people with low vision

Performance standards	Reference
<p>1. Super taxi ranks will include a kerb ramp compliant with AS1428.1 to facilitate safe access from the footway to the vehicle:</p> <ol style="list-style-type: none">a) where ramps are included in the kerb, they should be positioned at the rear of the taxi rank considering the extra length required for both the larger taxi vehicle and loading ramp, which will allow adequate access, clearance and circulation space for wheelchair users.b) kerb and channel adjacent to the taxi vehicle to be eliminated or relocated to improve access for people who are blind or have low vision and people with physical disability.	<p>AS1428.1 (2009, Clause 10.7</p> <p>Sydney Streets technical specifications</p> <p>NSW Taxi Council (2008 Taxi Zone Guidelines</p>
<p>2. The footpath area adjacent to the taxi rank should be sufficiently wide enough to provide for waiting taxi passengers and passing pedestrians:</p> <ol style="list-style-type: none">a) a minimum of 1800mm clear space should be provided for passing pedestrians, with a greater width in areas with high pedestrian volumes.	<p>NSW Taxi Council (2008 Taxi Zone Guidelines</p>
<p>3. In the best possible circumstances and as far as is practicable all taxi ranks will:</p> <ol style="list-style-type: none">a) be located on streets with a gradient of less than 1:20b) be placed to take into consideration objects and infrastructure on the footway adjacent to the taxi rank to ensure there are no obstructions to access between the taxi rank space and the kerb.	<p>AS1428.1 (2009 Clause 10.7</p> <p>Sydney Streets technical specifications</p>
<p>4. Where taxi ranks are located on one way streets – they will be located on the left side of the street in the direction of travel– to provide safe access for everyone- including people with assistance animals – to the front passenger seat</p> <p>5. Taxi rank signage will incorporate:</p> <ol style="list-style-type: none">a) luminance contrast (minimum 30% to be visible to people with low visionb) signage and written information at the rank to be accessible for people who are blind or have low vision– e.g. raised tactile lettering on signage with high colour contrast, and braille if possible.	<p>City of Sydney Legible Sydney Strategy and Design Manual.</p>
<p>6. Tactile Ground surface indicators will not be used in conjunction with taxi ranks.</p>	<p>Additional Guidance</p>
<p>7. Information about the level of access at each taxi rank will be provided via on-line maps and listings.</p>	<p>Best Practice</p>



E5 Carriageways

E5.9 Medians

A median is the portion of the roadway separating opposing directions of the travelled way, or local lanes from through travel lanes.

These elements provide opportunity to reduce traffic lane widths, slow traffic, and increase landscape and urban canopy.

Raised medians and islands provide space to locate pedestrian safety features and traffic control devices, amenities, landscaping and stormwater management.

Pedestrian refuge islands/ medians offer pedestrians opportunities to cross roads in a staged manner. They are typically used when a street is very wide.

Bioswale medians are typically incorporated in new streets.

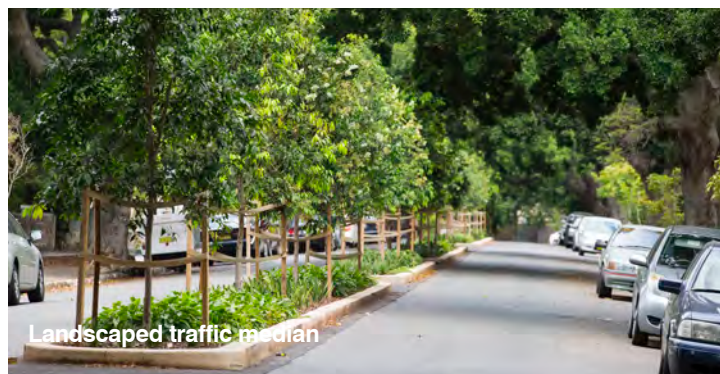
Medians should only be used where they support tree planting, greening and/or facilitate safe pedestrian crossing.



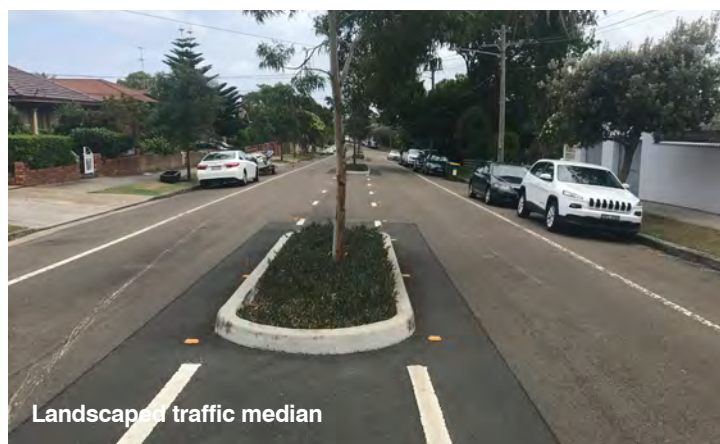
REFER
Section E 6.5



[Sydney Streets technical specifications](#)
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Landscaped traffic median



Landscaped traffic median



Bioswale Median



Pedestrian Refuge Median



Cowper Wharf Road Median under construction

E5 Carriageways

E5.10 Slow streets

Slow streets are characterised by reduced traffic speed and improved pedestrian and cycle amenity. Pedestrians are still separated from vehicle traffic as opposed to a shared zone arrangements. Footpaths are widened to accommodate pedestrian movement as well as opportunities for street furniture and greening.

Vehicle speeds are self reinforced through narrow carriageways, raised thresholds, kerb extensions and paving.

Yield streets

A special type of slow street is a “yield” street . These streets accommodate two way vehicle access in a single vehicle lane. Gaps in parking arrangement allow spaces for vehicles travelling in opposite directions to pass one another.

Many narrow streets in the City's heritage areas such as Glebe and Newtown already by default operate on yield street arrangements in order to accommodate two way access.

However for new street upgrades with low traffic volumes a yield street arrangement is an option to retain as much parking as possible but free up space for improved pedestrian, cycling and greening amenity.



REFER

**E5.3 Turning, parking and manoeuvring-
designing for low speed**



Little Hay Street - widened footpath to maximise pedestrian amenity

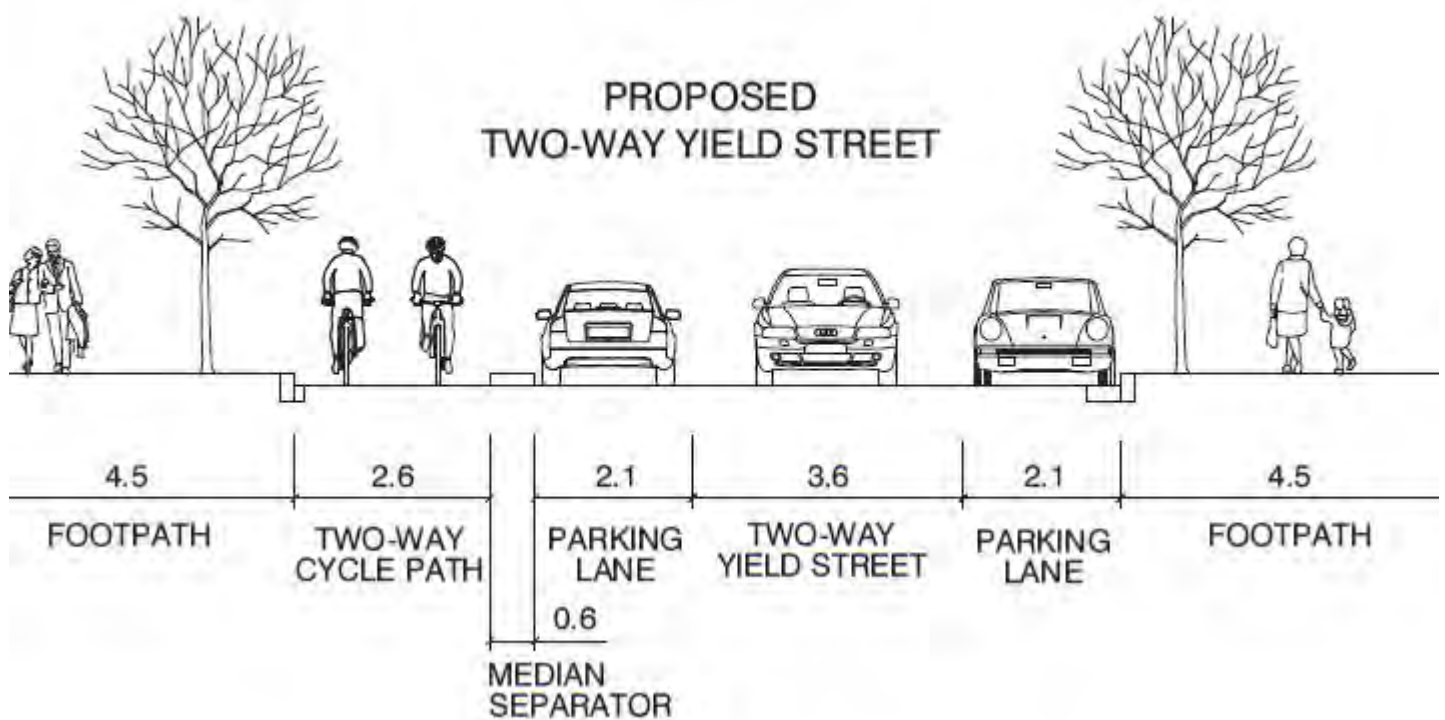


Figure 43 - Yield street section example

E5 Carriageways

E5.11 Shared zones

A Shared Zone is a road or network of roads where the road space is shared by vehicles and pedestrians.

The Transport NSW Shared Zone Policy (July 2012 and Technical Direction 2016/001 February 2016 provides guidelines for the identification and implementation of Shared Zones so that pedestrians and vehicles share that road space safely.

When there are low volumes of traffic identified and lack of space separation opportunities for balance between pedestrians and vehicle movement available a change of street type can be considered to a Shared Zone.

Two types of shared zones are considered under the Transport NSW Technical Direction:

- Category 1 (Cat 1 shared zone is provided on a road related area, has clearly different coloured and textured surface treatments from the surrounding roads, and typically does not have kerbs.
- Category 2 (Cat 2 shared zone is provided on a road which includes footpath parking and has substandard footpath widths, retains kerbs and has traffic calming devices and treatments to regulate traffic speeds to 10km/h.

Potential reasons for not removing kerbs may include heritage or cost-prohibitive constraints. However where existing kerbs are being retained traffic calming devices and a visibly changed road environment may need to be used to address vehicle speed. The retention of kerbs requires Transport NSW approval.

Considerations

Changing pavement surface to highlight the difference in the street environment from the surrounding road network. It must be clearly distinguishable by colour, texture and materials.

Continuous footpath treatments should be considered as entry/exit treatments to assist traffic calming when kerb are retained. Refer to TD 2013/05.

Consider building access requirements as per NSW fire brigade guide for aerial appliance – Policy No 4 Guidelines For emergency Vehicle Access;

The design for shared zones must safely accommodate the needs of those who are mobility restricted and vision impaired. Features such as tactile paving, hand rails and the careful placement of landscaping and street furniture must be considered during the design process. AS 1428.4.1 Design for Access and Mobility contains detailed design requirements and must be referred to during the design process.

Restricted forward visibility to encourage drivers to reduce their speeds and approach with care.

Provide landscape deflections such as garden beds, lighting and street furniture to act as a reminder that the driver is in a shared pedestrian zone.

In locations where it is considered necessary to maintain visibility, a minimum stopping sight distance of 12 metres shall be applied.



REFER

[TfNSW Shared Zones Technical Direction](#)



Objectives

1. Shared zones will be designed to prioritise pedestrian movement and include continuous footpath treatments, where applicable.
2. The design for shared zones must safely accommodate the needs of people with mobility disabilities and people who are blind or have low vision to navigate safely and independently through the shared zone. Features such as tactile paving, hand rails and the careful placement of landscaping and street furniture must be considered during the design process.

Performance standards

1. Shared zones will be designed in accordance with the City's Streets Code, Sydney Streets Technical Specifications and the Transport NSW TTD 2016/001. In particular:
 - a) The footpath treatment across the entrance to the shared zone should be continuous with surrounding footways to prioritise pedestrian movement, where it meets requirements of RMS TDT 2013/05
 - b) The remaining pavement surface of the shared zone shall be changed to highlight the difference in the street environment from the surrounding road network. It must be clearly distinguishable by colour, texture and materials.
2. Tactile ground surface indicators will be included at the boundary of the footway and shared zone where they are at the same grade in accordance with AS1428.4.1 clause 2.5. This will warn people who are blind or have low vision they are entering a more hazardous environment.

Reference

TfNSW TTD 2016/001
TfNSW TDT 2013/05



**Sydney Streets technical
specifications**
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TfNSW TTD 2016/001
TfNSW TDT 2013/05
AS1428.4.1 Clause 2.5

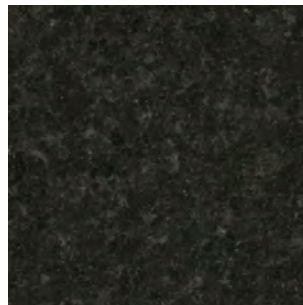
E5 Carriageways

E5.11 Shared zones

City centre

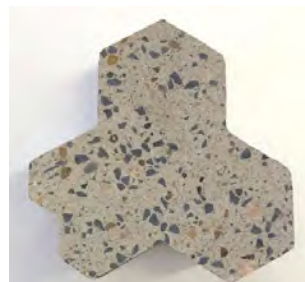


Harcourt (exfoliated finish)

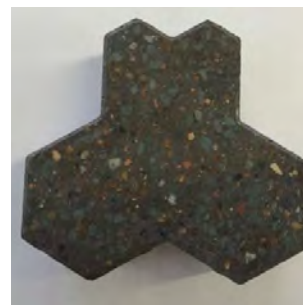


Austral Black (exfoliated)

Main Street precincts/ shared zone streets/lanes connected/ adjacent to a main street



Interlock concrete paver
-Honed: / two tone mix



Interlock -Honed: 50/50
River Pebbles and Basalt



Brick/concrete masonry
unit

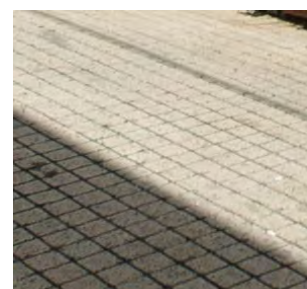
Local area



Bi -pave 80mm/ interlock



Brick/ concrete masonry



Stamped asphalt (use as
per City direction)

Illustrative patterns

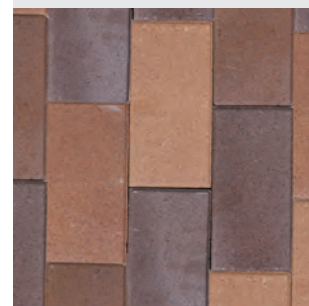
Stamped asphalt (low traffic
areas - use as per City
direction



Harcourt/Austral Black



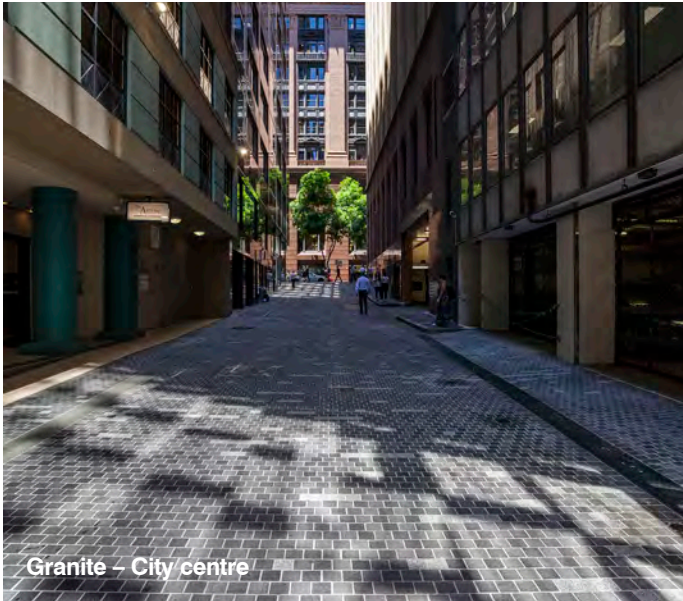
Interlock concrete paver/
two tone mix



Brick (three tone mix)



[Sydney Streets technical
specifications](#)
A3 B6 C1



Granite – City centre



Urban renewal / local street – concrete interlock



Brick – Adjacent main street – Newcombe Street – brick



Local – Bi pave concrete unit

CITO-CONSTRUCTION



Local – brick



Local – stamped asphalt

E5 Carriageways

E5.11 Shared zones

Transport NSW endorsed in principle new shared environment intersections along cycleways

Transport NSW has endorsed in principle the use of shared environment intersection treatments for use at un-signalised intersections to treat bi directional cycleway crossings at intersections.

The City undertook a study of trial intersections at Bourke St and George Street cycleways to assess road user behaviour at these intersections and safety outcomes.

Use of this intersection type will be subject to context assessment and Transport NSW approval.



Shared zone intersection treatment using concrete unit bi pavers

E5 Carriageways

E5.12 City centre laneways

City Centre Laneways provide important functions including rear property services, pedestrian links, or spaces with active ground floor uses that become destinations in their own right.

City centre laneways program

The Live Laneways - Laneways Revitalisation Strategy, consists of a number of initiatives such as ground floor activation, creation of shared zones and public domain improvements to bring life to laneways located in the City Centre.

The laneways program is made up of 57 lanes located within the Central Sydney planning control boundary. (Refer Figure 45)

Laneway treatments

The level of laneway treatments will depend on location/ context, predominant laneway function, shared zone status, the level or potential for ground floor activation/ outdoor dining, importance as a pedestrian network connection and available budget. For laneways using unit paving this will be granite paving that may vary in unit size and tone mix to differentiate from city centre footpath treatments.

For designated shared zones the paving treatment must be compliant with RMS requirements (refer to E5.11).

Laneways providing a predominant rear property service function require upgrade to match current material condition. This will generally be asphalt pavement with stone or concrete kerbs. Retention and extension of existing stone kerbs will be a key consideration.

Lighting

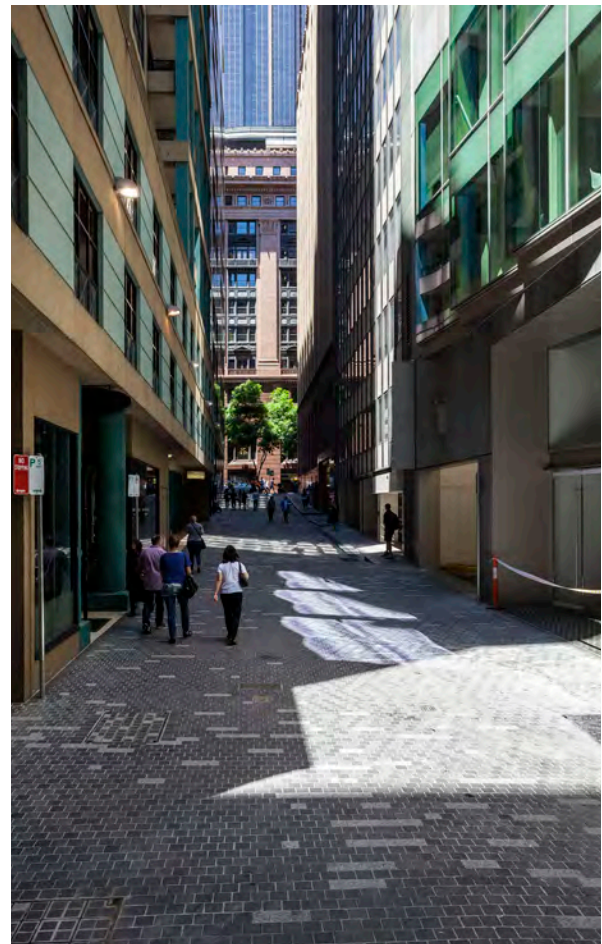
Laneway owned by the City of Sydney will require lighting treatments as set out in the Sydney Lights Design Code 2015. Bespoke lighting proposals such as catenary lighting are generally not approved. As such bespoke proposals require City approval in the concept design phase to avoid costly delays in the detailed design stage.

Public art

The City has initiated a number of permanent and temporary public art installations in City laneways. The provision of public art will be subject to City approval processes including consideration by the Public Art Advisory Panel. Refer to E10 Public Art.

Greening

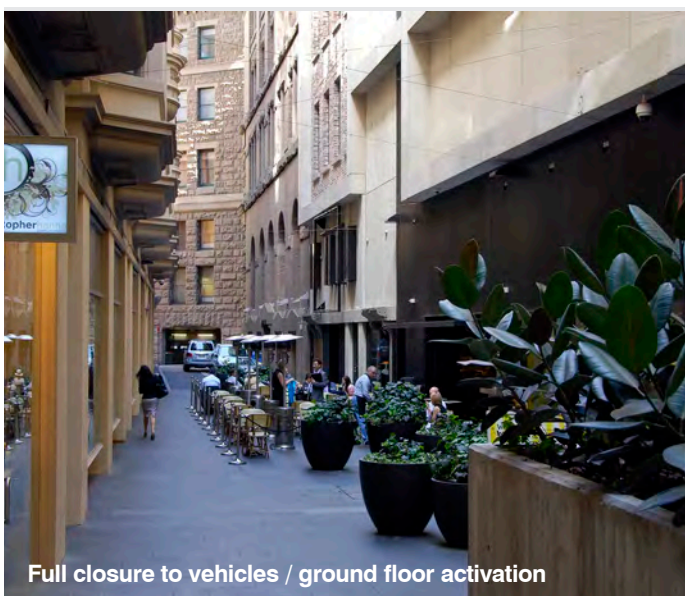
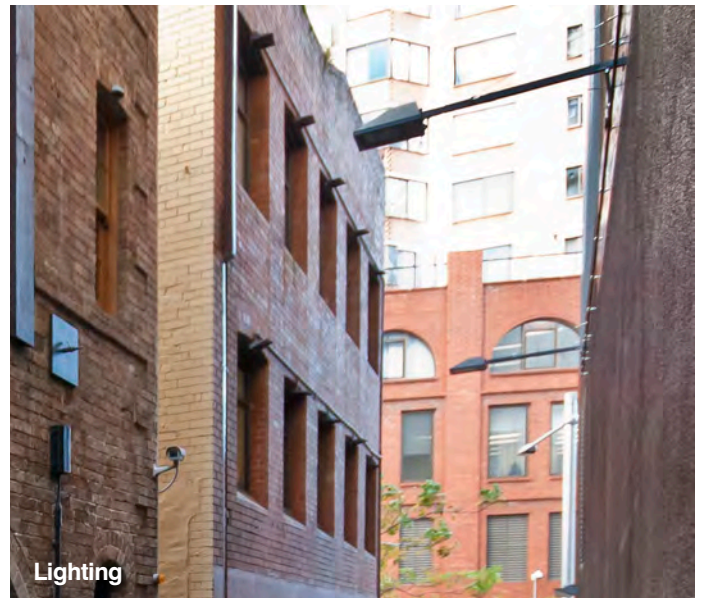
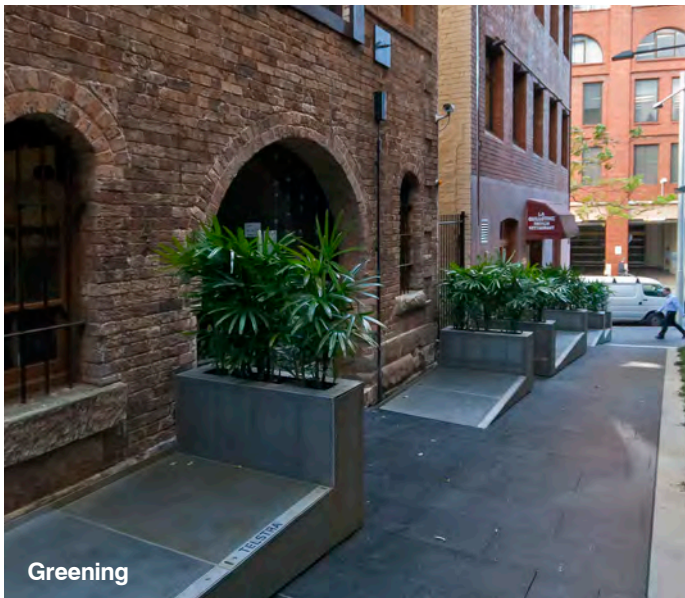
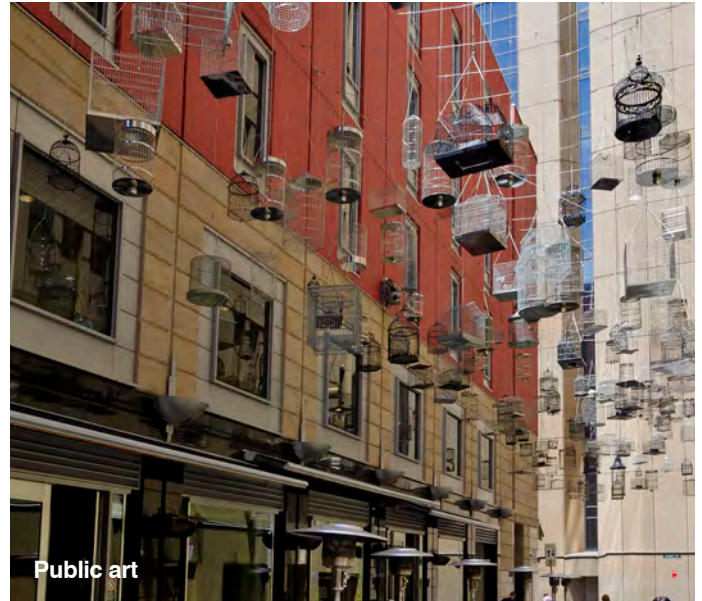
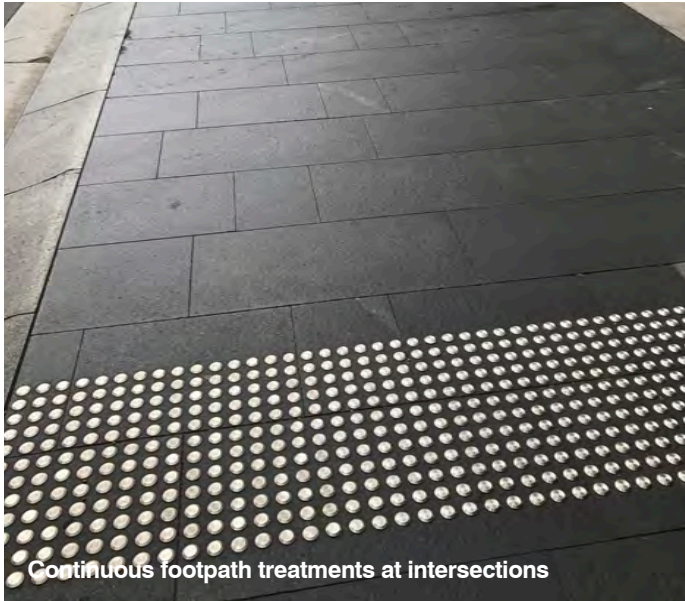
Opportunities to maximise green should be considered. Depending on space provision this could include tree planting, raised planters or vertical green wall treatments. Assessment of micro climate needs to be undertaken as part of the feasibility process.



Hosking Place

Street design and coordination

City centre laneways toolbox



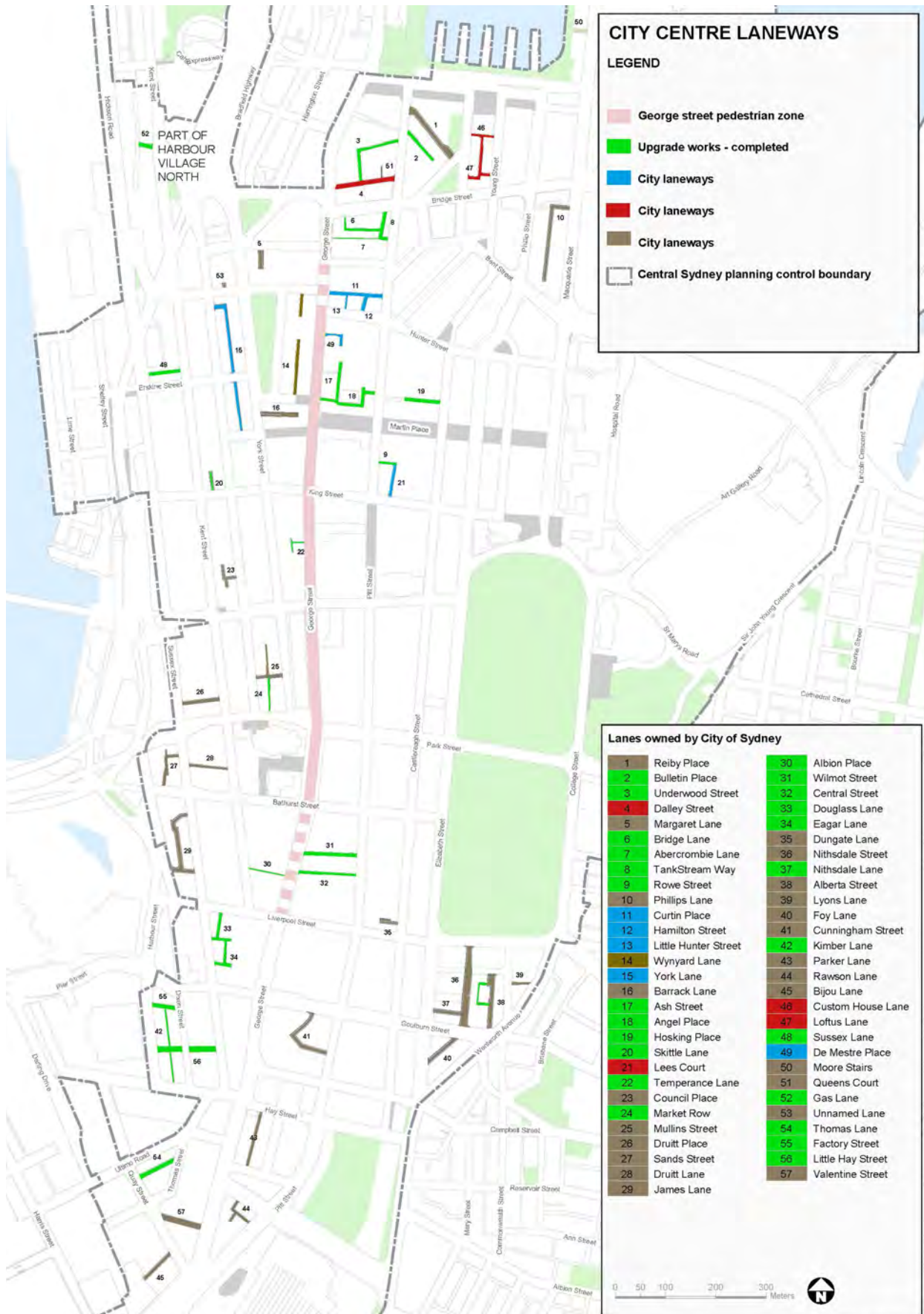
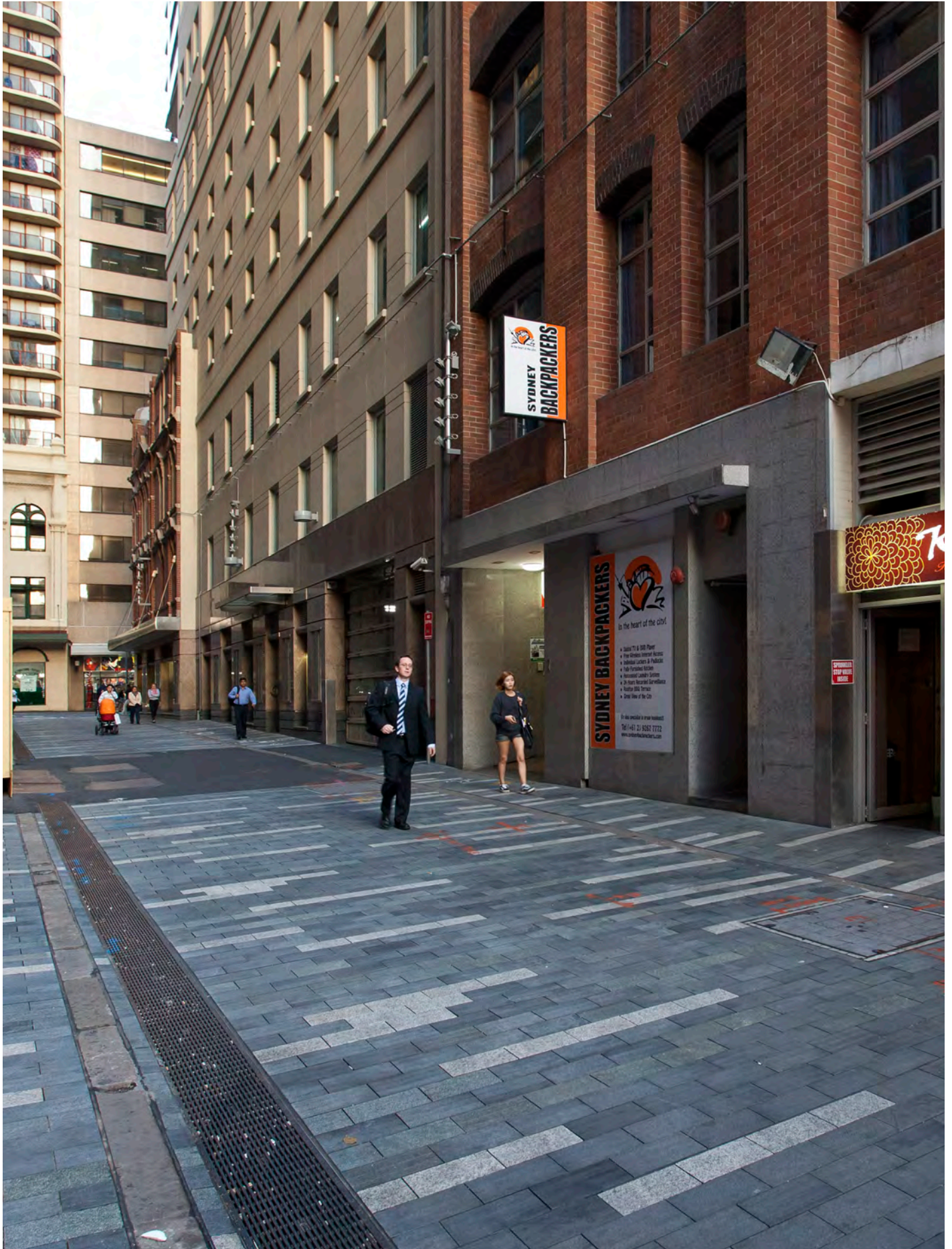


Figure 45 - City Centre Laneways

Street design and coordination



Central Street

E5 Carriageway

E5.13 Pedestrian crossings

The City of Sydney works collaboratively with Transport NSW (TfNSW) to design safe pedestrian street crossings and shared environments. In many circumstances, the Transport NSW is the final consent authority for the installation of this infrastructure. The City must demonstrate certain conditions and design guidelines are met to satisfy requirements of the RMS before consent can be issued.

As a matter of policy, pedestrian crossings will be designed in accordance with TfNSW Technical Directions TDT 2001/04b: use of traffic calming devices as pedestrian crossings and with consideration of the following performance standards.

Objectives for access

1. Pedestrian crossings will be designed to be detectable to people who are blind or have low vision to ensure they understand they have entered a different environment.
2. Pedestrian crossings will be accessible to wheelchair users, mobility scooters and people with prams.
3. Pedestrian crossings will be safe and free of slip and trip hazards



E5 Carriageways

E5.13 Pedestrian crossings

Performance standards	Reference
<p>1 Pedestrian crossings will be designed to be detectable to people who are blind or have low vision to ensure they understand they have entered a different environment. They will feature:</p> <ul style="list-style-type: none">a) Either kerb ramps compliant with AS1428.1 Clause 10.7b) or where it is a level crossing, tactile ground surface indicators (hazard along the boundary of the footway and roadway in accordance with AS1428.4.1 (2009 Clause 2.5c) Lighting installed to required lux levels in accordance with the range in Australian Standardsd) Minimum 30% luminance contrast between pedestrian crossing signage poles, vehicle and pedestrian separation installations, fittings and background and adjacent surfaces.	<p>AS1428.1 (2009) Clause 10.7</p> <p>AS1428.4.1 (2009 Clause 2.5)</p> <p>AS/NZS 1158 – 2010 Lighting for Roads and Public Spaces</p>
<p>2 Pedestrian crossings will be accessible to wheelchair users, mobility scooters and families with prams. As far as is practicable and in the best possible circumstances the gradient / cross slope on crossings shall not be steeper than 1:40.</p>	<p>Australian Human Rights Commission: Access to Premises – Frequently Asked Questions</p>
<p>3 Pedestrian crossings will be safe and free of slip and trip hazards. They will incorporate non-slip paintwork at any pedestrian crossing point in accordance with AS4586 (2013).</p>	<p>AS 4586 (2013) TfNSW Technical Direction TDT 2001/04b</p>



REFER

Pedestrian Refuge Island -
Refer Section E5.9



[Sydney Streets technical specifications](#)
A3 B6 C2

Pedestrian crossings toolbox



Kerb extensions to minimise crossing distance



Median refuge island to minimise crossing distance



Flush with adjoining footpath



TGSIs for flush crossings



Low landscape treatments/rain gardens



Lighting

E5 Carriageways

E5.14 Signalised pedestrian crossings

Signalised pedestrian crossings provide safe crossing opportunities on streets with high traffic volumes and speeds.

At many signalised crossings. Transport NSW is the consent authority for the installation of signalised pedestrian crossings (and audio tactile units).


Audio Tactile Push Buttons (ATPBs) alert pedestrians who are blind or have low vision that the traffic signal has changed and it is safe to cross the road at a signalised crossing.

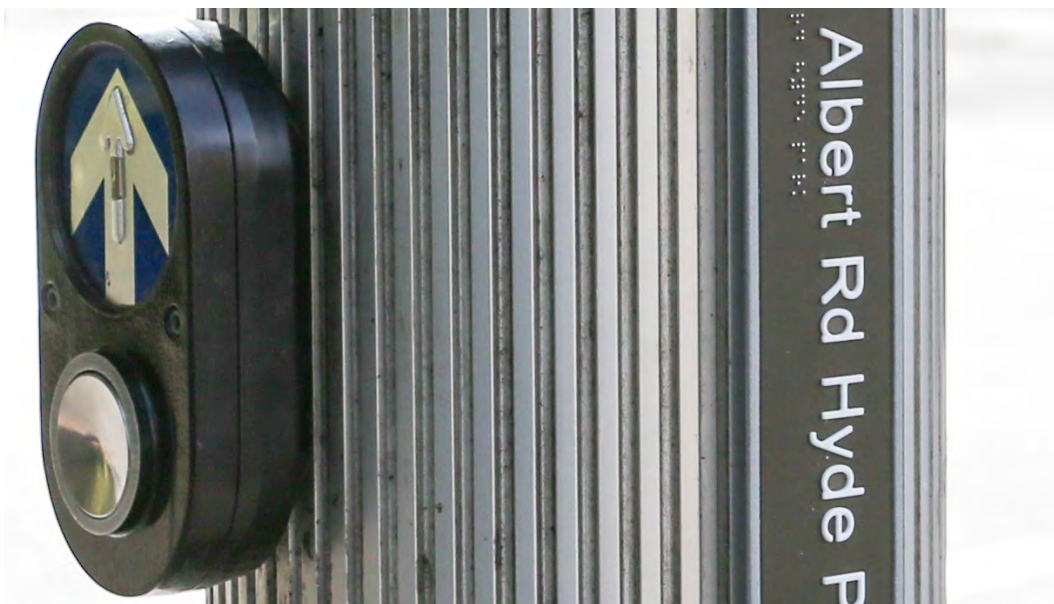
The City will advocate to the RMS for the provision of Audio Tactile Push Buttons (ATPBs) at all signalised intersections, to ensure people who are blind or have low vision are able to detect when it is safe and appropriate to cross at a signalised intersection.

The City is providing Braille /Tactile wayfinding signage at all signalised pedestrian intersections.

Objectives

- 1. Use of Audio Tactile Push Buttons (ATPBs) will allow people with vision and/or hearing Impairment to know when it is safe to cross the road
- 2. Controls at signal operated pedestrian crossings easily reached by a person when standing or seated and operated with a closed fist or open palm.

Performance standards	Reference
<div><div>1. Where pedestrian push button assemblies are installed, auditory signals and tactile directional indicator buttons should be included, to provide pedestrians with audio cue of when it is safe to cross the road. They will incorporate incorporating audible, visible and tactile signal notification elements.</div><div>2. Where they are provided, pedestrian push button assemblies should be located within the zone of common reach as per AS1428.2 (1992 Clause 22.4.</div><div>3. Braille /Tactile wayfinding signage will be located at all signalised pedestrian crossings</div></div>	<div>Best Practice</div> <div>AS 1428.5: 2010</div> <div>AS1428.2 1992 Clause 22.4</div> <div>Legible Sydney Signage Manual</div> <div><div></div><div>Sydney Streets technical specifications C6</div></div>



Audio/Tactile Push button



Braille Tactile signage

E5 Carriageways


E5.15 Pedestrian refuge island

Pedestrian refuge islands offer pedestrians opportunities to cross roads in a staged manner. They are typically used when a street is very wide or when the crossing time can be too long for some individuals to cross in one traffic light cycle.

Cut-throughs will be aligned with corresponding kerb ramps on either side of the road.

Objectives

- 1. Pedestrian refuge islands will be accessible and safe to wheelchair users and people with prams.
- 2. Cut-throughs will be aligned with corresponding kerb ramps on either side of the street.
- 3. Pedestrians who are blind or have low vision will be able to detect the boundary between the refuge island and the

Performance standards	Reference
<div>1. As far as is practicable pedestrian refuge islands will be designed in accordance with RMS Technical direction TDT2011/01A. In particular<ul style="list-style-type: none">a) pedestrian refuges will be a minimum of 2000m wide and must have a kerb.b) Medians and pedestrian refuges in crossings should be cut through level with the street or have kerb ramps at both sides.c) Cut troughs will be aligned with corresponding kerb ramps on either side of the roadd) Cut troughs will be a minimum of 3000mm wide.</div>	<div> Sydney Streets technical specifications A3 C3</div>



E5 Carriageways

E5.16 Light rail streets

The CBD and South East Light Rail is a new light rail network for Sydney, currently under construction. The 12km route will feature 19 stops, extending from Circular Quay along George Street to Central Station, through Surry Hills to Moore Park, then to Kensington and Kingsford via Anzac Parade and Randwick via Alison Road and High Street.

While Transport for NSW are leading the delivery of the design of the light rail system, including the light rail zone along our streets, stops and associated infrastructure, the City is working with Transport for NSW to ensure the interface between the pedestrianised areas and the light rail zone is inclusive and accessible.

Possible future light rail connections to Green Square will require transformation of existing streets to accommodate.

Performance standards

1. Tactile ground surface indicators will be included at the boundary of the light rail zone and the pedestrianised area, in accordance with the Disability Public Transport Standards 2002 and AS1428.4.1 Clause 2.5

Reference

Disability Public Transport Standards 2002
AS1428.4.1 Clause 2.5



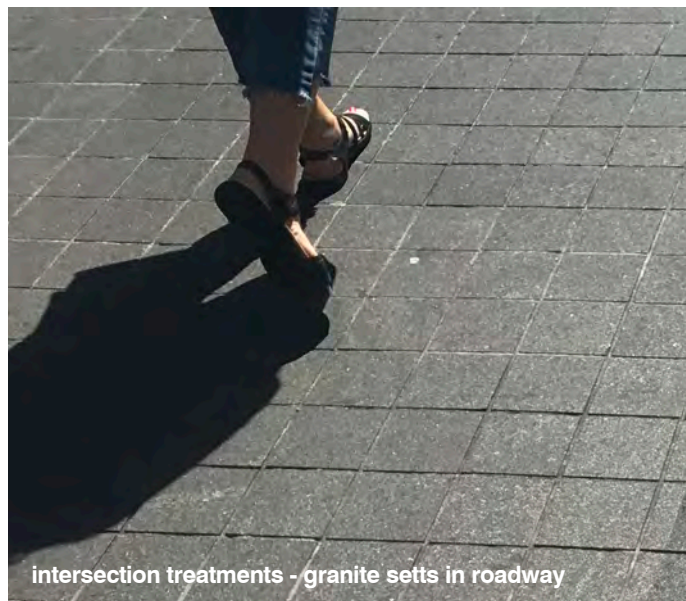
[Sydney Streets technical specifications](#)
C2



Street design and coordination



Light Rail track zone demarcation



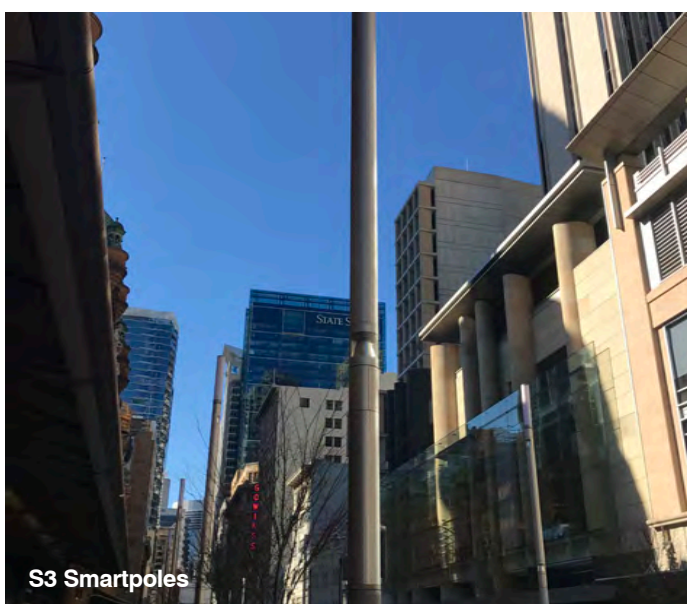
intersection treatments - granite setts in roadway



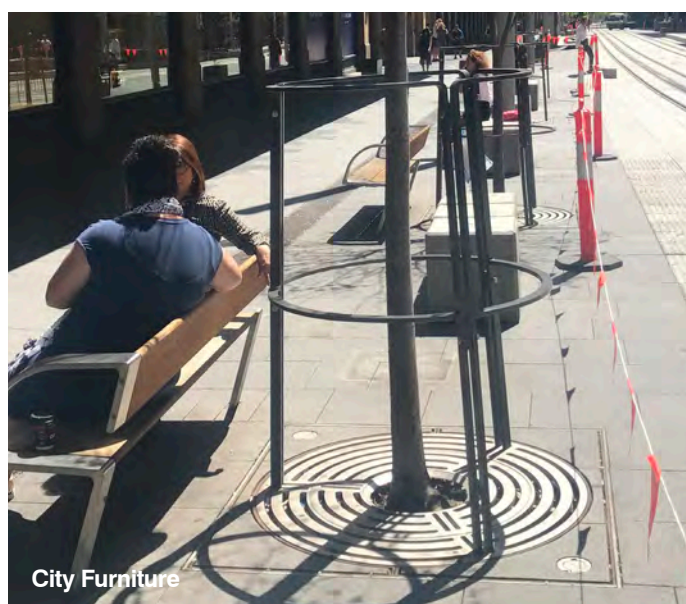
City granite in footpath zone with paver TGSIs to demarcate light rail zone



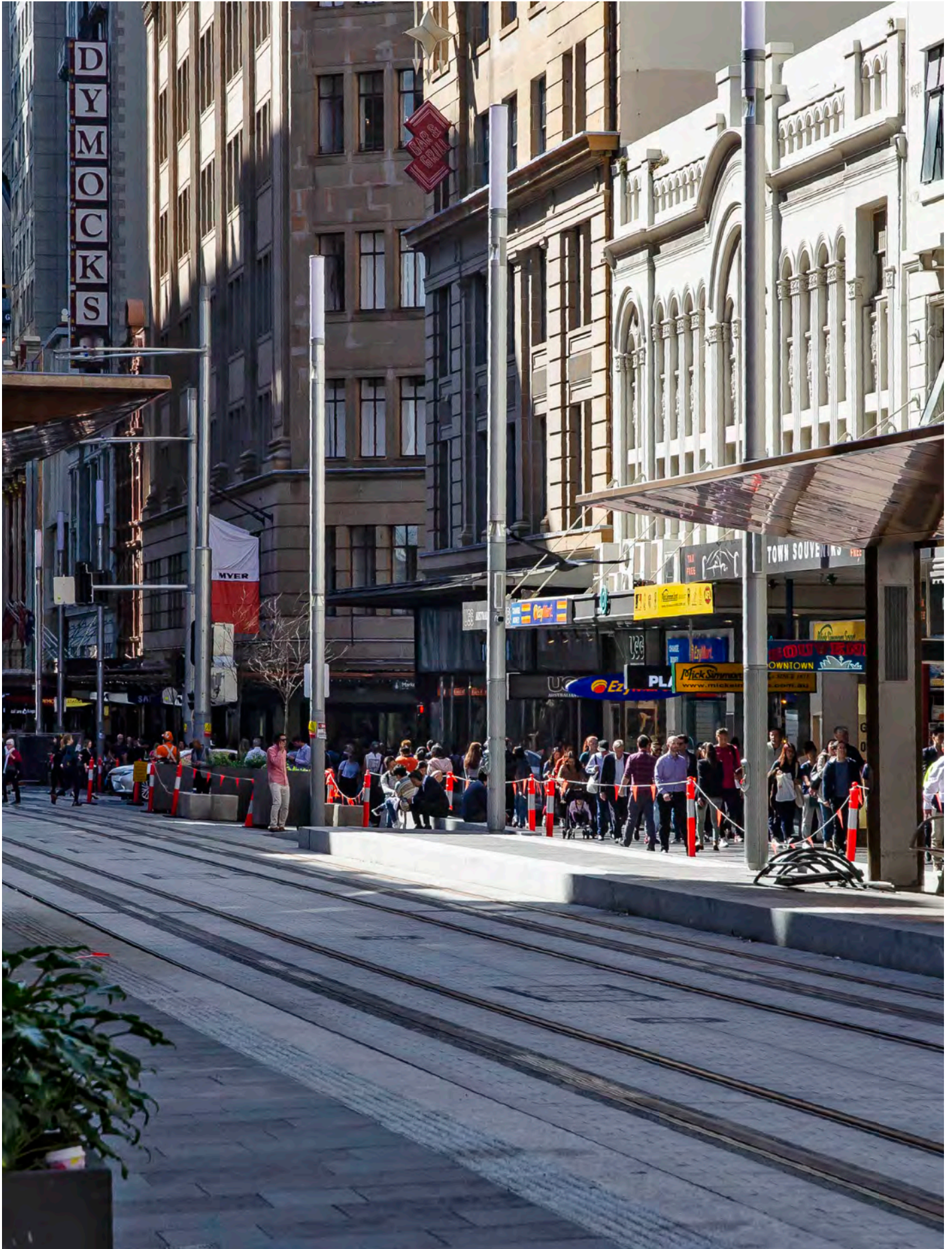
Landscape



S3 Smartpoles



City Furniture



E6 Urban canopy and greening

E6.1 Street tree siting and spacing

E6.2 Street tree selection

E6.3 Tree base treatments

E6.4 Verge treatments

E6.5 Planted medians



Urban canopy



E6 Urban canopy and greening

The City's Greening Sydney Strategy aims to maximise public domain areas of the City with trees, gardens and turf.

Urban canopy and greening provides:

- environmental quality and climate control benefits;
- visual continuity and unity for a streetscape;
- reinforces local identity and character.
- opportunity to incorporate Water Sensitive Urban Design to receive water runoff from surrounding roads and footpaths, and to treat stormwater for reuse and/or discharge.

Urban Canopy and greening considerations in this section following, include:

- Siting and Spacing;
- Street Tree Selection;
- Tree Base Treatments; and
- Verge Treatments
- Median Treatments



The City's tree management team will advise and direct all proposed tree selection and establishment requirements for each project.



