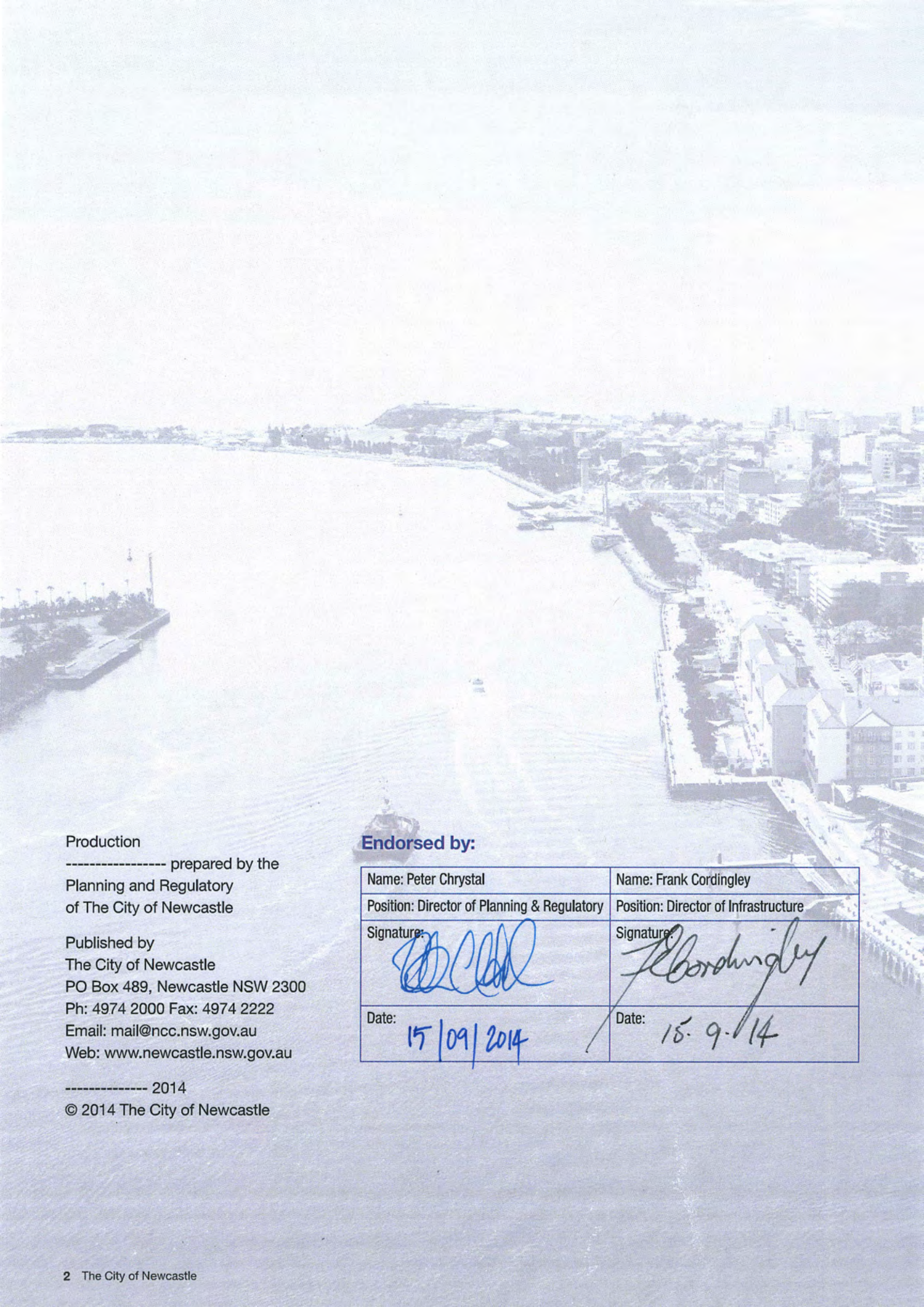




City Centre Public Domain Technical Manual



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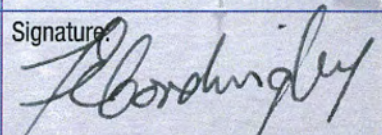
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1.0 Overview

1.1 Background

The City Centre Public Domain Technical Manual was listed as an action in the Hunter street Revitalisation Masterplan Strategic Framework (2010) and in the draft Newcastle Urban Renewal Strategy (2012). Extensive preparatory work was undertaken in 2012 and 2013 to review the current suite of materials and streetscape infrastructure. Recommendations were also made by consultants on the potential suite of materials and furniture to be used in the city centre public domain. The City Centre Public Domain Technical Manual responds to the previous work undertaken and incorporates broad stakeholder input to provide a manual that can be used in the consistent delivery of public domain improvements across the Newcastle city centre.

1.2 Aim

The aim of the manual is to ensure a consistent material selection to improve the city centre public domain. The current approach usually occurs through replacing existing materials on a 'like for like' or 'match existing' basis. The materials palette in this manual will promote a cohesive character and sense of identity for the city.

Key considerations for developing materials and street furniture palettes are:

- a consistent suite of materials and furniture for the public domain within Newcastle city centre as defined by the LEP 2012 boundary (Refer to City Centre Boundary Figure 1);
- efficiencies in the documentation, procurement and construction of streetscape and public domain works;
- sustainable in material selection including life cycle costing and provenance;
- Consistent with heritage elements within our city centre; and
- Sensitive to the various precincts, activity nodes and distinctive places within our city centre.

1.3 Overview

Results from the Hunter street Revitalisation Masterplan Strategic Framework (2010) and draft Newcastle Urban Renewal Strategy (2012) identifies key changes to the city centre streetscape were:

- creating a pedestrian friendly city;
- greening the streetscape;
- separated cycleways throughout the city;
- create a public domain that is designed for easy wayfinding; and
- attracting people back into the city to live, work and play.

1.4 Scope

The City Centre Public Domain Technical Manual sets guidelines, design coordination and material palettes for all public domain, streetscape and maintenance works in the city centre. The manual has been written for a broad audience and is intended to be used by designers, developers, building owners and their agents (such as urban designers and landscape architects). In addition, manual will be used by planners and other staff within The City of Newcastle to assess proposed development applications within the city centre boundary.

1.5 Referenced documents

Draft Newcastle City Centre Development Control Plan (2014)

The City of Newcastle Heritage Strategy (2014)

Newcastle Heritage Policy (2013)

Newcastle Urban Renewal Strategy (2012)

Newcastle Development Control Plan (2012)

Newcastle Local Environmental Plan (LEP) (2012)

The City of Newcastle Placemaking Policy (2012)

Newcastle Street Tree Master plan (2011)

Outdoor Dining Policy (2011)*

Hunter street Revitalisation Final Strategic Framework (2010)

Urban Forest Policy (2007)

The City of Newcastle Public Art and Placemaking Policy (2002)*

**Proposed for review in 2014/2