REFER

[City of Sydney Tree management policy](#)





central street canopy

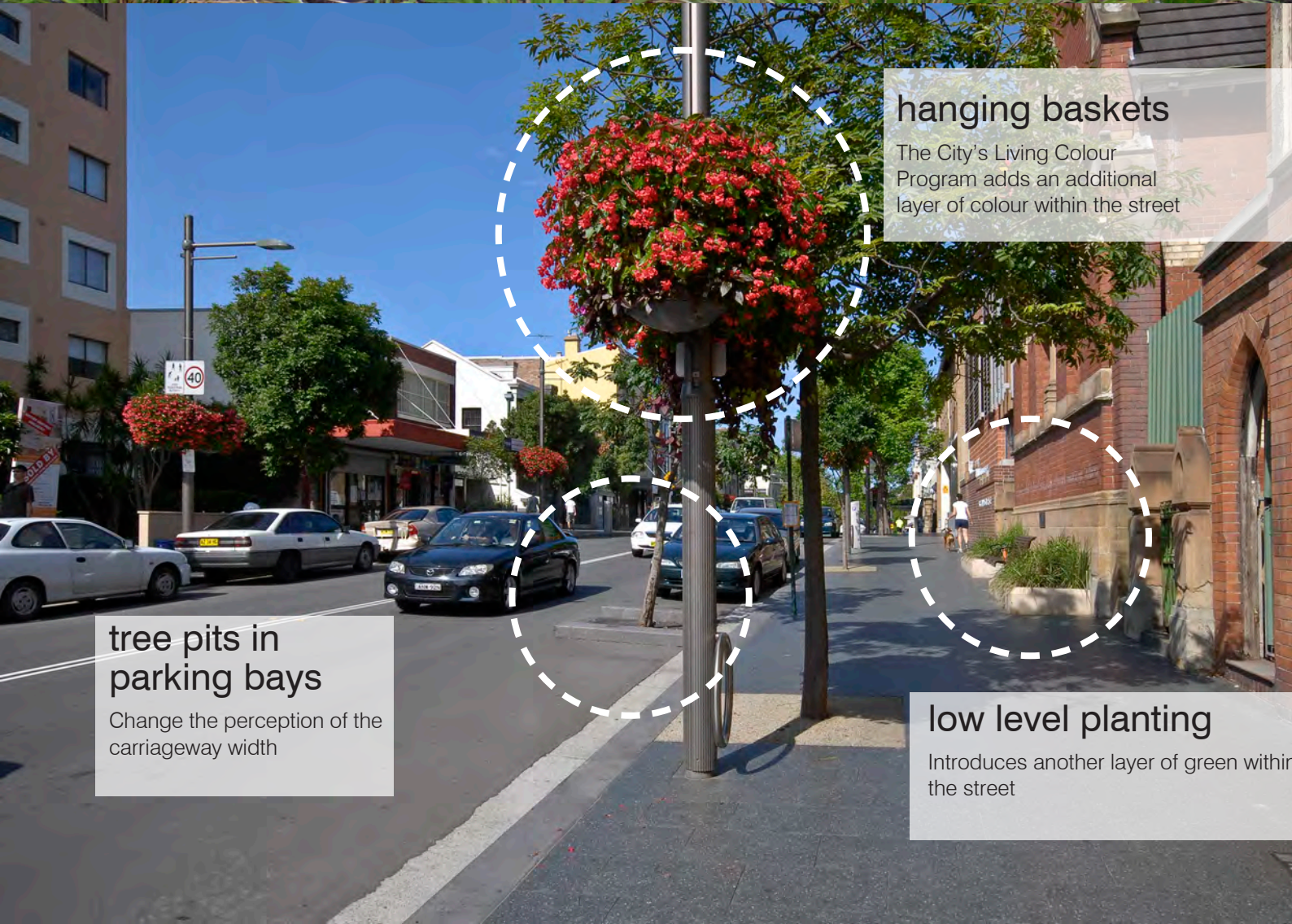
A central median adds tree canopy

street trees

Provide scale and shading within the street

water sensitive urban design

Median Swale



hanging baskets

The City's Living Colour Program adds an additional layer of colour within the street

tree pits in parking bays

Change the perception of the carriageway width

low level planting

Introduces another layer of green within the street

E6 Urban canopy and greening

E6.1 Street tree siting and spacing

Street trees should be planted within the Public Domain Furniture Zone and the Extension Zones of the street and subject to assessment within the Carriageway in median planting or to define parking bays.

The Street Tree Masterplan provides direction on spacing, pit construction, soil volumes and mix to ensure optimal tree establish.

Design co-ordination is critical to ensure assessment and co-ordination with utility placement, light poles and sight clearance requirements. Early consideration of streets trees across design consultant teams will reduce situations where provision of street trees are compromised by other factors.

Approved locations will be determined on a case by case basis through individual site assessment.

Where trees are planted in coordination with parallel parking bays, the size of the tree pit and the location of the central planting must consider car overhangs and allow for enough space to prevent tree damage;

Objectives for access

1. Streetscapes should be designed so that street trees don't obstruct the continuous accessible path of travel.
2. Elements on the streetscape, including street trees, will be coordinated to minimise pinch points.
3. Tree pit surfaces will be level with surrounding paving;
4. Where tree guards are used they will be visually detectable to all users.

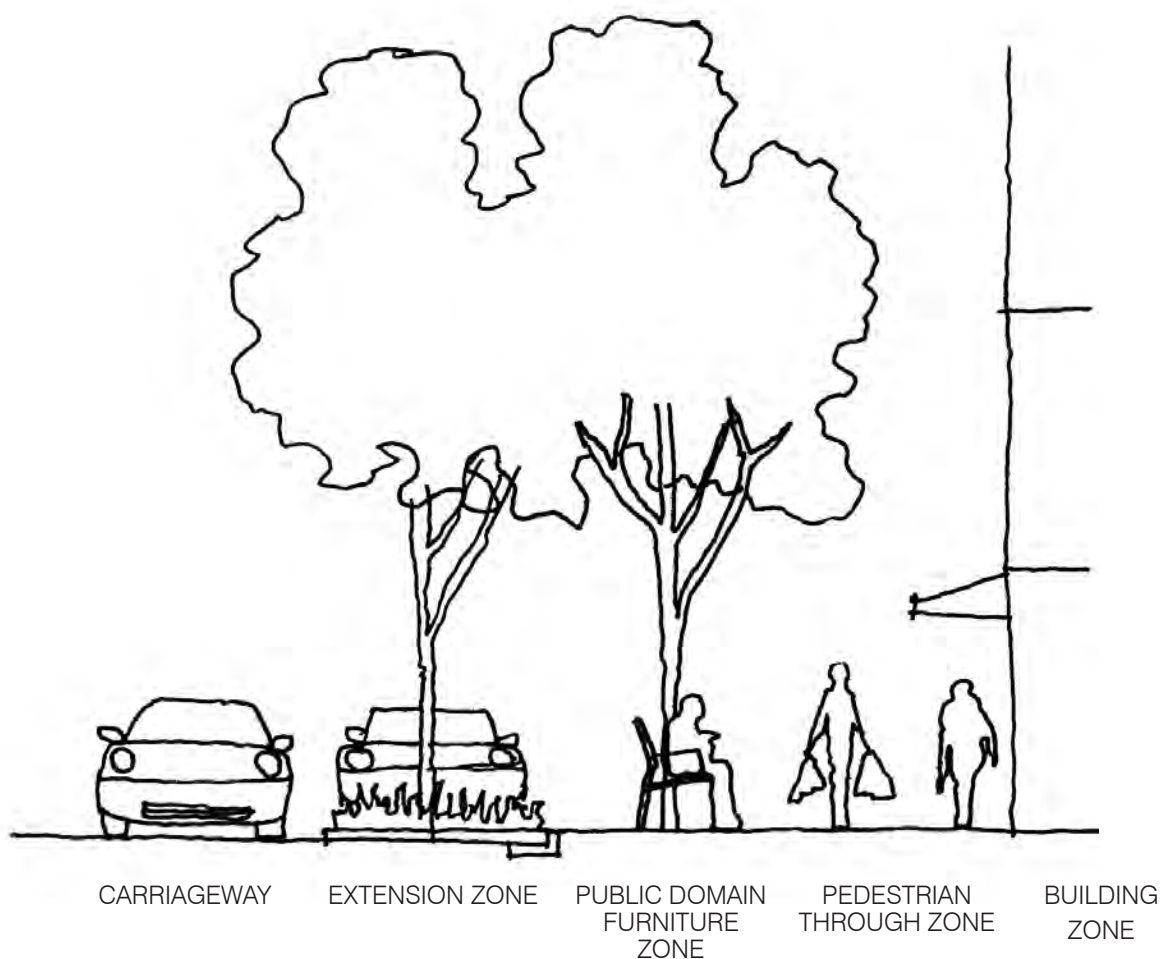



Figure 46

E6 Urban canopy and greening

Performance standards	Reference
<p>1. Street Trees will be located within the Street Furniture Zone of the footway, so as not to obstruct the continuous accessible path of travel. In particular:</p> <ul style="list-style-type: none"> a) Optimally 600mm from kerb edge b) A minimum of 1200mm clearance from the edge of the tree pit to the boundary of the building should be provided. <p>In circumstances where footways are less than 1800mm wide, a minimum clearance of 900mm between the back of the tree pit and building/boundary line will be accepted, to enable the City to meet targets identified in Urban Forest Strategy and Street Tree Masterplan Part D</p> <p>In these circumstances, the following conditions must be met:</p> <ul style="list-style-type: none"> a) that there are no obstructions overhanging the building line and encroaching onto the footway from the front yard of the adjacent property (e.g. shrubs and vines b) that the lower branches of the tree can be pruned to a height of at least 2000mm, and c) consideration will be given to the placement of other infrastructure on the street. A 900mm width clearance should be of no greater length than 1500mm. Beyond that, regular passing opportunities of 1800mm should be provided to minimise pinch points. 	<div>  REFER Street Tree Masterplan Part D </div> <p>Australian Human Rights Commission (2014 Frequently asked questions: Access to premises: What is an accessible footpath?</p>
2. The tree pit surface will be installed level with surrounding paving, leaving surface roots exposed where necessary.	
3. In high pedestrian areas, resin bonded porous paving will be used on tree pits to minimise risk of trip hazards resulting from loose soil, gravel or mulch.	
4. Permanent Tree Guards will have minimum 30% luminance contrast with surrounding paving materials.	

E6 Urban canopy and greening

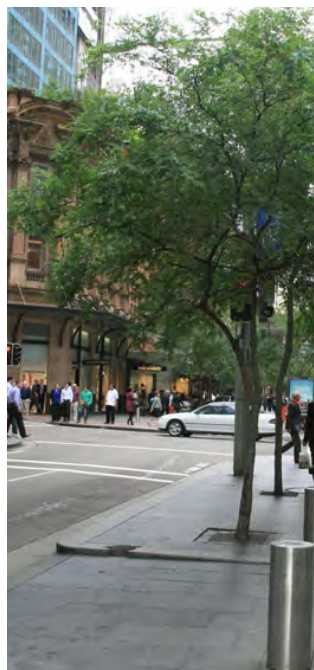
E6.2 Street tree selection

Appropriate tree selection, location and installation will provide the best opportunity for tree establishment and long terms benefits for the streetscape. Selection of tree species will be in accordance with the City of Sydney Street Tree Master Plan (or as amended).



REFER

[Street tree masterplan.](#)



E6 Urban canopy and greening

E6.3 Tree base treatments

Tree base treatments will vary according to the locations and context. Tree base treatments should be optimised to ensure tree health, capture stormwater runoff; minimise root interference and consider providing trafficable surfaces for pedestrians around trees.

Key design considerations for tree based treatments include:

- tree pit construction – refer to Street Tree Masterplan
- tree base dimensions in a footpath zone will be determined by footpath width - refer to Street Tree Masterplan
- standard tree base treatments include resin bonded porous pavement for tree planting in high pedestrian paved area, decomposed granite and grade mulch in turf in local streets.
- use of decomposed granite needs to consider footpath profile and gradient to assess susceptibility to wash out
- use of city standard tree grates are subject to the city's discretion
- mass planted and turf surround tree base options should be used where appropriate to increase vegetation in the streetscape;
- water sensitive urban design tree pits (infiltration should be used where appropriate levels and drainage fall occurs to receive water runoff from surrounding roads, properties and footpaths and to treat stormwater for reuse and/or discharge to receiving waters. Where appropriate subsoil conditions occur unlined raingardens or tree pits can be provided.



REFER

[Street tree masterplan](#)

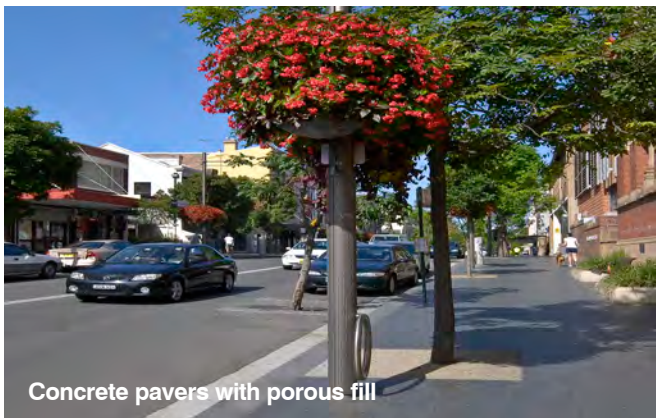


[Sydney Streets technical specifications](#)
C2



Street design and coordination

E6.3 Tree base treatments



E6 Urban canopy and greening

E6.4 Verge treatments

Planted or turf verge treatments are promoted to reduce the extent of paved surfaces and provide separation between the footpath and the roadway.

The City supports permanent in-ground planting over containerised planting in most cases. Containerised treatments require approval if proposed as a landscape treatment.

The location of planted verges needs consideration to ensure access to parked cars and utilities is maintained.

In wide footpath conditions in local areas there may be opportunities to reduce pavement width with additional planting areas without compromising pedestrian amenity.

The City also supports the use of verges for food production and community gardening in certain areas, and interested community groups should approach the City for approval in accordance with the Greening Sydney Plan and the City's Community Gardens Plan.

Where verge gardens and other street greening require mulch attention to choosing most appropriate material to avoid potential slip and trip.



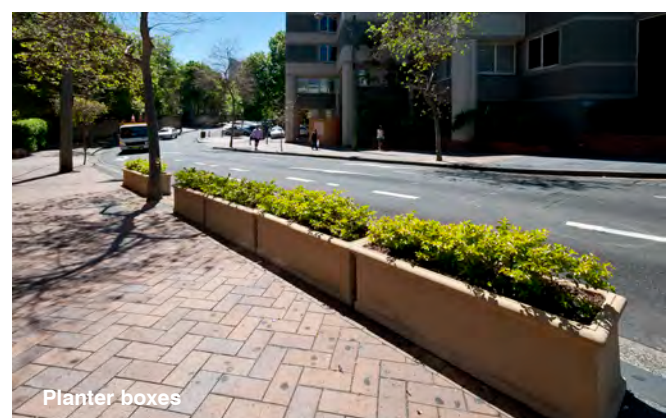
REFER

[Greening Sydney](#)



[Sydney Streets technical specifications](#)

B5



E6 Urban canopy and greening

E6.5 Planted medians

A central planted median can increase the streets aesthetics where overhead wires limit establishment of large trees, as well as narrow the carriageway, to reduce vehicle speeds and improve pedestrian amenity. They provide opportunity to further enhance the streetscape by introducing green elements, and provide additional stormwater control.

Key design coordination considerations for planted medians include:

- Median widths and sub surface detail must accommodate appropriate soil volume to support street tree type and size, root control and drainage;
- Footpaths should not be reduced in width to provide space or additional width for medians;
- Median edge treatments to maximise stormwater infiltration if levels/road profile allows;
- Pedestrian crossing refuge locations as required to consider accessibility and sight clearance zones to provide formal or informal crossing opportunities.



[Sydney Streets technical specifications](#)

A3 C3





Primrose Ave
Rosebery

E7

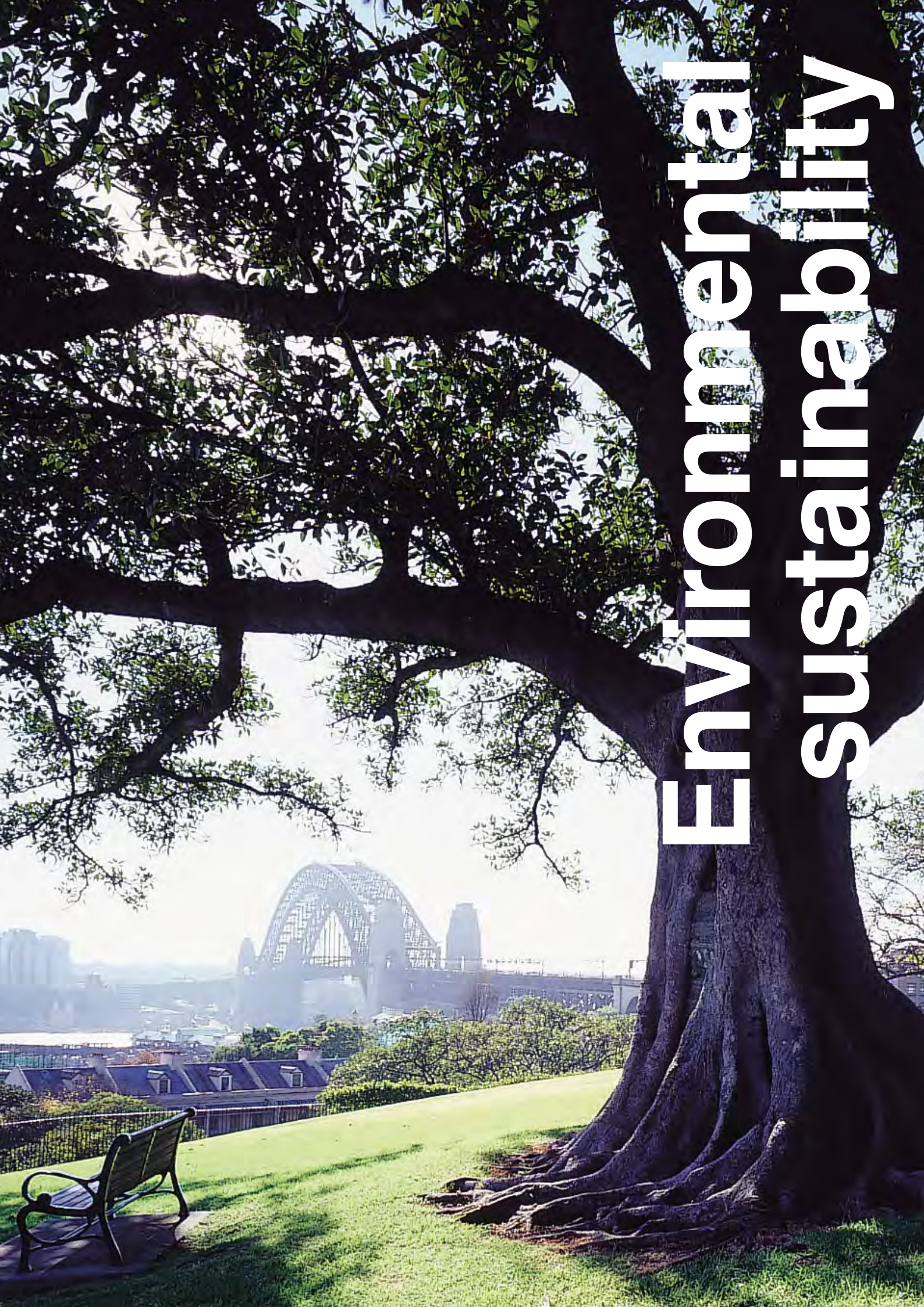
Environmental sustainability

E7.1 Water sensitive urban design

E7.2 Urban ecology

E7.3 Environmental sustainable material selection





Environmental sustainability

E7 Environmental sustainability

An environmentally sustainable approach to street design is fundamental to the City's requirements for projects.

E7.1 Water sensitive urban design

The Environmental Sustainability Strategy and Action Plan calls for a Water Sensitive Urban Design (WSUD) approach to planning and delivering urban forms including parks.

The City's water targets include zero increase in potable water consumption from 2006 baseline and reduction of solids and nutrients discharged to waterways via stormwater run-off.

WSUD not only contributes to achieving the City's water environmental targets, it also addresses the issue of stormwater pollutants being discharged to our waterways while providing the benefits of contributing to cooler micro climates and biodiversity of plant species.

Key objectives

- minimise potable water consumption through use of stormwater or recycled water;
- provide passive irrigation and minimise pollution discharged to waterway via stormwater runoff;
- retain water on site ;
- maximise permeable surfaces ;
- minimise hard surfaces;



[Sydney Streets technical specifications](#)

C7



REFER

[City of Sydney Water Management](#)



Bioswale



Passive irrigated tree pits



Permeable Pavement



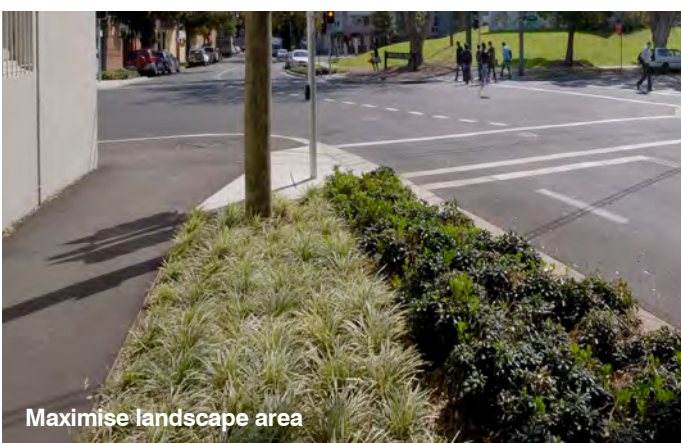
Kerb slots



Raingardens



Raingardens



Maximise landscape area



Raingardens

E7 Environmental sustainability

E7.2 Urban ecology

Although biodiversity has been greatly reduced from its original state within the local area, some significant vegetation and many fauna species remain.

The City's Urban Ecology Strategic Action Plan provides direction on the restoration and conservation of resilient urban ecosystems that support a diverse range of locally indigenous flora and fauna.

Streetscape projects provide the opportunity to conserve and enhance these existing biodiversity values in the city through appropriate species selection and design.

The City's Urban Ecology Co-ordinator will advise urban ecology requirements for each project based on context, opportunities and capability to positively contribute to the network of identified biodiversity linkages and habitat.



REFER

[City of Sydney urban ecology](#)



E7 Environmental sustainability

E7.3 Environmentally sustainable material selection

All materials for the City's assets should be selected considering the embodied carbon content, sustainable manufacturing process, ethical and sustainable supply chain, durability and end of life disposal.

Specifically the City aims to address the following:

- reduce consumption of non-renewable resources by recognising where such resources are consumed and take into account whole life-cycle cost in the procurement of goods, works, services and designs
- integrate the practice of considering sustainability criteria into the processes of procuring goods, works, services and designs
- increase recycling of waste materials, the utilisation of waste materials in the manufacture of new products, and the ongoing purchase of these products to support each stage of the recycling process.

Green concrete

Although a high energy consumer in production the use insitu concrete has many environmental advantages including longer asset life than asphalt, and the opportunity to use recycled materials in the mix.

The City uses a Green Concrete mix that includes a proportion of cementitious and/or coarse and fine aggregates being replaced by waste and/or recycled materials.



[Sydney Streets technical specifications](#)

A1 A2 A3 B3

Sustainable asphalt

The City is trialling sustainable asphalt mixes that uses a combination of recycled products. The manufacture of this substitute bitumen is 40% more energy efficient than the manufacture of traditional bitumen and uses recycled printer cartridges that would otherwise be sent to landfill.



[Sydney Streets technical specifications](#)

A1 A2 A3 B6

Geopolymer concrete road trial

The City of Sydney is trialling the use of geopolymer concrete. Made using industrial waste from coal-fired power stations and steel manufacturing, the new environmentally friendly building product is being trialled on a 30 metre section of roadway on Wyndham Street in Alexandria.

The production of geopolymer, which is the main ingredient in this green concrete, generates just 300 kilograms of CO2 per tonne of cement, compared with the 900 kilograms from traditional cement production.

Researchers from University of NSW will monitor the road performance for up to five years.



Geopolymer concrete trial installation



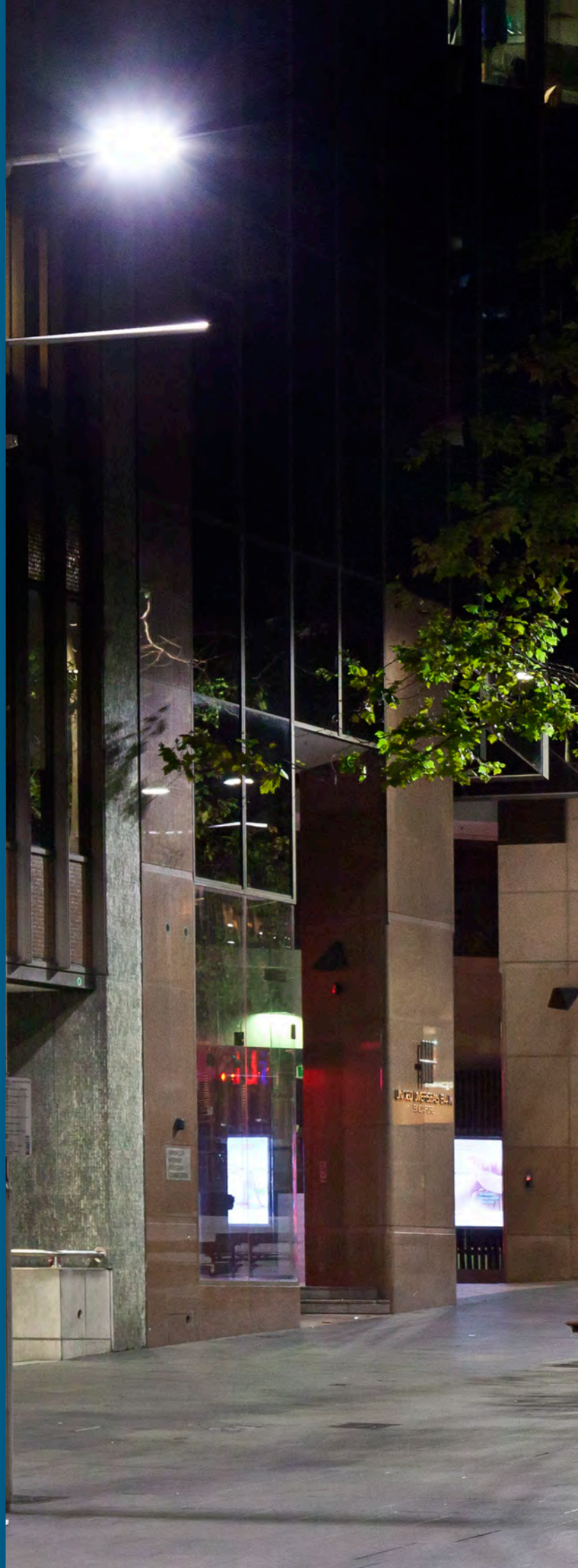
REFER

[Local Government NSW Recycled materials in roads and pavements](#)

E8

Street lighting

E8.1 Siting and clearance



Street lighting



E8 Street lighting

Street Lighting is critical to creating a public realm that supports way-finding, orientation and safe movement at night.

The City Sydney Streets Lights Code 2015 sets out the application for public lighting across the City that includes details on lighting palette, spacing, specifications of light fittings and required lighting levels.

A prime consideration is to ensure adequate lighting of pedestrian footways. In some cases this will require back of pole luminaires.

Required light levels and palette selection will require confirmation by the City's lighting engineers prior or at preliminary concept design stage

Objectives for access

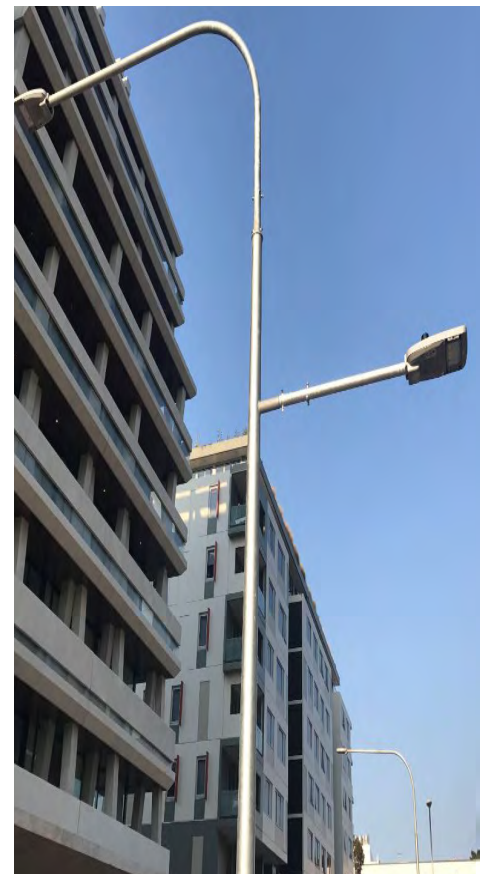
1. Lighting will improve amenity and safety of all pedestrians.
2. Appropriate lighting levels will provide people with low vision greater confidence to independently navigate the streetscapes at night.
3. Lighting will facilitate orientation and wayfinding to assist in creating a safe and legible night time environment for all users, including those with low vision.
4. Lighting along footways will be consistent
5. The impact of glare will be minimised.
6. Lighting infrastructure will not obstruct the continuous accessible path of travel.



Smartpoles





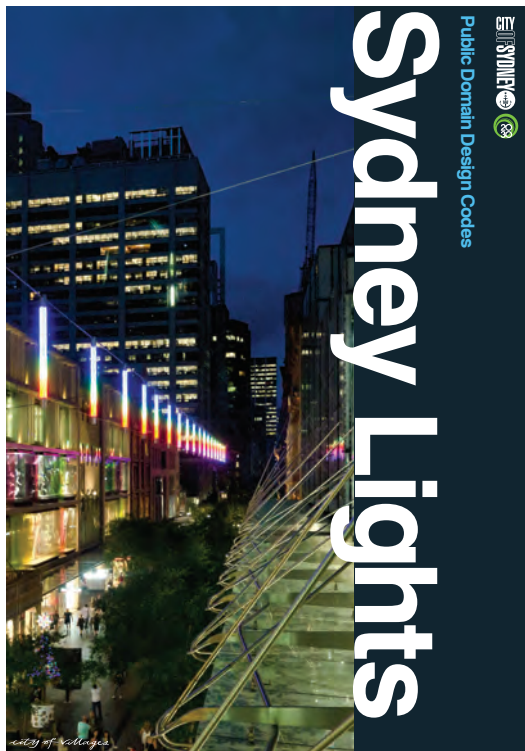
City pedestrian light (refer also to Sydney Lights Code and D5 and D6 for additional selections



City galvanised lighting pole with back of pole pedestrian light

E8 Street lighting

Performance standards	Reference
<ol style="list-style-type: none"> Lighting will be designed and installed to be compliant with the Sydney Lights Design Code and Sydney Streets Technical Specifications. Specific considerations for access include (but are not limited to): <ol style="list-style-type: none"> Lighting infrastructure will be contained to the dedicated public Domain Furniture Zone Lighting levels are to be consistent with: <ol style="list-style-type: none"> Sydney Lights Code, and AS/NZS1158 RMS requirements for Carriageway lighting R72. Lighting will be consistent within specific streetscapes and public domain settings (refer Sydney Lights 2015 part 3 for further detail). 	<p>Australian Human Rights Commission (2014 Frequently asked questions: Access to premises: What is an accessible footpath?</p> <p> REFER Refer Sydney Lights Design Code</p> <p> <u>Sydney Streets technical specifications</u> A5, B8 ,C5</p>
<ol style="list-style-type: none"> The use of up lights and in ground lighting will be avoided in the following public domain settings: shared zones, shared paths high pedestrian activity footways and footways adjacent roads carrying fast moving traffic, to minimise the adverse impacts of glare on people with low vision. The lighting design should be coordinated with public domain material selection to minimise any potential glare. 	<p>Additional Guidance</p>



REFER
[Sydney Lights Code](#)



Sydney Streets technical specifications
Reference to relevant documents and web links A5, B8 ,C5

E8 Street lighting

E8.1 Siting and clearance

Light poles must be located within the Public Domain Furniture Zone, and should not impede into the Pedestrian Zone. Refer to the Sydney Streets Code Technical Specifications for all construction details.

The locations and appropriate clearances must be coordinated with other street elements such as street trees, landscaping, utilities and street furniture.

It is essential that lighting designers prepare lighting documentation with proposed/ existing street trees and other elements marked on the setout plan to ensure that street tree outcomes are co-ordinated and not compromised.

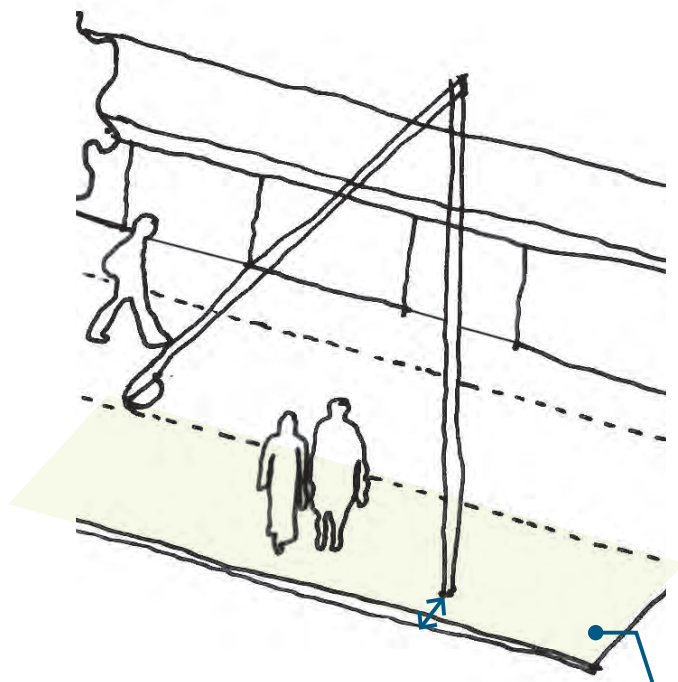


Figure 47



Appropriate distance between street trees and public domain furniture must be considered.



E9

Public domain furniture and elements

E9.1 Public domain furniture

E9.2 Outdoor dining

E9.3 Signage and wayfinding

E9.4 Bus and stop infrastructure

E9.5 Bollards

E9.6 Crowded place protection

E9.7 Bollards and crowded place protection





Public domain furniture

E9 Public domain furniture and elements

E9.1 Public domain furniture

Public domain furniture and other street elements form an integral part of the public domain identity, reinforce the public domain character, provide important amenities for pedestrians and add functionality and vitality to the public realm.

The City's public domain furniture suite aims to provide a co-ordinated family of elements and achieve a coherent streetscape character, with consistent design language including colour, form and detailing.

The suite of public furniture subject to the City's advertising contract is currently being retendered will include bus shelters, phone booths, Automatic Public Toilets and kiosks.

For furniture palettes applicable to streetscape character areas, refer to Part D. For all detailing, fixing and technical specifications, refer to the companion document, Sydney Streets Technical Specifications.

The Street Furniture Placement and Design Guidelines (Appendix D provides a framework for the assessment and decision making process around the placement and selection of street furniture in the City Of Sydney local government area (LGA).

These placement and design guidelines for street furniture aims to create a street environment in which the public domain is protected, public enjoyment is maximised and the provided furniture contributes to the city's amenity without detracting from the city's experience.

The Guidelines include direction on:

- furniture item details
- clear path of travel requirements
- minimum clearance around furniture
- accessibility and universal design guidelines
- design of street furniture items
- spatial arrangement
- impact on the public domain experience.



REFER

Appendix C - Street Furniture Placement and Design Guidelines



[Sydney Streets technical specifications](#)

C4





Figure 48



E9 Public domain furniture and elements

E9.2 Outdoor dining

The City supports local restaurants and cafes by allowing seating for outdoor dining to supplement indoor seating.

A well-managed footway promotes both equitable access and supports local businesses by creating places and streets that are amenable and attractive to all visitors.

The City has developed a policy and guideline for outdoor dining on the footway and similar public spaces that outlines provisions for application, placement, and furniture selection.

Of paramount importance is the provision of a clear path of travel. People who are blind or have low vision prefer that the location for the clear path of travel will be consistent and predictable for each street block.

To achieve this, the Council will ensure a minimum clear path of travel is maintained to a suitable width before any business uses are considered.



REFER

[City of Sydney outdoor dining](#)



Outdoor dining Pyrmont



Maintaining clear path of travel

E9 Public domain furniture and elements

E9.3 Signage and wayfinding

A coordinated suite of signage is an important component of achieving a legible and quality public domain.

Key design coordination considerations for signage include:

- all signage should be located within the street furniture zone, and with consideration for facilitating pedestrian movement around all sides; and
- attach signage where possible to existing poles and structures to reduce proliferation of additional poles in the streetscape.



REFER
[City of Sydney wayfinding](#)

 [Sydney Streets technical specifications](#)
C6

Figure 49 - City of Sydney Legible Sydney Wayfinding





The City's Interim Signage Code provides site placement principles and design manuals:

- street name signage
- pedestrian wayfinding signage
- parks signage
- cycle wayfinding signage
- community building signage.



REFER

APPENDIX D Signage Code

W4.1 Applied to RMS Pole

W5.1 Applied to RMS Pole

W4

W5

W13

W12

Circular Quay
Alfred Street
↑ Circular Quay
Sydney Opera House
The Rocks
→ Macquarie Street
Parliament House
← City Centre

Royal Botanic Garden – 12 min →
← King Street Wharf – 20 min

T
Central
← 4 min

Taxi →

W6



Flag & Finger Sign with
Braille /Tactile signage
at signalised pedestrian
crossings

Fixed to pole:
Wayfinding, Public
Transport, Taxi

Braille/Tactile Signage



E9 Public domain furniture and elements

E9.3 Wayfinding signage

- The city's wayfinding signage suite provides a kit of parts of various signage types and applications in the public domain. Other land agencies are encouraged to apply the City wayfinding suite to reinforce consistent and connected pedestrians links across the public domain.



REFER

[City of Sydney wayfinding](#)



Objectives for access

- Wayfinding signage systems in the public domain will assist people of all abilities including people who are blind or have low vision and people with intellectual disability to navigate around the City with ease and confidence. Wayfinding signage systems in the public domain should:
 - not obstruct the continuous accessible path of travel
 - be located in prominent positions adjacent to the continuous accessible path of travel so people can easily find and access information signs
 - be legible to people who are blind or have low vision
 - provide confirmation of destination
 - provide confirmation of current position and orientation
 - clearly identify the location of key destinations and amenities in the area, and
 - indicate the presence of any stairs.
- As far as possible, wayfinding signage systems used in different precincts and by different government agencies in the City of Sydney Local Government Area will be cohesive and consistent.
- Where appropriate, the City will employ additional environmental cues such as, texturally contrasted paving, shorelines and technological solutions to support people who are blind or have low vision to navigate in the public domain.



Performance standards	Reference
<ol style="list-style-type: none"> Wayfinding signage in the streetscape will be designed and installed in accordance with the City of Sydney Legible Sydney Design Manual (2014). Specifically, City of Sydney Wayfinding Systems in the public domain will: <ol style="list-style-type: none"> be consistent with AS1428.2 Clause 17 (including Braille, tactile, viewing distances, sizing and placement of information on signage) use appropriate logos and international symbols for access be visible and recognisable use legible typeface with a minimum of 30% luminance contrast. be accessible in other languages via mobile and digital technology Include a network of tactile street signs at every signalised pedestrian crossing throughout the City of Sydney. 	<p>City of Sydney (2012 Legible Sydney Wayfinding Strategy)</p> <p>City of Sydney (2014 Legible Sydney Design Manual)</p> <p>AS1428.2 (1992 Clause 17)</p>
<ol style="list-style-type: none"> Wayfinding signage will be located: <ol style="list-style-type: none"> within the street furniture zone as defined by the City of Sydney Streets Code so as to not obstruct the continuous accessible path of travel and as far as possible on an accessible surface. 	<p>City of Sydney Legible Sydney Wayfinding Strategy (2012)</p>
<ol style="list-style-type: none"> Where wayfinding signage provides direction to a destination that involves stairs on the route, the signage will indicate the presence of the stairs in the route. 	<p>City of Sydney Legible Sydney Design Manual (2014)</p>
<ol style="list-style-type: none"> In circumstances where navigation on the streetscape is not predictable for pedestrians who are blind or have low vision, accessibility may be enhanced through measures including but not limited to: <ol style="list-style-type: none"> the strategic placement of furniture and other elements such as, handrails, kerbs and furniture to guide people who are blind or have low vision safely through spaces and to their destination the use of textural and/or luminance contrasting paving materials (minimum 30% to continue the shoreline where there are breaks in the shoreline at the building edge) the use of shorelines to indicate the clear path of travel the use of technology to support navigation. 	

E9 Public domain furniture and elements

E9.4 Bus stops and infrastructure

Bus stops and associated infrastructure such as shelters require careful consideration to ensure access and public domain quality is not diminished.

Objectives for access

1. Bus Stops will be designed and installed to be compliant with the Disability Standards for Accessible Public Transport 2002, and Guidelines 2004 and in accordance with the Australian Human Rights Commission (2010 Guideline for promoting compliance of bus stops with the Disability Standards for Accessible Public Transport 2002.
 - a Be located on a firm, evenly graded boarding point, as level as possible
 - b Include an unobstructed space large enough to allow for the deployment of a ramp so that a person with a mobility disability can safely get on or off a bus;
 - c Provide a seamless transition between the bus stop and any connecting footpath, or the bus stop and the road where there is no footpath;
 - d Provide clear signage indicating the location of the bus stop; and
 - e Provide consistently-applied tactile ground surface indicators (TGSIs) to assist blind people or people with low vision to identify the presence of a bus stop and the location of the boarding point.
2. Where it is practicable, taking into site considerations and passenger demand, the City will endeavour to provide dedicated bus stop infrastructure of a shelter and seating unit in addition to the basic requirements above, to provide shelter and amenity for all passengers.
 - a equitable access to shelter, seating and the boarding points will be provided for all people including older people, people who are blind and have low vision, people with mobility disabilities and people with prams
 - b A continuous accessible path of travel at the rear and front of the shelter and/or seating area will be maintained. The minimum clearance required will take into account the level of pedestrian activity in the area.
 - c The installation of dedicated bus stop infrastructure will be co-ordinated with other elements in the street scape to ensure pedestrian movement and safety is prioritised, and the streetscape remains uncluttered.

Performance standards	Reference
<ol style="list-style-type: none"> Bus Stops will be designed and installed to be compliant with the Disability Standards for Accessible Public Transport 2002, and Guidelines 2004 and in accordance with the Australian Human Rights Commissions Accessible Bus Stops Guidelines. This includes the provision of TGSIs at bus stops. NB: The Human Rights Commissions interpretation of the Disability Standards for Accessible Public Transport 2002 is that “a bus stop is not a resting point, and therefore there is no obligation to provide seating and a shelter at every bus stop in order for it to be accessible.” Where dedicated bus shelters are provided, a continuous accessible path of travel with clear shoreline will be maintained, in particular: <ol style="list-style-type: none"> where there is adequate width on the footway, two access paths will be provided: <ol style="list-style-type: none"> desirable circulation: 1800mm between building boundary and bus shelter rear edge. 1500mm between front of shelter and kerb face. circulation: 1200mm between building boundary and bus shelter rear edge. 1200mm between front of shelter and kerb face. at minimum one access path of 1200mm minimum width will be provided in accordance with Disability Standards for Accessible Public Transport 2002 where more than one bus shelter is provided, regular passing points of minimum 1800mm will be provided at least every 20 metres. The installation of dedicated bus infrastructure will be co-ordinated with other elements in the street scape to ensure pedestrian movement and safety is prioritised, and clutter on the footway is minimised. <ol style="list-style-type: none"> Placement of bus shelters will take into account the location of existing street furniture and other infrastructure to ensure the area around the bus stop infrastructure is free from obstructions, and the footway is not over crowded. The decision on whether or not to provide a bus shelter, should take the into account bus service considerations: <ol style="list-style-type: none"> Patronage: patronage of the stop, and whether available shelter is adequate Wait times: The amount of seating should also consider the usual wait times for services. Stops on singular routes are likely to have longer wait times If the above space requirements, and need to avoid cluttering on the footway cannot be met with the addition of a dedicated bus shelter, where there is another source of shelter, such as that from an awning, then the provision of a bus stop in accordance with AHRC Bus Stop Guidelines (point 1-5) together with seating compliant with AS1428.2 (1992) Clause 27 is considered acceptable. Where seating and shelters are provided at bus stops, they will be designed to accessible to a range of people, including older people and people with mobility disabilities. 	<p>Disability Standards for Accessible Public Transport 2002, and Guidelines 2004</p> <p>Australian Human Rights Commission (2010) Guideline for promoting compliance of bus stops with the Disability Standards for Accessible Public Transport 2002</p> <p>Australian Human Rights Commission (2014) Frequently asked questions: Access to premises: What is an accessible footpath?</p> <p>Alternative Solution: Australian Human Rights Commission (2010) Guideline for promoting compliance of bus stops with the Disability Standards for Accessible Public Transport 2002</p> <p>Disability Standards for Accessible Public Transport 2002, and Guidelines 2004</p> <p>AS1428.1 (2009) Clause 27</p>

E9 Public domain furniture and elements

E9.4 Bus stops and infrastructure



Transport NSW Bus Signage



Warning and Directional TGSi



City Bus Shelters - narrow version



City Bus Shelter - standard



Typical bus stop arrangement - maintain clear path of travel behind bus shelter

E9 Public domain furniture and elements

E9.5 Bollards

Bollards may be necessary to delineate spaces, direct vehicle movement or restrict vehicle access to prevent damage to pavements particularly where a kerb is not provided.

A key principle is to avoid excessive use of bollards that result in a cluttered streetscape.

The City's furniture palette consists of a standard contemporary bollard and heritage bollard that are fixed or removable. (refer below) Application will depend on context and design intent.

Note: These bollards are not intended to protect crowded places from hostile vehicle attack. Refer to Section 11.4.1



E9 Public domain furniture and elements

E9.6 Crowded place and critical infrastructure protection

Current public security threats experienced worldwide may require responses in the public domain to ensure protection of crowded places and critical infrastructure.

Crowded place and critical infrastructure protection measures located within property boundary is the preferred solution. Applicants need to demonstrate that all options to meet protection requirements within property boundary has been thoroughly investigated and assessed and verified as unachievable before use of the public domain is proposed as an option to address security concerns



TECHNICAL SPECIFICATIONS
C4

City of Sydney crowded place protection and critical infrastructure in the public domain guidelines

The City is developing a Guideline (Appendix E) to provide consistency and clarity around decision making when assessing applications for use of the public domain for crowded place protection.

The Guideline includes the City's crowded place protection element palette, and applicant responsibilities in terms of risk management, ownership, maintenance and disestablishment of protection measures located in the City's public domain.



REFER

APPENDIX E - Crowded Place and Critical Infrastructure Protection in the Public Domain Guidelines (under preparation)



Modified City strengthened bollard



City standard bronze sheath to house structural component (indicative only under design development)



Elliptical sheath - bronze finish

E9 Public domain furniture and elements

E9.7 Bollards and crowded place protection


Objectives

1. The use of bollards and crowded place protection measures across the continuous accessible path of travel will be avoided where possible to minimise potential hazards for pedestrians who are blind or have low vision.
2. Where they are provided, bollards and crowded place protection measures will be:
 - a. Placed so as to maintain access along the path of travel
 - b. Placed in a consistent and predictable manner so that their location can be easily predicted by pedestrians who are blind and have low vision
 - c. Designed to be easily detectable by people with low vision.



Martin Place

E9 Public domain furniture and elements

Performance standards	Reference
<p>1. The use of crowded place protection measures across the continuous accessible path of travel will be avoided where possible to minimise potential hazards for pedestrians who are blind or have low vision.</p> <p>a) Where bollards or crowded place protection measures are placed on or adjacent to the continuous accessible path of travel they will be designed to achieve a minimum of 45-60% luminance contrast with surrounding paving materials, either through material selection or the addition of strips with high luminance contrast</p>	<p>Alternative Solution</p> <p> Sydney Streets technical specifications Reference to relevant documents</p>
<p>2. Where the bollards and other elements are provided as crowded place protection measures:</p> <p>a) they will be placed no less than 1200mm from the outside edges of bollard/elements to provide minimum access along the continuous accessible path of travel. The maximum distance between these bollards should be based on the type and speed of vehicle and likely paths of travel.</p> <p>b) As far as is feasible, they should be placed in a consistent and predictable manner in each precinct, with uniform distances between</p>	<p>Australian New Zealand Counter Terrorism Committee (2017) Hostile Vehicle Guidelines for Crowded Places</p>
<p>3. Where bollards and other elements are used for other reasons, they will be placed to ensure minimum 1200mm access between bollards</p>	<p>Austrorads (2017) Guide to Road Design Part 6A: Pedestrian and Cyclist Paths, Part 7.5.3</p>
<p>4. Where bollards are provided at a shared path, they will be positioned provide minimum 1400mm between bollards to provide comfortable access along the continuous accessible path of travel in accordance with Austrorads Guide to Road Design Part 6A: Pedestrian and Cyclist Paths.</p>	
<p>5. Where numerous bollards or crowded place protection measures are provided, they will be:</p> <p>a) placed using a consistent arrangement with the same clearance between each item, and</p> <p>b) as far as possible with clearly predictable placement at the edge of a zone or precinct.</p>	

E10 Public Art



Underworld, Taylor Square

Public art



E10 Public art

Public art, and other design elements such as water features add to the public domain amenity, and can serve as landmarks which assist in wayfinding.

The City Art - Public Art Strategy 2011 sets out a clear vision for public art in the City LGA including proposals for parks.

In parks and public spaces public art can imbue beauty and symbolic meaning as both independent installations and or into functional objects such as seats, grates, play structures, bridges, railings, to create a sense of place and identity.

Public art proposals will be subject to a City of Sydney approval process outlined in the City of Sydney Public Art Policy and Guidelines 2010.

The Public Art Advisory Panel will advise on the appropriate selection process for artists and curators within Council's procurement processes.

Artworks at the concept design stage will be assessed by the Public Art Advisory Panel who will then make a recommendation regarding the suitability of the artwork for the collection.

The elements need to be carefully placed to ensure they don't create hazards for people who are blind or have low vision.



REFER

[Public Art Policy](#)

Objectives for access

1. Public art and design elements will be placed so as to not obstruct the continuous accessible path of travel.
2. Where public art is adjacent to or obstructs the continuous accessible path of travel, appropriate hazard warnings will be provided.
3. As far as it is safe to do so, all people with a range of different abilities should be able to have an equitable experience of design elements including public art, water fountains and temporary art installations.



Angel Place

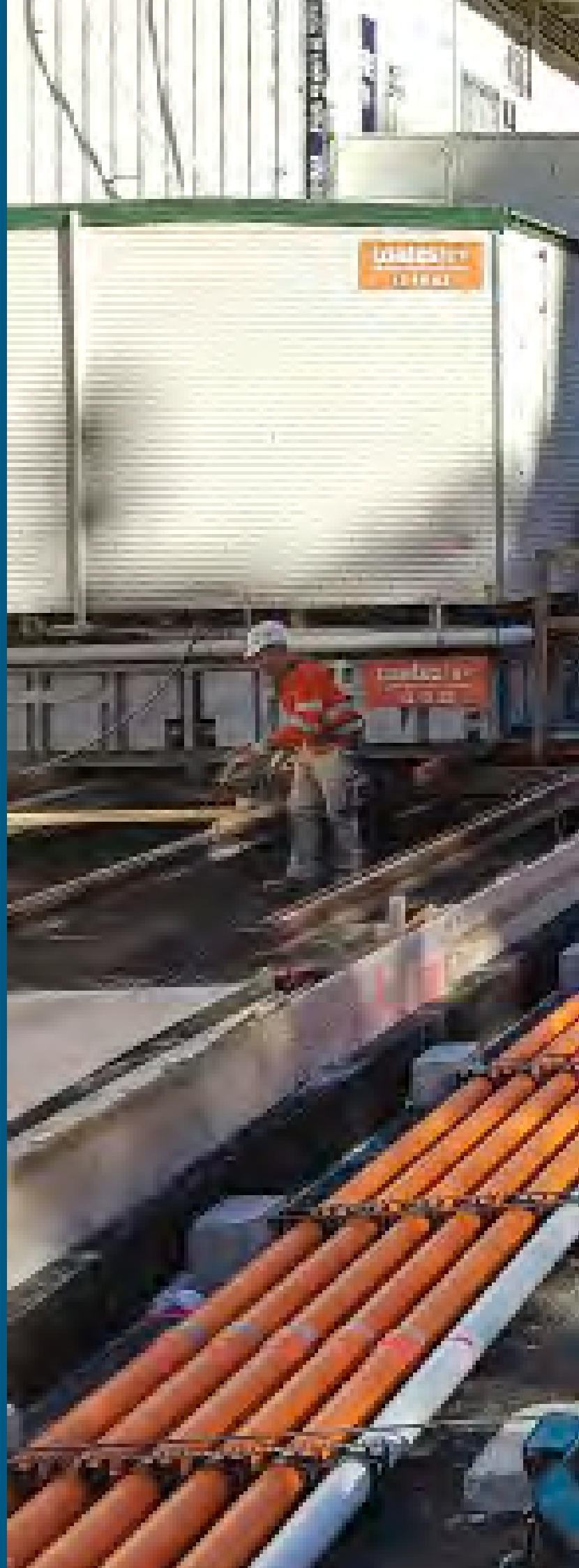
E10 Public art

Performance standards	Reference
<ol style="list-style-type: none"> Public art and related infrastructure will not obstruct or protrude onto the continuous accessible path of travel, or be placed within the pedestrian zone. If the feature is designed to be explored, people with disability will be given equitable and dignified access to the feature. This includes: <ol style="list-style-type: none"> the provision of a continuous accessible path of travel to the feature and a minimum of 1200mm clearance around the feature. In accordance with AS1428.4.1 Clause 2.6, where the design elements present impediments or hazards with less than 2000mm height clearance within or adjacent to the continuous accessible path of travel, contact with overhead hazard shall be prevented by a suitable barrier such as: <ol style="list-style-type: none"> Enclosing the area, or Providing handrails with kerb rails in accordance with AS1428.1. In the absence of a suitable barrier, TGSIs shall be installed. If a design feature is located in an area that is not accessible to someone with a disability, every effort will be made to deliver an equitable alternative experience of that feature. To ensure the best access outcome, engage access consultants to give advice about the placement of design features in the following circumstances: <ol style="list-style-type: none"> When the feature invites people to engage directly with it When there are complex access barriers and the City needs further advice; Where standard access solutions may compromise the safety or artistic integrity of the piece Where innovative and untested access solutions are proposed. 	<p>Australian Human Rights Commission (2013) Advisory Note on Streetscapes, public outdoor areas, fixtures, fittings and furniture</p>



E11 Utilities

- E11.1 Undergrounding of overhead powerlines
- E11.2 Electricity kiosks and sub-stations
- E11.3 Utility cabinets
- E11.4 Service inspection covers and lids
- E11.5 Footpath drainage grates and pits



Utilities



E11 Utilities

Utilities consist of utility poles, overhead wires, surface pits and electricity/communication kiosks as well as underground services such as stormwater, sewage, electricity and telecommunications.

The appearance of otherwise well-designed streets can be brought down by poorly positioned utility services and ill-considered detailing.

The City will strive to work with relevant utility authorities to achieve the most minimal streetscape impact solution for utility placement.

Key considerations for utilities include:

- utilities should be efficiently located to minimise impacts on other existing or proposed streetscape elements, and ensure basic access and maintenance requirements;
- ensure proposed underground utility alignment and depths do not compromise or inhibit the establishment of street trees.
- major streetscape works should include asset review of city stormwater assets to ascertain if any upgrade or renewal required to be included in scope of works.
- opportunity for project to include additional utility allocation to support recycled water or renewable energy.



E11 Utilities

E11.1 Underground of overhead power lines

Overhead power lines are owned by electricity utility companies not the City of Sydney Council. In some instances telecommunication cables are also located off overhead poles.

Undergrounding is the replacement of these overhead cables providing electrical power or telecommunications, with underground cables. All proposals would be subject to the requirements and approval of the relevant utility company.

Undergrounding of overhead cables makes a street or an area more attractive with less visual clutter and allows the support of a more substantial tree canopy as well as making the power lines less susceptible to outages during storms.

Implementing this improvement is considerably more expensive than an overhead wire arrangement.

The following are locations where undergrounding is prioritised as part of streetscape works.

Due to limited capital works funds and resources not all streets can be accommodated with underground power lines to achieve a more attractive streetscape.

Location/context	Undergrounding of overhead wire considerations
City Centre Streets and Gateways	<ul style="list-style-type: none"> Currently all streets in the city centre have underground servicing.
Main Streets	<ul style="list-style-type: none"> The preference is to underground Village Main Streets (Type A) and in order to accommodate S2 Smartpoles as part of the public domain palette. The City will use the following criteria and considerations in determining the feasibility of undergrounding overhead power lines Available budget - streetscape project outcome priorities will be pedestrian and public space amenity improvements such as paving, crossing opportunities, lighting, furniture and landscape with additional scope such as undergrounding subject to available budget; Impact assessment of undergrounding on existing tree roots and long term tree health
Urban Renewal Area Streets – New Streets	<ul style="list-style-type: none"> New streets allow opportunity design for underground services rather than deal with complexities associated with retrofit of existing streets.
Liveable Green Network Street Upgrade Projects	<ul style="list-style-type: none"> Assessed on a case by case basis; Streetscape project outcome priorities will be pedestrian, cycle (if applicable) and public space amenity improvements such as paving, lighting, furniture and landscape with additional scope such as undergrounding subject to available budget.
Developer Request and Negotiation	<ul style="list-style-type: none"> At own cost underground power lines to improve the appearance of development frontage. Not to be funded from VPA/s.94 contributions.

E11 Utilities

E11.1 Underground of overhead power lines

Street Co-ordination Considerations – Surface kiosks and other elements associated with undergrounding of powerlines.

Undergrounding of overhead wires will require the location of surface kiosk pillars to provide electrical supply into properties.

To date many of these kiosks have been located alongside the building line. This however creates accessibility issues by disrupting the shoreline for people who are blind or vision impaired to safely navigate along the pathway. The City is advocating to utility companies for sub surface pillar arrangement or more appropriate placement to maintain accessibility along the shoreline and appearance of streetscape.



Electricity surface kiosk pillar

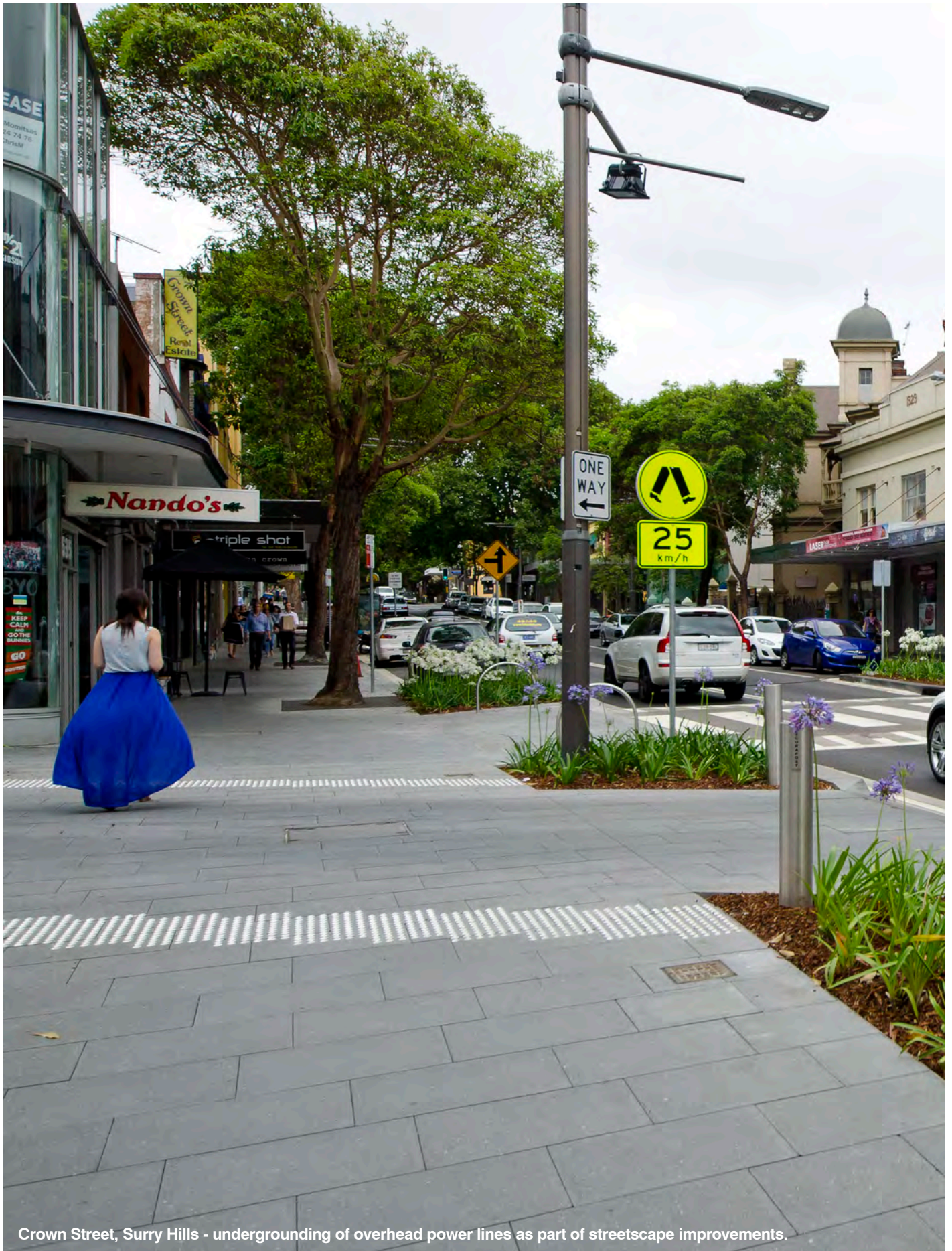
Alternatives to undergrounding – aerial bundled cable

Aerial Bundled Cable (ABC) converts multi-span overhead bare power lines into a single insulated cable.

This provides significant environmental, social and economic benefits by reducing the extent of detrimental tree pruning required and improvements to streetscape amenity by reducing the visual clutter of multiple overhead power lines. and allowing larger trees to be established.



Aerial Bundled cable



Crown Street, Surry Hills - undergrounding of overhead power lines as part of streetscape improvements.

E11 Utilities

E11.2 Electricity kiosks and sub-stations

Ausgrid has legal authority to install electrical substations and kiosks without approval from local councils. The City of Sydney has advocated to Ausgrid that it does not support the installation of substations on public land.

As a result, the City works with Ausgrid to ensure substations installed in the local government area minimise impact on the public domain. City staff meet with Ausgrid staff onsite when a new substation is proposed to assess the suitability of the location.

In addition to Ausgrid's requirements, City staff consider public safety and access requirements; visual amenity, CPTED considerations, maintenance of the City's infrastructure; maintaining parking spaces; maintaining visibility for all road users; reducing local heritage and property impacts; and minimising community disruption during installation.

The City also consider as a part of the development approval process whether substations can be included in new developments rather than on the street

Ausgrid also has its own safety requirements and does not propose any locations that fail to meet these.

For urban renewal areas that will deliver new streets it is imperative that consideration and co-ordination of kiosks is undertaken at the earliest planning and design process to ensure best possible placement and least impact on the public domain.



[Sydney Streets technical specifications](#)

A1 A2 A3 A4



E11 Utilities

E11.3 Utility cabinets

Utility cabinets should be placed to avoid obstruction to pedestrians and to minimise their visual impact on the streetscape.

Key principles include:

- ensure location maintains clear path of travel and shore line for people who are blind or vision impaired.
- the preferred location for utility cabinets is within a landscape set back , verge or kerb extension.
- attention to levels to avoid unsightly raised concrete bases ;
- multiple stacking and height of utility cabinets - need to consider CPTED, line of sight and pedestrian access.



[Sydney Streets technical specifications](#)

A1 A2 A3 A4



Kiosk in landscape verge



Graphic panel on kiosk



Kiosk in landscape setback

E11 Utilities

E11.4 Service inspection covers and lids

In a unit paved footpath the City's requires paver infill inspection pit lids to match adjoining pavement.

The City has an infill lids agreement with Telstra whereby the City requires Telstra to install infill lids on certain Telstra pits and manholes to enable installation of paver infills. The agreement apportions the process, payment, responsibility and liability relation to the installation and maintenance of infill lids and infill pavers.

It is recognised however that some utility authorities are renegotiating terms and responsibilities for the provision of in-fill pit lids.

Ensure approval from other relevant service authority to clarify responsibilities for maintenance, if the pit lid has a unit paved infill.

If no resolution on paver infill pit lids cannot be achieved cast iron lids are to be used in unit paved footpaths.

Concrete pit lids are not to be used in unit paved footpaths.

Service pit covers and lids should be aligned with the geometry of the footpath, including kerb lines, paving bond and cut lines. Attention given to the detailing around covers to avoid the need for unsightly mortar infill small cut paving units can considerably improve the safety and appearance of the footpath.

It is acknowledged that paver infill lid are sometimes subject to failure of paving material with cracking and dislodgement. The City will be undertaking trials of alternative treatments to match the tone of surrounding unit paving and assess outcomes from an urban design and on going asset management perspective.

Service pit covers and lids should be aligned with the geometry of the footpath, including kerb lines, paving bond and cut lines. Attention given to the detailing around covers to avoid the need for unsightly mortar infill small cut paving units can considerably improve the safety and appearance of the footpath.



Sydney Streets technical specifications

A1 A2 A3 A4 A5 C2



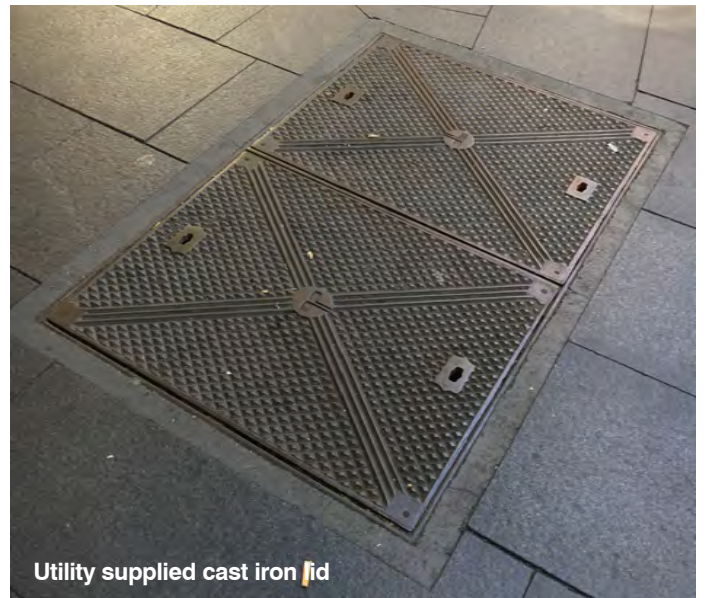
Brick paving infill lid



Insitu concrete paving infill lid



Concrete paving infill lid



Utility supplied cast iron lid



Utility owner identification



Align to street alignment/ paving bonds

E11 Utilities


E11.5 Footpath drainage grates and pits

Drainage pits and grates in a footpath area are used generally when it is not possible to provide a positive crossfall towards the kerb line. This may be encountered in the following situations:

- the floor level of the building and top of the kerb level are very similar
- the width of the footpath prevents the provision of a sufficiently steep gradient for water flow
- the provision of a kerb extension into the carriageway requires a back fall on the paving towards the original kerb line.

Objectives for access

Grates will be heel-proof and be designed and oriented to ensure that they are not a trip risk for people using prams or mobility aids and wheelchair users.

Performance Standards	Reference
All grates on footpaths will be designed and installed in accordance with AS1428.1 Clause 7.5	AS1428.1 (2009) Clause 7.5  Sydney Streets technical specifications A4 C2 C7





Trench grate located in George Street

Appendices

Appendix A

City palette maps

Appendix B

RMS road classification map

Appendix C

Street Furniture Placement
and Design Guidance

Appendix D

Signage Code

Appendix E

Crowded Place and Critical
Infrastructure Protection
Guidelines in the Public Domain











Appendix F

Public Domain Manual

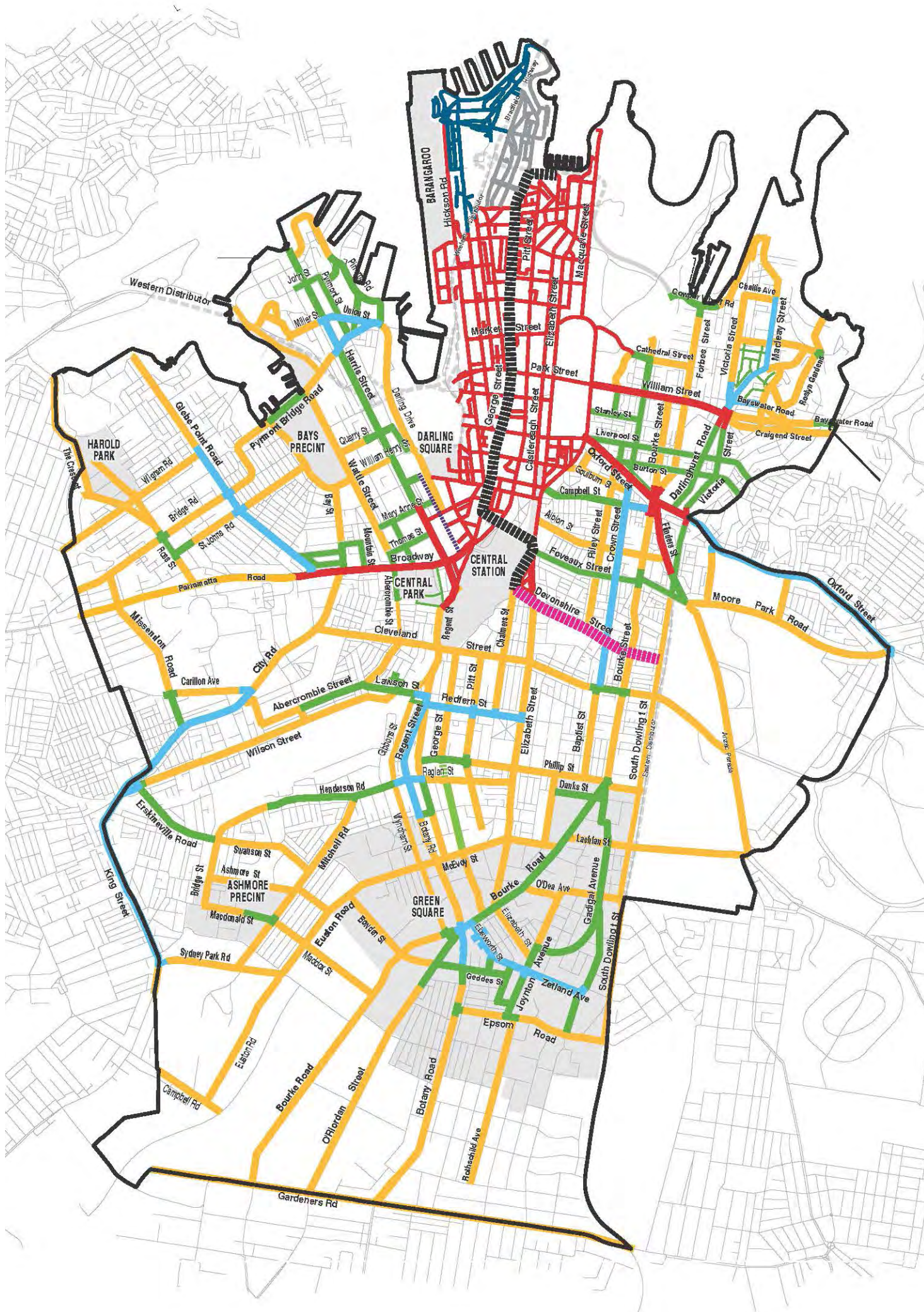
Appendices

Appendix A

City palette maps

LEGEND	
	City Centre & Gateway street
	Village main street
	Neighbourhood hub street
	Connecting Main street
	Local street
	Heritage – Millers Point/ Dawes Point Area Refer D7
	The Rocks (NSW Property)
	Light Rail (City Centre)
	Light Rail (outside City Centre)
	Urban Renewal Area (refer to Part D)

not to scale



1.0 City centre

LEGEND

City Centre & Gateway street

Village main street

Neighbourhood hub street

Connecting Main street

Local street

Heritage – Millers Point/ Dawes Point Area Refer D7

The Rocks (NSW Property)

Light Rail (City Centre)










Light Rail (outside City Centre)

Urban Renewal Area (refer to Part D)

not to scale











2.0 Darlinghurst, Potts Point, Elizabeth Bay

LEGEND	
	City Centre & Gateway street
	Village main street
	Neighbourhood hub street
	Connecting Main street
	Local street
	Heritage – Millers Point/ Dawes Point Area Refer D7
	The Rocks (NSW Property)
	Light Rail (City Centre)
	Light Rail (outside City Centre)
	Urban Renewal Area (refer to Part D)

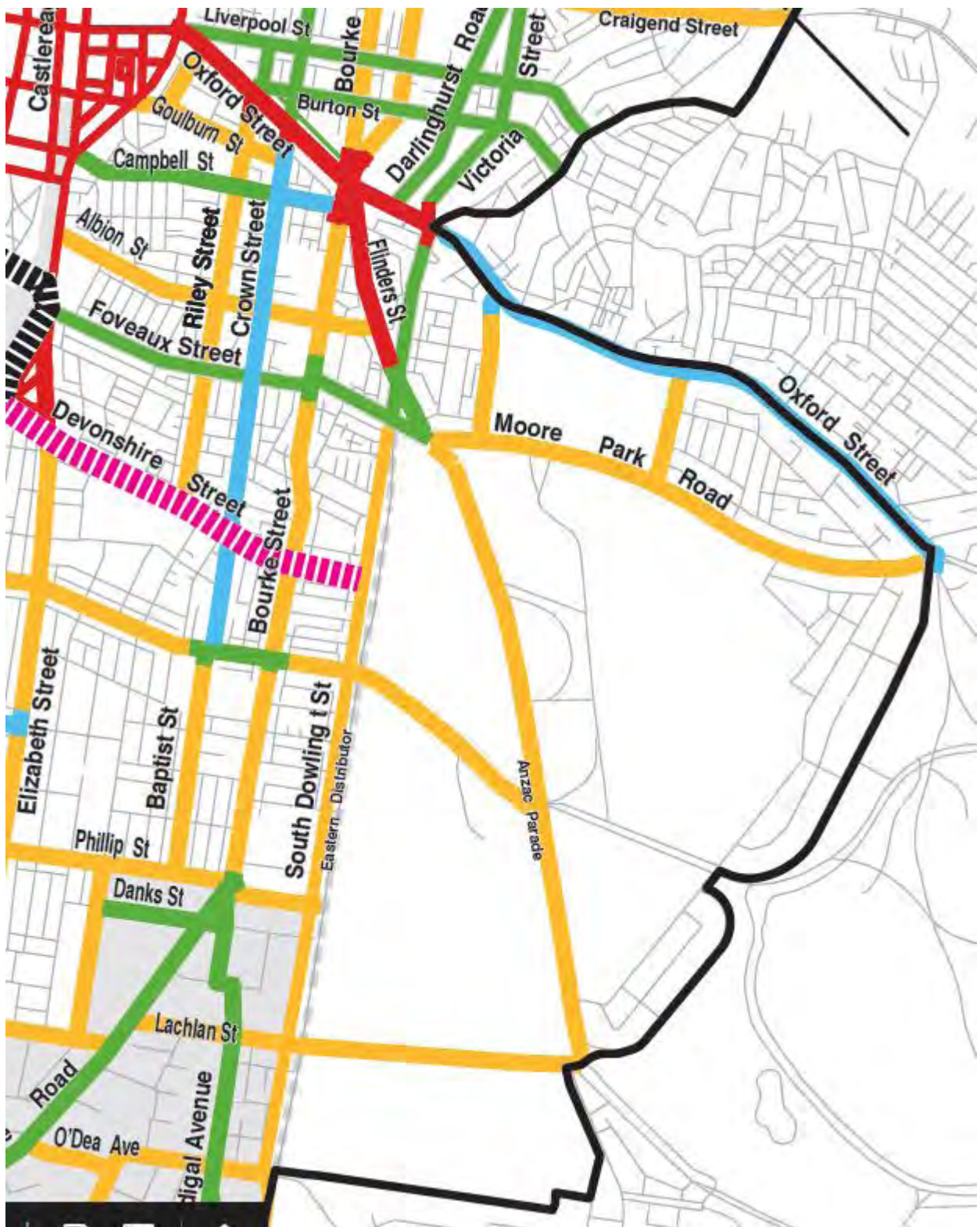
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3.0 Surry Hills, Moore Park



LEGEND	
	City Centre & Gateway street
	Village main street
	Neighbourhood hub street
	Connecting Main street
	Local street
	Light Rail (City Centre)
	Light Rail (outside City Centre)
	Urban Renewal Area (refer to Part D)

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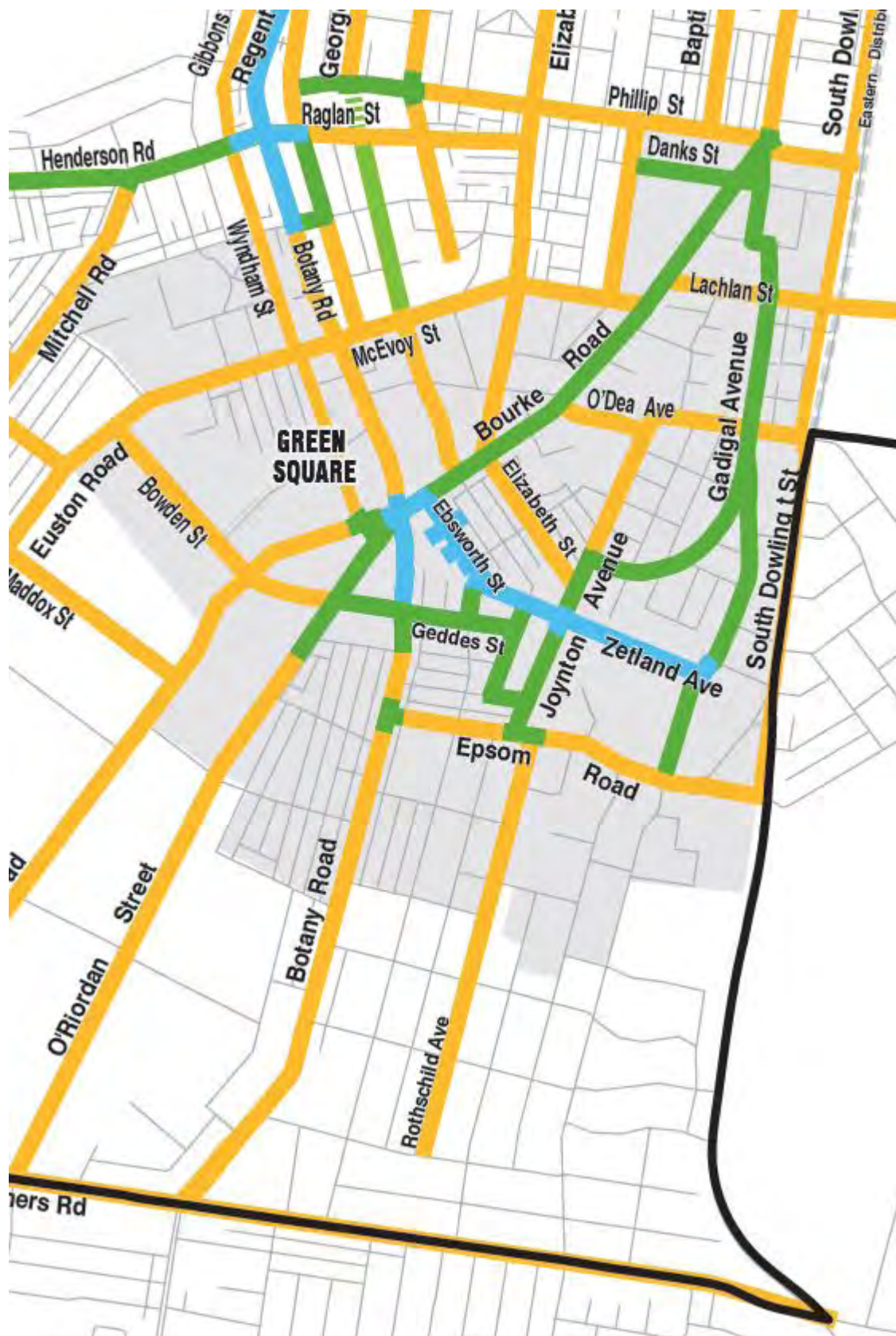


4.0 Green Square, Waterloo, Rosebery

LEGEND

	Village main street
	Neighbourhood hub street
	Connecting Main street
	Local street
	Urban Renewal Area (refer to Part D)

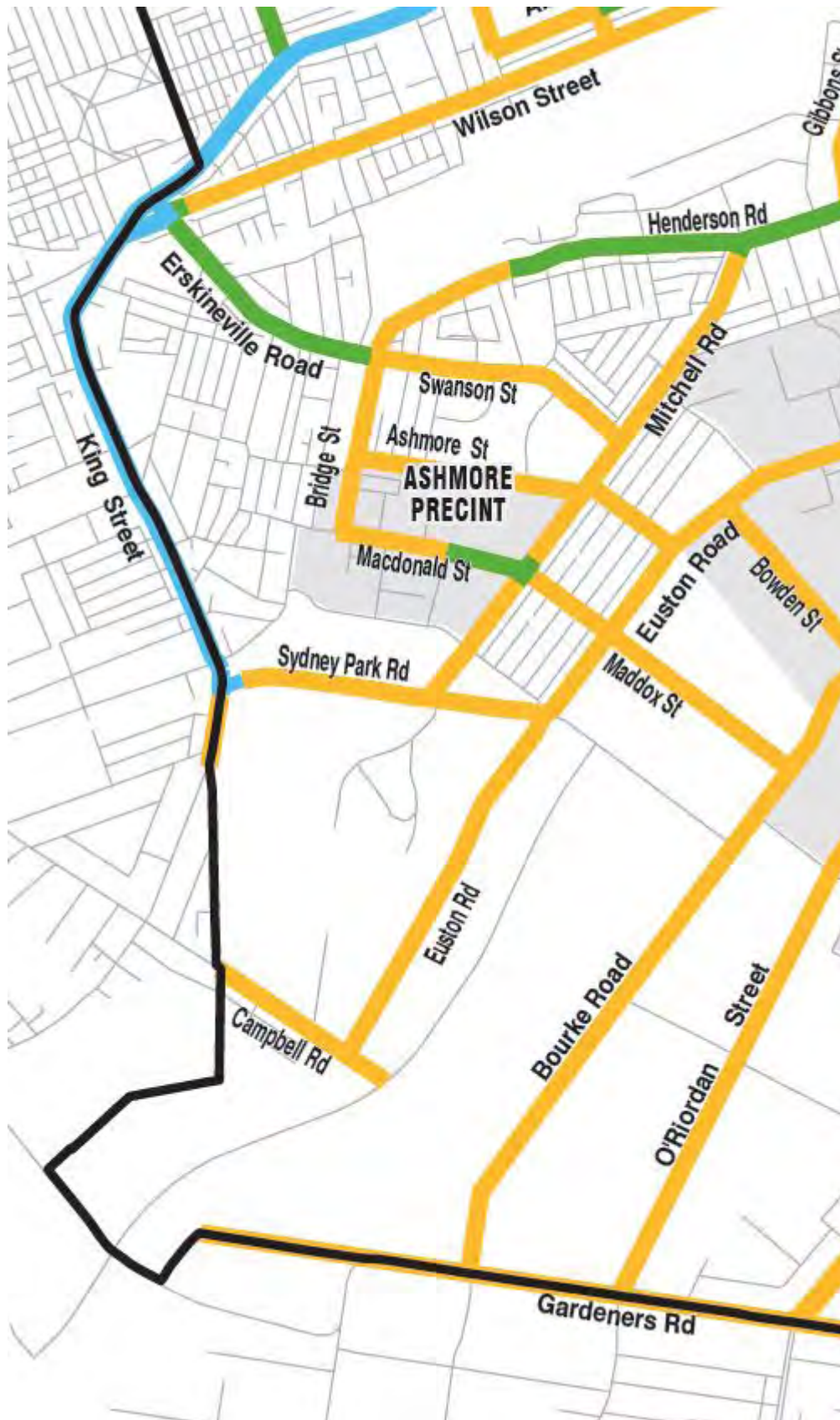
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5.0 Newtown, Erskineville, Alexandria

LEGEND	
<div></div>	City Centre & Gateway street
<div></div>	Village main street
<div></div>	Neighbourhood hub street
<div></div>	Connecting Main street
<div></div>	Local street
<div></div>	Light Rail (City Centre)
<div></div>	Light Rail (outside City Centre)
<div></div>	Urban Renewal Area (refer to Part D)

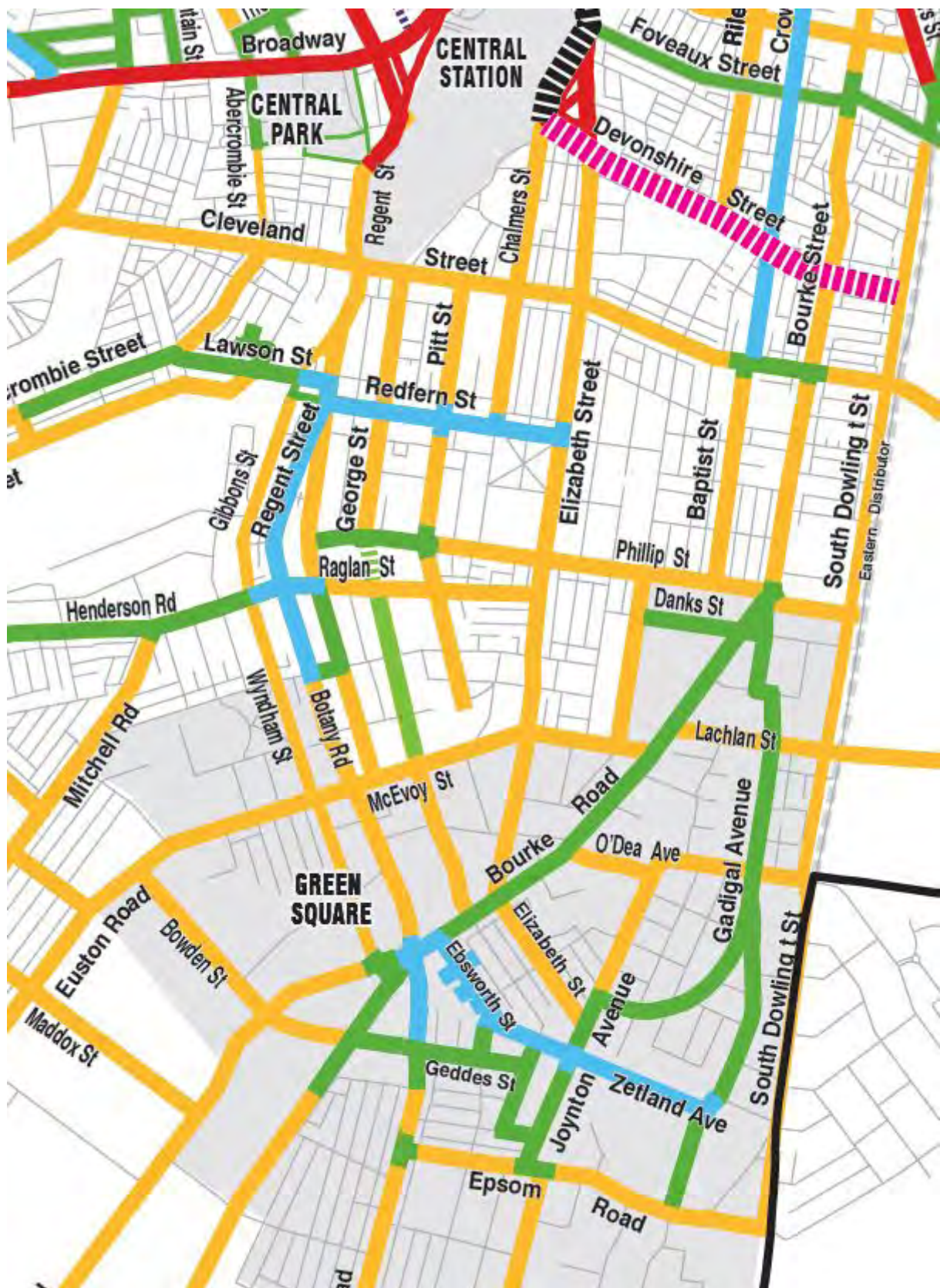
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6.0 Chippendale, Redfern, Waterloo

LEGEND	
	City Centre & Gateway street
	Village main street
	Neighbourhood hub street
	Connecting Main street
	Local street
	Light Rail (City Centre)
	Light Rail (outside City Centre)
	Urban Renewal Area (refer to Part D)

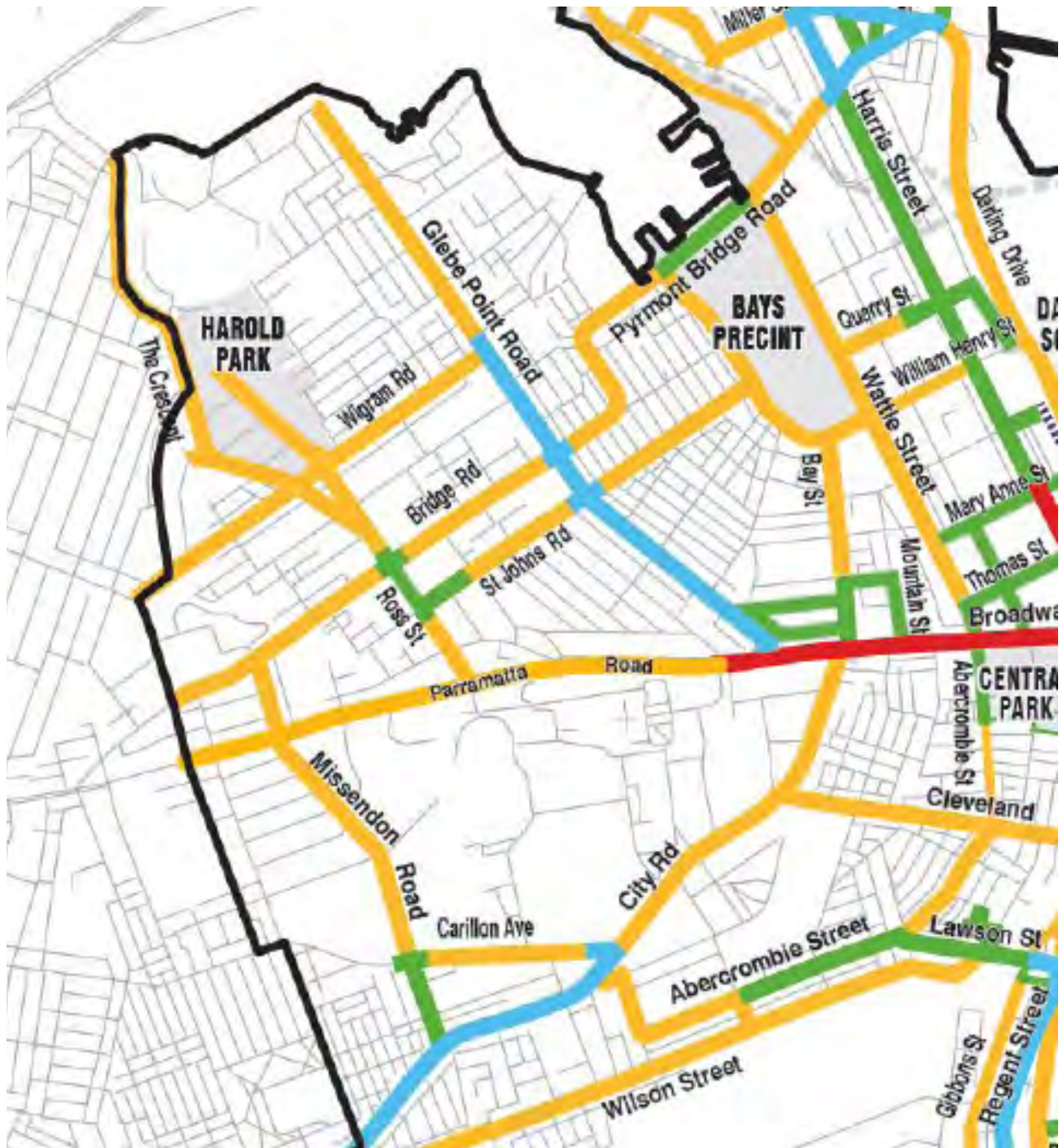
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7.0 Glebe, Forest Lodge, Camperdown

LEGEND	
	City Centre & Gateway street
	Village main street
	Neighbourhood hub street
	Connecting Main street
	Local street
	Heritage – Millers Point/ Dawes Point Area Refer D7
	The Rocks (NSW Property)
	Light Rail (City Centre)
	Light Rail (outside City Centre)
	Urban Renewal Area (refer to Part D)

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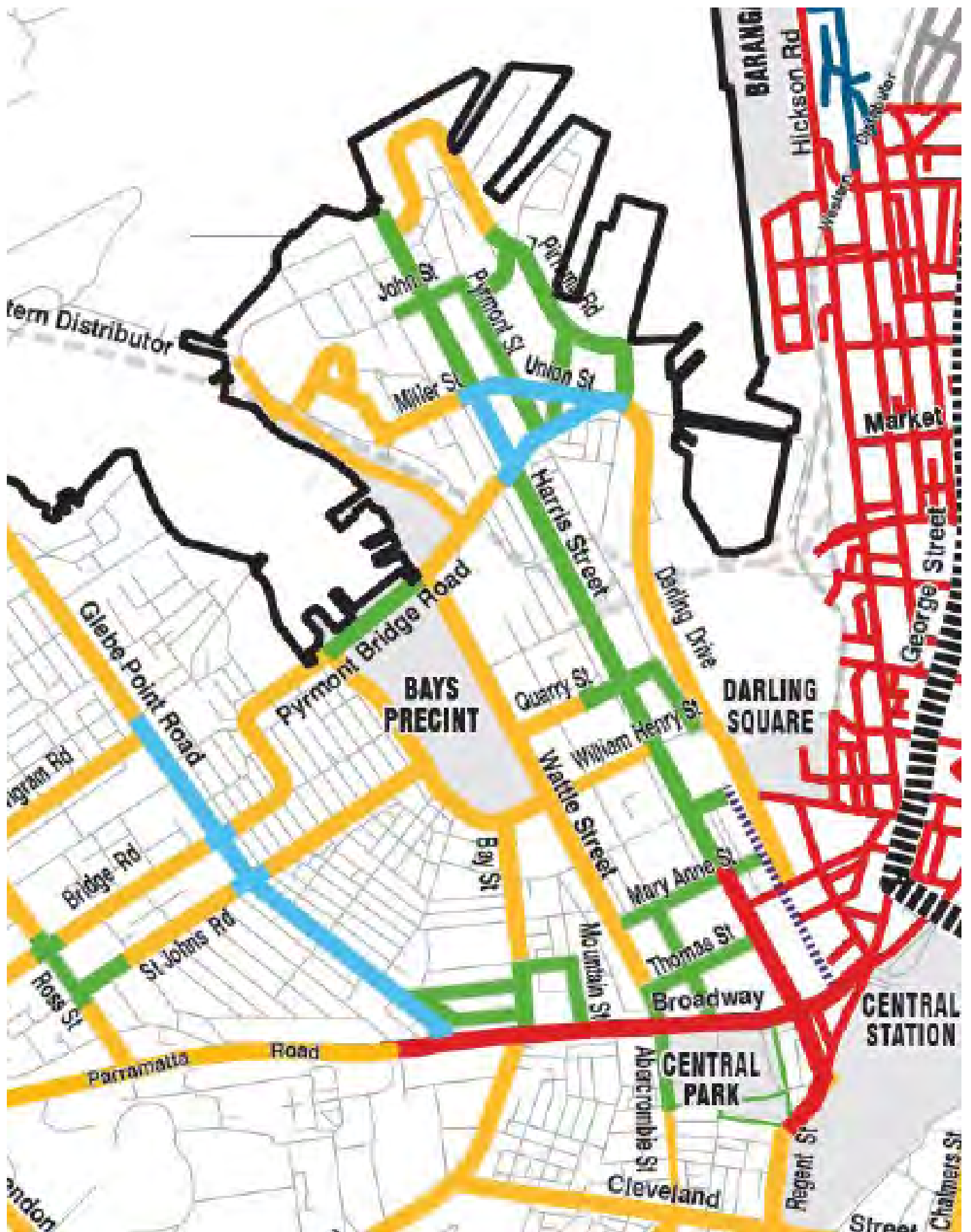


8.0 Pyrmont, Ultimo

LEGEND	
	City Centre & Gateway street
	Village main street
	Neighbourhood hub street
	Connecting Main street
	Local street
	Heritage – Millers Point/ Dawes Point Area Refer D7
	The Rocks (NSW Property)
	Light Rail (City Centre)
	Light Rail (outside City Centre)
	Urban Renewal Area (refer to Part D)

not to scale

NOTE: REFER TO SECTION D7 on additional directions for Pyrmont / Ultimo palette selection



Appendix B

State Classified Roads

To manage the extensive network of roads for which council is responsible under the Roads Act 1993, Transport NSW in partnership with local government established an administrative framework of State, Regional, and Local Road categories. State Roads are managed and financed by Transport NSW and Regional and Local Roads are managed and financed by councils.

To find out whether your proposed works are in the road reserve of a classified road, please review the Schedule of Classified Roads and Unclassified Regional Roads and the Classified Roads map.

For all unclassified roads and many classified roads Local Government is the consenting authority with Transport NSW giving concurrence or consent on classified roads.



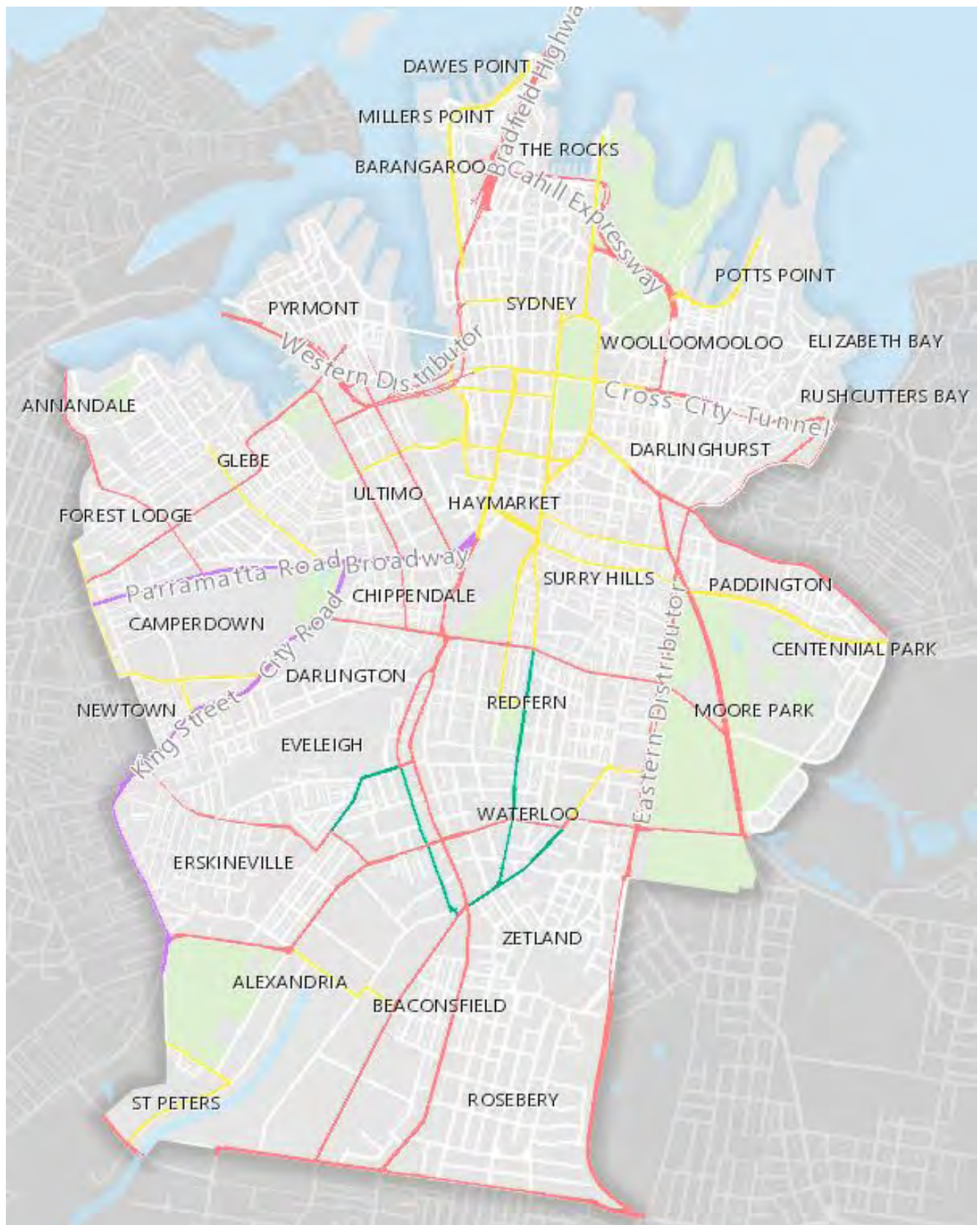
REFER
Schedule of Classified Roads and Unclassified Regional Roads

[State Classified Roads](#)

LEGEND



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Appendix C



Street furniture Placement Guidelines

DRAFT

Contents

1 Introduction

1.1	Purpose of this document	4
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1 Introduction

1.1 Purpose of this document

These guidelines create a framework for the assessment and decision making process around the placement and selection of street furniture in the City Of Sydney local government area (LGA).

A range of street furniture items is located throughout the City of Sydney's local government area (LGA), including bus shelters, kiosks, automated public toilets, public telephones, benches, bubblers, bins, bike hoops and more.

If designed well and installed in a coordinated way street furniture provides not only amenities to the public, but can create a more vibrant streetscape and add to people's experience of the city.

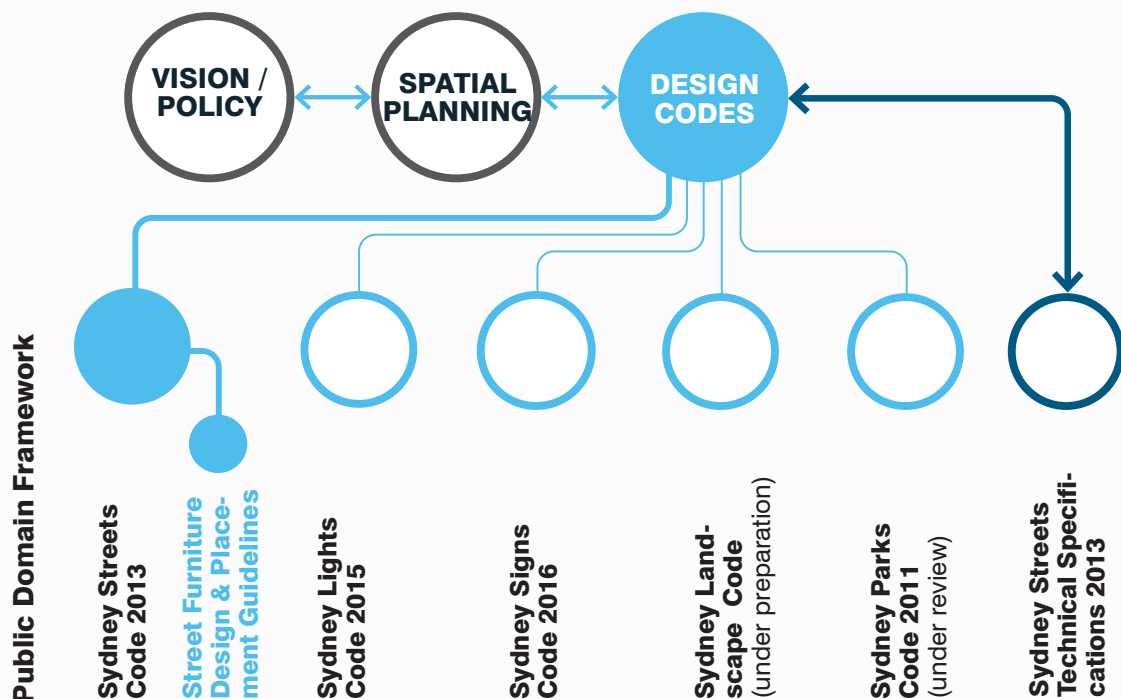
The design and placement of street furniture aims to create an attractive and coherent city, supports social activities in the public domain and provides people with appropriate services and amenity.

The design and placement guidelines for street furniture intend to create a street environment in which the public domain is protected, public enjoyment is maximised and the provided furniture contributes to the city's amenity without detracting from the city's experience.

The following key design and placement considerations for street furniture are described in more detail in the sections below:

- Design of street furniture items
- Spatial Arrangement
- Impact on the public domain experience

Figure 1.0 **City of Sydney Public Domain Framework**



1.2 How to use this document

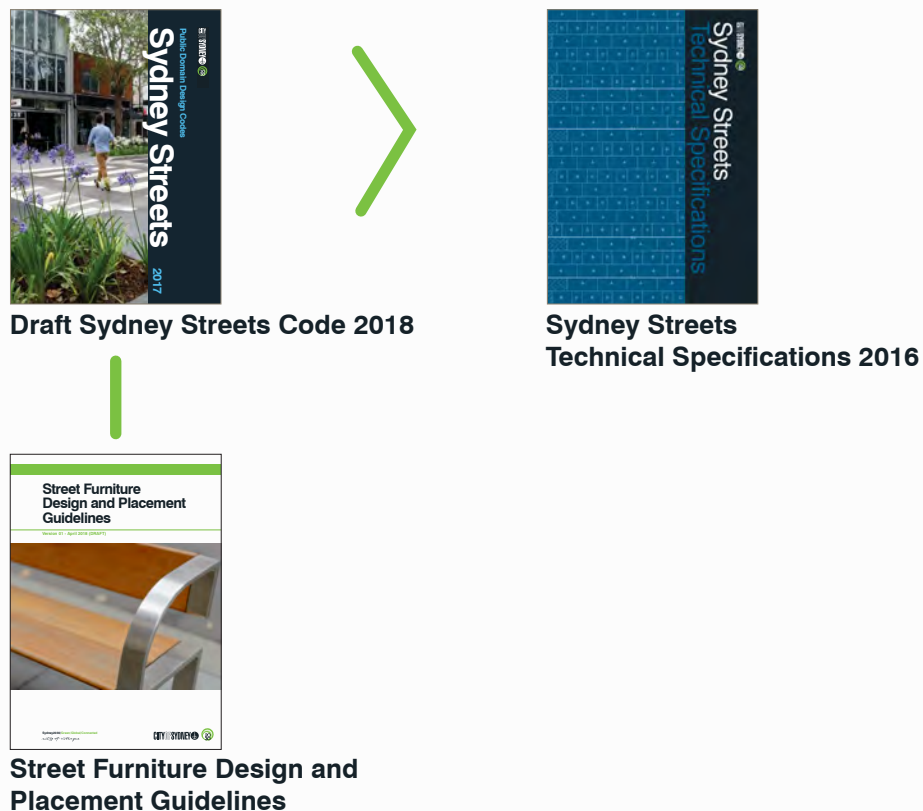
These Guidelines must be read in conjunction with other documents in the City of Sydney public domain framework (refer to figure 1.0), as well as relevant strategic documents and policies referenced in this document.

This document forms part of the Streets Code and is a planning and design guide only; all works are subject to council approval and will be assessed on a case by case basis.

These guidelines relate directly to the **Streets Code** and the **Sydney Streets Technical Specifications 2016**.

To access these documents visit www.cityofsydney.nsw.gov.au

Figure 2.0 **Pages from the Streets Code, the Street Furniture Design and Placement Guidelines and the companion Sydney Street Technical Specifications**



1.3 Considerations

The following points are to be considered with regards to **street furniture design**:

- Consistency of appearance
- Flexibility of the suite to be adaptable to suit various constraints and applications
- Inclusive in form and function
- Sustainability

The following points are to be considered with regards to **placement of street furniture**:

- Pedestrian movement, safety and comfort
- Accessibility requirements
- Competing demand for space on busy streets
- Pedestrian numbers
- Legibility
- Views and vistas of important places, streetscapes and buildings
- Functional services required in different places
- Other features and objects in the public domain including awnings
- Reduction of unnecessary obstacles and clutter including visual clutter

In addition to these the **placement of street furniture with advertising panels** needs to consider:

- Heritage values
- Places of rest and respite

1.4 Principles

1.4.1 Principles for the Design of Street Furniture elements

Consistency

Street furniture should be designed in a consistent language with regards to materiality, colours and finishes.

A wide range of users is to be considered in the design development allowing varying heights of interaction with the item. Multi-functionality of street furniture items is desirable in particular in busy city centre locations where space is precious and clutter reduction crucial.

Modular system

A range of street furniture items is desirable to appropriately respond to and compliment the respective areas and the environments in which they are placed.

A modular system of street furniture elements can cater for different volumes of pedestrian traffic, narrow footpaths, footpaths along major traffic arteries, small scale residential housing and high rise building environments.

Accessibility and Universal Design

Street furniture is to be accessible to all users and should follow the principles of 'universal design' – meaning a design that is useable by all people to the greatest extent possible, without the need for adaption or specialised design.

All street furniture designs are to be compliant with the requirements of the Australian Standards (AS1428.1) as a minimum.

Durability and Resilience

The industrial design of street furniture items is to be durable and resilient.

Materials and finishes are to be chosen considering exposure to rain and salt water as well as impacts of vandalism, graffiti, acid tagging and its removal.

Design, materials and finishes are to consider long term climatic changes, e.g. heat waves and extreme rainfalls.



1.4 Principles

1.4.2 Principles for Placement of Street Furniture

Pedestrian movement and comfort

Beyond the minimum spatial requirements of clear paths and circulation space as defined by the relevant Australian Standards and Disability Standards for Accessible Public Transport pedestrian comfort levels are to be considered as well.

To create streets which feel comfortable to move around in, traffic volumes and movement patterns of pedestrians need to be taken into account when designing and placing street furniture.

Compliance

Furniture is to be placed in compliance with Council's public domain policies and public domain codes.

Street clutter reduction

Placement of street furniture should consider other nearby street furniture and wayfinding signage together with possible consolidation of these items to avoid the creation of cumulative street clutter.

Visual clutter and pedestrian movement restrictions both need to be taken into account when planning placement of street furniture.

General safety in the public domain

The placement of street furniture and its integration with the public domain should meet safer by design principles such as maximising visual permeability and opportunities for passive surveillance. The creation of dark and concealed spaces in the public domain is to be avoided and Crime Prevention Through Environmental Design (CPTED) principles are to be implemented.



Visual connections and legibility

Street furniture placement is to consider sight lines and important views in the public domain, respond to surrounding architecture, open spaces and specific site conditions.

Street furniture items are not to inhibit legibility in the public domain, such as blocking views between spaces.

Footpaths at corners of intersections are to be kept free of street furniture to ensure unobstructed vision for drivers.

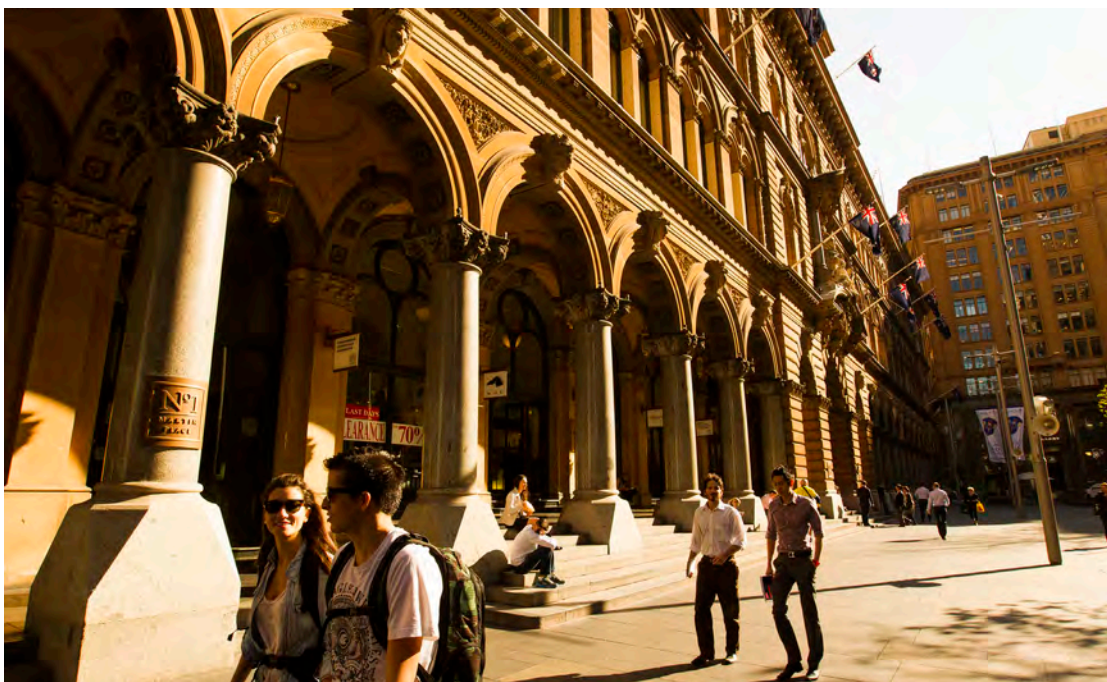
Heritage items and significant views

Street furniture should not be placed within the curtilage of a significant heritage item, which affects the setting of that item or in a location where the view of a heritage item is compromised.

This includes significant views identified in the planning controls (e.g. axial view of Martin Place, Central Station clock tower, Town Hall clock tower, etc).

Active frontages

Street furniture should not be placed where they obstruct active frontages to buildings, such as out-door dining.



2 General Guidelines

2.1 Siting and Spacing

Public domain furniture and other elements should be located within the **Street Furniture Zone** or creation of additional space by widening footpaths or extending kerbs particularly at intersections or mid-block.

Considerations include:

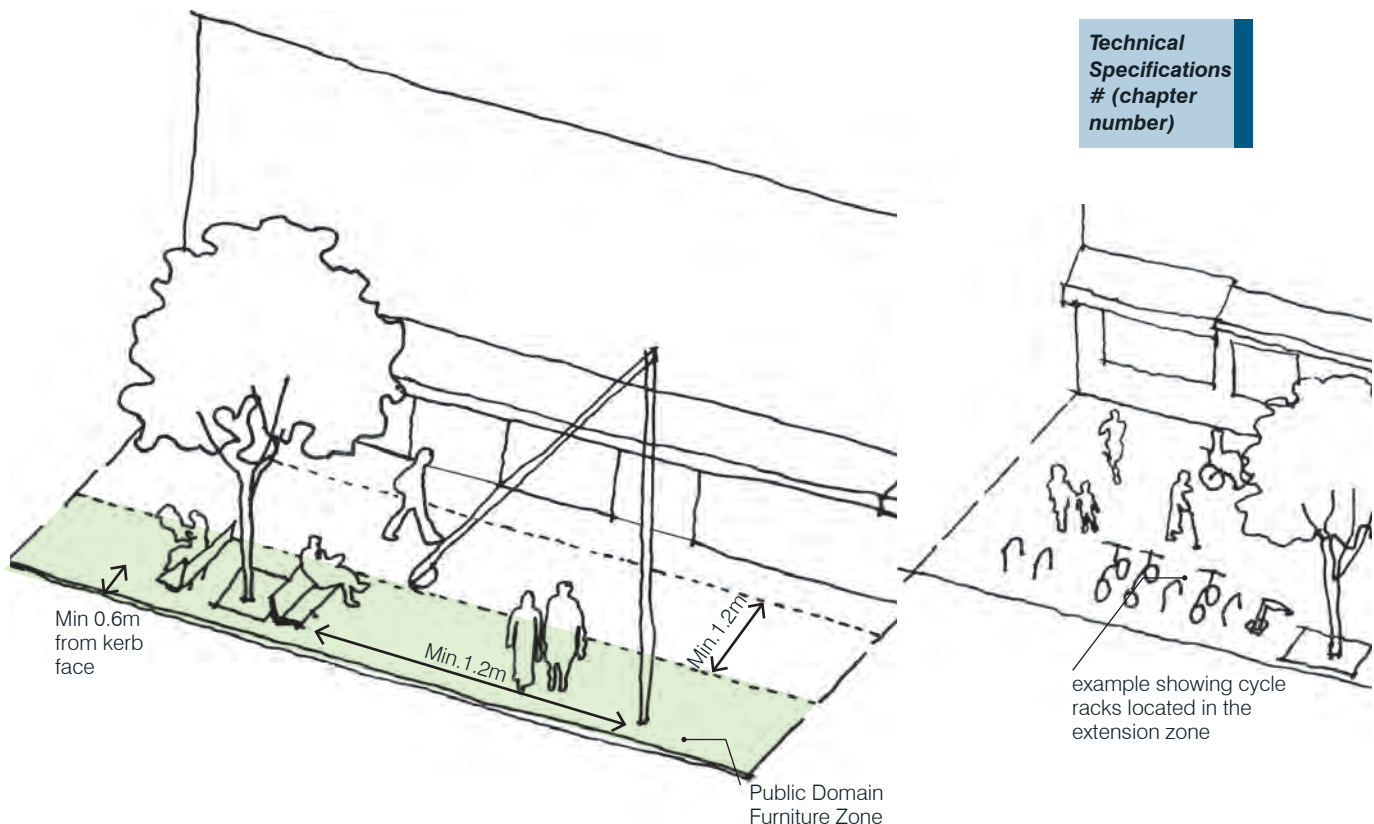
- Clear paths of travel for equal access;
- Group facilities together in simple compositions rather than haphazardly spread out along a street.
- Use of kerb extensions to co-locate facilities to maintain clear path of travel where footpath width is constrained.
- All furniture must be located a minimum of 600mm from the street kerb face, seating is preferable to be located 1.0m from the kerb face for safety.

Public Space

Use of adjacent public space including street closures, parks and urban spaces that have good presentation to the street provide opportunities to provide facilities without limiting access along the footpath.

The following key design and placement considerations for street furniture are described in more detail in the sections below:

- Provision of Street Furniture
- Clear path of travel requirements;
- Minimum clearance around furniture;
- Accessibility and universal design guidelines;
- Design of street furniture items;
- Spatial Arrangement
- Impact on the public domain experience



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2.2 Provision of Street Furniture

The placement of street furniture is generally coordinated with the City of **Sydney's Liveable Green Network (LGN)** along primary and local pedestrian routes.

The City's environments range from the dense urban city centre and gateway areas to village centres, activity strips and local areas with open spaces and parks.

Distinctive areas and places as well as Heritage areas form important parts of the city's spatial and visual experience.

For more detail on the frequency of provision of street furniture elements refer to the **Sydney Street Code**.

Refer to the Liveable Green Network Implementation Plan 2012 and the Greening Sydney Sydney Plan.

2 General Guidelines

2.3 Clear Path of Travel

The primary function of streets is to enable the safe, comfortable and efficient movement of people.

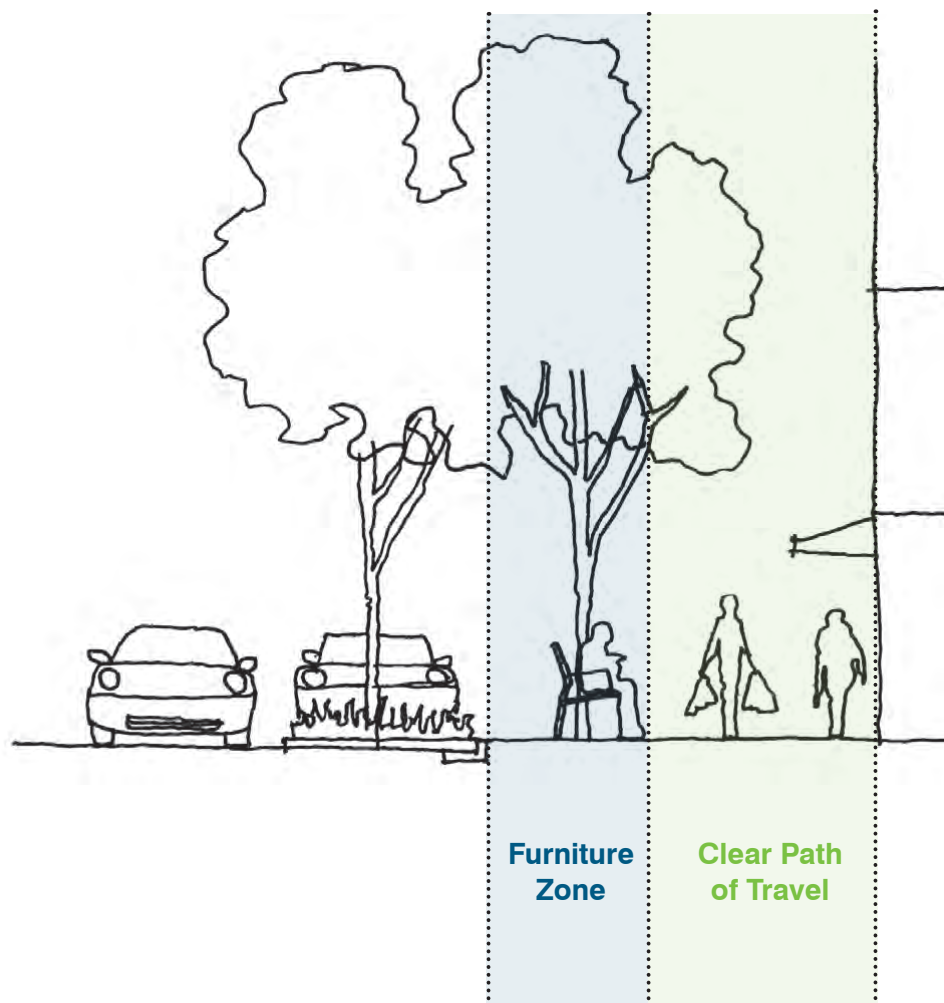
The first guideline for locating street furniture is to ensure minimum clear paths of travel are maintained for pedestrians, including people in wheelchairs.

The distance required for a 'clear path of travel' varies according to pedestrian numbers. A high volume of pedestrian movement, such as in the City Centre, requires a greater clear path of travel to enable several people to pass comfortably during peak times.

The City of Sydney Streets Code identifies a preferred distance and a minimum distance for a 'pedestrian through zone' in various typical conditions. In setting these distances, the following has been considered:

- Pedestrian numbers
- Local character
- Street widths

These pedestrian through zones should be considered as 'clear paths of travel' and as the primary consideration in the siting of street furniture items.



Street Types	Pedestrian Through Zone (m) (Clear Path of Travel)		Public Domain Furniture Zone (m)	
	Preferred	Minimum	Preferred	Minimum
City Streets	4.0	3.0	2.0	1.0
Village Centres and Activity Strips	3.5	2.5	1.5	1.0
Local Streets (mid-high activity streets)	3.5	2.0	1.5	1.0
Local Streets (low-mid activity streets)	2.0	1.5	1.5	0.6

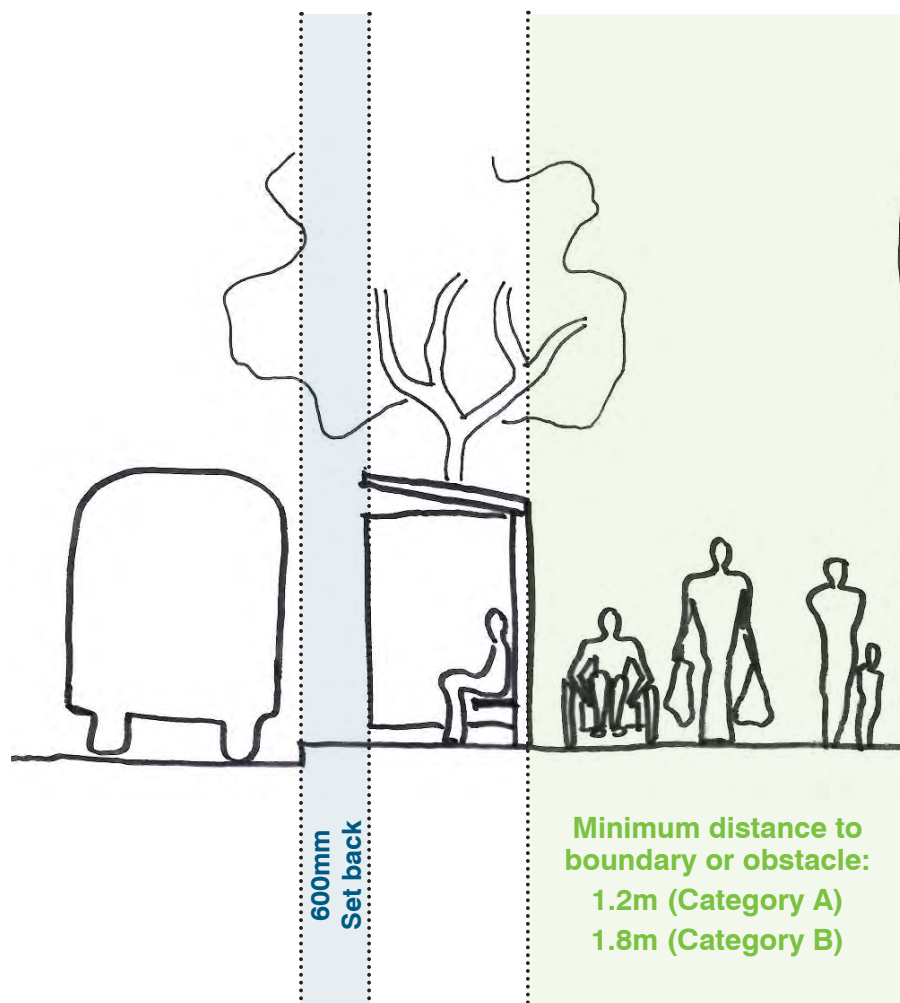
2.4 Minimum Clearances around Furniture

Additional spatial considerations include minimum clearances from buildings, traffic and other obstacles, to ensure that furniture is safe, robust and are easy to maintain.

In general a minimum clearance of 1200mm between street furniture items and building boundaries or any other obstacles is to be maintained throughout (as defined in the Disability Standards for Accessible Public transport 2002 and Guidelines 2004)

The below table provides guidelines on minimum clearances for street furniture items for maintenance and accessibility standard requirements.

Street furniture items are to be set back from the kerb line by 600mm as described in the “Sydney Streets Technical Specifications”.



Furniture Item	Minimum distance to boundary or obstacle (m)*	
	Category A – City Centre and Village Centres/ Activity Strips	Category B – remaining LGA
Shelter	1.8	1.2
Kiosk	1.8	1.2
APT	1.2	1.2
Phone	1.2	1.2
Poster Bollard	1.2	1.2

*In some locations of low pedestrian traffic and narrow footpaths it may preferable to place the furniture item against the boundary line in order to achieve a better footpath clearance adjacent to the kerb. This is only possible where building frontages have no openings to the street.

Refer also to the specific street furniture item section of this document for individual and more detailed specifications and requirements.

2.5 Accessibility and Universal Design

Performance Standards	Reference
<p>1. As far as possible, street furniture (including seating, garbage bins, and water fountains, bicycle parking infrastructure and public telephones), will be located within a dedicated street furniture zone, located kerb-side or on kerb blisters, in order to keep the pedestrian zone and the continuous accessible path of travel free of obstructions. In particular:</p> <ul style="list-style-type: none"> a) Seats shall set back by a minimum of 500mm from the path of travel, and b) In civic spaces, all street furniture should be positioned on one side only of the accessible path of travel. 	<p>Australian Human Rights Commission (2013) Advisory Note on Streetscapes, public outdoor areas, fixtures, fittings and furniture Clause 8.7.1</p> <p>AS1428.2 (1992) Clause 27.1</p>
<p>2. Where street furniture obstructs the continuous accessible path of travel, additional hazard warning features will be incorporated as needed. These can include but are not limited to the following examples:</p> <ul style="list-style-type: none"> a) The placement of hazard TGSIs in accordance with AS1428.4.1 Clause 2.6. b) where the placement street furniture creates impediments or hazards with less than 2000mm height clearance within or adjacent to the continuous accessible path of travel (such as public telephones that are not detectable by cane at ground level) contact with overhead hazard shall be prevented by a suitable barrier such as: <ul style="list-style-type: none"> i) Enclosing the area, or ii) Providing handrails with kerb rails in accordance with AS1428.1. c) In the absence of a suitable barrier, TGSIs shall be installed. 	<p>AS1428.4.1 (2009) Clause 2.6.</p>
<p>3. Seating will be designed to be compliant with AS1428.2 Clause 27.2 Seating in pedestrian areas. In particular:</p> <ul style="list-style-type: none"> a) Street furniture will be made of materials that have a minimum luminance contrast of 30% as per AS1428.2 Clause 27.1 (b). The contrast will be assessed with surrounding paving materials b) Street furniture seating will generally be a consistent height of 450mm as per AS1428.2 Clause 27 c) Seating will include arm rests and backs to support people who have difficulty being seated or getting up from a seated position d) As far as practicable, bubblers and water fountains will be incorporate body lever controls (rather than Push buttons) so as to be accessible to people with limited manual dexterity. They will also be designed to be accessible for wheelchair users. 	<p>AS1428.2 (1992) Clause 27</p>
<p>4. Street furniture, including accessible seating bins, and bubblers will be provided at regular intervals as informed by the City of Sydney Streets Code.</p>	<p>Best Practice</p>



<p>5. Within civic spaces that provide numerous different seating opportunities, a variety of styles which maximises the range of people that can be seated will be provided. these include:</p> <ul style="list-style-type: none"> a) A minimum of 25% of seating options will have back and arm rests and will be compliant with AS1428.1 Clause 27. Specifically: <ul style="list-style-type: none"> i) arm rests at a height between 220mm and 300mm above seat ii) a range of different seating heights (350mm, 450mm and 520mm) consistent with guidelines in AS1428.2 Clause 27 where possible. b) Some improvised and integrated seating - which may not be fully compliant with AS1428.2 - is permitted where there are some seating options within the immediate seating zone that comply with AS1428.2. 	<p>AS1428.2 (1992) Clause 27</p>
<p>6. Within civic spaces, as far as practicable, accessible seating, compliant with AS1428.2 Clause 27 will be provided at key locations such as at major entrances, at viewing areas, beneath shelter/shade.</p>	<p>Best Practice</p>

2.6 Advertising on Street Furniture

As a guiding principle the placement of advertising on street furniture in the public domain needs to create a balance between quantity, size and quality of advertising and the needs of the public.

Advertising panels are to be integrated into the design of street furniture elements and be a modular, removable component of the street furniture to respond to varying requirements in the public domain.

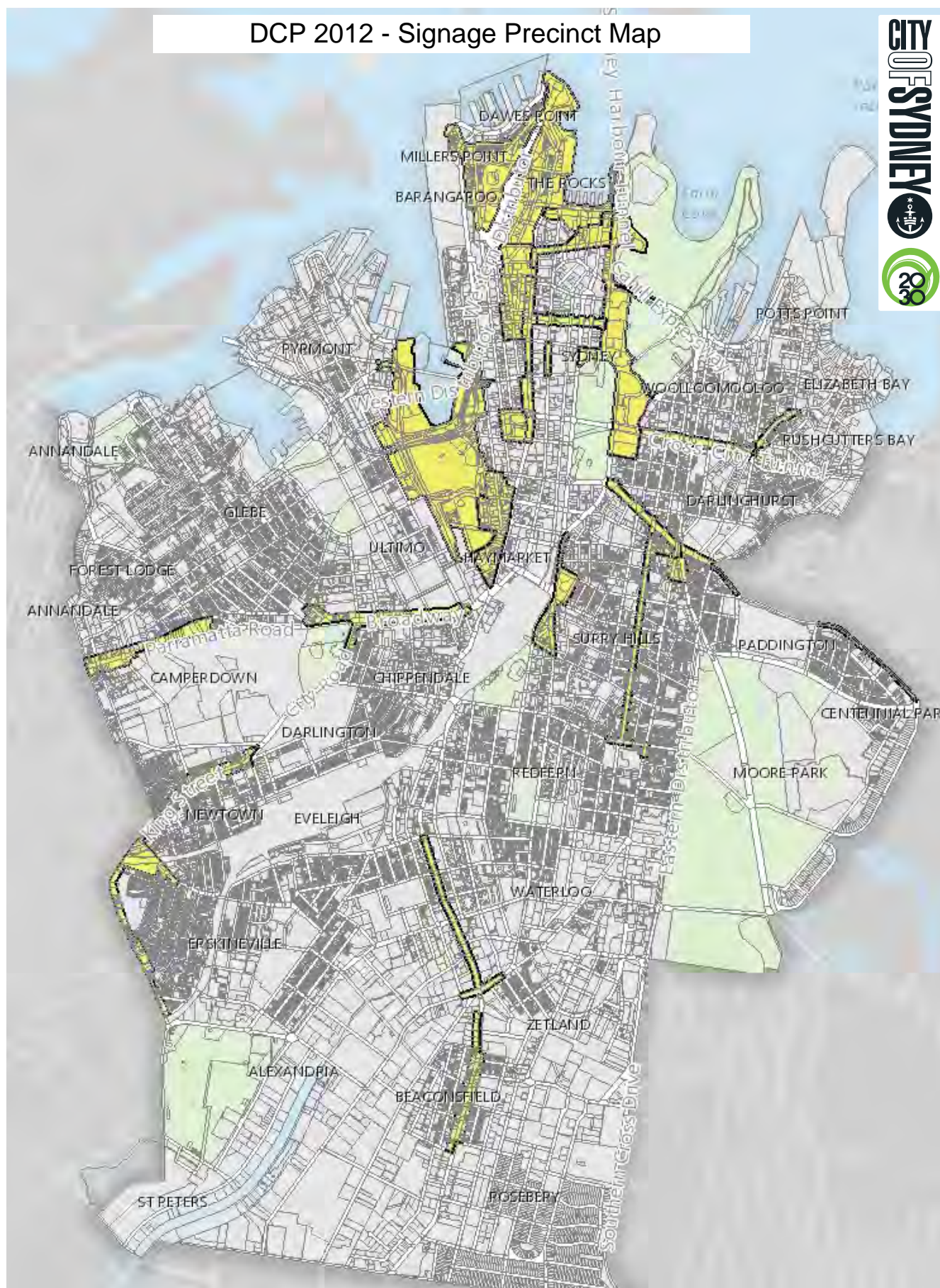
The placement of advertising panels as part of street furniture elements needs to be assessed with reference to the City's Development Control Plan (DCP) 2012 and in particular the requirements listed under **3.16.7 Advertising structures and third party advertisements**.

Signage precincts as described in the DCP and shown on the **Signage Precinct Map** of the DCP are to be referred to when placing advertising as part of street furniture in the public domain.

The placement of advertising on street furniture is to respect that city trees will not be trimmed to improve sightlines to advertising on furniture.

Digital advertising screens are not to be placed to dominate an area commercially or visually; they are not to be placed in combination to form one larger area or in a short distance series.

DCP 2012 - Signage Precinct Map



The following SEPP 64 assessment criteria for advertising and signage are to be considered as part of the placement process:

Character of the area

Is the proposal compatible with the existing or desired future character of the area or locality in which it is proposed to be located?

Is the proposal consistent with a particular theme for outdoor advertising in the area or locality?

Special areas

Does the proposal detract from the amenity or visual quality of any environmentally sensitive areas, heritage areas, natural or other conservation areas, open space areas, waterways, rural landscapes or residential areas?

Views and vistas

Does the proposal obscure or compromise important views?

Does the proposal dominate the skyline and reduce the quality of vistas?

Does the proposal respect the viewing rights of other advertisers?

Streetscape, setting or landscape

Is the scale, proportion and form of the proposal appropriate for the streetscape, setting or landscape?

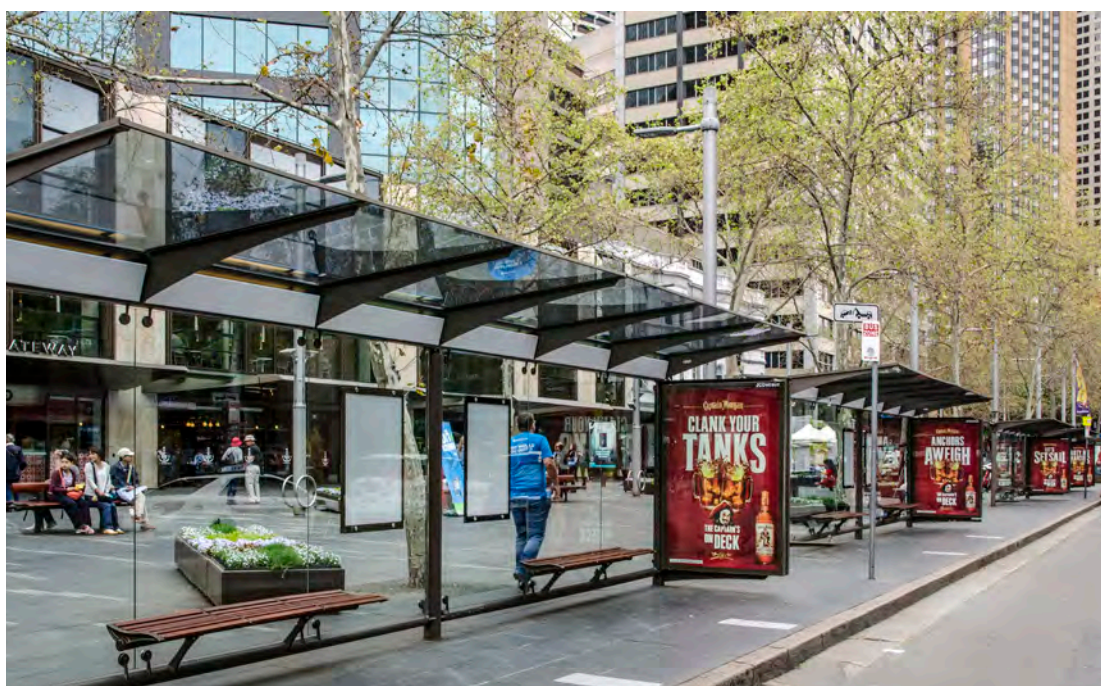
Does the proposal contribute to the visual interest of the streetscape, setting or landscape?

Does the proposal reduce clutter by rationalising and simplifying existing advertising?

Does the proposal screen unsightliness?

Does the proposal protrude above buildings, structures or tree canopies in the area or locality?

Does the proposal require ongoing vegetation management?



Site and building

Is the proposal compatible with the scale, proportion and other characteristics of the site or building, or both, on which the proposed signage is to be located?

Does the proposal respect important features of the site or building, or both?

Does the proposal show innovation and imagination in its relationship to the site or building, or both?

Illumination

Would illumination result in unacceptable glare?

Would illumination affect safety for pedestrians, vehicles or aircraft?

Would illumination detract from the amenity of any residence or other form of accommodation?

Can the intensity of the illumination be adjusted, if necessary?

Is the illumination subject to a curfew?

Safety

Would the proposal reduce the safety for any public road?

Would the proposal reduce the safety for pedestrians or bicyclists?

Would the proposal reduce the safety for pedestrians, particularly children, by obscuring sightlines from public areas?



3.1.1 Shelter



Description

Cox Design

Cox 4 - 1550mm deep x 4090mm wide
Cox 5 - 1550mm deep x 5450mm wide
Cox 8 - 1550mm deep x 8180mm wide

Foster Design

with or without solar panels
1200mm deep x 4010mm wide

Placement

Minimum clearances are as follows:

Area A - Central Sydney

Kerb to shelter	1500mm
Shelter to boundary/building	1800mm

Area B - Remaining LGA

Kerb to shelter	1200mm
Shelter to boundary/building	1200mm

Other clearances to be considered are:
to tree trunks, tree canopies, tree pits,
traffic signal poles, street lights, street and
wayfinding signs

Installation

A Development Application is to be lodged with the City of Sydney for any new shelter placements.

Changes or modifications to an existing shelter may require a Section 4.55.

Further Information

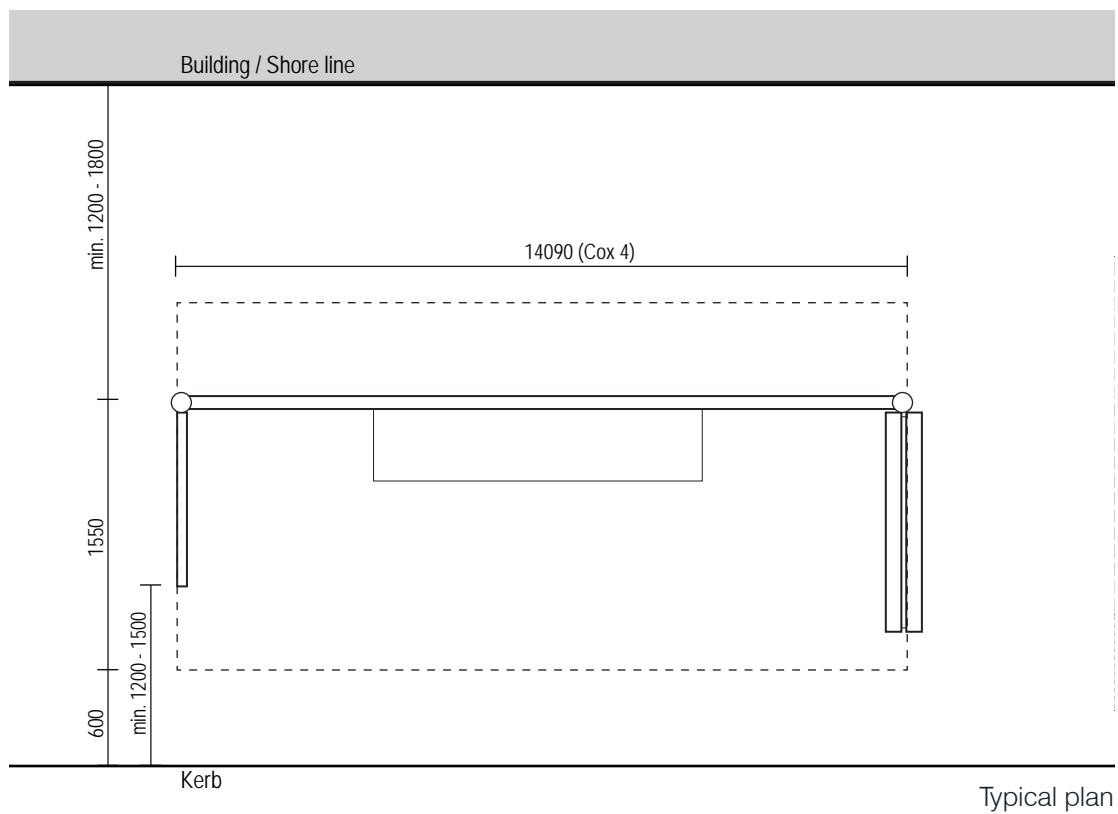
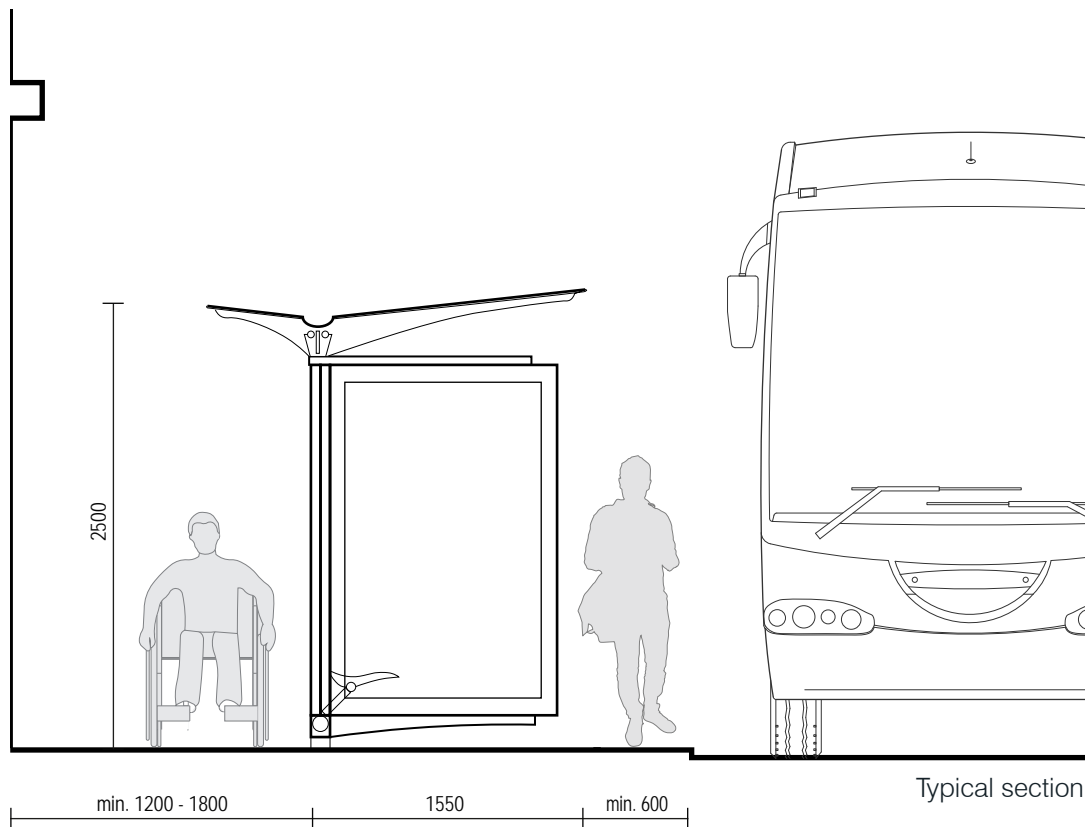
In some locations of low pedestrian traffic and narrow footpaths it may be preferable to place the furniture item against the boundary line in order to achieve a better footpath clearance adjacent to the kerb. This is only possible where building frontages have no openings to the street.

Where more than one shelter is provided, regular passing points of 1800mm are to be provided at least every 20m.

Refer also to the **Sydney Streets Code**, section E.10.5 Bus Stops and bus stop infrastructure and the Sydney Technical Specifications.

Refer also to the City's **Guidelines for an Inclusive and Accessible Public Domain**.

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3.1.2 Kiosk



Description

Cox Design

Small kiosk

1550mm deep x 2852mm wide

Large kiosk

1850mm deep x 3975mm wide

Installation

A Development Application is to be lodged with the City of Sydney for any new kiosk placements.

Changes or modifications to an existing kiosk may require a Section 4.55.

Placement

Minimum clearances are as follows:

Area A - Central Sydney

Kerb to kiosk	600mm
Kiosk to boundary/building	1800mm

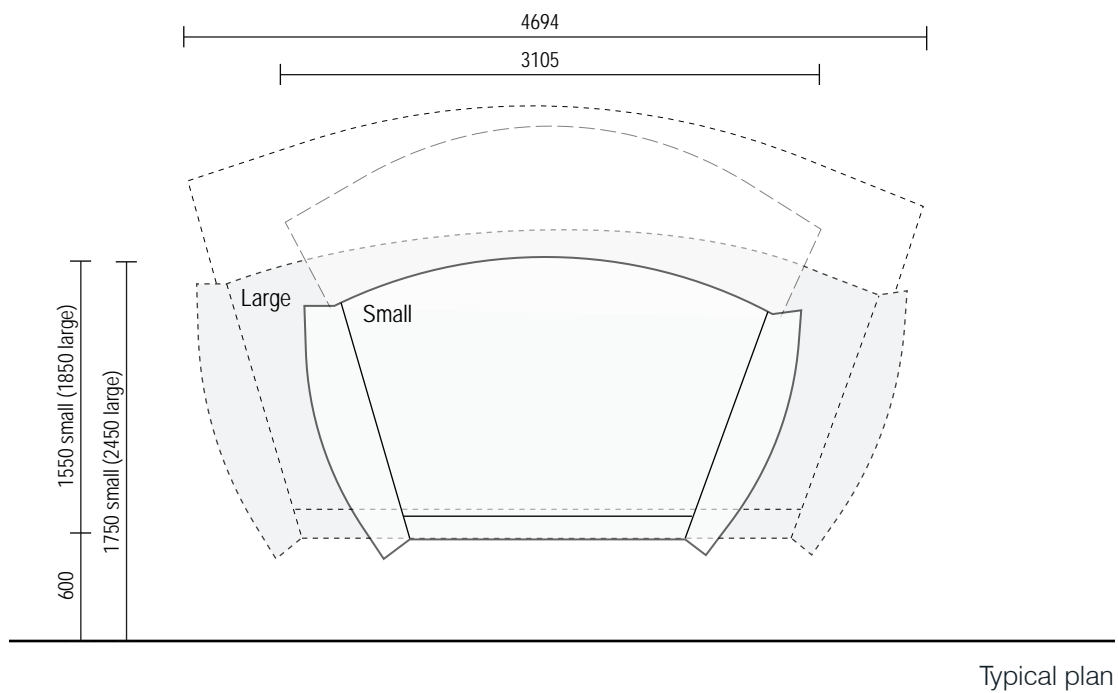
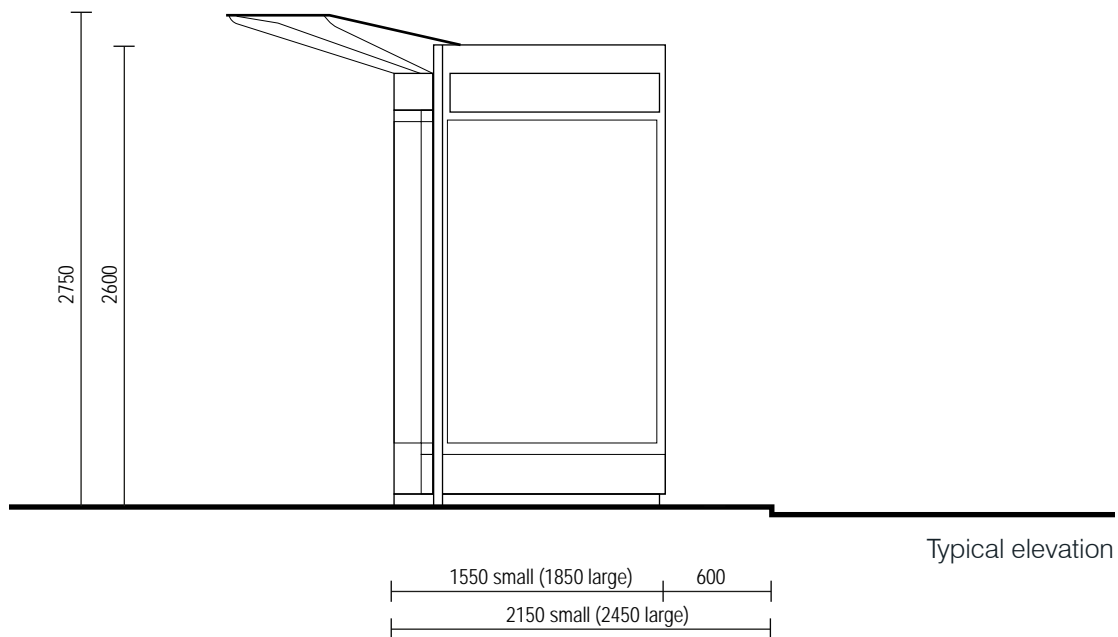
Area B - Remaining LGA

Kerb to kiosk	600mm
Kiosk to boundary/building	1200mm

Other clearances to be considered are:
to tree trunks, tree canopies, tree pits,
traffic signal poles, street lights, street and
wayfinding signs

Further Information

Refer also to the City's **Guidelines for an Inclusive and Accessible Public Domain**.



3.1.3 Automated Public Toilet (APT)



Description

Cox Design

2140mm deep x 4250mm wide (front)

Installation

A Development Application is to be lodged with the City of Sydney for any new APT placements.

Changes or modifications to an existing APT may require a Section 4.55.

Placement

Minimum clearances are as follows:

Area A - Central Sydney

Kerb to APT	600mm
APT to boundary/building	1800mm

Area B - Remaining LGA

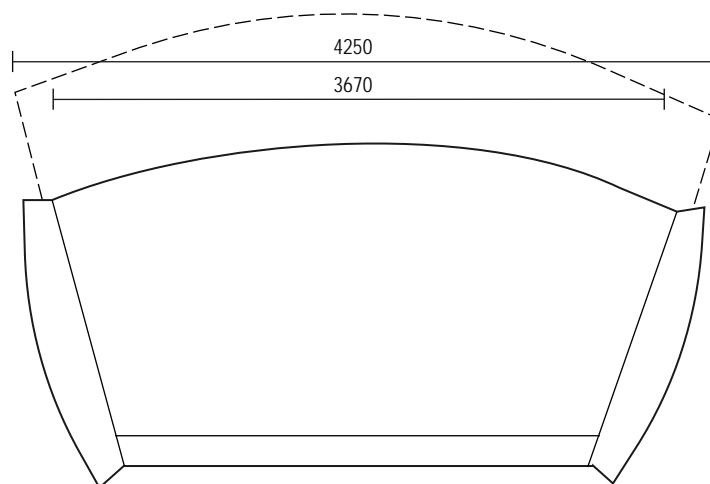
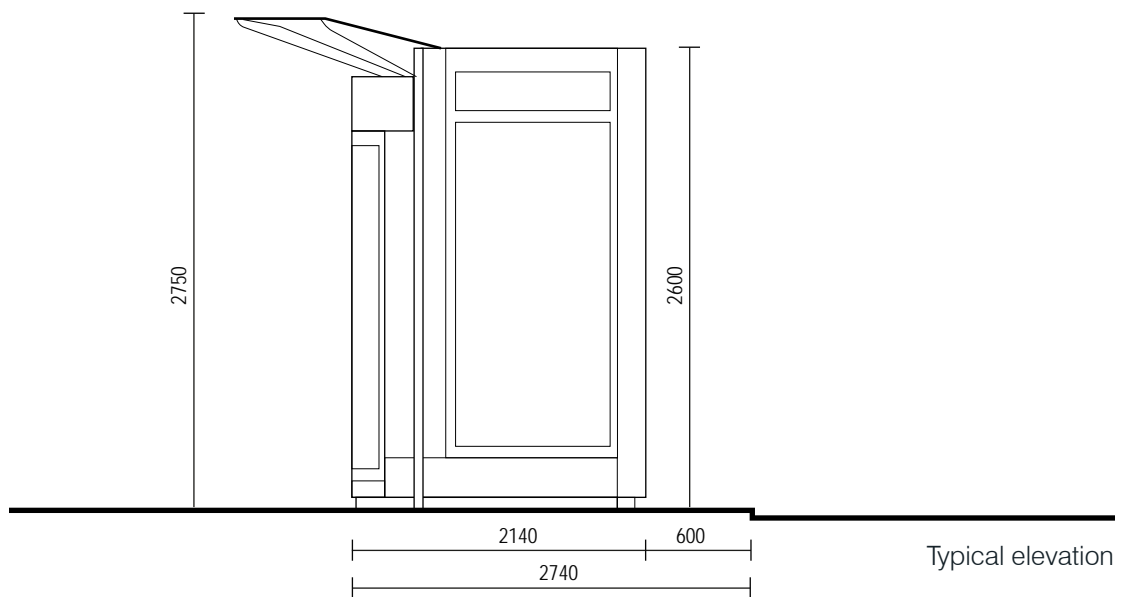
Kerb to APT	600mm
APT to boundary/building	1200mm

Other clearances to be considered are:
to tree trunks, tree canopies, tree pits,
traffic signal poles, street lights, street and
wayfinding signs

Further Information

APTs should be connected to a continuous accessible path of travel of a maximum gradient of 1:20.

Refer also to the City's **Guidelines for an Inclusive and Accessible Public Domain**.



Typical plan

3.1.4 Telephone / Communications Pylon



Description

Cox Design

970mm deep x 1400mm wide
x 2800mm high

Installation

A Development Application is to be lodged with the City of Sydney for any new phone placements.

Changes or modifications to an existing phone may require a Section 4.55.

Placement

Minimum clearances are as follows:

Area A - Central Sydney

Kerb to phone	600mm
Phone to boundary/building	1800mm

Area B - Remaining LGA

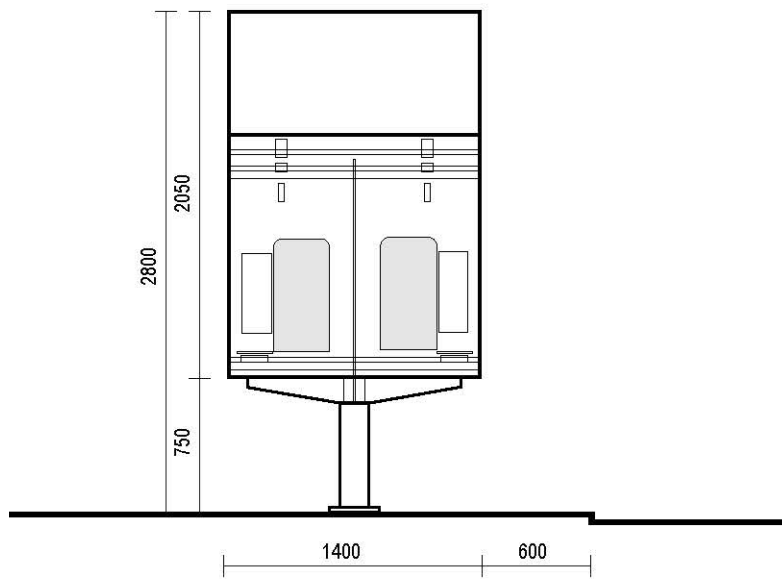
Kerb to phone	600mm
Phone to boundary/building	1200mm

Other clearances to be considered are:
to tree trunks, tree canopies, tree pits,
traffic signal poles, street lights, street and
wayfinding signs

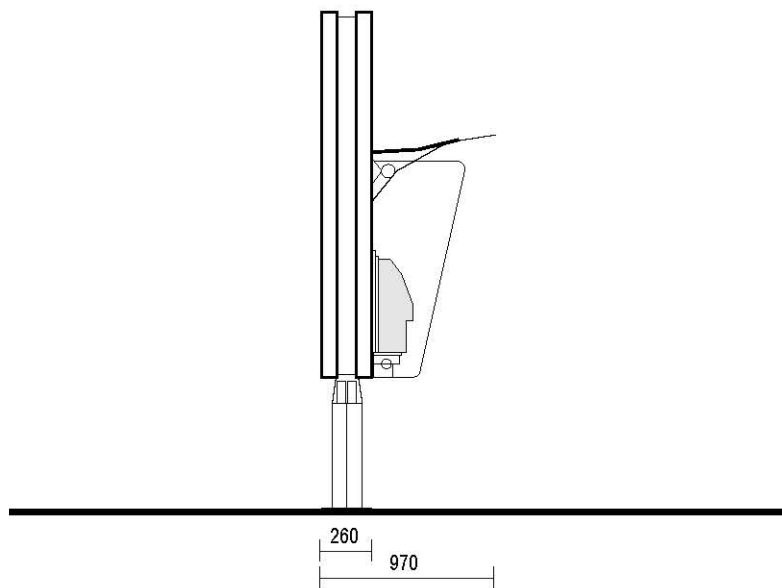
Further Information

In locations of high pedestrian traffic and narrow footpaths it may be preferable to place the furniture item parallel to the kerb to achieve a better footpath clearance.

Refer also to the City's **Guidelines for an Inclusive and Accessible Public Domain**.



Front elevation



Side elevation

3.1.5 Poster Bollard



Description

Cox Design

270mm deep x 1400mm wide
x 2800mm high

Installation

A Development Application is to be lodged with the City of Sydney for any new poster bollard placements. Changes or modifications to an existing poster bollard may require a Section 4.55.

Placement

Minimum clearances are as follows:

Area A - Central Sydney

Kerb to poster bollard	600mm
Poster bollard to boundary/building	1800mm

Area B - Remaining LGA

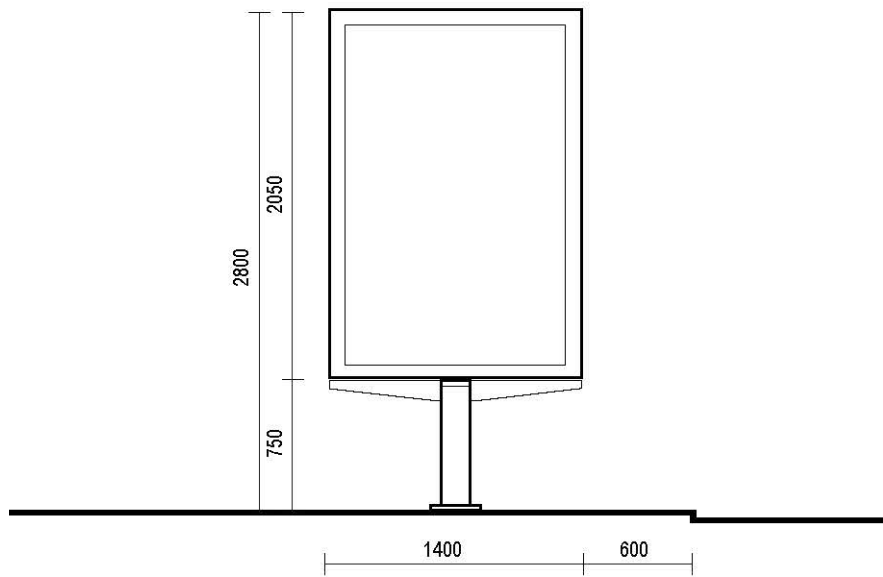
Kerb to poster bollard	600mm
Poster bollard to boundary/building	1200mm

Other clearances to be considered are:
to tree trunks, tree canopies, tree pits,
traffic signal poles, street lights, street and
wayfinding signs

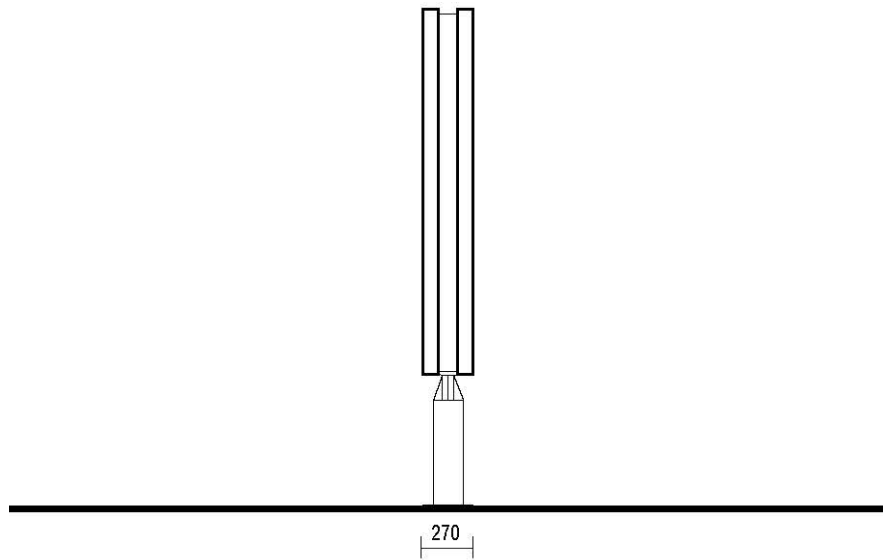
Further Information

In locations of high pedestrian traffic and narrow footpaths it may be preferable to place the furniture item parallel to the kerb to achieve a better footpath clearance.

Refer also to the City's **Guidelines for an Inclusive and Accessible Public Domain**.



Front elevation

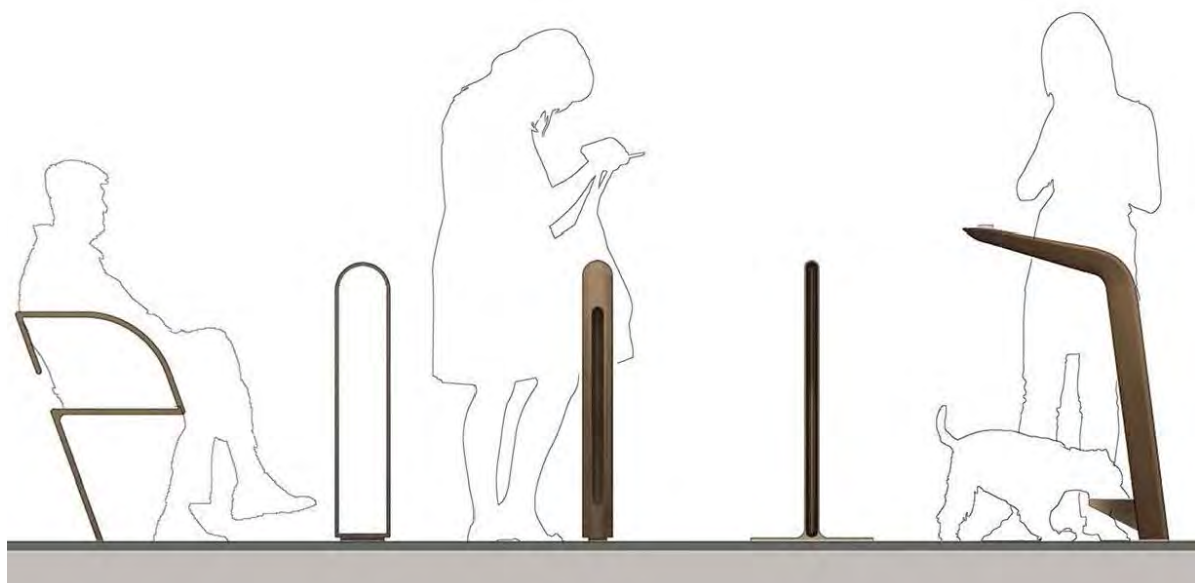


Side elevation

3.2 Street Furniture without Advertising

The City's street furniture suite consists of street furniture with advertising panels and street furniture without advertising.

Street furniture elements without advertising are generally smaller elements and include benches/seats, bins, bubblers, bollards and tree guards and tree grates.





3.2.1 Bench/Seat



Description

City Seat

535mm deep x 1900mm wide

Installation

A Development Application is not required.

There should be a 500mm clearance between the front of seats and the clear path of travel.

Placement

Minimum clearances are as follows:

Area A - Central Sydney

Kerb to seat	600mm
Seat to boundary/building	1200mm

Area B - Remaining LGA

Kerb to seat	600mm
Seat to boundary/building	1200mm

Other clearances to be considered are:
to tree trunks, tree canopies, tree pits,
traffic signal poles, street lights, street and
wayfinding signs, set backs from corners

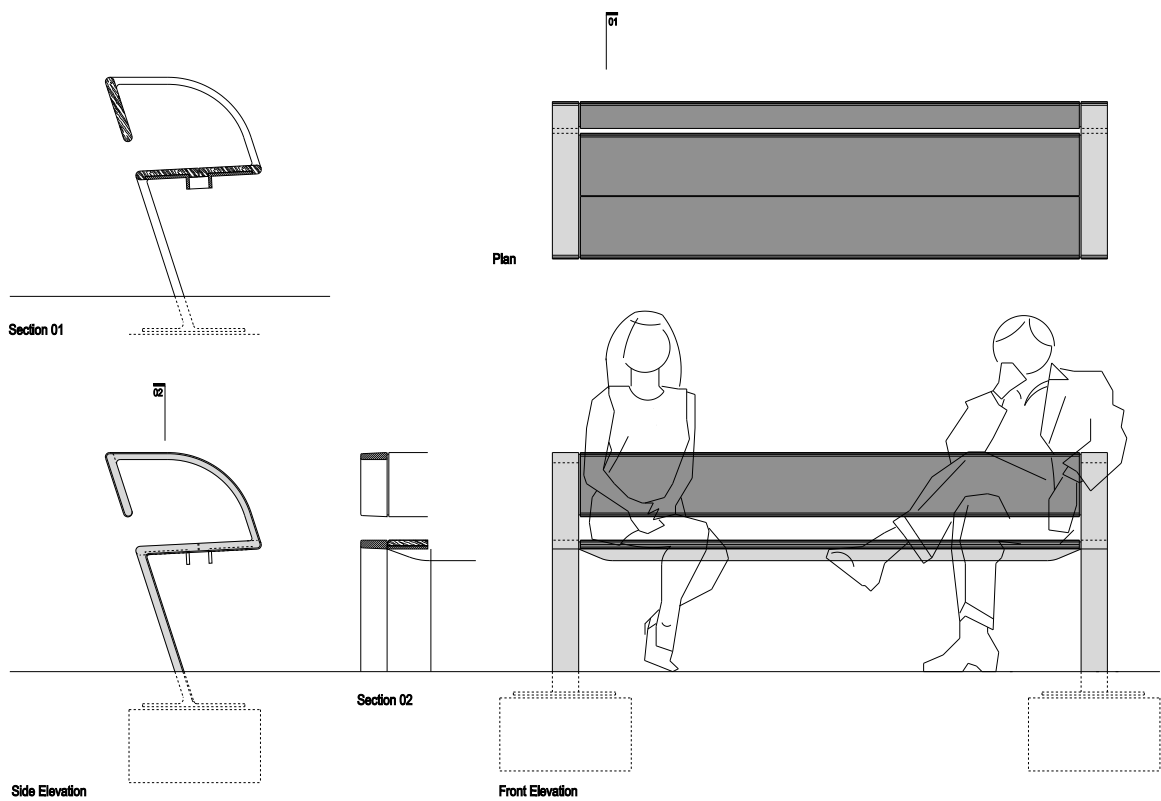
If the seats are installed in groups, facing each other or back to back the following set out dimensions should be used:

Back rest to back rest	350mm
front of seat to front of seat	1300mm
(Refer to drawing A)	

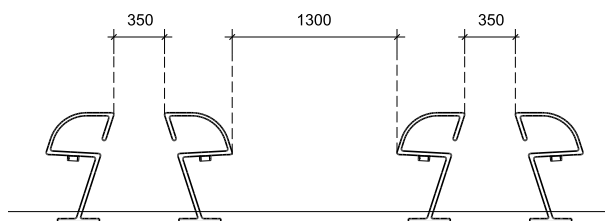
If the seat is installed on a sloping ground the centre of the seat is to be set out at a height of 450mm from the finished floor level as shown on drawing B.

Further Information

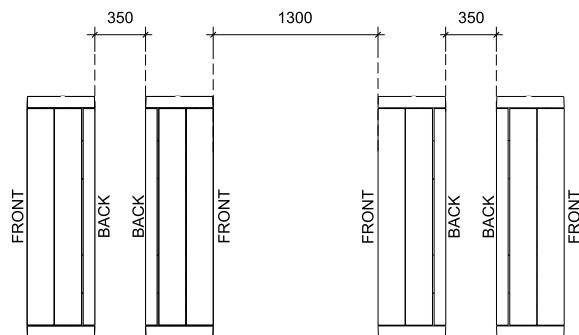
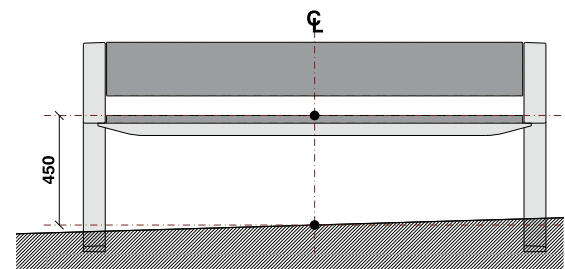
Refer also to the City's **Guidelines for an Inclusive and Accessible Public Domain**.



Drawing A - Seat installation in groups



Drawing B - Sloping ground level installation



3.2.2 Bin



Description

City Capsule Bin

535mm deep x 1900mm wide

Pedestrian guard railings > 1.5m

Drainage Grates on Roadway > 3m

Pram/Access Ramps > 3m

Placement

Minimum clearances are as follows:

Area A - Central Sydney

Kerb to bin 600mm

Bin to boundary/building 100mm

Area B - Remaining LGA

Kerb to bin 600mm

Bin to boundary/building 1200mm

Whole LGS

Hill/Crest Bend in roadway > 50m

Pedestrian crossing > 10m

Intersections & Roundabouts > 20m

Driveways
(from approach side) > 1.5m

Power poles, bike racks,
seating & utility boxes > 1.5m

Installation

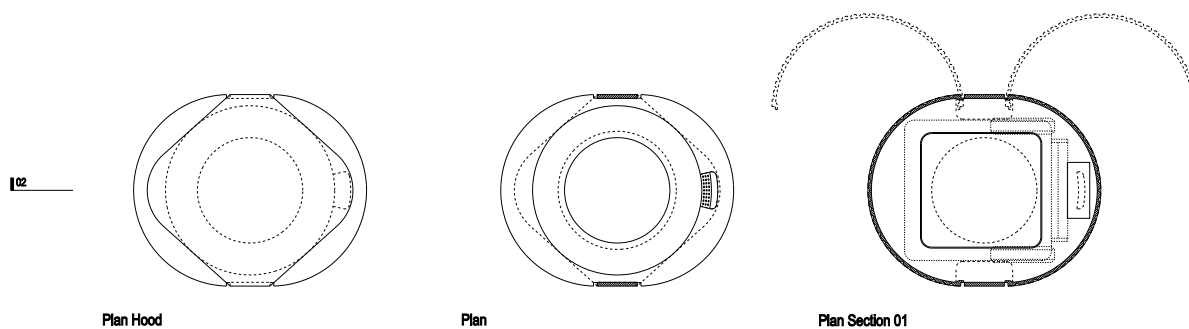
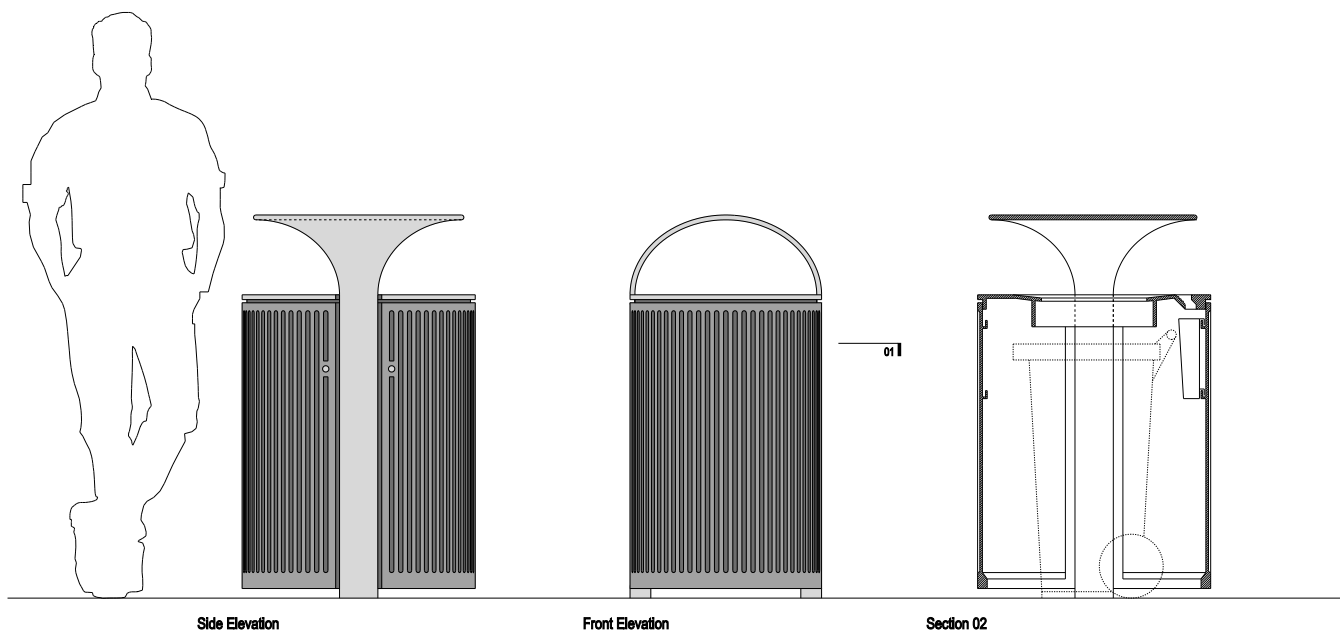
A Development Application is not required. The placement of bins is to be coordinated with the City's waste services.

The bins are to be installed with the doors swinging away from the kerb line to allow easy access from the street and the truck.

Bin removal and placement inside the bin as well as visibility of oncoming traffic and distance to traffic lights are to be considered as part of the placement.

Preferably bins are to be installed in a level location.

If the bin is installed on a sloping ground the bin might be installed vertically or perpendicular to the slope depending on the slope gradient. If installed vertically the door swing is to be considered to avoid jamming of the door on the ground.



Kerb Line

Further Information

Refer also to the City's **Guidelines for an Inclusive and Accessible Public Domain**.

3.2.3 Bubbler



Description

City Bubbler

535mm deep x 1900mm wide

Installation

A Development Application is not required.

Placement

Minimum clearances are as follows:

Area A - Central Sydney

Kerb to seat	600mm
Seat to boundary/building	1200mm

Area B - Remaining LGA

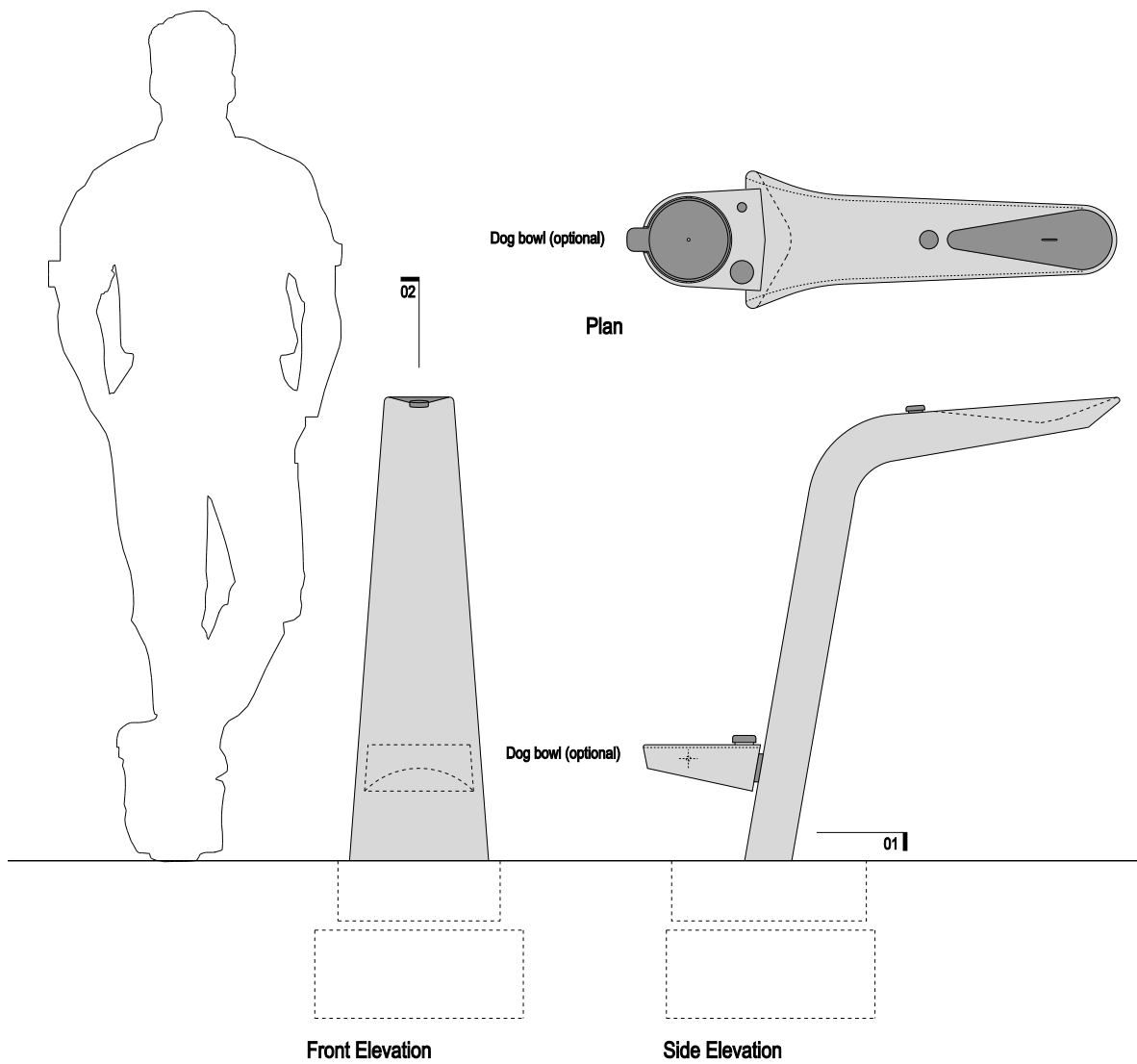
Kerb to seat	600mm
Seat to boundary/building	1200mm

Other clearances to be considered are:
to tree trunks, tree canopies, tree pits,
traffic signal poles, street lights, street and
wayfinding signs, set backs from corners

Further Information

The City Bubbler can be installed with or without a dog bowl.

Refer also to the City's **Guidelines for an Inclusive and Accessible Public Domain**.



3.2.4 Bollard



Description

City Bollard

100mm deep x 180mm wide x 900mm high

Installation

A Development Application is not required.

Placement

Minimum clearances are as follows:

Area A - Central Sydney

Between each other	1200mm
To other obstructions	1200mm

Area B - Remaining LGA

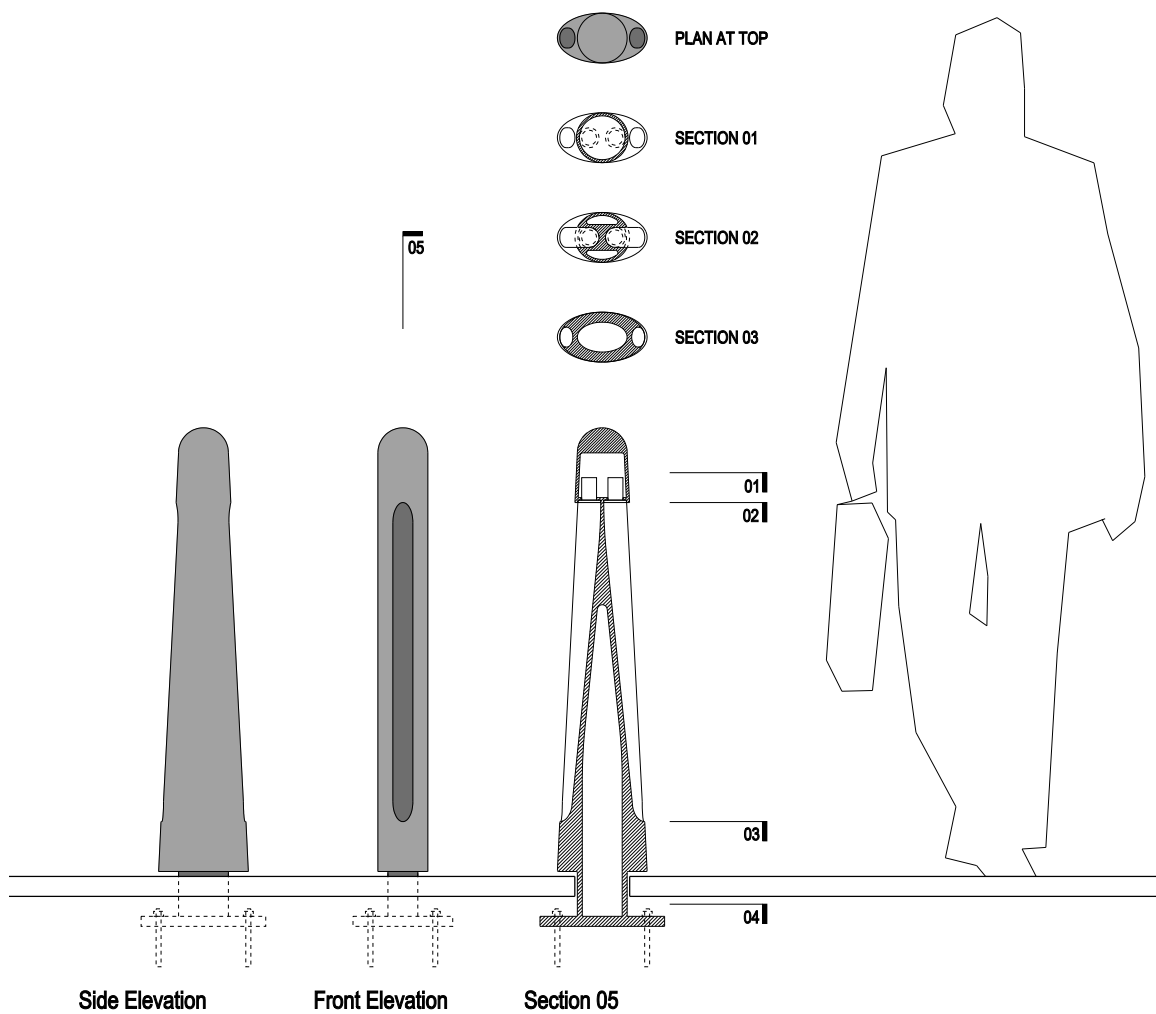
Kerb to bollard	600mm
Bollard to boundary/building	1200mm

Other clearances to be considered are:
to tree trunks, tree canopies, tree pits,
traffic signal poles, street lights, street and
wayfinding signs, set backs from corners

Further Information

Refer also to Street Design Code Sections E.10.5 and E.10.6 and to the City's **Crowded Places Design Guidelines**.

Refer also to the City's **Guidelines for an Inclusive and Accessible Public Domain**.



3.2.5 Tree Guard and Grate



Description

City Tree Guard

535mm deep x 1900mm wide

City Tree Grate

535mm deep x 1900mm wide

Installation

A Development Application is not required.

Placement

Minimum clearances are as follows:

Area A - Central Sydney

Kerb to Tree Guard	600mm
Tree Guard to boundary/ building	1200mm

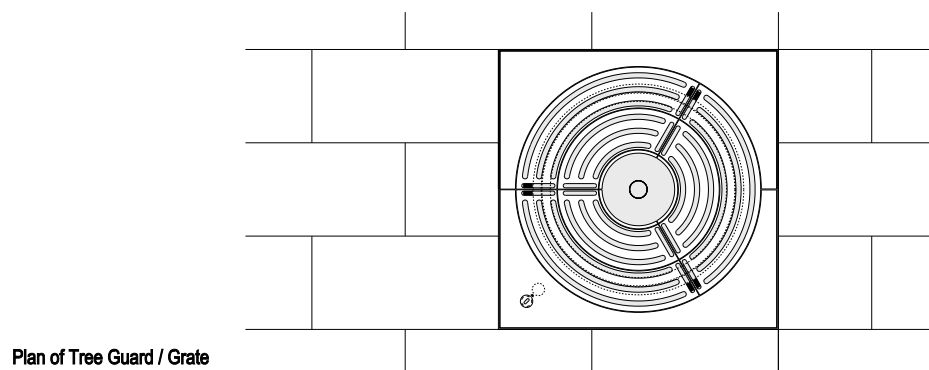
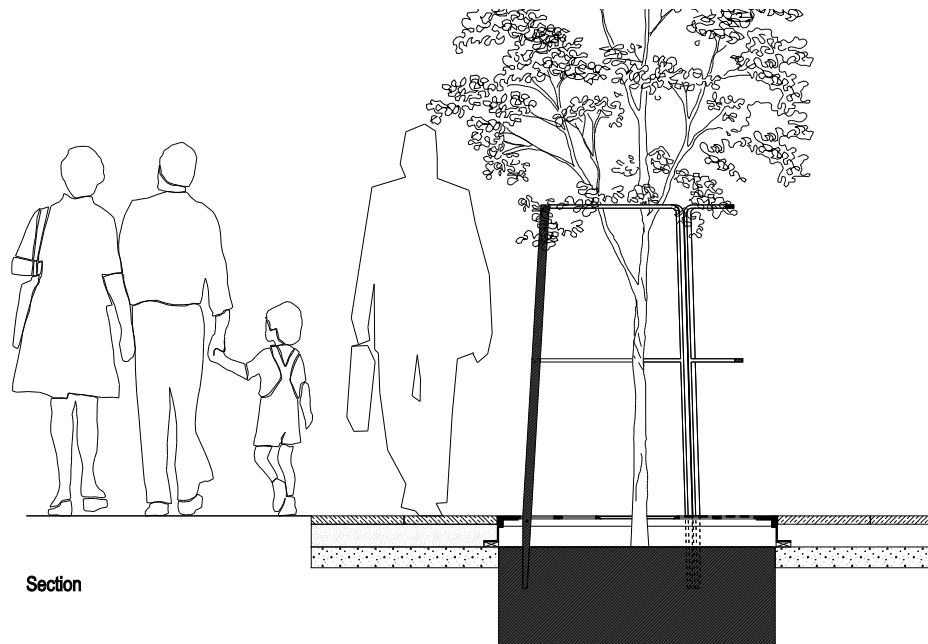
Area B - Remaining LGA

Kerb to Tree Guard	600mm
Tree Guard to boundary/ building	1200mm

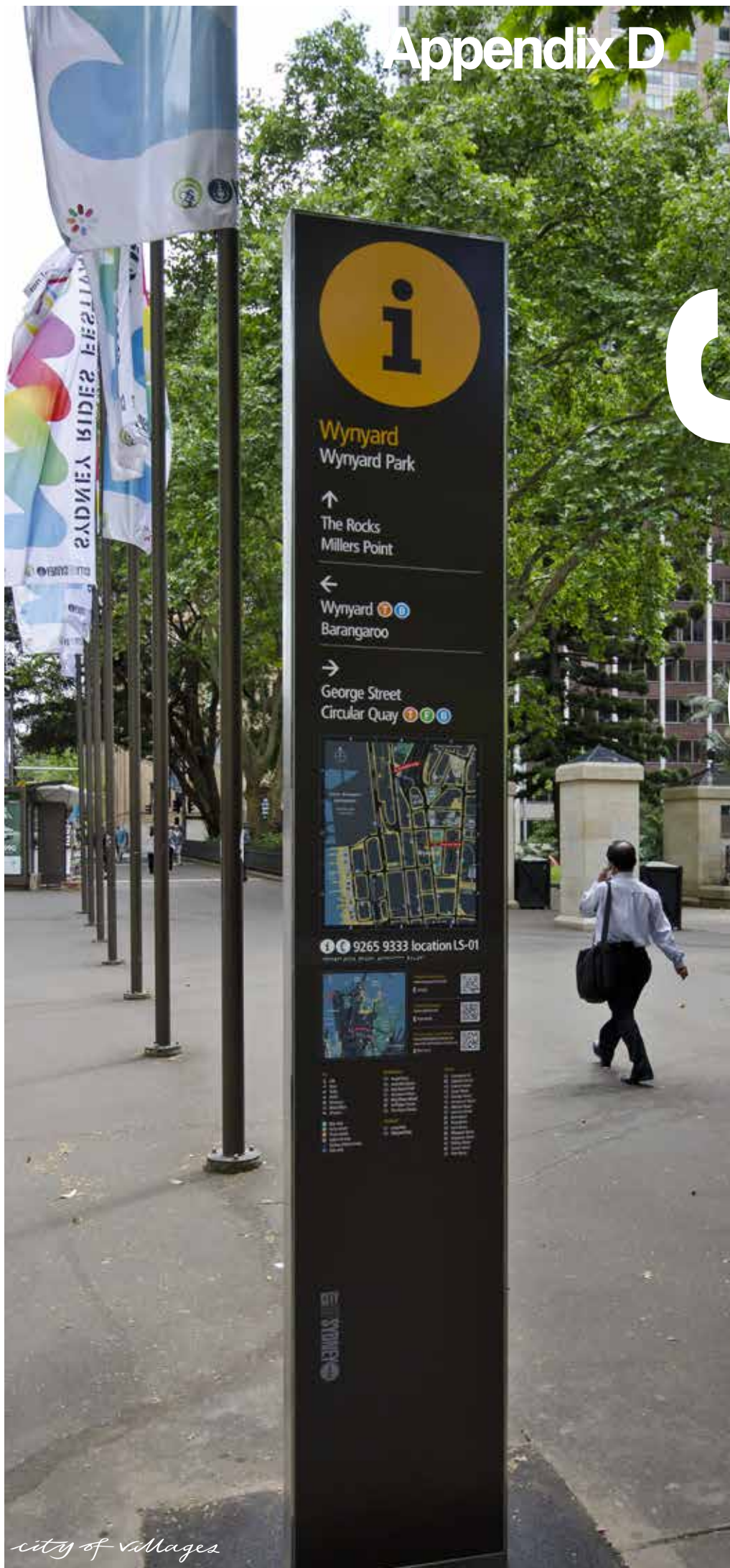
Other clearances to be considered are:
Street furniture elements, traffic signal poles, street lights, street and wayfinding signs, set backs from corners

Further Information

Refer also to the City's **Guidelines for an Inclusive and Accessible Public Domain**.



Signs



Part One — Introduction

- 1.1 Purpose
- 1.2 Acknowledgement
- 1.3 Public Domain Framework
- 1.4 Scope/Location
- 1.5 User
- 1.6 Reading the Code
- 1.7 Functionalities and Responsibilities of signage in the Public Domain
- 1.8 City of Sydney Public Domain Signage Suites
- 1.9 Which Manual for what signage?
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Part Two — Policies and Planning Principles

- 2.1 Policy background and context
- 2.2 Key Planning Principles
 - 2.2.1 Reducing and Avoiding Clutter
 - 2.2.2 Conform to Australian Standards
 - 2.2.3 Vandalproofing
 - 2.2.4 Provide directions for transitional areas to other land authorities' signage
 - 2.2.5 Ensure Ease of Maintenance
- 2.3 Design Principles
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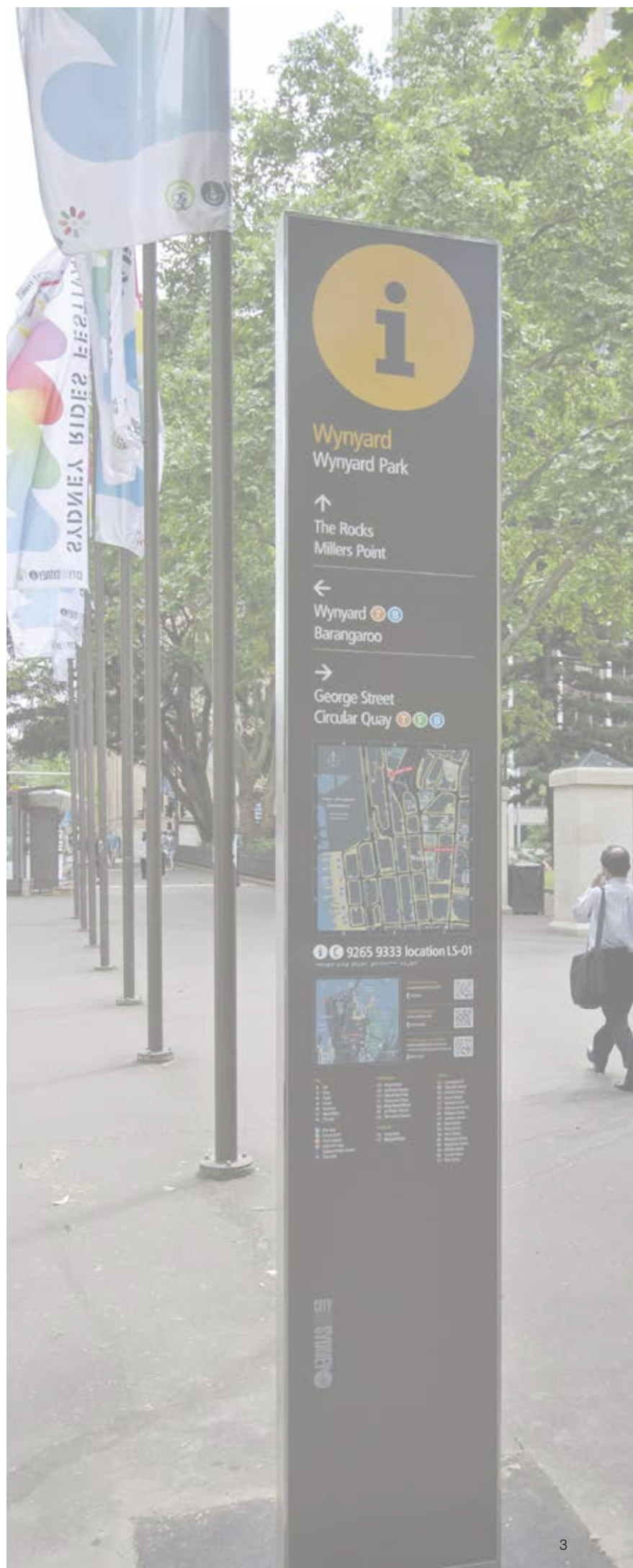
Part Three — Placement and Messaging Guidelines

- 3.1 What do we sign?
 - Guidelines on the selection of destinations for the wayfinding system
 - 3.1.1 Directional signage
 - 3.1.2 Wayfinding maps
- 3.2 When do we sign?
 - Guidelines on the decision making process for signage placement

Part Four

Signage Manuals

- 1 CoS Legible Sydney - Design Manual
- 2 CoS Park Signage - User Manual and Construction Manual
- 3 CoS Street Name Signage Specification
- 4 CoS Bicycle Network Directional Signage - Design Guidelines
- 5 CoS Community Facilities - Signage Style Guide
- 6 CoS Temporary Signage Manual (to be provided)
- 7 CoS Regulatory Signage Manual (to be provided)



Sydney Signs Part One

Introduction



Introduction

1.1 Purpose

Signage is an important element in the public domain assisting the comfortable use and enjoyment of public areas. If poorly resolved and located it can also detract from the visual qualities of the public domain.

Sydney Signs (the Code) sets the guidelines, design coordination as well as material and information design guidelines for public domain signage in the Local Government Area.

The design manuals for various signage types and elements - as listed in part 2 of this code - provide written specifications and standard drawings for detailing and manufacturing of signage in the public domain in accordance with the guidelines set out in this Code.

1.2 Acknowledgement

This publication was prepared by the City of Sydney and is copyright and remains the property of the City of Sydney.

Private sector commercial and advertising signage proposals are not addressed by this code.
Refer to relevant City planning controls for planning approval requirements.

1.3 Public Domain Framework

The City's public domain planning framework includes a number of strategic plans, planning controls, policy codes and technical specifications that together form a holistic vision for the City (refer to figure 1.0).

Sydney Signs is part of the Public Domain Code suite of documents that guide the design of Sydney's public domain. There are five Codes: Sydney Streets Code, Sydney Lights Code, Sydney Signage Code, Sydney Landscape Code and Sydney Parks Code.

1.4 Scope/Location

This Code applies to all areas of the public domain within the City of Sydney Local Government Area that are under the City's control. It does not apply to areas under the control of other land authorities, such as The Sydney Harbour Foreshore Authority, the Barangaroo Development Authority, the Royal Botanic Gardens and Darling Harbour Live or traffic signage and parking regulation signage provided by RMS and the City.

However the City of Sydney encourages the use of the Code in the areas within its boundary that are not under its control in order to achieve coordinated and consistent signage to support long term maintenance benefits.

Refer to figure 1.1 City of Sydney Land Authorities Map.

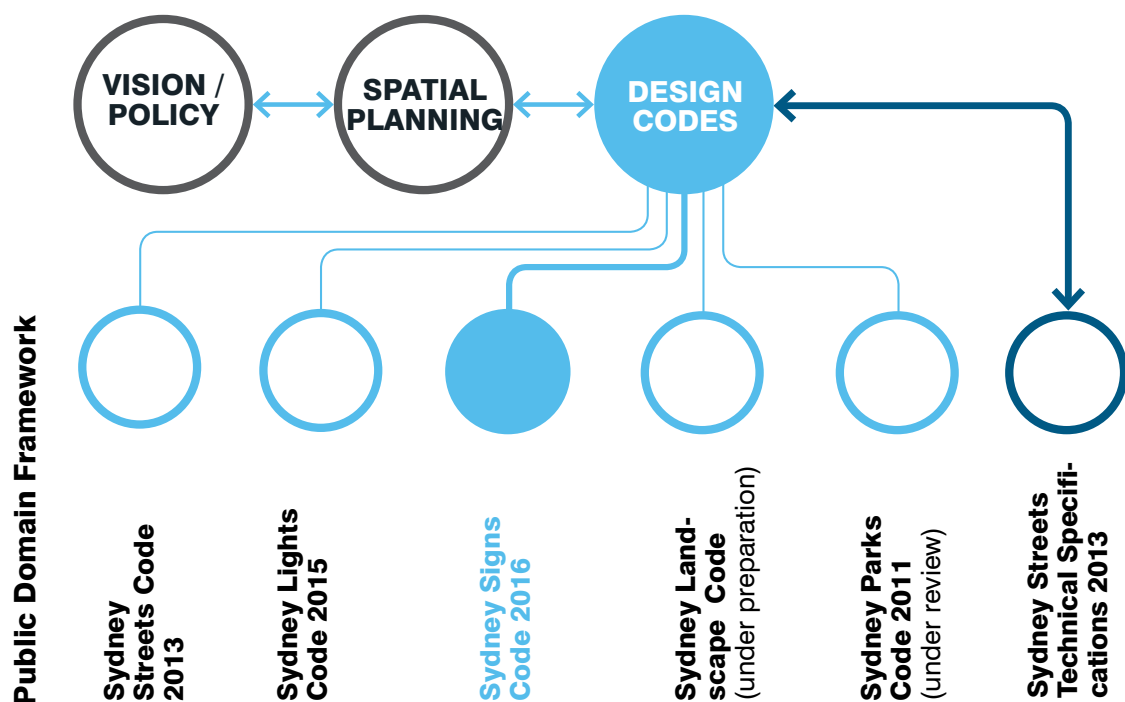
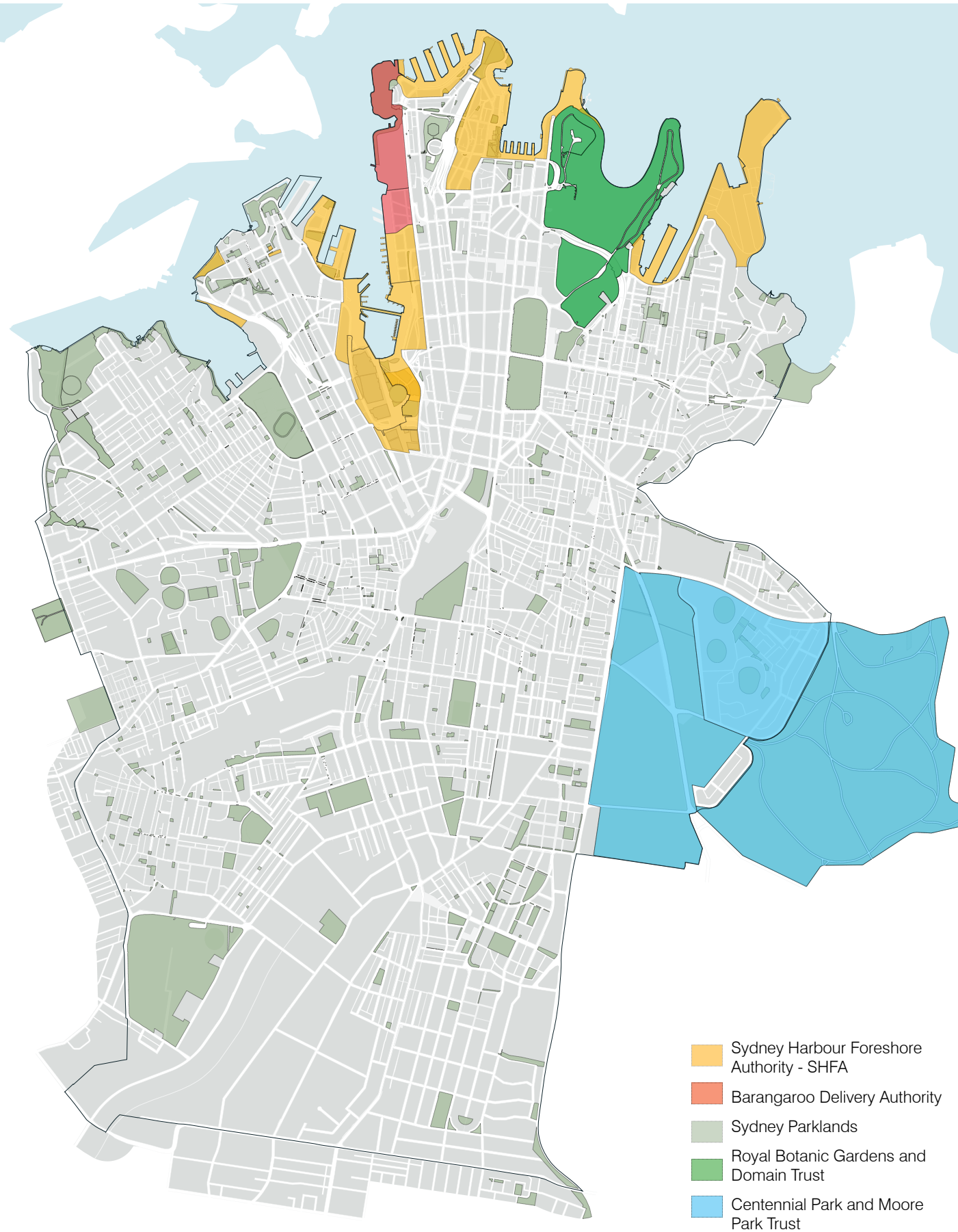


Figure 1.0 City of Sydney Public Domain Framework

Figure 1.1 City of Sydney Land Authorities Map



1.5 User

This Code should be used by all stakeholders involved with planning, design and approval of signage works for the City's public domain.

This document is intended to be used internally by all divisions within the City and externally by developers and their consultants required to provide public domain signage for the City.

1.6 Reading the Code

The Code must be read in accordance with other documents in the City of Sydney public domain planning framework (refer to figure 1.0) as well as any relevant strategic documents.

As the Code is a planning and design guide only, all works are subject to detailed design assessment and documentation for site specific applications, including any required structural certifications.

1.7 Functionalities and Responsibilities of signage in the Public Domain

The City is one of a number of public authorities that has responsibilities for signage in the public domain (Refer to figure 1.3)

Various public domain signage types include the following:

- Wayfinding/directional information for pedestrian, bicycle and public transport
- Traffic and parking information
- Place and identification information
- Regulatory information
- City of Sydney community building identification

Sydney Signs focuses on the provision of public domain signage relating to:

- Streets, laneways and public spaces/plazas
- Parks and open spaces
- Communal buildings
- Temporary events, construction billboards

1.8 City of Sydney Public Domain Signage Suites

Figure 1.4 shows a summary of the different sign suites currently used by the City.

These include:

- Pedestrian wayfinding signage
- Parks wayfinding and regulatory signage
- Taxi Rank Signage
- Public Transport Wayfinding Signage
- Street name identification
- Bicycle wayfinding signage
- Community facilities signage

1.9 Which Manual for what signage?

Table 1.0 indicates which Design Manual or Specification is to be used for what type of signage.

1.10 Legislative framework

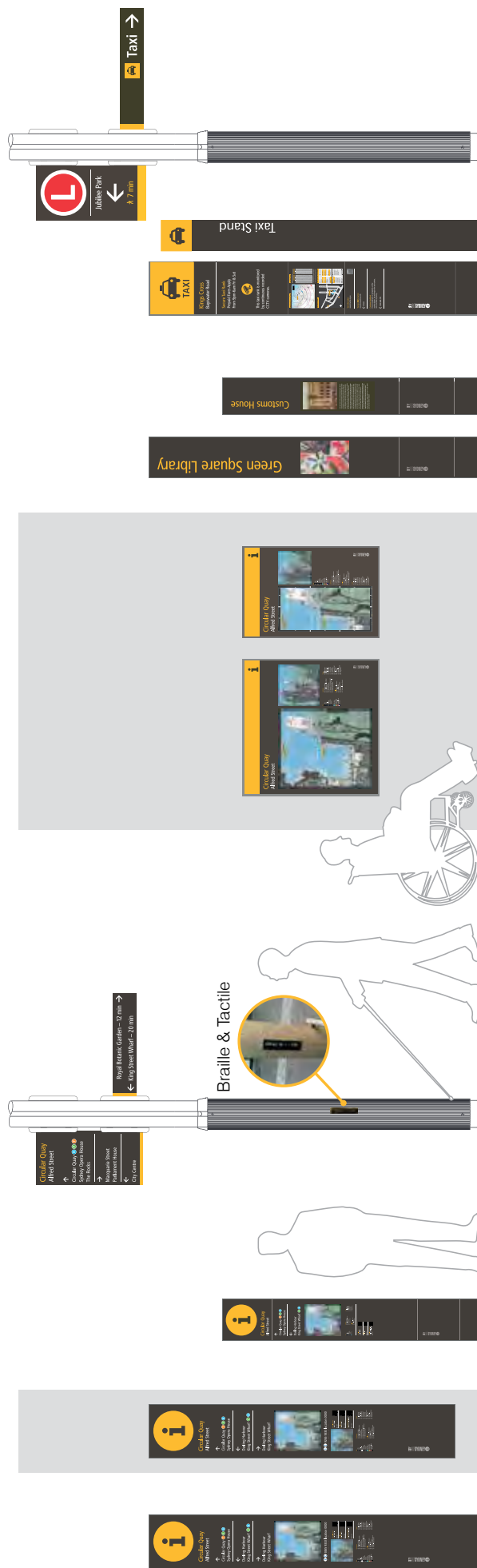
The signage systems specified in the manuals of this Code fall generally under the Exempt and Complying Development regulations of the relevant DCP. However if new signage is proposed in the vicinity of a Heritage Item advice needs to be sought from planning assessments if a Development Application is required.

Table 1.0: Which Manual for what signage?

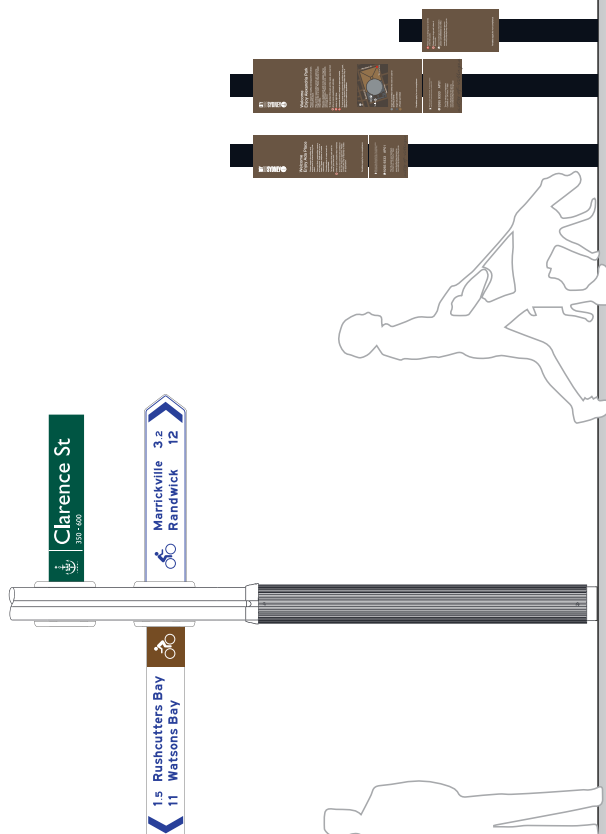
Signage Type	Design Manual/Specification
Directional pedestrian and wayfinding signs in the public domain (including Pylons, Flag and Finger Signs), Tactile Street Signs	Legible Sydney Design Manual
Any signage in Parks	Park Signage User Manual and Construction Manual
Taxi Rank Signage	Legible Sydney Design Manual
Directional pedestrian and wayfinding signs to Public Transport	Legible Sydney Design Manual
Street Name Signage	Street Name Signage Specification
Directional bicycle signage	Bicycle Network Directional Signage - Design Guidelines
Community Signage	Community facilities signage style guide
Temporary Signage (i.e. events, construction hoardings, etc.)	Temporary Signage Manual (to be provided)
Regulatory Signage (no-alcohol zone, CCTV camera, etc.)	Regulatory Signage Manual

Figure 1.3 City of Sydney Signage Matrix

Responsibility	City of Sydney (Sydney Signs)			
	State Government Public Land Agencies		Private Sector	
	Sydney Harbour Foreshore Authority (SHFA), The Rocks, Barangaroo Delivery Authority (BDA), Royal Botanic Gardens, Centennial Park Public Transport Authorities Transport for NSW State Rail			
Context	Roads and Maritime Services			
	Streets / Laneways / Plazas		Parks / Open Spaces	Buildings
	Wayfinding/Directional <ul style="list-style-type: none"> pedestrians bicycle public transport Traffic and Parking Place/Identification Information Regulatory		Place/Identification/Information Wayfinding/Directional Regulatory	City of Sydney community building identification Private sector building identification signage Internal wayfinding/directional
Signage Function				Temporary
				Event Identification Construction and Hoarding billboards
Manuals				
	<ul style="list-style-type: none"> CoS-Legible Sydney Manual CoS-Street Name Signage Specification CoS-Pedestrian Signage Policy and Manual CoS-Bicycle Network Directional Signage Design Guidelines CoS-Public Transport Wayfinding Signage Regulatory Signage Manual CoS-Shared Pathways Pavement Markings 2009 		<ul style="list-style-type: none"> City Signage DCP Community Facilities Signage Style Guide 	<ul style="list-style-type: none"> Temporary Signage Manual (to be provided)



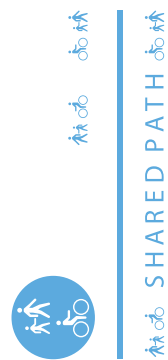
Legible Sydney Wayfinding Signage



City of Sydney Street Signage /
Bicycle Network Signage



City of Sydney Park Signage



City of Sydney Pathway
Signage Specification

Sydney Signs Part Two

Policies and Planning Principles



Policies and Planning Principles

2.1 Policy background and context

The City's vision of Sustainable Sydney 2030 for the sustainable development of the City to 2030 and beyond forms the background and context of this code.

Public domain signage contributes to achieving the directions in 2030 by assisting people to confidently access and move around the city, use public transport with ease, promote walking and cycling, provide awareness of community facilities and deliver high quality design in the provision and placement of signage.

2.2 Key Planning Principles

2.2.1 Reducing and avoiding Clutter

Street furniture, signs, bins, bollards, utilities boxes, lighting and other items of public domain infrastructure facilities, which tend to accumulate on a footway, can clutter the streetscape. Clutter is visually intrusive and has adverse implications for many disabled people. The agencies responsible for such items and those who manage the streets should consider ways of reducing their visual impact and impediment on the users.

Signs in particular can clutter the street if used in excess. Clutter is unattractive and can create hazards for street users.

Cluttering tends to accumulate over time by the incremental addition of signs to serve a particular purpose without taking the overall appearance of the streetscape into account. It is recommended that street signs are periodically audited with the aim/view of identifying and removing unnecessary signs.

The following points should be considered when placing new signage and auditing existing signage:

- **Provide a clear, unified signage system for the whole City of Sydney LGA**

The consistent design and use of signage suites and signage elements creates a clear reference path for pedestrians and cyclists, guiding the user through the city via a clear and unified visual language. Colour, proportions, graphics and features of the sign elements within the signage suites make the signage clearly identifiable for the user.

- **Minimise the amount of signage that is erected in the public domain**

Poorly located and overused signage elements create confusion and undermine the intended aims of managing traffic and providing directions. Signs should be located where required yet retain an uncluttered overall streetscape and public domain.

To achieve this signage should be placed on existing (infra)structure wherever possible, following this hierarchy:

1. Attachment to existing smartpoles
2. Attachment to other existing poles
3. Attachment to suitable existing structures
4. Introduction of a new pole

Co-placement of signage on the same pole is recommended wherever possible.

The necessity of each sign should be ensured via evaluation and survey of existing signage and existing messaging.

The following hierarchy with regards to installation heights should be applied when placing several signs on a pole:

1. Street name signage
2. Wayfinding signage
3. Regulatory signage

- **Consolidate signage wherever possible and remove redundant signage as required**

To ensure the reduction of visual street clutter, information and messaging is to be consolidated into a minimum number of signage elements. Existing out-dated and redundant signage elements should be removed wherever possible.

Remove and /or replace existing and old signage wherever possible.

- **Signage should be designed to integrate into the overall character of street furniture and lighting systems, for example Smartpoles (where possible)**

The use of smart poles is recommended wherever possible, co-placement of signage on one pole should be aimed for wherever relevant.

Pylon signs should be placed in alignment with the street furniture zone.

- **Asset Management**

Regular audits and reviews of existing signage will ensure that messaging and signage content is up to date and relevant as well as that all signage elements are in good condition.

The use of asset management systems including GIS mapping is recommended for the management of all signage systems.

2.2.2 Conform to Australian Standards

All signage design, manufacture and installation is to conform with all relevant Australian Standards.

2.2.3 Vandal Proofing

New signs should be made of hard wearing and durable quality finishes not easily damaged or defaced (vandalproof) suitable for external applications.

To avoid vandalism and damage of new signage it is recommended that a clear anti-graffiti finish be applied for coated materials. The graphic application of information must be durable to withstand scratching or removal by peeling.

In addition a maintenance program must be established to ensure any graffiti is removed in a timely manner.

2.2.4 Provide directions for transitional areas to other land authorities' signage

Refer to 2.4 Transitioning to other land authority signage

2.2.5 Ensure ease of maintenance

The City's Asset Management Policy is to ensure that the City has information knowledge and understanding about the long-term and the cumulative consequences of being the custodian of public infrastructure.

Public signage asset management is based on the following principles to guide sustainable management of infrastructure assets:

- Take a lifecycle approach – apply a whole of life methodology for managing infrastructure assets including planning, acquisition, operation, maintenance, renewal and disposal.
- Sustainable environmental performance
- Best value – balance financial, environmental and social aspects to achieve best value
- Decision support systems and knowledge such as GIS mapping of signage assets– core systems will include up to date infrastructure asset information to inform decisions
- Service levels – infrastructure asset service levels will be clearly defined
- Long-term financial plans – asset practices, plans and systems will enable the development of long term financial plans for asset classes
- Manage risks associated with infrastructure assets
- Continuous improvement of asset management practices.

2.3 Design Principles

All signs are to conform with the following principles:

Consistency

in terms of placement (distance and mounting locations) and height. The design incorporates principles regarding ergonomics such as viewing distances and lettering size as well as placement of information on signs.

Clarity

Text and graphic messages should be unambiguous. A combination of plain English language together with logos and internationally recognisable pictograms supports clear messaging.

Simplicity

Provide simple instructions and shortest possible path.

Access

Ensure signs are easily legible and conform to Australian Access codes and do not create barriers to movement paths.

The City's different signage systems have been developed to be accessible to all people regardless of their physical or mental ability. The international symbol of access is to be used and incorporated in signage to identify each facility or direction to that facility, which is accessible by people with a range of abilities.

Consideration has been given to:

- tactile text for the visually impaired
- pictograms for functionally illiterate and non-English speaking people
- minimum letter heights for all messages in accordance with specified viewing distances (as per AS 1428.2-1992)
- adequate font type of sign information
- adequate contrast of sign information with the luminance factor of the surface of numbers, letters or symbols no less than 30 per cent different from their background

Tactile and Braille messages have been specified, where applicable, as an additional and alternative method of graphic application. Raised lettering is specified for all tactile messages to assist the greatest number of people with different levels of visual impairment.

Vandal proofing

Signage vandalism is always a risk in any external precinct. The material and finish of the signs must be durable and not easily damaged or defaced.

- Where coated materials are used it is recommended that a clear anti-graffiti finish be applied.
- The graphic application of information must be durable to withstand scratching or removal by peeling.
- A maintenance program must be established to ensure graffiti is removed at once.

Placement of signs

Ensure the reduction of street 'clutter' in the public domain and promote the consolidation of information within a minimum of signage elements

Reduction of visual clutter

Signs are required to be located at decision-making points, points of interest or interpretation and confirmation along a journey, yet retain an uncluttered overall streetscape and public domain.

2.4 Transitioning to other land authority signage

The City of Sydney local government area adjoins a number of separate land authorities: The Rocks precinct, Barangaroo Development Authority (BDA), Sydney Harbour Foreshore Authority (SHFA), Darling Harbour Live, Darling Square, Darling Quarter as well as the Royal Botanic Gardens and Domain Trust and Centennial Park and Moore Park Trust. Coordination with Transport for NSW (TfNSW) and RMS is also required.

The City promotes an attitude of integration and communication with these authorities to establish protocols with regards to placement and messaging in the “Handshake – Zone” between two land authorities. (Figure 1.5)

Co-ordination between agencies will avoid doubling up on unnecessary signage and provide a user focussed approach to wayfinding across the City with a seamless transition across the systems. The goal is to have a co-ordinated system that focuses on the user and avoids multiple / duplicate arrangements regardless of land ownership.

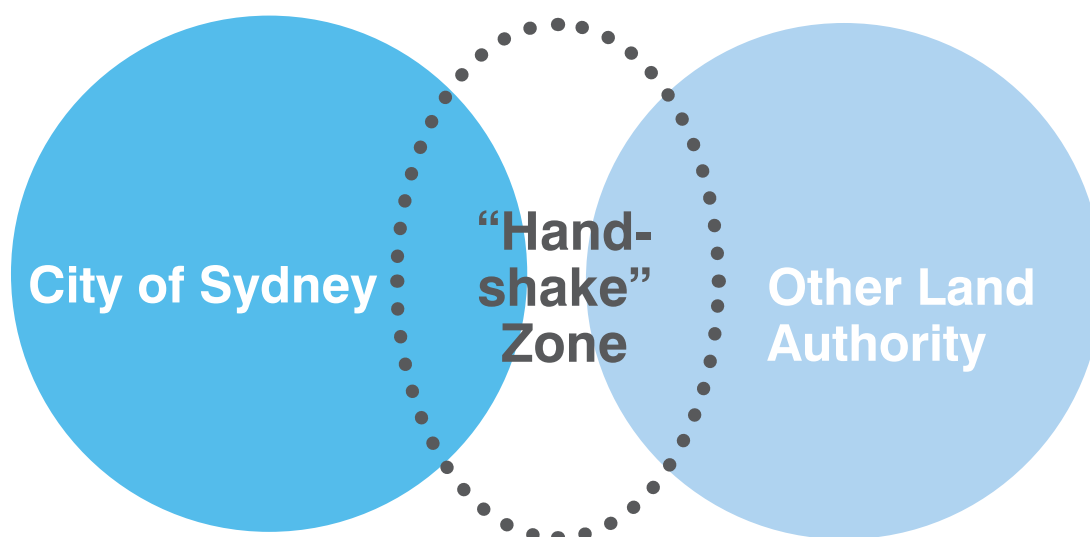
Transport for NSW coordination

An agreement on coordination with TfNSW has been achieved via integration of the new transport icons T, B, F and L (Train, Bus, Ferry, Lightrail). The City has integrated these transport icons on its wayfinding signage system with directional information to public transport modes.

TfNSW will provide their own wayfinding signage system at the location of the transport stop or interchange, creating a clear handover from one system to the other.

The City’s wayfinding map may be used at public transport stops and interchanges to link further into the City’s overall wayfinding signage system and to create consistency for the user.

Figure 1.5 City of Sydney Signage Transition Zone



Sydney Signs Part Three

Placement and Messaging Guidelines

What do we sign?

3.1 Guidelines on the selection of destinations for the wayfinding system

The selection of destinations for directional messaging on wayfinding signage is critical in creating a consistent system for the user.

A comprehensive Destination Schedule for the whole local government area has been developed as part of the Legible Sydney Design Manual (refer to Part 4.1). This schedule provides a complete list of destinations at the time of development. A regular review of this Destination Schedule is required as part of the signage maintenance process.

Based on this Destination Schedule the Legible Sydney Design Manual (refer to Part 4.1) provides a clear approach to the selection of directional messaging for all signage types in its more detailed Placement and Messaging Guidelines.

Destinations listed in the Destination Schedule may be shown on one or several signage elements, however all destinations will be shown on the wayfinding map.

Wayfinding signage will also recognise Aboriginal place naming as approved by the Geographical Names Board of NSW.

Figure 3.1 provides an overview of destination types, where they are applied in the wayfinding system and what hierarchy will be used in the development of directional messaging.

Each sign will be assessed with regards to this hierarchy and available messaging space on the sign.

Destinations on the map need to be evaluated with regards to density, clarity and legibility of the map. Criteria, such as attraction, transport, area of interest, architectural merit, prominence, etc. should be used for this evaluation process.

The wayfinding maps will also feature 3D landmarks to assist in the wayfinding. These 3D landmarks are not always destinations in themselves, but represent important visual clues for the user.

	Destination Type	Directional messaging on Pylon, Flag or Finger Signs	Wayfinding Map(s) on Pylon Signs
01	Suburbs and Areas	named	named
	Precincts	named	named
02	Public Transport	named/pictogram	named/pictogram
03	Public Open Spaces	named	named
	Water and Water assets	named	named
04	Visitor and Tourist Attractions	named	named/pictogram
05	Public Buildings	named	named
	Educational Institutions	named	named
06	Recreational Facilities	named	named
07	Hospitals	named	named/pictogram
	Police stations	named	pictogram
08	Places of Worship	named	named/pictogram
09	Public Toilets	pictogram	pictogram
10	Monuments, statues, sculptures and public art	-	named/ 3D landmark icon
11	Restaurants, cafes and retail	-	pictogram (for clusters only)
12	Post offices	-	pictogram
13	Car Parks	-	pictogram
14	Hotels and Accommodation	-	pictogram
15	Landmark retail	-	named/pictogram

Figure 3.1 Destination representation on wayfinding signage

The selection of actual destinations for the Destination Schedule was based on the criteria listed below.

A distinction has been made between destinations shown on directional signage and the wayfinding map versus those shown on the wayfinding map only.

3.1.1 Directional signage

The following categories of destinations should be shown on directional signage as well as on the wayfinding map:

Suburbs and Areas

All defined suburbs and areas within the Local Government Area that are mostly linked to the postcode areas, are included.

Precincts

Recognised cultural precincts such as Chinatown, Thaitown, Walsh Bay, etc. that are recognised in City publications and other publications are included.

Public Transport

All public transport nodes including train stations, light rail stops, bus stops and major bus stop interchanges, ferry wharfs, taxi ranks and major coach stops.

Public Open Spaces

All public open spaces such as Parks, Gardens, Plazas and Squares with or without public access are included.

Water and Water assets

All water such as bays and coves are included.
Water assets such as wharfs and piers are included.

Visitor and Tourist Attractions

Attractions for the primary purpose of entertainment, interest or education rather than being primarily a retail outlet are included.

To be signed, the following criteria must be applicable:

- Permanently established visitor or tourist destination, which can be documented through visitor number per year
- Open to the public without prior booking for published periods of the year

Galleries

Art galleries must have been established for no less than 5 years and must be non-commercial, i.e. no artworks are being sold.

Small to medium size galleries might be considered as a tourist and visitor attraction if part of a cluster of galleries.
Precincts/areas that comprise a cluster of smaller

galleries have been determined and nominated in the Destination Schedule appended to the Design Manual. These areas will include a gallery pictogram when shown on a sign. Directional signage may include the message 'Galleries' and a pictogram.

To further promote cultural areas whilst reducing street clutter hard copy maps and smart phone apps are recommended over signing single galleries as these tools can respond quicker and more easily to changes.

Theatres and Cinemas

Premises for the sole use of theatre or cinema purposes are included. Only buildings or premises will be signed rather than the name of the groups using the premises.

Museums and Cultural Institutions

Museums and cultural institutions providing education and information on specified cultural aspects are included.

Public Buildings

All buildings or institutions used by the general public providing a public service, such as libraries, community centres, neighbourhood centres, etc. are included.

Educational Institutions

Includes:

- City operated Childcare Centres
- All primary and secondary schools
- Tertiary schools and education facilities of a large size with teaching facilities, such as universities

Recreational Facilities

Major recreational facilities such as sports fields, swimming pools, cricket grounds, tennis courts, etc. are included.

Hospitals

All hospitals are included.

Police stations

All police stations are included.

Places of Worship

All places of worship with significant non-local congregations are included. Places of worship in buildings of architectural merit may be given preference.

Public Toilets

All City operated public toilets are included.
All other public toilets that are located in the public domain are included.
On signage public toilets are shown as a pictogram only.

3.1.2 Wayfinding maps

The following categories of destinations will be shown on the wayfinding map only:

Monuments, statues, sculptures and public art

Any major permanently installed monuments or statues may be included, if they assist wayfinding.

Restaurants, cafes and retail

Are only included where clusters of such assets occur.

Post offices

All post offices including those within retail areas are included.

Car Parks

All public car parks operated by the City as well as major parking facilities with 500+ parking spaces where the building type is unlikely to change in the future.

Hotels and Accommodation

Larger hotels with 100+ rooms may be included if they assist wayfinding. In some situations clusters of smaller hotels can be shown on the map via an icon only.

Landmark department stores

Retail may be included if it contributes to general wayfinding.

Destinations falling into any of the above categories that are located outside the Local Government Area are to be included, if useful for the broader orientation and assisting in the wayfinding.

When do we sign?

3.2 Guidelines on the decision making process for signage placement

To avoid visual clutter through street signage the following list of prompts and criteria should be used to assist in the decision making process on whether a new (pedestrian wayfinding) sign is required.

Figure 3.2 provides a list of prompts and criteria for the general decision making process on signage placement.

For wayfinding signage this section is to be read in conjunction with the placement guidelines shown in the Legible Sydney Design Manual.

	Prompts / Criteria
Users	<ul style="list-style-type: none"> • What signs are necessary to assist the user, taking all types of users into account? • Are directional signs needed for pedestrians or bicycle traffic? • Is information provided in the necessary formats to be accessible to all? • Can navigation be assisted by other means than signage, i.e. landmarks, visual clues? • Can pathway markings be used instead of signage?
Place	<ul style="list-style-type: none"> • How can necessary information be integrated in the place without dominating it? • Can new signage information be consolidated with existing signage by replacing or removing old signs? • Is new signage going to create clutter in the streetscape? • Is new signage creating more accessibility to the place for the disabled?
Safety	<ul style="list-style-type: none"> • Are there any hazards that require signs? • Can significant locations, such as school entrances, health centres, local shops, etc be indicated by measures such as surface variation to reduce the need for additional signage?
Regulation	<ul style="list-style-type: none"> • What regulatory signage is required (no alcohol zone, no smoking, etc)? • Can behaviour be influenced by means other than signing
Legislation	<ul style="list-style-type: none"> • Are CCTV cameras installed in the area which need to be signed?

Figure 3.2 Prompts and Criteria for signage Placement

Sydney Signs Part Four

Signage Manuals

Signage Manuals

The following signage manuals provide information on how to specify and manufacture the complete range of sign types required for all areas throughout the Local Government Area.

They describe the principles of the messaging and location strategy, details of the various sign types required, followed by visual graphic standards and construction standards.

The manuals provide guidelines on planning a comprehensive sign program to be issued for procurement and manufacture.

- 1 CoS Legible Sydney - Design Manual
TRIM: 2016/144510 (for Council use only)
- 2 CoS Park Signage - Park signage User Manual
TRIM: 2012/066466 (for Council use only)

CoS Park Signage - Park signage Construction Manual
TRIM: 2012/066464 (for Council use only)
- 3 CoS Street Name Signage Specification
TRIM: 2014/106456-01 (for Council use only)
- 4 CoS Bicycle Network Directional Signage - Design Guidelines and Graphic Specifications
TRIM: 2014/106456-02 (for Council use only)
- 5 CoS Community Signage - Community Facilities Signage Style Guide
TRIM: 2014/257944 (for Council use only)
- 6 CoS Temporary Signage Manual
(to be provided)
- 7 CoS Regulatory Signage Specifications
TRIM: 2014/106456-03 (for Council use only)

Under Preparation

Crowded Place and Critical Infrastructure
Protection in the Public Domain **Guidelines**

Public Domain Manual



Revision	Date
0	September 2013
1	13 September 2013
2	9 March 2017
3	22 June 2021

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Public Domain

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Part A

Overview



Overview

Part A

Overview

A1 Purpose

The Public Domain Manual contains information to help you understand what is required to satisfy each Public Domain condition of consent and when this information is required:

- prepare submissions for approval of works in the public domain;
- understand your responsibilities during the approval process to help avoid delays;
- calculate, lodge and re-claim security bonds related to public domain works;
- smoothly manage the construction of public domain works; and
- understand the process and your responsibilities during the works completion, handover and defects liability period.

A2 Why review and update this manual?

The City's Public Domain Manual was first drafted in 2013 and it has always been intended that the Manual would be regularly updated to account for changes to approval process and Australian Standards, as well as to ensure it aligns with the Sydney Streets Technical Specification and other City policies and guidelines.

A3 User

This Public Domain Manual is designed to help you prepare a successful public domain submission.

It should be used by all stakeholders involved with planning, design and approval of public domain works for the City's streets.

Disclaimer

The Public Domain Manual is an initiative of the Council of the City of Sydney. Whilst every effort has been made to provide accurate and up-to-date material, our material is for reference only and it is not designed to be, nor should it be regarded, as professional advice.

The City does not guarantee, and accepts no legal liability for, the accuracy, reliability, currency or completeness of any material in the Public Domain Manual or on www.cityofsydney.nsw.gov.au or any linked sites. You should seek appropriate independent professional advice before making any decisions based on material found on www.cityofsydney.nsw.gov.au or any linked sites. You should not rely on material we provide.



A4 Scope

The manual applies to public domain works during the following stages:

Submission Requirements

Public Domain information required to construct assets on or under public land.



Construction Documentation

Submission of plans and details to construction standard, required to satisfy:

- conditions of consent prior to the issue of a Construction Certificate (by a Principal Certifier or the City);
- approval of public domain works associated with a planning agreement, or works on, in or to land to be dedicated to the City;
- an approval for works in the public way required under the Roads Act.



Construction, Completion and Handover

Construction of approved public domain works for all work on land owned or managed by the City or to be dedicated to the City.

- hold point inspections;
- rectification of defects;
- preparation and submission of certified Works-as-Executed documentation;
- obtaining a Public Domain Letter of Completion by the City to allow the issue of an Occupation Certificate by a Principal Certifier or the City.

A5 Legislation, Policies and Guidelines

The Public Domain Manual must be read in conjunction with:

- development consent conditions;
- planning agreement, if applicable;
- advice given by City officers during the submission and approval process; and
- the City's policies, specifications and planning controls available on the City's website.

- **Environmental Planning and Assessment Act** – granting consent to development subject to conditions, including requiring payment of bonds to Council by the developer to protect the public domain or to guarantee that work to the public domain will be completed.
- **Roads Act** – approving or declining applications to work in or alter the public way owned by Council, including roads and footpath.
- **Local Government Act** – approving (with conditions) or declining applications to connect private stormwater pipes to Council owned stormwater systems.

Your submission must comply with this manual and all key policies and standards to be approved.

Council has the right to grant approvals for work on the public domain, under the following legislation:

Often approvals are required under more than one Act. For example, a condition of consent can be applied to a development which requires an upgrade of the footpath around the site. This new footpath design and construction will need to be approved both under the Environmental Planning and Assessment Act (for condition approval) and the Roads Act (for construction) prior to the work commencing.

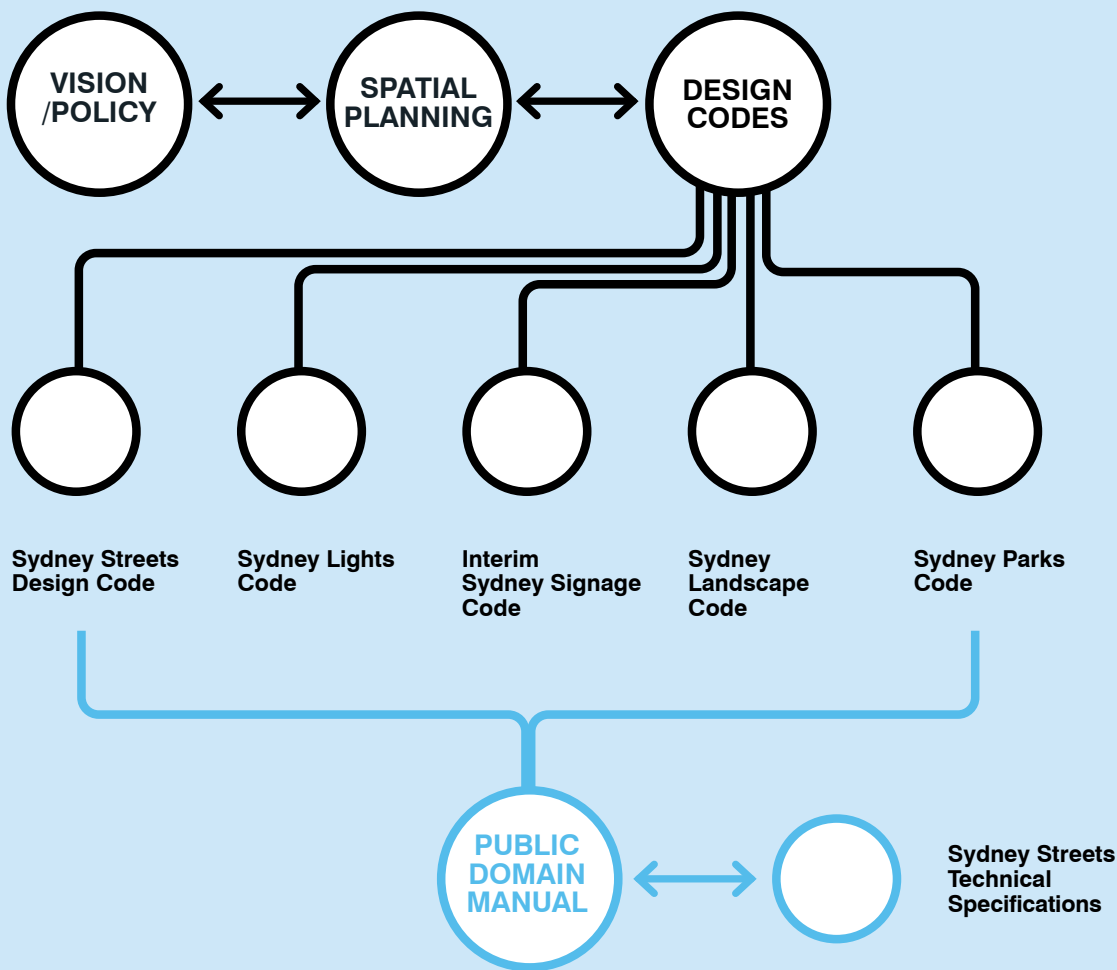


Figure 1 - City of Sydney reference documents

A.5.1 Reference Documents

Public domain requirement		Reference document
Scope and documentation requirements to prepare a public domain plan and application for approval of footpath levels and gradient	>	Public Domain Manual Development Consent Conditions Planning Agreement
Composition of the street, design principles, street palettes, design coordination	>	Sydney Streets Design Code
Inclusive access requirements	>	Inclusive Accessible Public Domain Policy and guidelines Legible Sydney Design Code Sydney Streets Design Code
Public Area exterior lighting design objectives and technical requirements	>	Sydney Lights Code
Stormwater requirements	>	Stormwater Drainage Manual Consent Conditions Sydney Streets Technical Specifications
Flood management requirements	>	Floodplain Management Policy Consent Conditions
Tree species selection and planting requirements for street trees.	>	Street Tree Master Plan
Public Art requirements	>	Interim Guidelines For Public Art In Private Developments (Update In Progress)
Private domain landscape treatments and interface with the public domain	>	Sydney Landscape Code Sydney Parks Code
Street design construction details and specifications	>	Sydney Streets Technical Specifications
Public safety	>	Protection of Crowded Places Guidelines (Pending)

A6 How to Use the Manual



STEP 1

Review the Public Domain Approval Process, this manual and all other key documents and policies.
Refer Part A.

STEP 2

Prepare and submit information required for submission Development Applications / Roads Act / Planning Agreement.
Refer Part B.

STEP 3

Review Conditions of Consent or Planning Agreement terms. Prepare and submit construction documentation.
Refer Part C

STEP 4

Pay relevant bonds, apply for permits and begin construction.
Refer Part D.

STEP 5

Complete constructions, rectify defects, provide works as executed documentation, registration of positive covenant and obtain and council sign off and dedication if required.
Refer Part E & F.



A7 Contact Us

If you have any questions about the approval process for public domain works or land to be dedicated to the City, including how to satisfy a condition, make a submission and or request a pre-lodgement meeting, please contact the City's Public Domain team on 9246 7575 or by email at publicdomain@cityofsydney.nsw.gov.au.

Please contact the City's Customer Service team on 9265 9333 if you have other questions about the use of the public domain, such as events, licenses, outdoor dining or hoarding applications.



Part B

Making a Submission



Making a Submission

Part B

Making a Submission

B1 Introduction

Approval is required to carry out works on or in:

- land that is owned or managed by the City; and
- land that will be dedicated to the City.

The need to lodge a submission may come via a Development Consent, a Planning Agreement, or an application for Works on the Public Way required under the Roads Act.

To gain approval, detailed construction-level drawings must be provided for review by City staff for all proposed work in the public domain. This will usually involve preparation of a Public Domain Plan, together with other detailed submissions for Levels and Gradients, Storm water Drainage, Road Design, Lighting and other elements as applicable to your site.

Information about submission requirements for all public domain elements are outlined in Part C – Conditions of Consent.

Submissions must be approved by the City before the start of any construction works in the public domain. The submission and approval process is summarised in Figure 2.

Submissions must comply with the requirements set out in your planning consent / approvals, the requirements of City policies and legislation, and the requirements outlined in this Public Domain Manual.

Submissions must be prepared by a suitably qualified architect, urban designer, landscape architect, civil engineer, lighting engineer or surveyor, as applicable to the submission type.

Submissions for works on or in the public domain are to be lodged with the appropriate form and supporting documentation through the City's Customer Service Centre for assessment by the City's Public Domain Team.

It is your responsibility to ensure that information submitted to the City by you or your consultants has been checked, is accurate, complies with the specified requirements and is properly coordinated. Failure to provide complete, coordinated and consistent information with your submissions may result in delays in or inhibit the City's ability to assess your submissions.

It is recommended that you arrange a pre-lodgement meeting with the City's Public Domain team for guidance on preparing your submission. To gain the full benefit of this meeting, it is important that this occurs early in the process, once you are aware that public domain works are required for your development. You can contact the Public Domain team on 9246 7575 or by email to public.domain@cityofsydney.nsw.gov.au

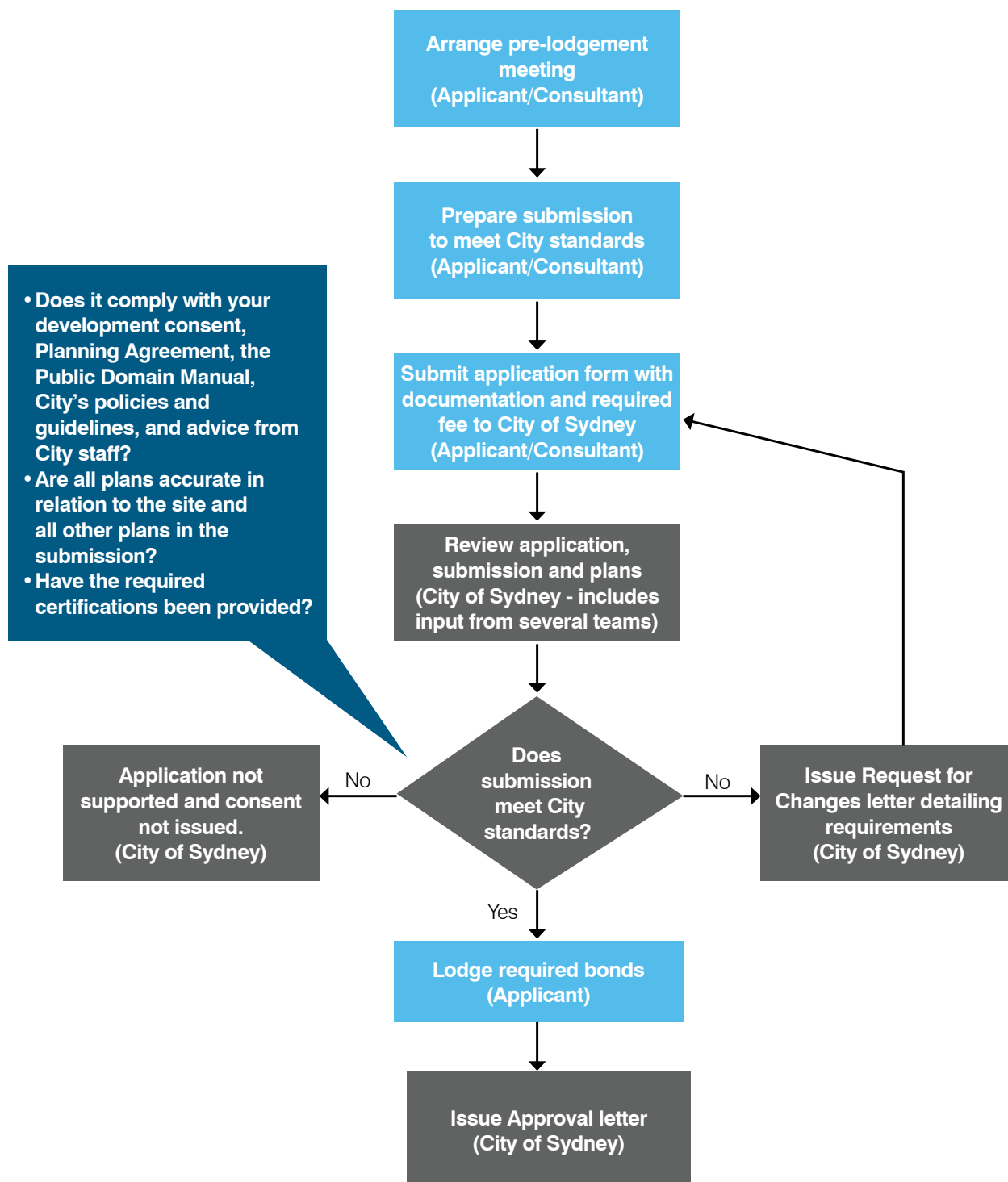


Figure 2 - Approval process for works in the public domain

B2 Development Applications

Development applications, especially those involving change or the intensification of land use may trigger the requirement to improve or upgrade the existing public domain.

Submission requirements for public domain works required by a Development Application can be found in Part C of this manual.

B3 Planning Agreement Works

Planning agreements are voluntary agreements that allow development contributions such as the dedication of land, public infrastructure, community facilities, affordable housing, monetary contributions or any other material public benefit. The City may enter into a planning agreement with a landowner and/or developer in connection with a development application or proposal to change a Local Environmental Plan (planning proposal) that requires the delivery of public domain works on existing City owned land or on land to be dedicated to the City

Planning agreement works generally arise in response to the City's development controls and are negotiated as part of the Development Application assessment.

Submission requirements for public domain works covered by a Planning agreement are the same as the requirements for works that are covered under a Development Application. Refer to Part C of this manual for detailed requirements.

B4 Works on the Public Way

Works or activities on a public road, footpath or verge area may not require a Development Application. These works will require consent under Section 138 of the Roads Act 1993 and in some cases Section 68 of the Local Government Act 1993.

Prior to any works commencing, a Works on the Public Way application is required to be submitted to the City for review and approval.

Submission requirements for Works on the Public Way applications are the same as for a Development Application or a Planning Agreement. Refer to Part C of this manual for detailed information about the submission requirements



Part C

Public Domain Conditions of Consent



Conditions of Consent

Part C

Public Domain Conditions of Consent

You may need to submit information for a range of public domain works for parks and streetscapes.

Although these requirements may be separately conditioned on your development consent or other planning approval, the works are fundamentally inter-related. It is therefore important that submissions for related works are made at the same time where possible.

Sample plans are available to show the level of detail required for Public Domain and Levels and Gradient Plans. Information including all relevant documents and policies can be downloaded from our website using the link below:

<https://www.cityofsydney.nsw.gov.au/development/public-domain-works/da-associated-works>

You will be allocated a Public Domain Officer who will support you throughout the application process to obtain approvals. This officer will be your point of contact at the Council for all public domain related matters and you will be requested to provide one point of contact for your project for liaison and coordination.

Public Domain information is required at various stages of your project. These stages are:

1

Information required to be lodged with your Development Application

2

Prior to any work commencing on site including demolition and preparatory works

3

Prior to a Construction Certificate for the development (including excavation works)

4

Prior to commencing construction work on or in the public domain

5

Prior to an Occupation Certificate being issued for the building works

Stages 2-5 usually relate to specific conditions of consent applied to your approval. The summary matrix in Figure 3 provides an overview of:

- how the conditions relate to each other; and
- the point in the construction program when they need to be satisfied.



Public Domain Conditions of Consent

Type of Condition	1 Information Required to be lodged with your Development Application	2 Prior to any Works commencing including demolition and preparatory works
-------------------	--	---

Your consent conditions are specific to your development. Condition requirements vary from project to project. Refer Appendix G5 for required forms and fees

PUBLIC DOMAIN PLAN	Diagram Showing Extent of Public Domain Works	Dilapidation Report - Public Domain
	Public Domain Survey	
LEVELS AND GRADIENTS	Levels and Gradients of all Surrounding Footpaths	
FLOODING AND STORMWATER	Stormwater Quantity Management	
	Stormwater Quality Management	
	Flood Management	
PUBLIC DOMAIN LIGHTING		
BONDS		Public Domain Damage Security Bond
SURVEY INFRASTRUCTURE		Survey Infrastructure - Identification and Recovery
STONE KERBS		Protection of Stone Kerbs
ROADWAY		Associated Roadway Costs
DEWATERING		
MISCELLANEOUS		

Figure 3 - Public domain conditions summary matrix

3

Prior to Construction
Certificate for the
development (including
excavation works)

4

Prior to Construction of
the public domain

5

Prior to Occupation
Certificate being issued
for the building works

Public Domain Concept Plan	Public Domain Plan Detailed Documentation for Construction	Public Domain Works Completion
	Hold points	Public Domain Completion - Work As Executed Documentation
Public Domain Levels and Gradients - Major / Minor (when not approved at DA stage)		(sign off included in WAE)
Stormwater and Drainage - Minor Development	Stormwater Drainage Connection	Stormwater Completion Deed of Agreement & Positive Covenant (sign off included in WAE)
Stormwater Drainage Design		
Stormwater On-Site Detention		
Stormwater Quality		
Flood Planning Levels		Constructed Floor Levels
Flood Risk Management		
Public Domain Lighting Upgrade	Lighting Reticulation Design	(sign off included in WAE)
	Public Domain Works Security Bond	
		Survey Infrastructure – Pre Subdivision Certificate Works
		Survey Infrastructure – Restoration (sign off included in WAE)
		(sign off included in WAE)
New Road Concept Design		Land Dedication - No Long Term Environmental Management Plans
		Land Dedication - Remediation Capping Layer (sign off included in WAE)
Temporary Dewatering During Construction		
	Public Domain Construction Approval Under Section 138 Roads Act Approval	Defects Liability Period - Public Domain Works
	No Obstructions	
	Drainage and Service Pit Lids	
	Paving Materials	

1

C1 Information Required to be Lodged with your Development Application

C1.1 Diagram Showing Extent of Public Domain Works

A clear and legible diagram indicating the proposed extent of public domain works associated with the development.

Works area is for all frontages of the development extending 5m past the boundary and to the middle of the road. Works may include roadways & footways including features within, such as planting and furniture.

C1.2 Public Domain Survey

Survey plan to be extended to centre of all surrounding roads. The survey plan is to be prepared by a registered surveyor must include all existing public domain elements surrounding the site frontage including road reserve and extend 10m on either side of the property boundary.

See Figure 4.

C1.3 Levels and Gradients of all Surrounding Footpaths

The Public domain levels and gradient drawings shall show all of required information stated below.

- Existing and proposed levels for roads, footpaths, building setback area and through-site links. Clearly document road, footpath, kerb and gutter levels and cross- falls for a site & the levels must be shown relative to Australian Height datum (AHD) and map Grid Australia (mGA).
- Street sections, and engineering cross and longitudinal sections based on detailed and accurate survey information and consist of plans. They should clearly show existing public domain levels and proposed changes to meet council standards, and reflect any council proposed changes to the public domain as applicable.
- Levels and gradient information may be included on landscape or architectural plans to demonstrate integration of buildings and private landscaping with the surrounding public domain.

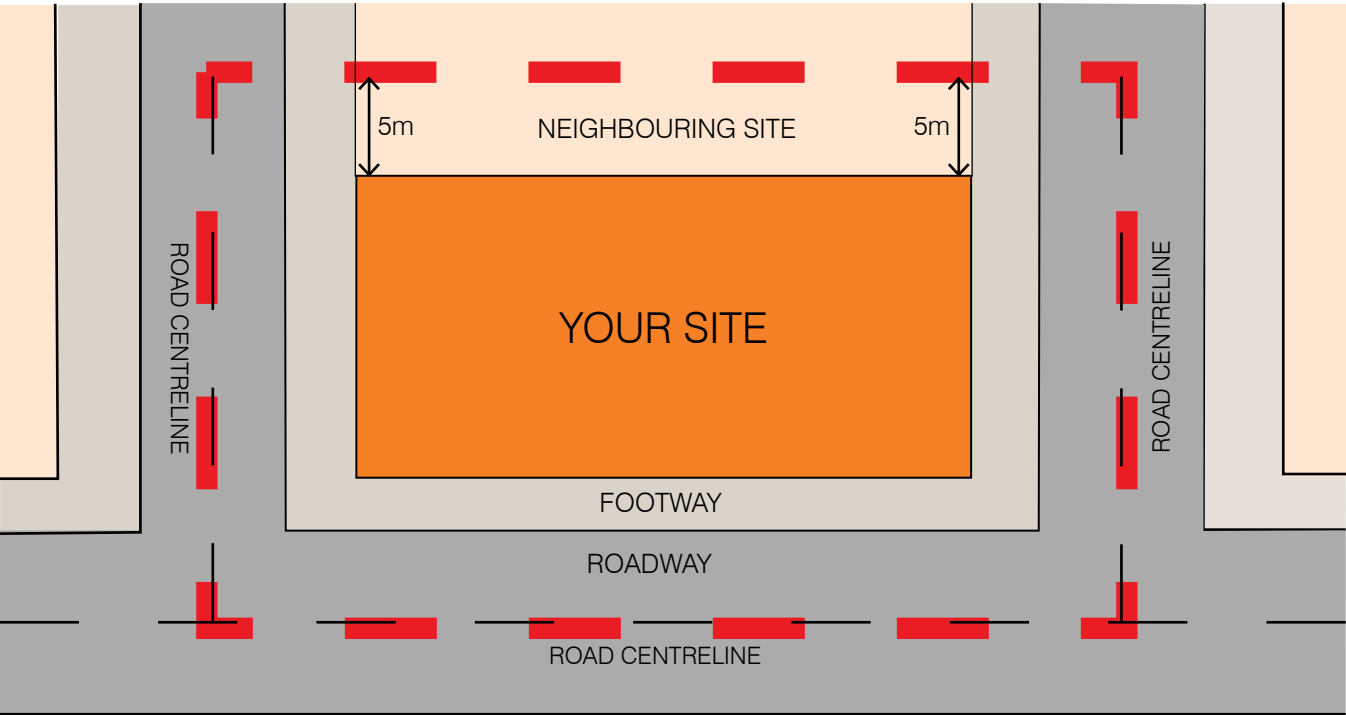


Figure 4 - Extent of public domain works survey

The public domain levels and gradient drawings must be overlaid on a survey plan prepared by a registered surveyor & be designed by a qualified civil engineer & landscape architect. Full details of how to prepare the documentation can be found in Section C3.2.

Levels and Gradients are required at this stage to ensure that your development can respond simultaneously to the floor levels required to prevent flooding of the building and the pavement design to ensure equitable access throughout the public domain. For most applications, sections through the middle of the road to the building entrances will be sufficient to show that both these aims can be achieved.

Some clients may prefer to provide a full Levels and Gradients submission for approval at this time.

C1.4 Stormwater Quantity Management

A stormwater quantity management plan demonstrating compliance with the Sydney Streets Technical Specification – Part (A4) Stormwater drainage design and the stormwater drainage design manual is to be submitted with the development application or Part-5 activities approval application.

C1.5 Stormwater Quality Management

Where a site is over 1000sqm a stormwater quality modelling (MUSIC Link) report demonstrating achievement of water quality target is to be submitted with the development application or Part-5 assessment.

C1.6 Flood Management

If your site is not flood affected you must submit a flood assessment report or statement declaring the site to not be flood affected

If your site is flood affected a flood assessment report is required.

The flood assessment report must be prepared by a suitably qualified practicing civil engineer (NER) demonstrating no adverse flood impacts in and around the development site. The report is to be submitted with the development application or Part-5 assessment.





C2 Prior to Works Commencing on Site Including Demolition and Preparatory Works

C2.1 Dilapidation Report - Public Domain

Dilapidation reports provide a record of the condition of the public domain prior to the start of the works. This record must include clear images of the building facade adjoining the footpath, the footpath, nature strip, kerb and gutter, driveway crossovers and laybacks, kerb ramps, road carriageway, street trees and plantings, parking restriction and traffic signs, and all other existing infrastructure along the street.

Preparation

The submission must be prepared by a suitably qualified surveyor or other professional.

Content

The submission should include:

- A PDF format report containing all images at a scale that clearly demonstrates the existing site conditions;
- Each image is to be labelled to identify the elements depicted, the direction that the image is viewed towards, and include the name of the relevant street frontage;
- Each image is to be numbered and cross referenced to a site location plan;
- A summary report, prepared by a suitable qualified professional, must be submitted in conjunction with the images detailing the project description, identifying any apparent existing defects, detailing the date and authorship of the photographic record, the method of documentation and limitations of the photographic record;
- Include written confirmation that the City of Sydney is granted a perpetual non-exclusive license to make use of the copyright in all images supplied, including the right to make copies available to third parties as though they were Council images. The signatures of both the photographer and the person who paid for the report must be included.

Format

Submissions must be provided electronically in pdf format.

C2.2 Public Domain Damage Security Bond

See Part D Public Domain Security Bonds. The public domain damage bond will be required when there is a probability of damage to the public domain due to developer construction works. The bond is calculated as described in the City's adopted fees and charges and can be submitted in cash, as an unconditional bank guarantee or insurance bond. On your request, your Public Domain Officer will issue a letter detailing the amount payable and submission requirements.

Preparation

The applicant should email the public domain inbox - publicdomain@cityofsydney.nsw.gov.au to request the bond letter.

C2.3 Survey Infrastructure - Identification and Recovery

Survey infrastructure assets within the City have been placed by a number of organisations including federal, state & local government agencies and other public or private entities. The City provides information on survey infrastructure assets irrespective of ownership. When undertaking works in public places, all steps must be taken to ensure the preservation of existing permanent survey marks. Survey marks take several forms and they must all be recorded and protected.

Examples of the survey marks can include:

- a brass bolt fixed into the pavement or kerb surface; or
- a lead plug holding a brass tack, enclosed by a cast iron box / lid.

Mapped survey infrastructure within the City of Sydney local government area is typically a 'permanent survey mark' as prescribed in Schedule 4 of the Surveying & Spatial Information Regulation 2012 and may take one of three forms:

- a numbered brass disc set into concrete in the kerb, gutter or footway (Type 1 or Type 2 State Survey Mark [SSM]);
- a stainless steel pin or brass bolt set into concrete under a numbered steel cover box in the footway or roadway (Type 4 Urban [PM]);

- a small stainless steel disc and pin set into concrete in the kerb, gutter or footway (Type 15 State Survey Mark [SSM]).

Preparation

The submission must be prepared by a Registered Surveyor.

Content

The application should contain the following information:

- evidence that the surveyor has inspected the area to check for existing survey infrastructure; and
- either:
 - confirmation that work will not disturb the survey mark; or
 - that the survey mark has been preserved as outlined in the Surveyor General's Directions No.11 Preservation of Survey Marks.

Format

Submissions must be:

- Electronic – Letters and/or documentation to be provided in pdf. Plans showing locations of survey marks to also be provided in CAD .dwg formats. Plans must be based on Australian Height Datum (AHD) and Map Grid of Australia (MGA) orientation, zone 56.



Figure 5a - Permanent mark cover box



Figure 5b - Bench mark

Public Domain Conditions of Consent

C2.4 Protection of Stone Kerbs

The City considers all stone kerbs to be of heritage significance, and they are to be protected and preserved where possible. If the original kerbs cannot be preserved then new stone kerbs will be required as replacements.

Preparation

The information can be included in the Public Domain Plan.

Content

The application should contain the following information:

- evidence that the surveyor has inspected the area and existing stone kerbs are identified on the survey plan; and
- either:
 - confirmation that work will not disturb the stone kerbs; or
 - details for the reinstatement of new or replacement kerbs to be included in the public domain plan submission.

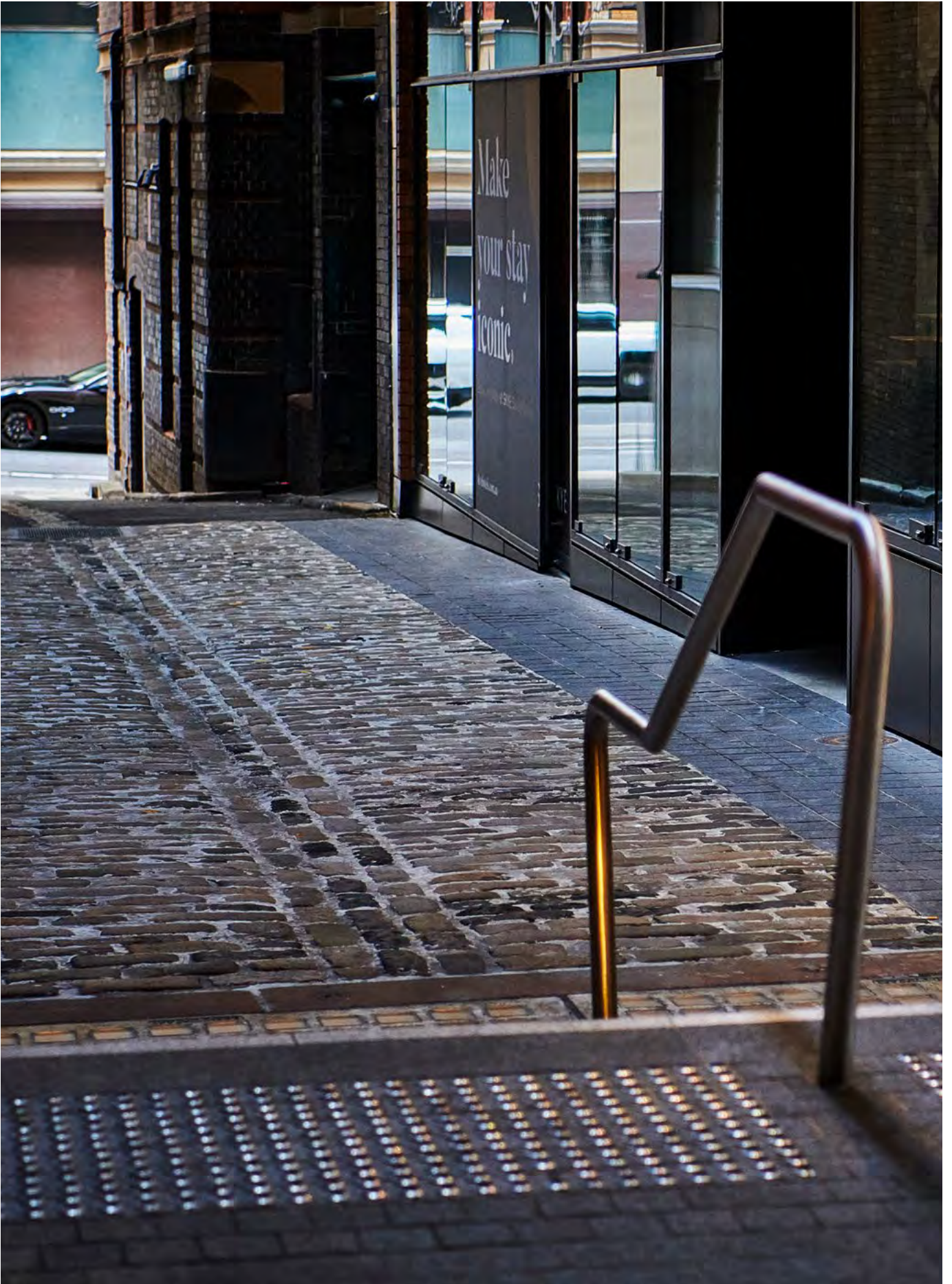
Format

Submissions must be provided electronically in pdf format.

C2.5 Associated Roadway Costs

The developer is responsible for all costs associated with the construction of new road works.







C3 Prior to Construction Certificate for the Development (including excavation works)

C3.1 Public Domain Concept Plan

Public Domain Concept Plans are required to show the upgrade of the public domain in accordance with the City's latest Strategic Policies and Sydney Streets Design Code. The aim is to create a streetscape which directly responds to your development and provides a safe, accessible and enhanced environment for residents and the community.

Only larger projects will be required to submit a separate concept plan. Smaller projects shall submit a general layout plan with their detailed documentation. This will be defined in your conditions of consent.

Generally, the extent of work for Public Domain Concept Plan proposals will need to include all frontages of your project site, from the property boundary to the gutter. In some cases, works within the road carriageway may also be required, for instance if new footpath extensions (blisters); kerb and gutter reconstruction; drainage or water sensitive urban design works; or correcting cross-falls in the roadway are needed. Sometimes work may need to be performed across site boundaries if required to blend in with existing levels or site conditions.

Preparation

The Public Domain Concept Plan must be prepared by a suitably qualified civil engineer, landscape architect or architect, and be based on an accurate survey prepared by a registered surveyor.

Content

A Public Domain Concept Plan should clearly show:

- the existing public domain elements surrounding a development site. This includes the location of signs; street furniture; street trees; planting; property boundaries; kerb/gutter alignment; vehicular crossings; pedestrian kerb ramps; street lights; the existing finishes (e.g. paving and kerb types); and any other elements that exist.
- elements to be retained, protected, removed or replaced;
- works required to reconstruct the public domain fronting the site to meet the City's current standards. The concept plan should consider the following items:
 - footway treatments
 - tree planting opportunities
 - street furniture requirements
 - public domain lighting requirements
 - planting and rain garden opportunities
 - kerb and gutter replacement
 - stormwater connections
 - traffic calming measures
 - pedestrian movement
 - site context
- construction details are not required at this stage.

Format

Submissions must be:

- Electronic - and provided in both pdf and CAD .dwg formats. Plans must be based on Australian Height Datum (AHD) and Map Grid of Australia (MGA) orientation, zone 56.
- Hard copy submissions may also be requested for larger projects.

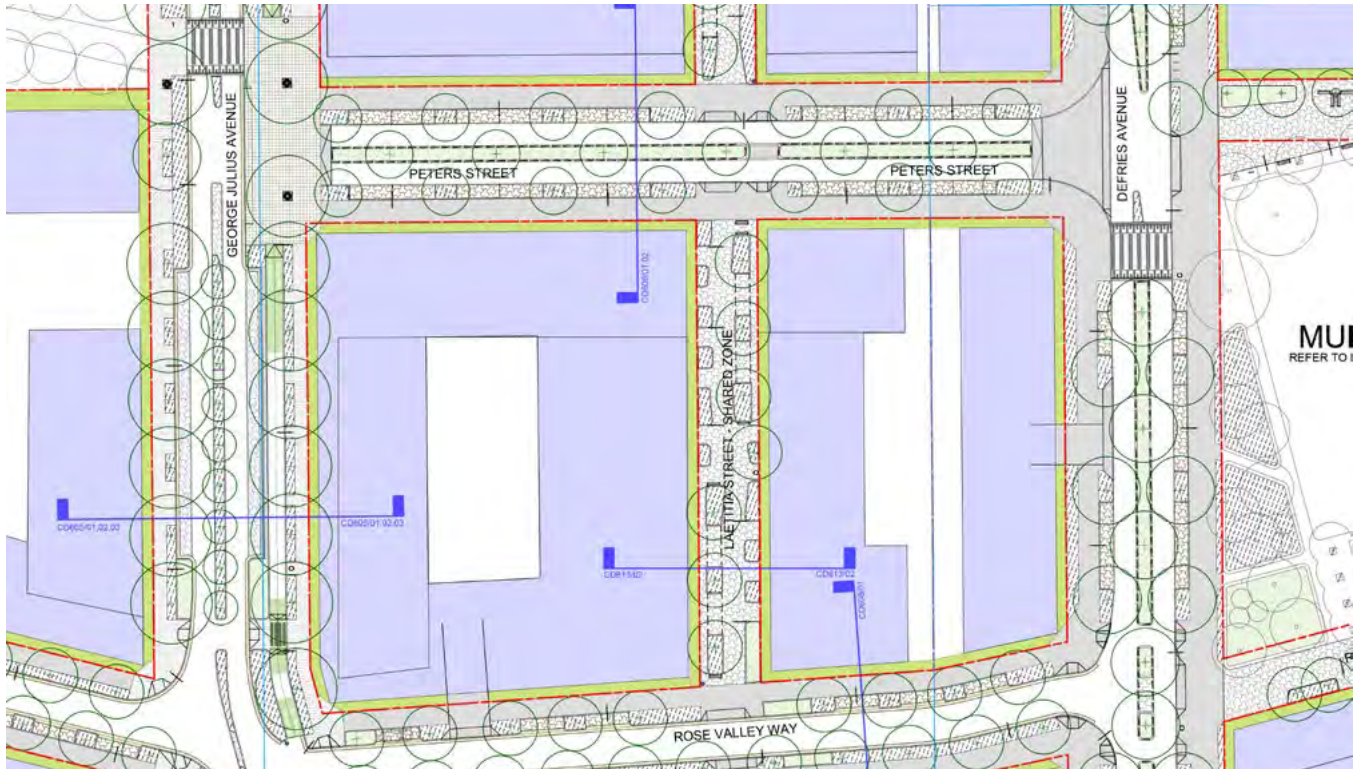


Figure 6 - Example of Public Domain Concept Plan



Public Domain Conditions of Consent

C.3.2 Public Domain Levels and Gradients - Major / Minor

A Levels and Gradients submission includes plans, cross-sections and longitudinal sections to demonstrate the road, footpath, kerb and gutter levels and cross-falls for a site.

Levels and Gradients submissions are required so the City can clearly understand:

- what the existing public domain levels and grades are;
- where improvements to gradients may be required for accessibility in accordance with City standards; and
- what changes to existing levels, driveway crossovers, and building entries are proposed.

A submission is typically needed when a development proposal involves construction of a new building; the introduction or alteration of building entries or driveways; or other impacts on the surrounding footway or roadway. Levels and Gradients must be shown for all frontages of your project site and must extend for a distance of 20m 20m along footpath at both ends of the development site and also include kerb ramp connections across streets (as applicable).

Localised adjustments within the public domain to suit building entries are not permitted.

For further information, you can download a sample Levels and Gradients plan from the City's website as an example of the submission standard.

Preparation

The Public domain Levels and gradients drawings must be overlaid on a survey plan prepared by a registered surveyor, and be designed by a qualified civil engineer and landscape architect.



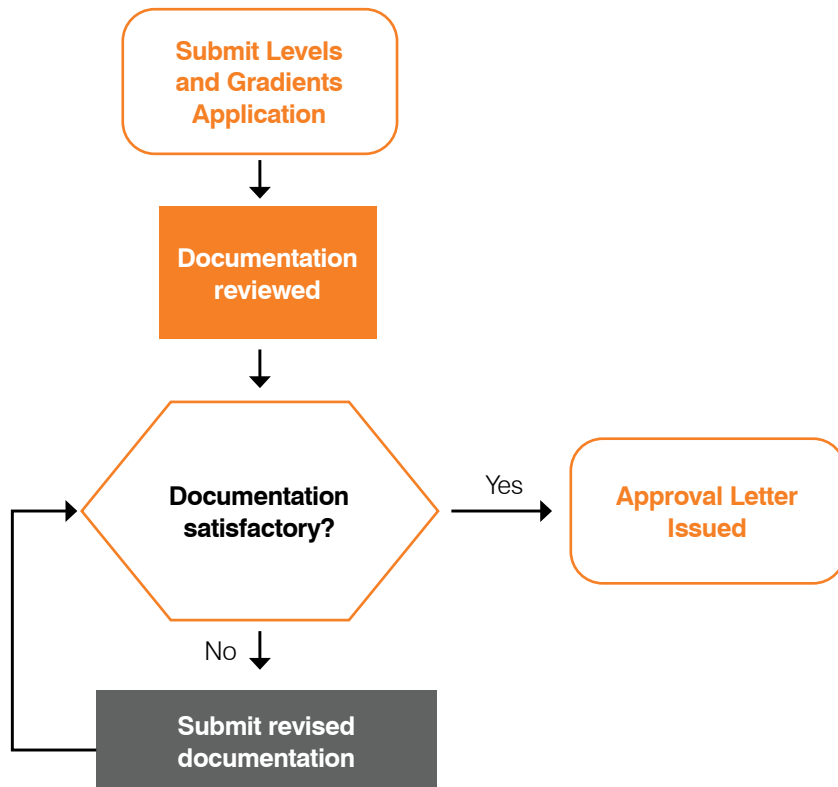


Figure 7 - Approval process for Levels and Gradients



Public Domain Conditions of Consent

Content

The following elements should be included (as required for your site):

- Existing and proposed contours and spot levels - for existing and proposed elements in the public domain, including service pits, drainage pits, tree pits and the like. Existing and proposed levels at entries adjacent to properties, building setback areas, forecourts, basement carparks and the like, adjoining the public domain. Required changes in levels to meet City standards and other proposed changes to the public domain.
- The building footprint at ground level (including locations of doors, windows and vehicular openings) should be shown - building/development floor levels to show & set to achieve recommended footpath cross falls, to achieve a smooth transition between private & public land and to achieve flood planning levels (as applicable)
- Kerb and gutter alignment – the kerb line must be parallel to and 150mm above the invert of the gutter (as designed), unless otherwise specified or approved by City staff. Levels must be shown for existing and proposed kerbs and gutters, drainage gullies, inverts, the property boundary and building alignment, and level adjustments to the road carriageway as required (e.g. for road restorations or adjustments);
- Road carriageway adjustments - as required to suit new development and meet City standards. Note that where substantial kerb and gutter demolition is needed, the road carriageway must also be reconstructed or resurfaced in accordance with City standards to the centre line of the carriageway or to sufficient distance from the gutter lip to achieve a uniform cross-fall / transition into the existing road pavement. Indicative new road alignments and location of traffic features (such as refuge islands, kerb blisters and pedestrian crossings) in the road carriageway.
- Intersections designed including consideration of minimum kerb extensions, raised thresholds, continuous thresholds, marked pedestrian crossings and signalised traffic lights.
- Pits and services - levels for adjustments to pits and services, required to suit new longitudinal grades and cross-falls must be shown.
- Footway adjustments - to achieve cross-falls between 1 – 2.5% from property boundary to top of kerb. If existing levels and gradients do not comply with City standards, reconstruction will be required, however small variations from the standards due to latent site conditions (e.g. steep

sites) may be accepted, subject to consideration and approval by Public Domain Officer. Localised adjustment of longitudinal grades and cross-falls to suit building, pedestrian or vehicle access requirements is not permitted in the public domain and must occur within the property line if required.

- Pedestrian kerb ramps and vehicle crossovers (driveways) – proposed new, redundant (to be removed) and relocated pedestrian kerb ramps and vehicle crossovers or other proposed adjustments to the footway gradients. Note that adjustment of levels at vehicle and pedestrian entrances to address equal access or flood planning levels (e.g. for property basements) is not permitted. Any such adjustments must occur within the property line.
- Existing and proposed site features - including tree pits, light poles, street furniture and signage.
- Setbacks and any changes to boundary to be shown.

Format

Submissions must be:

- Electronic - and provided in both pdf and CAD .dwg formats. Plans must be based on Australian Height Datum (AHD) and Map Grid of Australia (MGA) orientation, zone 56.
- Hard copy submissions may also be requested for larger projects.

Submissions must include:

- Plans - spot levels for key elements (as outlined under Content above) and running chainages along the kerb alignment at 10m intervals (or closer for smaller sites), extending 20m beyond the property boundaries to ensure that levels adjustments are transitioned smoothly into the existing public domain. Existing & proposed work should be overlaid on the same plan, rather than separated onto different plans. This helps Council staff to understand how existing & new work relate to each other.
- Also show- north point, title block for project address, type of plan, drawing number, revision, date & scale, extent of proposed work.
- Cross-sections - showing existing and proposed alignments and levels at the building line, top of kerb, lip of gutter and road carriageway at each chainage interval. Sections should be taken at the same chainage intervals as indicated on the plan, for all site frontages, and be prepared at 1:100 horizontal scale and 1:10 (exaggerated) vertical scale. cross section must be taken through the ground floor building interior (2m), footpath, kerb & extending up-to the centreline of the carriageway & or road restoration. Section through building entries are also required
- Longitudinal sections taken through the property boundary and top of kerb showing existing and proposed alignments, levels and falls at the same regular 10m chainage intervals shown on the plan for all site frontages. Include existing and proposed levels at driveways, kerb ramps, building entries and the like. Extend beyond the development area as necessary to ensure a smooth transition to surrounding public domain areas. Where a redesign of kerb returns is required, a separate longitudinal section is to be provided and must include existing and proposed levels at the boundary, top of kerb, gutter invert and pram ramps at relevant chainages.

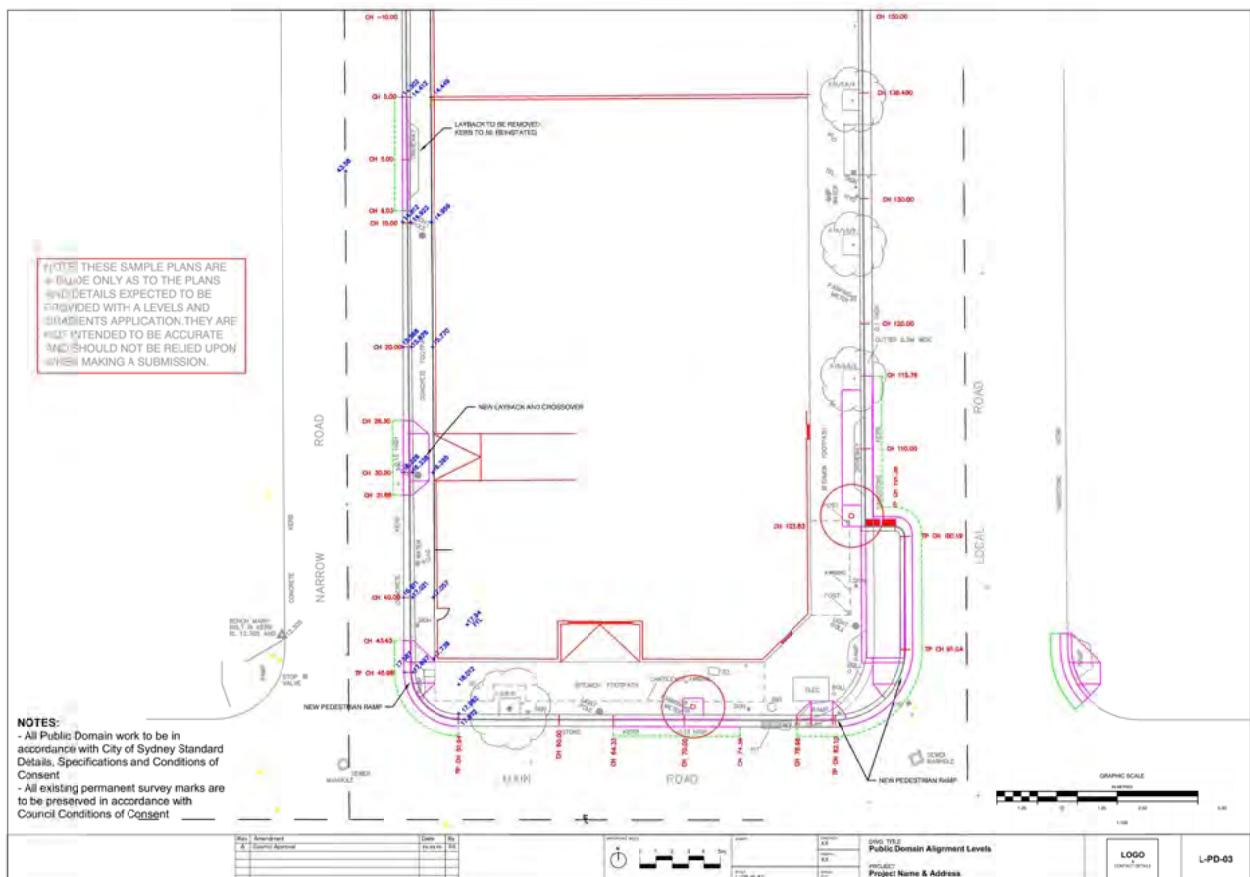


Figure 8 - Levels and Gradients sample plan

Public Domain Conditions of Consent

C3.3 Stormwater General

Requirements for flood management and stormwater drainage connections and submissions are outlined in detail in the City's Stormwater Drainage Manual in Appendix G2 and Sydney Streets Technical Specifications – Part A4. All stormwater documentation is to comply with the City's standards and policies in addition to the documentation named above.

C3.3 (i) Stormwater and Drainage - Minor Development

This condition is generally applied to smaller sites (usually those under 250sqm) or where the stormwater discharge is via a kerb outlet only.

Refer to Appendix G2 City of Sydney's Stormwater Drainage Manual and Sydney Streets Technical Specifications – Part A4 for submission requirements.

3.3 (ii) Stormwater Drainage Design

This condition is commonly applied to sites where the stormwater discharge may be required to connect to the City's stormwater system.

Refer to Appendix G2 City of Sydney's Stormwater Drainage Manual and Sydney Streets Technical Specifications – Part A4 for submission requirements.

C3.3(iii) Stormwater On-Site Detention

On-site detention (OSD) of stormwater may be required by either Sydney Water or the City. Application to Sydney Water is required to determine their requirements.

Evidence of Sydney Water's requirements are to be submitted to the City's Public Domain Unit as part of the submission to satisfy this condition.

C3.3 (iv) Stormwater Quality

Stormwater quality is usually assessed at the development application stage. Sites greater than 1000m² will require the submission of a MUSIC e-link report demonstrating that the stormwater quality targets can be achieved. Details of how the targets are to be met will be required to be submitted at construction certificate stage along with a Civil Engineer's (NER/RPEng) certification report.

C3.4 Flood Planning Levels

The development must be constructed to comply with the recommended flood planning levels as noted in your conditions of consent.

Details of how the approved flood planning levels or flood mitigation measures are to be met will be required to be submitted at construction certificate stage along with a Civil Engineer's (NER/RPEng) certification report.

C3.5 Flood Risk Management

A flood risk management report demonstrating compliance with flood planning levels and construction plans is required, as noted in your conditions of consent.



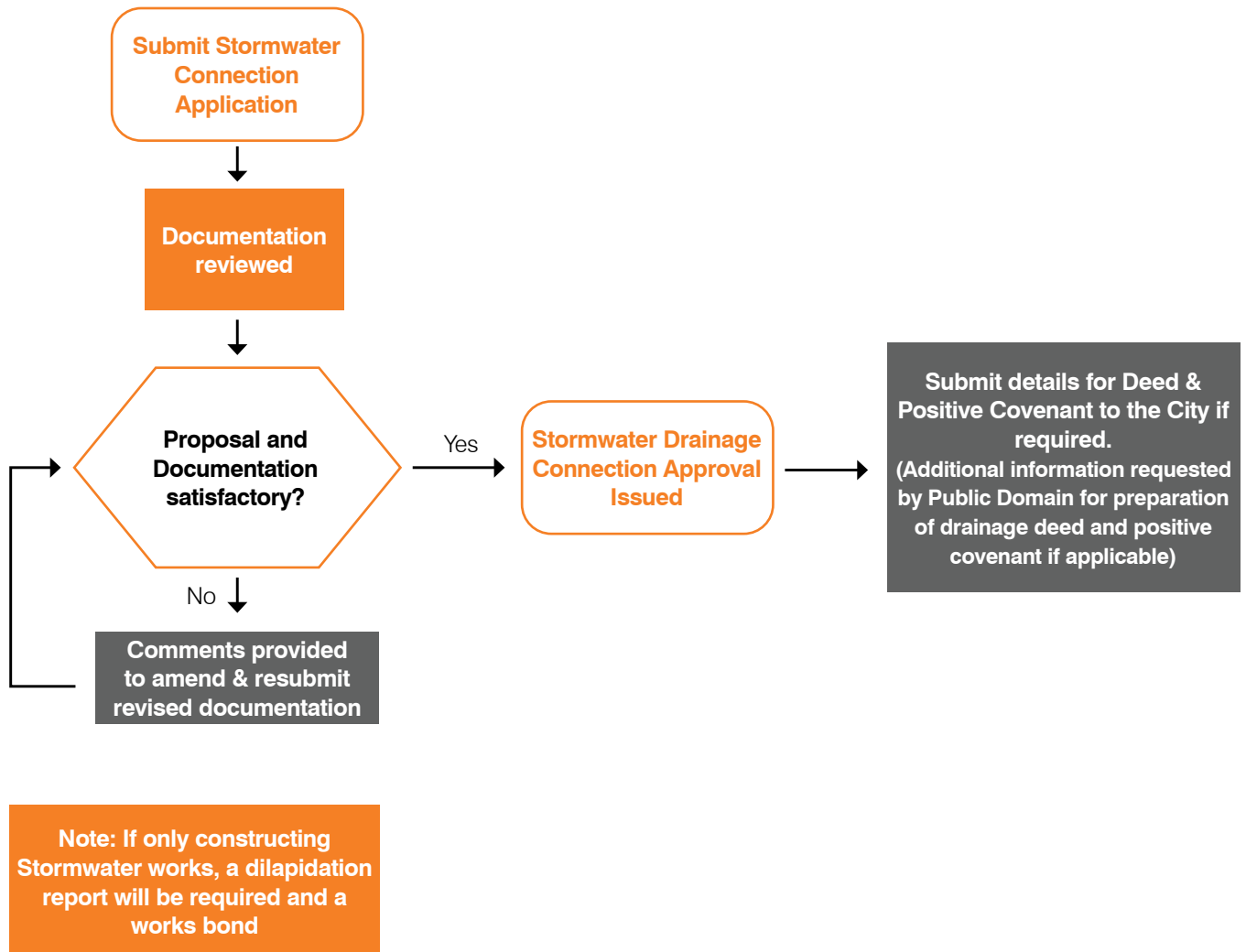


Figure 9 - Approval process for stormwater drainage connection

Public Domain Conditions of Consent

C3.6 Public Domain Lighting Upgrade

Requirements for lighting design and submissions are outlined in the detail in the City's Sydney Lights Design Code and Sydney Streets Technical Specification.

Preparation

The Lighting submission must be designed by a suitably qualified lighting engineer.

Public domain lighting must also be fully incorporated into both the Public Domain Concept Plan and Public Domain Detail Plan. .

Content

Where relevant, the following elements should be included:

- vertical and horizontal illuminance plots for the public domain lighting design to demonstrate compliance with all relevant Australian Standards and to meet the lighting categories and requirements specified by the City;
- the location, type and category of existing and proposed lights, including details of luminaire specifications, required to ensure compliance with City policies and Australian Standards;
- certification by a suitably qualified, practicing lighting engineer or lighting designer to certify that the design complies with City policies and all relevant Australian Standards including AS 1158, AS 3000 and AS4282;

Format

Submissions must be:

Electronic - and provided in both pdf and CAD .dwg formats.



Public Domain Conditions of Consent

C3.7 New Road Concept Design

This condition is applied to all developments requiring the construction of a new road. Requirements for the road design are outlined in detail in Part A of the Sydney Streets Technical Specifications. Submissions for road works need to be fully coordinated with your Public Domain Plan submission. You will need to liaise with all relevant public utility authorities, Transport for NSW, Council, the Local Pedestrian Cycling and Traffic Calming Committee and its nominated consultants to design your road. The Public Domain Officer will ask for written evidence of this when you submit your design.

Preparation

The road design submission must be designed by a suitably qualified civil engineer.

Content

Where relevant, you will need to include the following in your design package:

- general subdivision plan with contour details, clearly indicating the extent of work;
- road cross sections showing road and footway widths, existing levels, design levels, cross fall grade pavement configuration, batter slopes, engineered retaining walls, kerb returns, kerb and gutter, vehicle crossovers, pedestrian ramps, the location of public utility services and 900mm minimum road restoration to match smoothly into the existing road levels;
- plan drawing and longitudinal section showing gutter invert, kerb and boundary alignments with design grades of the existing and proposed future public road network including public utility services;
- road design showing the following:

- a. road pavement structure and design;
 - b. kerb, gutter and building alignment;
 - c. traffic management structures / measures;
 - d. traffic, pedestrian and parking signage;
 - e. details of intersections with existing roads including line-marking, pavement marking, sign-posting, swept paths for the largest expected vehicle;
 - f. on-road bicycle route infrastructure and facilities;
- drainage plans and schedule of drainage elements, showing the following:
 - the proposed location of all subsoil drains and sub-pavement drains, including the nominal width and depth of trenches, pipe diameters and materials, longitudinal design grades, and the locations of outlets and clean outs;
 - the location of public utility services;
 - details and specifications for the construction of all components of the system in accordance with the City's Sydney Streets Technical Specification;
 - all assumptions and/or calculations made in the determination of the need or otherwise for subsurface drainage, including requirements of broader storm water catchment analysis to undertaken beyond the site boundary;
 - drainage details and longitudinal sections with hydraulic grade lines for the design storm and other standard features such as flow rates, pipe class, pipe grade and velocity;
 - adjustments/upgrades to utility services as required;
 - standard engineering and structural details plan;
 - erosion and sedimentation control plans;
 - design certification report for the road works should be prepared by an appropriately qualified civil engineer certifying that the design complies with the City's policies, standards and specifications and those of all other relevant authorities as applicable. All design documentation shall be completed in accordance with the relevant standards and specifications. All engineering plans and calculations shall be checked, signed and certified by a suitably qualified practicing professional engineer before being submitted to Council.

On completion, works shall be certified as constructed in accordance with the approved plans, specifications and conditions of approval, and that the "Works as Executed" plans are a true and correct record of what has been built. The works supervisor shall be independent of the Principal Certifier.



Format

Submissions must be:

- Electronic - and provided in both pdf and CAD .dwg formats. Plans must be based on Australian Height Datum (AHD) and Map Grid of Australia (MGA) orientation, zone 56.
- Hard copy submissions may also be requested for larger projects.



Public Domain Conditions of Consent

C3.8 Temporary Dewatering During Construction

Basement excavations that are deeper than the existing water table may require the removal of groundwater during construction. The application form for temporary dewatering may be downloaded from the City's website.

Preparation

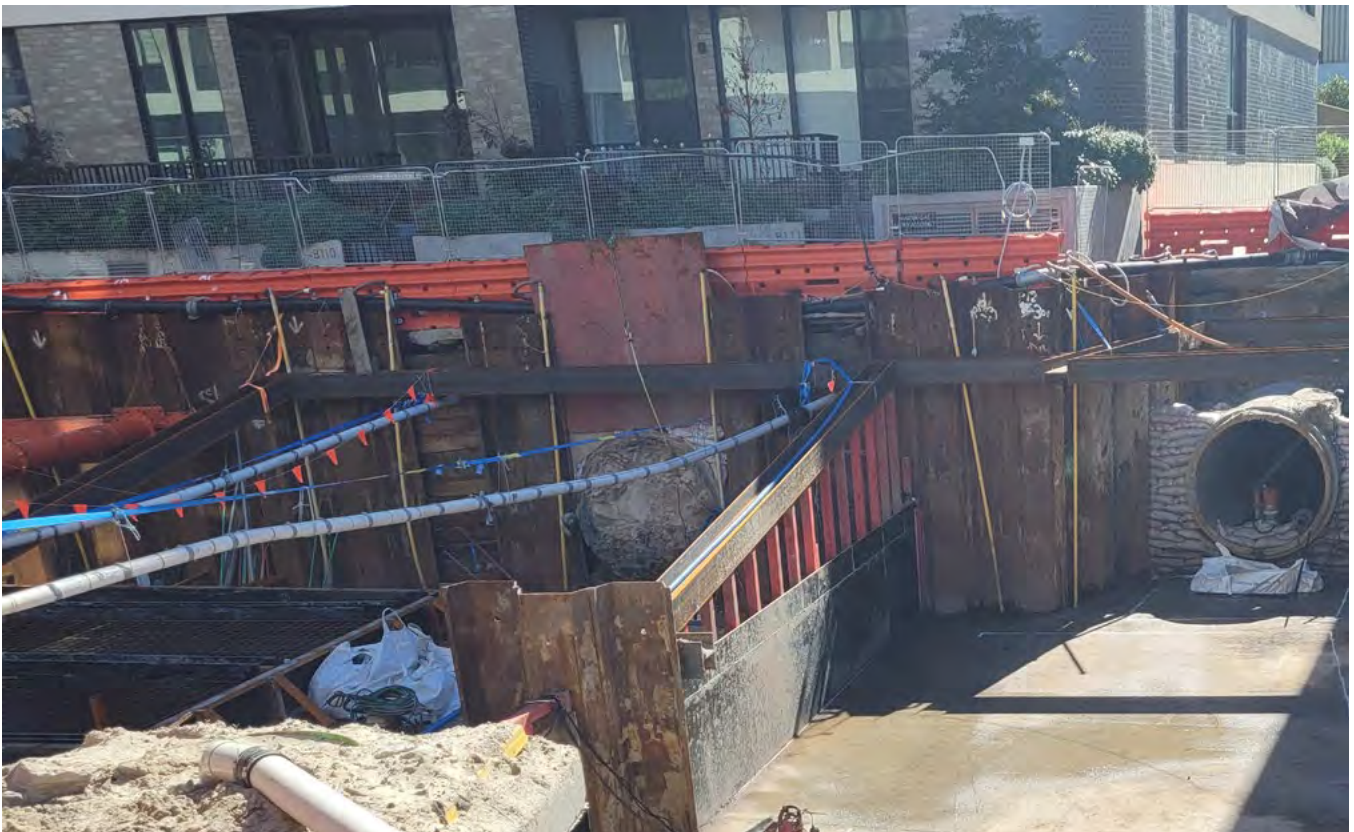
A Dewatering Management Plan is to be prepared by a suitably qualified water quality expert.

Content

The detail of the information required for the application for the Dewatering Management Plan can be found on the application form.

Format

Submissions must be in pdf format.



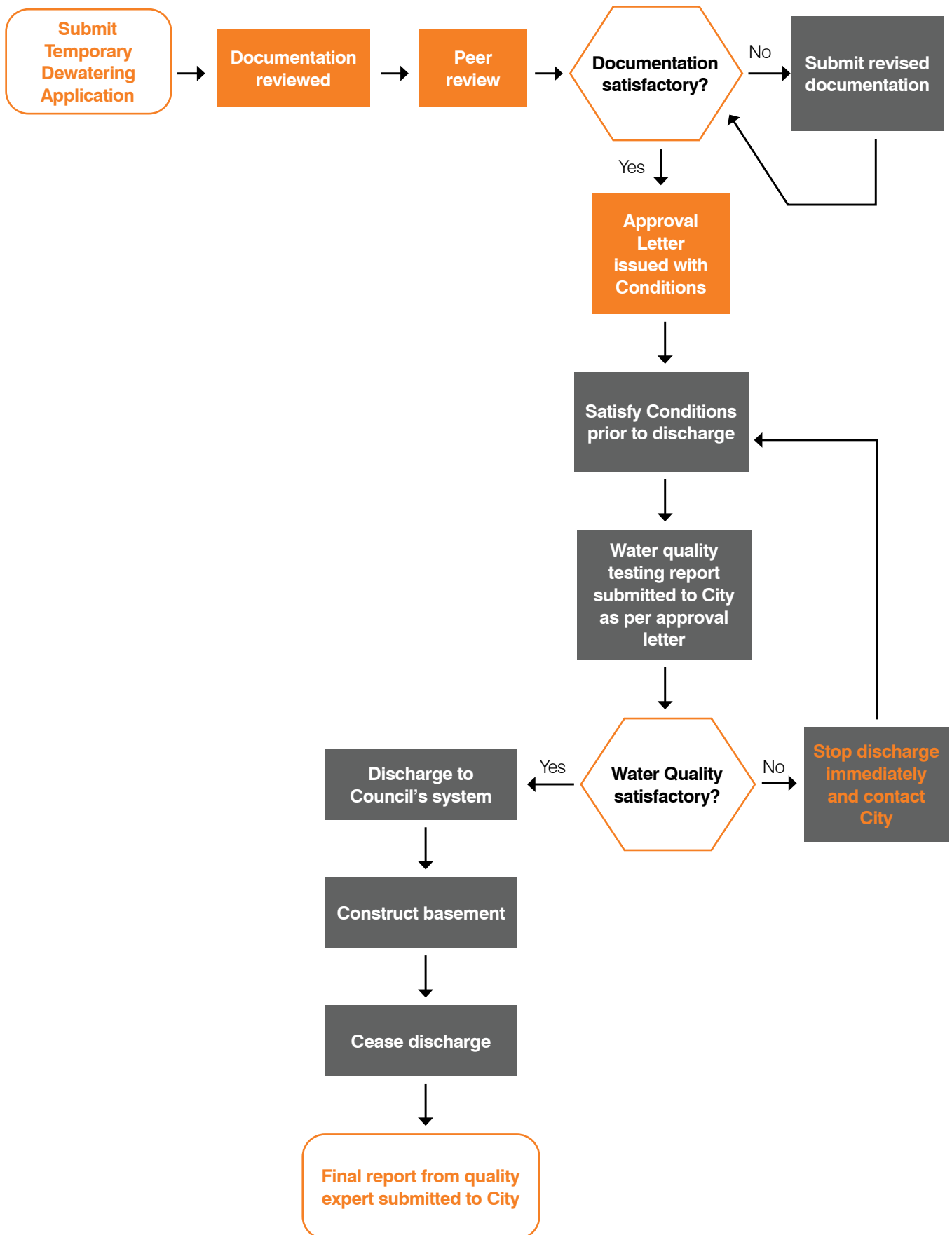


Figure 10 - Approval process for temporary dewatering

4

C4 Prior to Construction of the Public Domain

C4.1 Public Domain Detailed Documentation for Construction

A Detailed Public Domain Plan is a set of construction-level plans and details that clearly show:

- the existing public domain elements surrounding a development site. This includes the location of signs; street furniture; street trees; planting; property boundaries; kerb/gutter alignment; vehicular crossings; pedestrian kerb ramps; street lights; the existing finishes (e.g. paving types); and any other elements that exist.
- elements to be retained, protected, removed or replaced; and
- works required to reconstruct the public domain frontages of the site to meet the City’s current standards

Required works may include changes to roads, drainage infrastructure, kerbs and gutters, footways, vehicle crossovers (driveways), traffic signs and facilities, pedestrian kerb ramps, service pit covers, street trees and other landscaping, furniture, lighting and other elements on land owned by the City. All public domain elements are required to meet the City’s current standards.

Generally, the extent of work for Public Domain Plan proposals will need to include all frontages of your project site, from the property boundary to the gutter. In some cases, works within the road carriageway may also be required, for instance if new footpath extensions (blisters); kerb and gutter reconstruction; drainage or water sensitive urban design works; or correcting cross-falls in the roadway are needed.

For further information, you can download a sample Public Domain Plan from the City’s website as an example of the submission standard.

Preparation

The Detailed Public Domain Plan must be prepared by a suitably qualified civil engineer, landscape architect or architect, based on an accurate survey prepared by a registered surveyor.

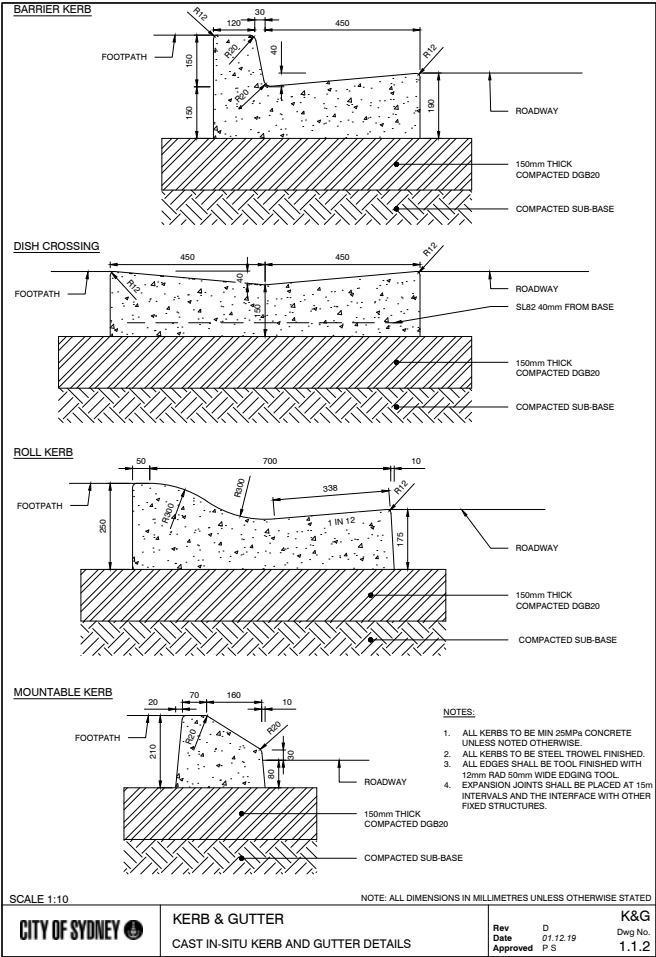


Figure 11 - Extract from Sydney Streets Technical Specifications Standard Drawings

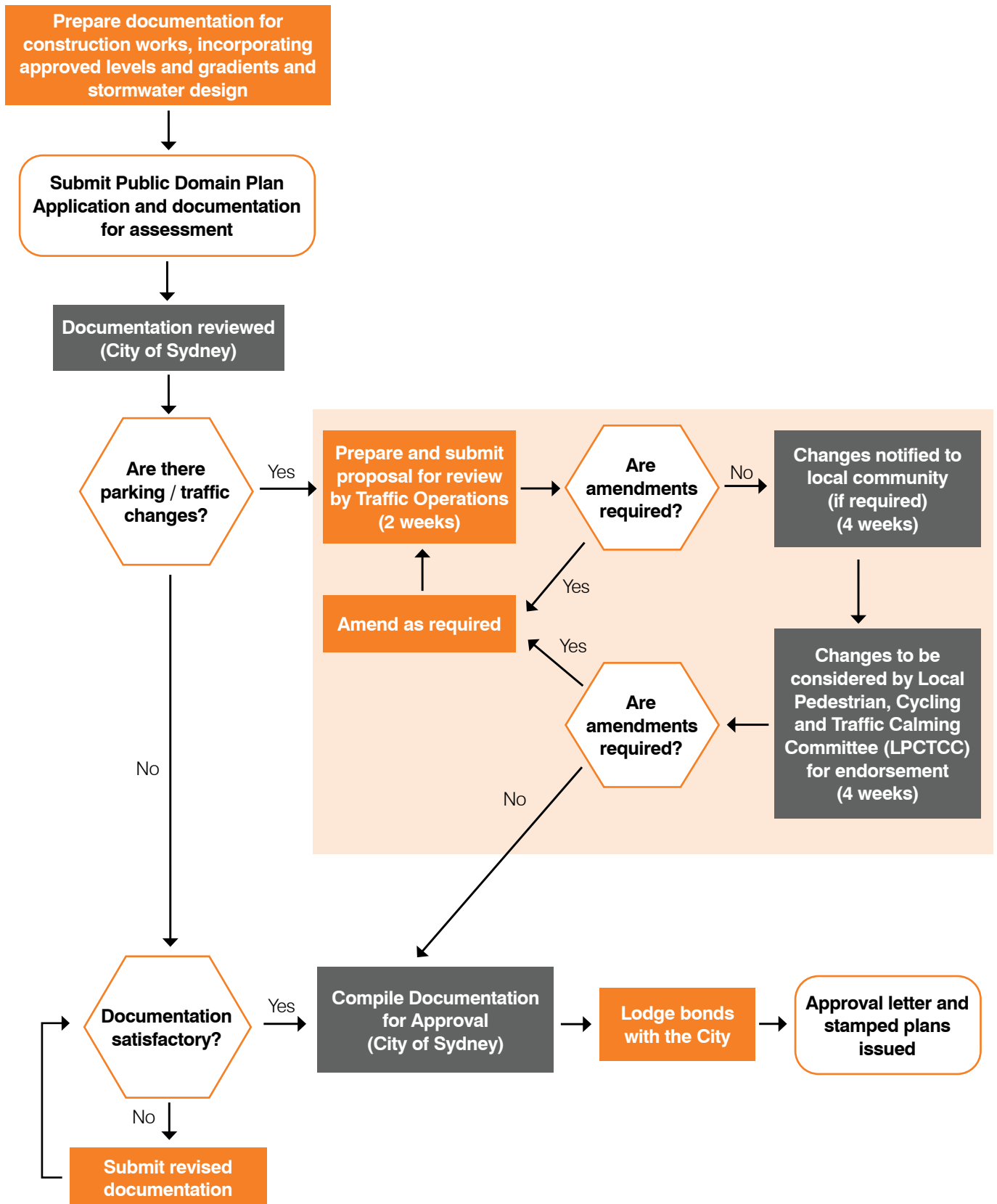


Figure 12 - Approval process for Public Domain Plan

Public Domain Conditions of Consent

Content

The following items should be considered in your Detailed Public Domain Plan (as required for your site):

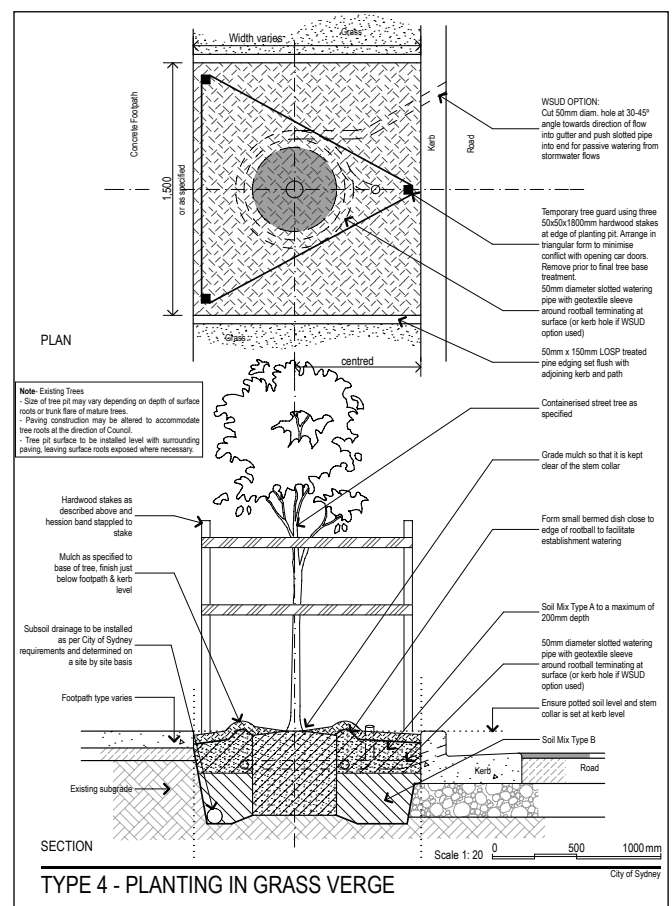
- **Encroachment** - private property elements must not encroach into the public domain. This includes things like steps, handrails and Tactile Ground Surface Indicators (TGSIs). Property boundaries and extent of works lines must be clearly shown on the plans. Plans must show the building footprint at ground level (showing locations of doors, windows and vehicular openings) and locations of overhead awnings above ground as applicable.
- **Levels** - adjustment of footways to achieve cross-falls between 1 – 2.5% from property boundary to top of kerb. Note that localised adjustment of longitudinal grades to suit building entries is not permitted in the public domain. Refer to Section 3.2 of this manual for further detail about Levels and Gradients submissions.
- **Kerb and gutter** - removal of non-complying or poor quality kerb and gutter, and replacement to meet City standards. Repair and realignment of stone kerb where required to provide uniform longitudinal grades and heights. Removal of redundant storm water outlets and replacement of whole kerb sections as required.
- **Footways** - new or re-paving and sealing of the footway in accordance with the relevant City specifications. Plans should show the paving setout, including paving pattern and coordination of junctions with the adjacent footway. Retention and repair of existing pavement lights/light blocks

should be included where applicable to the site.

- **Pits** - realignment and adjustment of service pit lids to suit new pedestrian ramps, driveway works, paver layout and footway design levels. New service pit lids are to be infill-type, with infill material to match adjacent final paving finishes.
- **Pedestrian kerb ramps** - relocation and reconstruction (to ensure 90 degree orientation to roadway and alignment with opposite pram ramp). Provision of new pedestrian ramps and driveway crossovers, including provision of pedestrian ramps on the opposite side of the street to the site to ensure a complete crossing is provided. Removal of redundant ramps and crossovers and reinstatement of kerb, gutter and footpath pavement to City standards.
- **Lighting** - provision and upgrade of street and pedestrian lighting to meet the lighting levels and types as required by City policies and Australian Standards. This may include removal or relocation of existing poles and fittings; installation of new poles and fittings; undergrounding or bundling of aerial cables; construction of conduits and the relocation of utilities, signage and services as required. Note that lighting submissions are reviewed in consultation with the City's Lighting team. You should make submissions as early as possible to allow for this process. Refer to section 3.6 of this manual for further detail.
- **Vehicle crossovers (driveways)** - relocation and reconstruction of existing crossovers as required to suit the development. Provision of new crossovers. Removal of redundant crossovers and reinstatement of kerb, gutter and footpath pavement to City standards.



- ## Format



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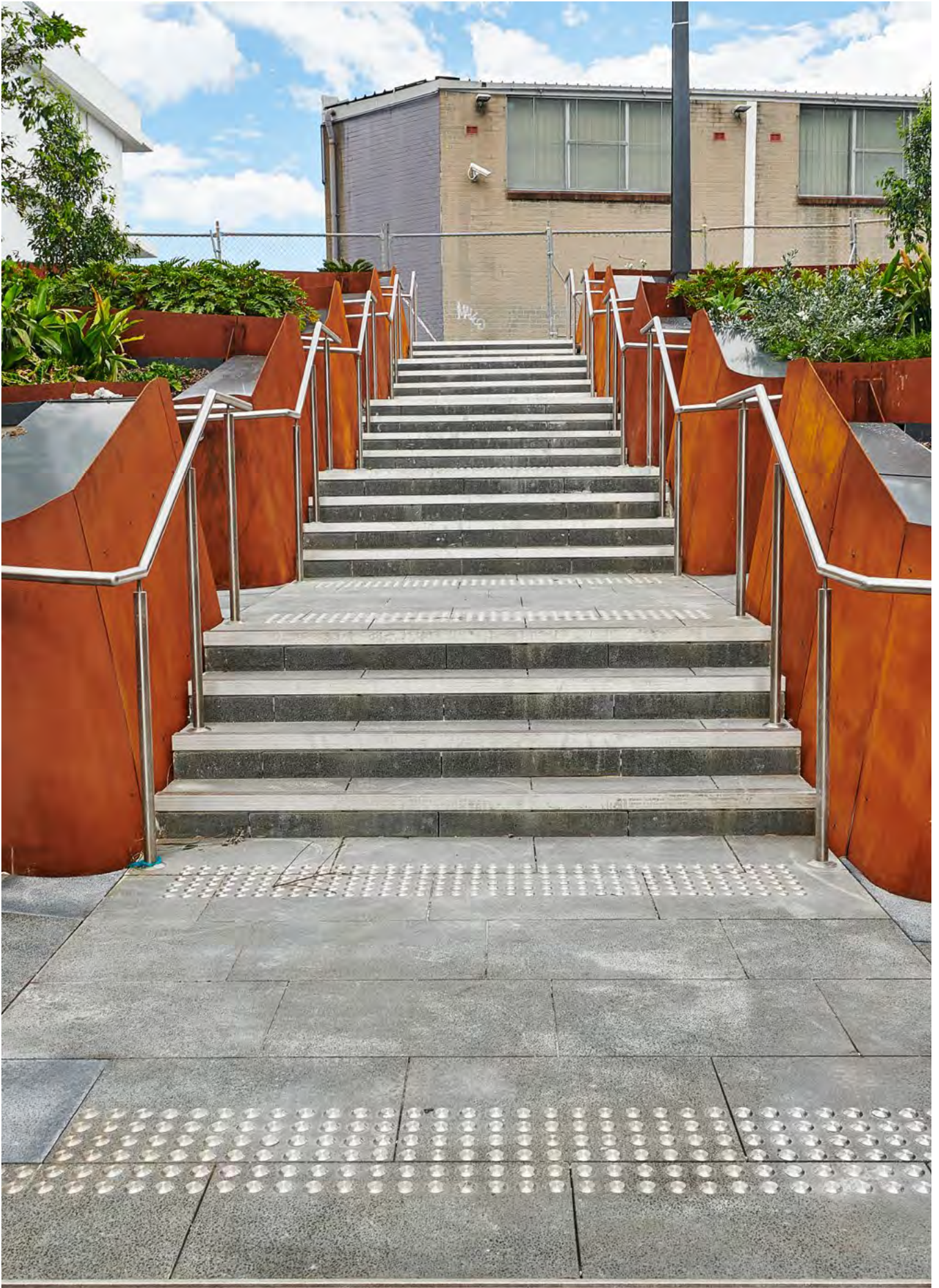
- Electronic - provided in both pdf and CAD .dwg formats. Plans must be based on Australian Height Datum (AHD) and Map Grid of Australia (MGA) orientation, zone 56.

- Submissions must include:

- Plans and relevant site specific construction details.



Figure 14 - Public Domain Detailed Documentation example



Public Domain Conditions of Consent

C4.2 Hold Points

Once the public domain works commence on site the service provider will be subject to a series of inspections by Public Domain Officers to ensure the quality of the workmanship is to City standards.

The Public Domain Officer will issue a list of Hold Points, witness points and checks necessary for your site. Work cannot progress past these Hold Points unless signed off by the Public Domain Officer.

Work that has not been approved at a Hold Point may be required to be demolished and reconstructed. See Section E – Construction, Hold points and appointing the City as PC for more information on Hold Points.

Preparation

Your Public Domain Officer will supply the list of Hold Points with the Public Domain Plan Approval and stamped plans.

C4.3 Stormwater Drainage Connection

Approval is required in order to connect into the City's drainage system. This is only applicable when connecting into the City's stormwater infrastructure via a pit.



C4.4 Lighting Reticulation Design

Requirements for lighting design and submissions are outlined in detail in the City's Sydney Lights Design Code and Sydney Streets Technical Specification.

Preparation

The submission must be prepared by a suitably qualified, practicing lighting engineer or lighting designer.

Content

The submission must include:

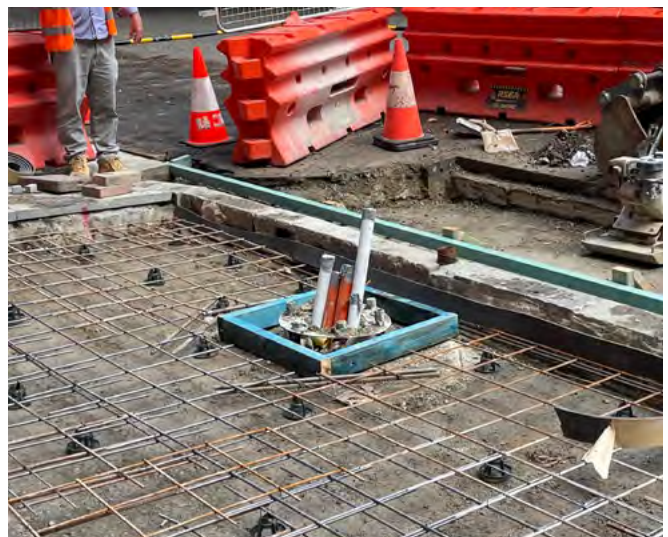
- Footing locations and structural details;
- Location and details of underground electrical reticulation, connections and conduits;
- Certification by a suitably qualified, practicing lighting engineer or lighting designer to certify that the design complies with City policies and all relevant Australian Standards including AS 1158, AS 3000 and AS4282;
- Structural certification for footing designs by a suitably qualified, practicing engineer to certify that the design complies with City's policies and Australian Standards.

When a Public Domain Plan is required to be submitted for a development, the lighting submission must be fully coordinated with the Public Domain Plan.

Format

Submissions must be:

Electronic - and provided in both pdf and CAD .dwg formats.



C.4.5 Public Domain Works Security Bond

See Part D Public Domain Security Bonds. The public domain works bond will be required when there is a public domain plan. The bond is calculated in accordance with the City's adopted fees and charges with rates for constructing various elements as described in the stamped plans. The bond can be submitted in cash, as an unconditional bank guarantee or insurance bond. Upon request, your Public Domain Officer will issue a letter detailing amount and submission requirements.

The bond is to be lodged with the City prior to the issue of a public domain approval.

C4.6 Public Domain Construction Approval Under Section 138 Roads Act Approval

Approval under Section 138 of the Roads Act 1993 is required prior to any public domain works.

C4.7 No Obstructions

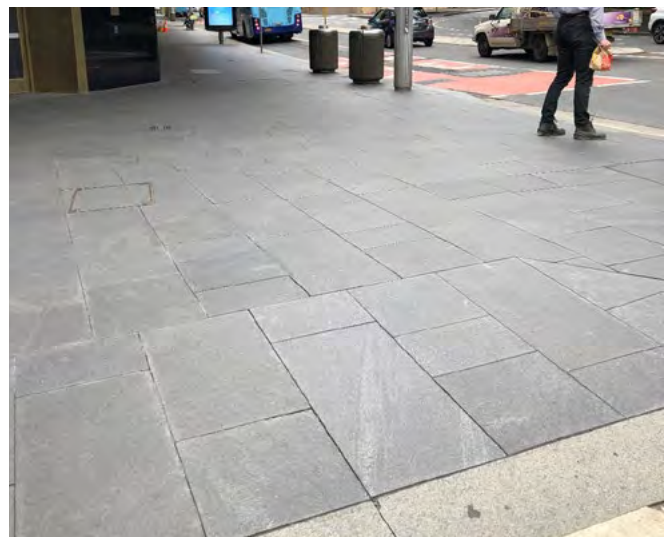
All obstructions located in direct paths of travel, for example service pillars, are required to be relocated to an agreed position before any Occupation Certificate is issued in respect of the development or before the use commences, whichever is earlier. The Public Domain Officer will inform you when they consider it necessary to relocate an obstruction and when they consider this work to be complete.

C4.8 Drainage and Service Pit Lids

Service and drainage pit lids to be as described in the condition of consent. Requested information to be supplied with the Detailed Public Domain Plan, refer section C4.1

C4.9 Paving Materials

Publicly accessible spaces must comply with relevant Australian standards. Refer to your conditions of consent.



5

C5 Prior to Occupation Certificate for the Building

C5.1 Public Domain Works Completion

The public domain works are required to be completed before any Occupation Certificate is issued in respect of the development or before the use commences, whichever is earlier. The Public Domain Officer will inform you when they consider the work to be complete and issue a Public Domain Letter of Completion. A satisfactory Work as Executed documentation package is also required prior to issue of the certificate, refer section C5.2.





Public Domain Conditions of Consent

C.5.2 Public Domain Completion - Work As Executed Documentation

At the completion of your project the Public Domain works, Work-As-Executed documentation will be required before a Public Domain Letter of Completion can be issued for public domain work. Work-As-Executed Quality Records shall be clearly identifiable and separate from design information. Full details with thorough explanations on how to complete this documentation package can be obtained from your Public Domain Officer.

Preparation

The information supplied for this condition must be prepared by the Project Manager.

Content

Requirements for works-as-executed documentation will be outlined with your approval letter for all works in the public domain (including those arising from a Development Application, Planning Agreement or Works on the Public Way application), and will typically include:

- a set of survey plans prepared and certified by a registered surveyor that clearly show the works as constructed, and clearly note all variations from the approved plans;
 - certifications for all work stating that the works have been constructed in accordance with the approved plans, specifications and City standards. Certification must be prepared by a suitably qualified professional with qualifications relevant to the work being certified and who observed the work being constructed at each critical stage;
 - maintenance manuals and warranties for all works as applicable;
 - service authority sign-off;
 - landscape and street tree certification and evidence of acceptance by City Tree Management Officer and/or Parks Officer;
 - stormwater information to include, but not be limited to,
 - CCTV of storm water system,
 - Sydney Water (S73) certificate,
 - As-built survey of pits and pipes,
 - Asset datasheet in accordance with Appendix D "A4 Drainage Design"
 - street lighting to include, but not be limited to,
 - certification by suitably qualified and accredited Electrical Engineer as specified in the Lighting Codes,
 - evidence of Design/Installation Approval for respective statutory authority Lighting.
- evidence of registration of underground electrical reticulation with "Dial-Before-You-Dig" database
 - certification by a suitably qualified practicing structural consultant for footings, stating that the installation is fit for the purpose, complies with the approved design and the site specific underground obstructions and soil conditions.
 - Operation and Maintenance manual.
- traffic signage to include evidence of correctly installed traffic signage as per the approved signage plans showing the signs labelled with the time and date of erection;
 - any other requirements outlined in the Sydney Streets Technical Specification or in other conditions of consent.

Drawings shall show:

- a comparison with the approved design drawings. All design distances, levels and values are to remain in black on the drawings and 'struck out' with a diagonal line in red.
- all As-Constructed distances, levels and values (text), regardless of variance, are to be marked on the plans, cross sections and Longitudinal Sections in red.
- the redrawn parts of any layout details (plan) and longitudinal or cross sections are to be drafted in red with the original line work to remain in black but 'struck out' in red as required.
- actual dimensions which have been recorded on site, (e.g. the design drawings may give a dimension as "Maximum 2 metres"; the WAE drawings shall give the actual measured dimension of say 1.9 metres).
- all amendments made to the approved design during the construction phase.

Further details of the required submissions can be found in the Public Domain Works Handover Requirements Document available on request from your Public Domain Officer.

Format

Submissions must be:

- Electronic - and provided in both pdf and CAD .dwg formats. Plans must be based on Australian Height Datum (AHD) and Map Grid of Australia (MGA) orientation, zone 56.
- Hard copy submissions may also be requested for larger projects.

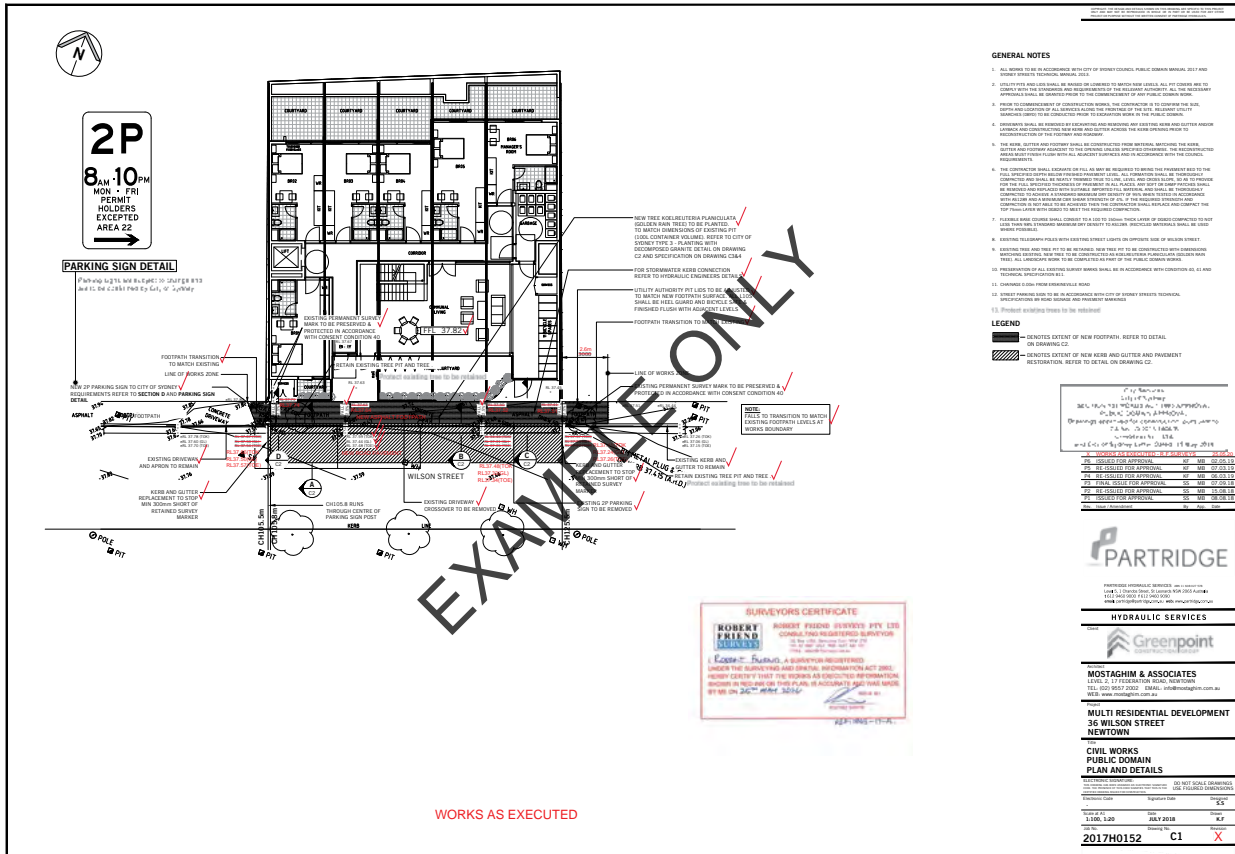


Figure 15 - Works As Executed Documentation example

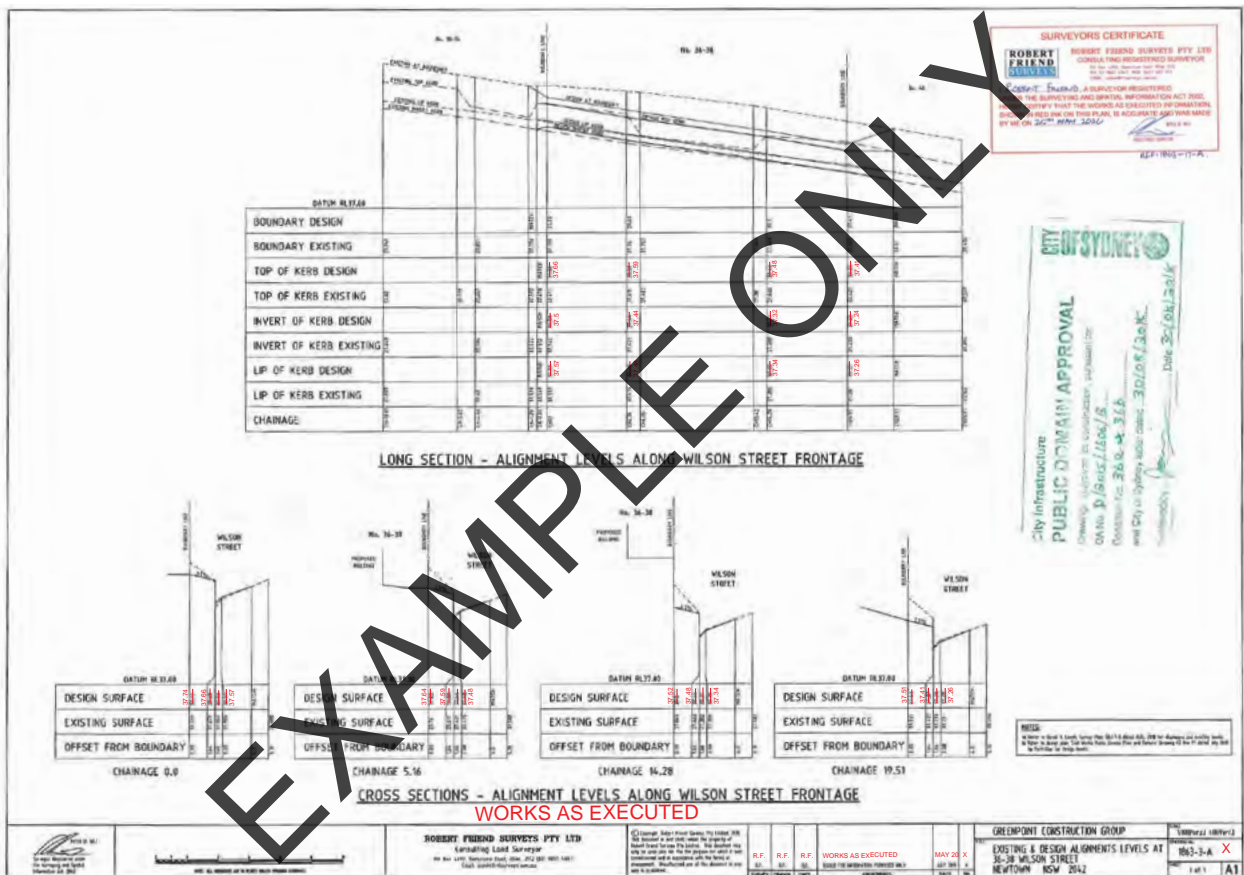


Figure 16 - Works As Executed Documentation example

Public Domain Conditions of Consent

C5.3 Stormwater Completion Deed of Agreement & Positive Covenant

For all approved connections to the City's underground drainage system, the owner is required to enter into a Deed of Agreement with the City, which is to be registered on Title through a Positive Covenant.

For all drainage systems involving On Site Detention (OSD), a Positive Covenant must be registered on the property Title to ensure maintenance of the approved OSD system, regardless of the method of connection.

Council's Legal Services Unit will be in contact with the applicant and owner to finalise the Deed of Agreement and Positive Covenant after approval of the stormwater drainage connection and/or OSD.

Content

Further details of the required submissions can be found in the Stormwater Drainage Manual.

C5.4 Constructed Floor Levels

Refer to your conditions of consent.

C5.5 Survey Infrastructure - Pre Subdivision Certificate Works

In some instances, for example where new kerb and gutter is to be installed, it may not be possible to replace a mark immediately. In these cases an application must be made to defer the replacement of the mark to the Surveyor General.

Preparation

The information supplied for this condition must be prepared by a Registered Surveyor.

Content

The application should contain the following information:

- a copy of the Surveyor-General's Approval including all submitted documentation;
- either:
 - confirmation that work did not disturb the survey mark; or
 - that the survey mark has been preserved as outlined in the Surveyor General's Directions No.11 Preservation of Survey Marks.

Format

Submissions must be:

- Electronic – Letters and/or documentation to be provided in pdf. Plans showing locations of survey marks to also be provided in CAD .dwg formats. Plans must be based on Australian Height Datum (AHD) and Map Grid of Australia (MGA) orientation, zone 56.

C5.6 Survey Infrastructure - Restoration

Once work has been completed evidence must be provided to the City that the survey infrastructure has not been damaged.

Preparation

The information supplied for this condition must be prepared by a Registered Surveyor.

Content

The evidence should include the following:

- Certification that all requirements requested under any Surveyor-General's Approval for Survey Mark Removal or by the City's Principal Surveyor from condition "Survey Infrastructure – Identification and Recovery" have been complied with;
- Certification that all requirements requested under any Surveyor-General's Approval for Deferment of Survey Marks from condition "Survey Infrastructure – Pre Subdivision Certificate works" have been complied with and;
- Time-stamped photographic records of all new survey infrastructure relating to the site.

Format

Submissions must be:

- Electronic – Letters and/or documentation to be provided in pdf. Plans showing locations of survey marks to also be provided in CAD .dwg formats. Plans must be based on Australian Height Datum (AHD) and Map Grid of Australia (MGA) orientation, zone 56.

C.5.7 Land Dedication - No Long Term Environmental Management Plans

In most instances, land to be dedicated will not be accepted by the City if there is any Long-Term Environmental Management Plan (LTEMP) on the title. The City expects land to be transferred into its ownership to be free from harmful contaminants.

If the land to be developed is contaminated, usually a Remediation Action Plan will need to be submitted and approved with the initial development application documentation. Any changes to the agreed Remediation Action Plan during the construction process will usually require a modification to the existing development consent.

C.5.8 Land Dedication - Remediation Capping Layer

In some circumstances, where land cannot be completely remediated, a Long Term Environmental Management Plan may be required. In most instances, the City will require a minimum of 1.5m depth (below surface level) of uncontaminated or clean capping above the contaminated ground. Land may be required to be remediated beneath the 1.5m depth to ensure safe access to existing services in the future.

Where there is any residual contamination, a Long Term Environmental Management Plan will be required. The City will only accept passive plans, where the maintenance requirements are in line with the Council's current practices.

Generally, a passive plan will not involve any of:

- Regular inspections or monitoring by officers requiring special qualifications
- Documentation to be kept or updated with the LTEMP
- Requirements for any personal protective equipment to be used by construction workers or service providers on the site or
- Air monitoring.

Preparation

The Long Term Environmental Management Plan must be prepared by a suitably qualified environmental consultant and reviewed and approved by a qualified Site Auditor.

Format

Submissions must be:

- Electronic – Plans must be provided in pdf format.

C.5.9 Defects Liability Period - Public Domain Works

Refer to your conditions of consent.

Part D

Public Domain Security Bonds



The background is a solid orange color with a pattern of various geometric shapes in different shades of orange. These shapes include triangles, squares, circles, and irregular polygons, some of which are semi-transparent, creating a layered effect.

Public Domain Security Bonds

Part D

Public Domain Security Bonds

D1 Introduction

A Refundable Security Bond (Bond) is required in relation to public domain works arising from a Development Consent a Planning Agreement or a Works on the Public Way approval under the Roads Act.

A Bond may also be required to cover against possible damage to Council property (even if you are not undertaking any public domain works).

A Works Bond is to ensure that approved works in the public domain are carried out in accordance with the approved plans and City Standards, Codes and Policies.

A Damage Bond is to ensure that existing public domain assets are adequately protected during building and or public domain construction works.

A Security Bond will be requested as per your Consent, Planning Agreement or approval. Public Domain Security Bonds may include the following;

- Public Domain Works;
- Planning Agreement;
- Public Domain Damage;
- Installation of Temporary Ground Anchors, and
- Kerb and Gutter Bond.

Other Bonds related to construction activity such as erecting hoardings may also be applied by other teams at the City.

D2 Calculating the Security Bond

Public Domain Security Bonds listed above are calculated in accordance with the City of Sydney's adopted schedule of Fees and Charges.

Security Bond for works to be undertaken under a Planning Agreement are based on the agreed value of the works to be provided, as determined by a Quantity Surveyor's estimate.

D3 Lodging the Security Bond

Security deposits must be lodged with the City before approval is issued for the related work, or before the work commences, as determined by the City and any relevant planning controls.

The City's Public Domain team will advise you in writing of the required value of the bond, form of payment accepted and how and where to lodge the Bond.

The form of payment accepted by the City are as follows;

- Unconditional Documentary Bond – such as Bank Guarantee, Surety Bond, Insurance Bond or;
- Cash – including Bank Cheque, EFT – Direct Debit Card

Please note, the City *does not* accept conditional Documentary Bonds, personal or company cheques or credit cards

D4 Release of the Security Bond

The Bonds will be release in accordance with the Consent, Approval or Planning Agreement.

Security Bonds are refundable once the work to which they relate is completed and a Public Domain Letter of Completion is issued by the City or no damage has occurred to the public domain.

A Public Domain Letter of Completion will be issued once works are competed to the City's satisfaction and all works-as-executed (as-built) documentation, certifications and warranties related to the work have been submitted in full and have been accepted by the City.

In most cases at completion, 90% of the value of the security is eligible for release as a defects liability period will apply.

Where no defects period applies the Bond will be returned in full.

Where applicable 10% of the Security Bond value will be held by the City until the conclusion of the specified defects liability period, providing there are no outstanding issues at the end of that period.

If the obligations are not met against which a Bonds are held, the City has the ability to make a claim against the Bond value and use it to undertake any necessary outstanding works, including rectification of defects. A credit balance (if any) after such a claim will be eligible for a refund.

Part E

Construction, Hold Points & Appointing the City as PC



Construction, Hold Points & Appointing the City as PC

Part E

Construction, Hold Points & Appointing the City as PC

E1 Opening the Public Domain

Before starting work in the Public Domain, you will need to obtain a separate Road Opening Permit from the City's Construction and Regulation team before the work can commence. The Road Opening Permit may include requirements for fees to be paid and conditions may be imposed on the construction process.

E2 Hold Point Inspections

Public domain works must be constructed in accordance with the approved plans, specifications, City standards and relevant policies. Variations to the approved documentation that may be required due to unforeseen site conditions must be approved by the City's Public Domain team prior to Construction.

Your letter of approval for public domain works will list the required hold points that you must coordinate with the City's Public Domain team. City staff may also undertake random, unscheduled inspections to monitor work progress and compliance with the approved plans and specifications.

E3 Critical Stage Hold Point Inspections - Appointing the City as Principal Certifier

In accordance with Section 109E(1AA) of the Environmental Planning and Assessment Act, the City must be appointed as the Principal Certifier (PC) for 'subdivision work' when a subdivision works certificate is applied for – that is, when a proposal includes a requirement to construct civil infrastructure to support the subdivision of the land dedicate land to the City.

When the City is appointed PC for critical stage inspections will be set, over and above any other hold points specified for other public domain works. The City's Public Domain team will advise you in writing of the inspections that will apply.

To appoint the City as PC for your subdivision works you must submit a Notice of Commencement of Building or Subdivision Work and Appointment of Council as PC. The application must be made no less than 48 hours before the subdivision works are proposed to commence, but it is recommended that you notify the City as soon as you know subdivision works will apply.

The person making the application must be the person having benefit of the development consent or complying development certificate, or the contractor carrying out the work if the contractor is the owner of the site.



E4 Missed Inspections

A minimum of 48 hours' notice (or as otherwise specified in your approval) must be given to City staff before the date of all intended hold point and critical stage inspections.

Work must not progress beyond a set hold point until written approval is given by City officers. Failure to give adequate notice of a required hold point may result in staff rejecting the work and requiring it to be reconstructed.

Additional requirements apply to missed inspections when the City is the PC. These are outlined in Section 162C of the Environmental Planning and Assessment Regulation.

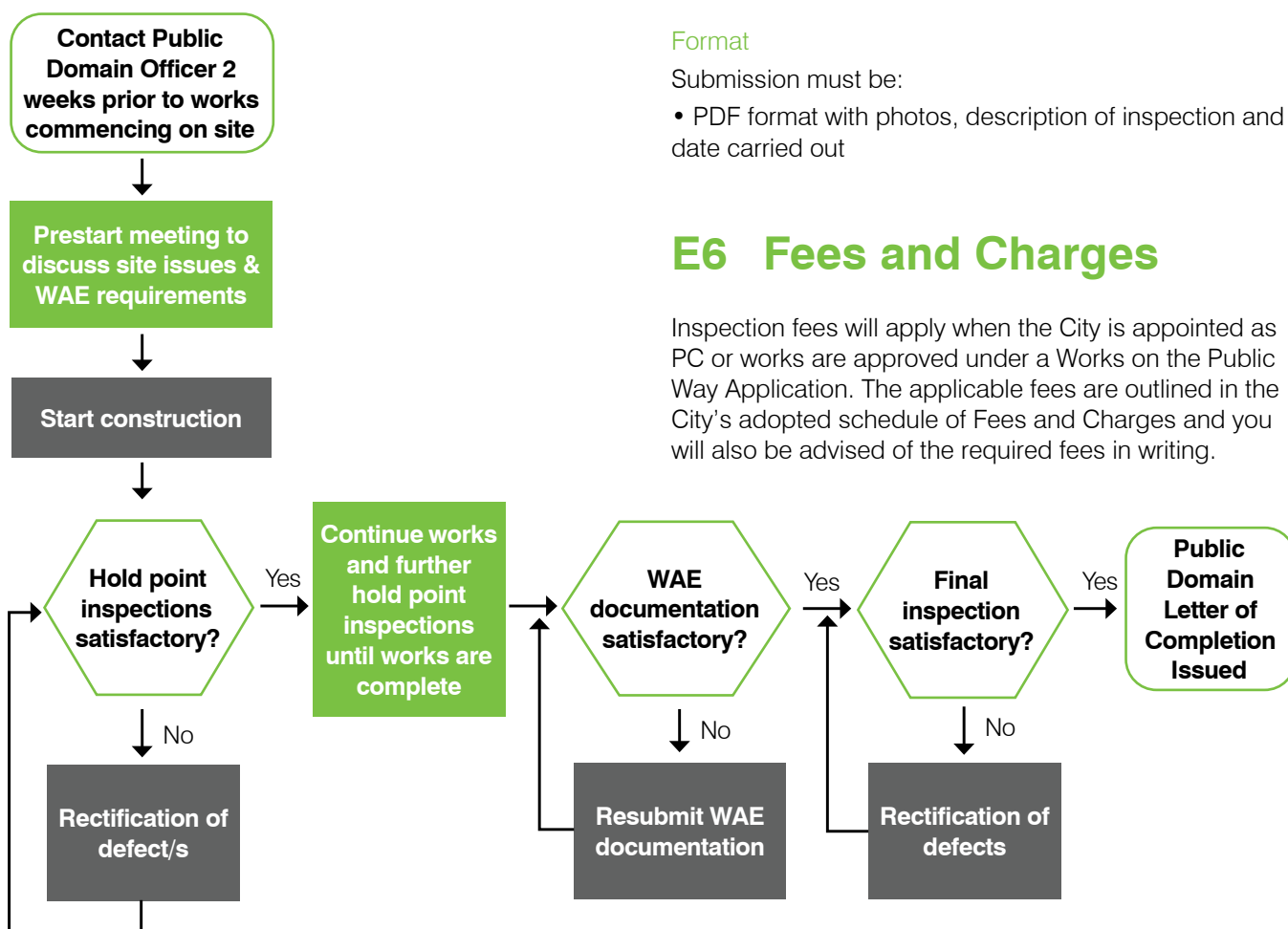


Figure 17 - Public Domain completion process

E5 Out of Hours Hold Points

In some circumstances, works are required outside of ordinary work hours and in-person hold point inspections are not feasible. When works occur outside of ordinary work hours, an Out of Hours report is required. Prior approval is required to undertake an Out of Hours Report in lieu of onsite hold point inspections.

Content

- Marked-up Plan of work location, pre and post photos
- Certification from a registered Engineer (providing relevant qualifications) that works has been constructed in accordance with the stamped plans and the City of Sydney's technical specifications

Format

Submission must be:

- PDF format with photos, description of inspection and date carried out

E6 Fees and Charges

Inspection fees will apply when the City is appointed as PC or works are approved under a Works on the Public Way Application. The applicable fees are outlined in the City's adopted schedule of Fees and Charges and you will also be advised of the required fees in writing.

Part F

Defects, Works Completion & Handover





Defects, Works Completion & Handover

Part F

Defects, Works Completion & Handover

F1 Defects

Once the public domain works have been constructed, City officers will undertake an inspection to identify any defects that need to be rectified.

Defects may include incorrect location of elements, unsatisfactory construction techniques or finishes, or any other non-compliances with the approved plans and specifications. All items will be confirmed by the City in writing and must be rectified as soon as possible.

Any bonds related to the work will be held until the identified issues have been addressed in accordance with the approved plans, specifications and to the City's satisfaction.

F2 Completion and Works-as-Executed (As-Built) Documentation

Once the public domain works have been constructed, including the rectification of any identified defects, City officers will undertake a final inspection to determine completion. A Public Domain Letter of Completion will only be issued by the City once the works are considered satisfactory and all required works-as-executed documentation has been submitted to, and been accepted by the City as outlined in Part E.

Part G

Appendix



Appendix

Part G

Appendix

G1 Ground Anchors

Excavations near roads have the potential to cause subsidence and damage to roads and other infrastructure on or within the road reservation. Where this potential exists, proponents must contact the City's Public Domain team (where the City is the local roads authority) to discuss the proposed excavation works before commencement. When support systems are placed within road reservations formal approval is required. More detailed information can be found on the website in the City of Sydney Code of Practice – Hoisting and Construction Activities in Public Places.

The City will not approve permanent ground anchors or ground anchors within the top 2m of the road reserve as measured from the gutter invert level or surrounding ground levels where a gutter is not present.

A bond will be required to be lodged which will be retained for a period of 6 months after the acceptance of certification confirming ground anchors have been de-stressed and subject to a final inspection.

Applications must be made using the standard form available on the City's website and include drawings, details and certification as set out in the form and/or any other site-specific information required by the Public Domain Officer.

Preparation

The Application for Temporary Ground Anchors must be prepared by a suitably qualified engineer.

Content

The following elements should be included (as required for your site):

- Location Plan
- Site Plan
- Structural certification
- Geotechnical certification and
- Calculations

Refer to the Ground Anchor Approval Application form for submission requirements.

Format

Submissions must be:

- Electronic - and provided in both pdf and CAD .dwg formats. Plans must be based on Australian Height Datum (AHD) and Map Grid of Australia (MGA) orientation, zone 56.

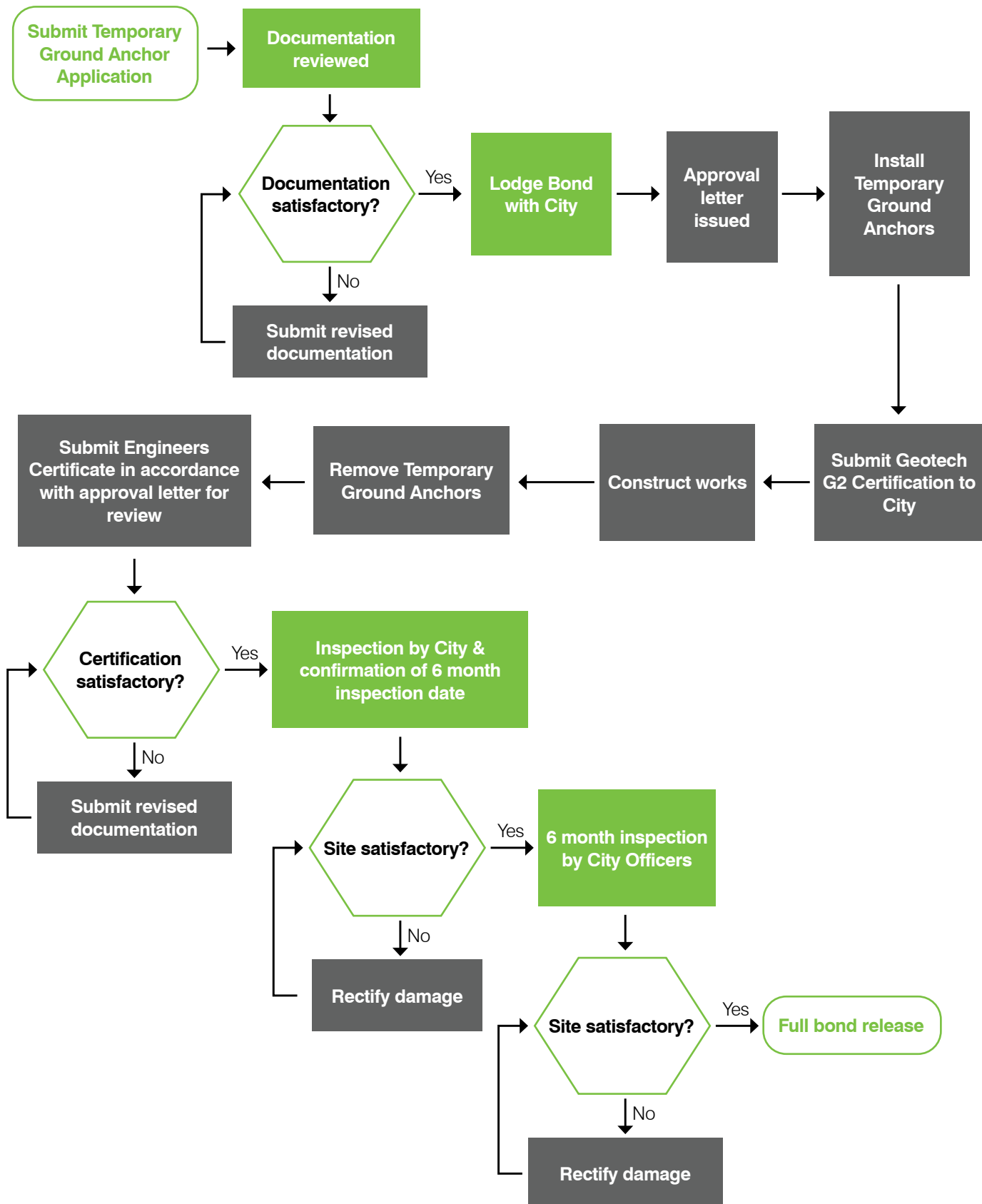


Figure 18 - Approval process for temporary ground anchors

G2 Stormwater

Contents

1. Introduction
2. Policies and Guidelines
3. Contact Us
4. Flooding Assessments
5. Requirements for On-site detention (OSD)
6. Stormwater Drainage Plans and Details
7. Stormwater Quality

1. Introduction

This manual set outs stormwater and flooding requirements relevant to private developments. It details what should be considered with regard to stormwater and flooding when making a Development Application and issues to consider in addressing conditions of consent for stormwater drainage work.

Note: This document supersedes and replaces previous information provided in the 2006 City of Sydney Stormwater Drainage Connection Information document.

2. Policies and guidelines

The Stormwater Drainage Manual must be read in conjunction with:

- The City's policies (key documents listed below), specifications (refer below) and planning controls;
- Development consent conditions for your project; and
- Advice given by City officers during the submission and approval process for your project.

Key policies and documents related to the stormwater drainage manual include:

- [Interim Floodplain Management Policy](#)
- Public Domain Manual
- Sydney Streets Design Code (refer to downloads section of the web page)
- [Sydney Streets Technical Specifications and Standard Drawings](#)
 - Design Specifications – refer to A4 Drainage Design (including attachments)
 - Construction Specifications – refer to B10 Stormwater Drainage.

3. Contact Us

If you have a question about stormwater drainage works, how to make a submission, or to request a pre-submission meeting, please refer to the Public Domain Manual or contact the City's Public Domain team on:

- 02 9246 7575
- or email publicdomain@cityofsydney.nsw.gov.au

4. Flooding Assessments

[Sydney Local Environmental Plan 2012 \(Sydney LEP 2012\)](#) requires the consent authority to be satisfied that all proposed development adequately protects the safety of property and life, and avoids adverse impacts on stormwater drainage, flood behaviour and the environment. This includes:

- that proposed development will not experience undue flood risk; and
- that existing development will not be adversely flood affected through increased damage or hazard as a result of any new development.

Specified flood planning controls apply to all land that is at or below the flood planning level. The requirements, set out in Sydney LEP 2012, must be met before development consent is granted.

Additional information on the requirements for flood planning is set out in the City's [Interim Floodplain Management Policy](#).

To satisfy the City that the development complies with these requirements you may need to undertake a flood study as part of your Development Application submission in addition to establishing flood planning levels for the development.

General information on floodplain management, including information on the various catchment areas within the City of Sydney, can be found on the City's website under [floodplain management](#).

5. Requirements for On-site Detention (OSD)

5.1 Sydney Water Requirements

Requirements for OSD are determined by Sydney Water, but are generally summarised below:

Properties that must have a system include (but are not limited to):

- All commercial, industrial and special use (e.g. community, education, recreational) buildings or structures;
- Town houses, villas, home units or other strata subdivisions;
- Dual occupancy lots.

In the instance where OSD is not required by Sydney Water, OSD may still be required by the City where it is not feasible to connect or extend to the existing stormwater network. Refer to section 6.2 below for details.

You may be exempt from requiring an OSD system if:

- Construction is only for a single residential dwelling;
- The original total site area is less than 250 m²;
- The development site is in the lower section of the catchment;
- You are refurbishing an existing building and maintain the existing drainage system.

Further information on the requirements for OSD is outlined in [Sydney Water's On-Site Detention Policy](#).

5.2 Legal Requirements

A positive covenant must be registered on the title of the land for all drainage systems involving OSD to ensure maintenance of the approved OSD system, regardless of the method of connection.

Should a direct connection to existing City-owned drainage infrastructure be required, the owner must enter into a deed of agreement (Stormwater Deed) with the City, which is to be registered on title through a positive covenant. To begin this process please complete the Stormwater Drainage connection approval application form - [Stormwater Drainage Connection Approval Application](#)

The following information will be required for the positive covenant and/or Stormwater Deed:

- Owner of Property;
- ABN / ACN;
- Address;
- Contact details;
- Phone No;
- Email;
- Site Address;
- DA Number

6. Stormwater Drainage Plans and Details

The proposed stormwater disposal and drainage from the development should be considered as a part of your Development Application. This should include details of:

- All stormwater connections associated with the development;
- Details of On-site detention requirements (refer to section 5 above);
- Details of new infrastructure associated with the development.

6.1 Connection Information

The feasibility of connection options will ultimately be determined by the City's Public Domain team. Any works in the public domain are subject to approval and subsequent road opening permit requirements. These works may also be subject to defects liability periods, submission of works completion documents (e.g. works-as-executed plans, certifications, warranties and/or CCTV footage) and infrastructure handover.

Information on private connections, for both kerb and underground connections, is detailed in the City's A4 Drainage Design code as part of the [Sydney Streets Technical Specifications and Standard Drawings](#). This document is to be read in conjunction with all other chapters of the Technical Specifications.

Any connection to City of Sydney infrastructure will require a deed of agreement. Refer to Section 5.1 above.

6.2 Kerb Connections

The City may consider kerb connections on a site specific basis. This would generally relate to works that consist of gravity discharge of stormwater via downpipes to the kerb.

The City may also consider kerb connections for developments involving OSD systems where it can be demonstrated that it is not feasible to connect or extend to the existing stormwater network, subject to the following:

- The maximum permissible site discharge will be limited to 25l/s for storms up to and including the 20yr ARI;
- Dry-weather flow is not permitted through kerb outlets and these discharge systems are subject to timed pumping between the hours of midnight and 4am, subject to approval;

- Flow to kerb connections is to be discharged as gravity flow only.

In the instance where OSD is not required by Sydney Water, OSD may still be required by the City where it is not feasible to connect or extend to the existing stormwater network. This is to ensure that the maximum permissible site discharge, to a kerb connection, is not exceeded.

6.3 Application Requirements

You can download an [Application for Approval of Stormwater Drainage Connections](#) or collect a hard copy of the form from the City's One Stop Shop or Neighbourhood Service Centres.

A fee for each drainage connection will apply, in accordance with the City's adopted schedule of [fees and charges](#) and as detailed on the application form.

6. Stormwater Quality

All development sites should consider water quality improvements as a part of their development application.

The City's requirements for meeting stormwater quality targets are set out in the General Provisions of the [Sydney Development Control Plan 2012](#), Section 3.

G3 Trees

G3.1 Tree Retention and Removal

All development sites should consider the impact of the development to adjacent trees as part of their development application, including the impact of activity and access required for construction.

Any proposal to remove or significantly prune trees in the public domain must be indicated on the Landscape Plan. Proposed tree removals are required to be known at this stage to ensure the impact of the development is adequately assessed.

G3.2 Tree Protection

All trees required to be retained as part of the development are to be adequately protected for the duration of the project. General tree protection measures are specified within the City of Sydney Street Tree Master Plan. Specific tree protection measures may be a condition of the development consent.

Preparation

When required, a tree protection plan must be prepared by an arborist qualified to Australian Qualifications Framework Level 5 in accordance with the Australian Standard AS4970-2009 Protection of trees on development sites. The City has published guidelines for the preparation of arboricultural reports.

Content

Details of trees to be retained and protected, along with relevant detail of the method, should be included in the Public Domain Plan.



Figure 19 - Street tree trunk protection



Figure 20 - Street tree trunk protection

G3.3 Tree Planting Arrangements

If tree planting is proposed or required as an element of the Public Domain Concept Plan, the public domain applicant must consider and choose one of two options, as follows:

1. Undertake the tree supply and planting requirements themselves, including:
 - The procurement of tree stock of the required species, container size, and quality in advance of the work to ensure the trees are available when needed;
 - The submission of documentation to demonstrate the supplied trees comply with the required quality standards;
 - The planting of the trees in accordance with all required quality standards listed within the City of Sydney Street Tree Master Plan, subject to hold point inspection and acceptance at the time of planting;
 - The maintenance of the trees (including frequent watering), in accordance with all requirements listed within the City of Sydney Street Tree Master Plan, for the duration of the public domain defect liability period and subject to final inspection and acceptance;
 - The replacement of any tree that is not of acceptable quality or has not adequately or successfully established.
2. Pay a fee for the City to supply, plant, and maintain the required trees on the applicant's behalf.



Figure 21 - Street tree planting

G4 Glossary

The following acronyms and definitions apply to this document as a guide

G4.1 Acronyms

Acronym	Definition
CC	Constructions Certificate
CoS	City of Sydney
DA	Development Application
DMP	Dewatering Management Plan
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)
Heritage Act	Heritage Act 1977 (NSW)
LG Act	Local Government Act 1993(NSW)
LPCTCC	Local Pedestrian, Cycling Traffic Calming Committee
OC	Occupation Certificate
OSD	On-site detention
PC	Principal Certifier
PD	Public Domain
Roads Act	Roads Act 1993 (NSW)
RMS	Roads and Maritime Services, now known as Transport for NSW (TfNSW)
SSM	State Survey Mark
WAE	Works as Executed
WH & S Act	Work Health and Safety Act 2011

G4.2 Definitions

Abbreviation	Definition
Approval	official permission granted by the Authority having jurisdiction to accept the proposed activities
Authority	means any government, semi-governmental, administrative, fiscal or judicial body, department, commission, authority, tribunal, agency or entity
Bond	has the same meaning as Security Bond
Business Day	means a day on which banks are open for general banking business in New South Wales, but does not include Saturdays, Sundays or public holidays
City	means The Council of the City of Sydney
City of Sydney's adopted fees and charges	means the schedule of Fees and Charges attached to the City of Sydney's Revenue Policy. The fees and charges are determined by Council each financial year
City's Policies	means all City's policies, standards, codes and procedures relevant to the provision of works in the public domain or works relating to future public domain works
Certificate of Completion	has the same meaning as the Public Domain Letter of Completion
Completion	means when a Public Domain Letter of Completion is issued in writing by the City
Completion Date	means the date of the issue of the Public Domain Letter of Completion
Cost of works	means the total estimated cost of the public domain works
Council	means The Council of the City of Sydney
Defects Liability	means the developer is responsible for any defects that arise from the workmanship within the Defects Liability Period
Defects Liability Period	means a stated period (generally 6 or 12 months) as defined in the approval relating to the public domain works), starting from the Completion Date
Development application	has the same meaning as in the EP&A Act
Development Approval	has the same meaning as Development Consent as in the EP&A Act
Dewatering Management Plan	means a plan of management prepared by a qualified water quality expert, outlining the action of temporary removal of groundwater or surface water from a construction site to meet the City's standards a relevant legislation
Hold Point	means a mandatory verification point beyond which work cannot proceed without approval by the City's Public Domain team
Levels and Gradients	means the gradients of the footpaths adjacent to your site and as described in section C3.2
MUSIC report	means a report produced by specified software which predicts water quality improvements
Occupation Certificate	has the same meaning as in the EP&A Act
On-site detention	means a method of slowing the release of stormwater from the site for a period of time
Part 5 works	has the same meaning as activities under EP&A Act Part 5
Planning Agreement	means a binding agreement between the City of Sydney and a developer where the developer agrees to provide benefits to the community alongside the construction of the development
Principal Certifier	has the same meaning as in the <i>Building and Development Certifiers Act 2018</i> .
Principal Contractor	has the same meaning as in the WH & S Act
Public Domain	means an area of land designated for public use where Council is the Road Authority or the owner of the land

Definitions continued

Abbreviation	Definition
Public Domain Manual	means this document and all attachments and annexures
Public Domain Plan	means a plan showing existing elements and proposed works within the public domain
Public Domain Works	means all works within the Public Domain or future Public Domain
Public Domain Letter of Completion	<p>means a letter from the City's Public Domain team confirming that works have been completed to the City's standard and all documentation required is received and marks the start of the defects liability period.</p> <p>means the point at which the Developer's Works are complete except for minor defects:</p> <ul style="list-style-type: none"> - The existence of which do not prevent the public domain works being reasonably capable of being used for their intended purpose and - The rectification of which will not affect the immediate and convenient use of the public domain for their intended purpose.
Public Road	has the same meaning as in the Roads Act
Registered Land Surveyor	means any person who is currently listed on the Register maintained by the Board of Surveying and Spatial Information (BOSSI), having been assessed as competent to practice cadastral (boundary) surveying.
Road Authority	has the same meaning as the Roads Act
Section 60 Approval	means the approval issued by NSW Heritage Council pursuant to section 63 of the Heritage Act 1977
Security Bond	means a refundable payment in favour of the City to act as security to ensure that approved works in the public domain are carried out and or to ensure that existing public domain assets are adequately protected during building and or public domain construction works
Services	means any services provided by an Authority or the City and the system or other means of providing those services to the Premises.
Street Tree	means a tree that is not on private land and is growing in or upon a Public Road (including footways)
Subdivision of Land	Has the same meaning as in the EP&A Act
Submission	means documentation including plans for consideration or approval relating to an application or to satisfy a condition of consent
Survey Mark	has the same meaning as survey monuments, or geodetic marks etc and are any mark defined under Schedules 1,2,3 and 4 of the Surveying and Spatial Information Regulation 2017

G5 Fees & Charges

Reference	Title	Fees and Charges (All fees and charges, including security bonds are in accordance with the City of Sydney adopted schedule of fees and charges)
C1.1	Diagram Showing Extent of Public Domain Works	Nil
C1.2	Public Domain Survey	Nil
C1.3	Levels and Gradients of all Surrounding Footpaths	Nil
C1.4	Stormwater Quantity Management	Nil
C1.5	Stormwater Quality Management	Nil
C1.6	Flood Management	Nil
C2.1	Dilapidation Report - Public Domain	Nil
C2.2	Public Domain Damage Bond	A damage security bond will be required to be submitted and will be determined based on the area of public domain impacted
C2.3	Survey Infrastructure - Identification and Recovery	A fee will be charged where a City owned survey mark is required to be reinstated after construction works have been completed
C2.4	Protection of Stone Kerbs	A Security bond may be required for the protection of Stone kerbs and gutters
C2.5	Associated Roadway Costs	Nil
C3.1	Public Domain Concept Plan	No fees required for concept plan assessment
C3.2	Public Domain Levels and Gradients	An application fee is to be submitted with a completed Application for public domain levels and gradients
C3.3i	Stormwater and Drainage – Minor Development	An application fee is to be submitted with a completed Application for Stormwater Drainage Connection if connecting to the City of Sydney's underground stormwater drainage infrastructure
C3.3ii	Stormwater Drainage Design	
C3.3iii	Stormwater On-site Detention	
C3.3iv	Stormwater Quality	Nil
C3.4	Flood Planning Levels	Nil
C3.5	Public Domain Lighting Upgrade	Nil. The fee for assessing lighting designs is included in the Application for Public Domain Plan assessment fee
C3.6	New Road Design	The fee for assessing new road designs is included in the Application for Public Domain Plan assessment fee
C3.7	Dewatering	An application fee applies for Public Domain Plan (including road design) submissions in accordance with the City of Sydney's adopted schedule of fees and charges. The application must be submitted with a completed Public Do-main Plan application.
C4.1	Public Domain Detailed Documentation for Construction	An application fee is to be submitted with a completed Application for Public Domain Plan assessment

Reference	Title	Fees and Charges (All fees and charges, including security bonds are in accordance with the City of Sydney adopted schedule of fees and charges)
C4.2	Hold Points	No fees apply for issuing the Hold Points although Construction inspection fees may occur in some instances eg when the City is acting as the Principal Certifier for the site or for a Roads Acts Approval. The fees will be based on the estimated cost of works
C4.3	Drainage Connection	An application fee is to be submitted with a completed Application for Stormwater Drainage Connection, if connecting to the City of Sydney's underground stormwater drainage infrastructure
C4.4	Lighting Reticulation	The fee for assessing the lighting design is included in the Application for Public Domain Plan assessment fee
C4.5	Public Domain Works Bond	A works security bond will be required and will be determined based on the public domain works required
C4.6	Section 138 Roads Act Approval	Nil
C4.7	Appointment of Public Domain Unit as Principal Certifier for Subdivision Works	Construction inspection fees will be required once the scope of works is determined. The fees will be based on estimated cost of works
C4.8	No Obstructions	Nil
C4.9	Service and Drainage Pit Lids	Nil
C4.10	Tactile Ground surface Indicators	Nil
C4.11	Paving Materials	Nil
C5.1	Public Domain Works Completion	Nil
C5.2	Works As Executed Documentation	Nil
C5.3	Stormwater Completion Deed of Agreement & Positive Covenant	A Legal fee will be charged for preparing required documentation
C5.4	Survey Infrastructure Pre-Subdivision Certificate Works	Nil
C5.5	Survey Infrastructure - Restoration	Nil
C5.6	Land Dedication	Nil
C5.7	Land Dedication - Remediation Cap-ping Layer	Nil
G1	Ground Anchors	An application fee is to be submitted with a completed Application for temporary ground anchors.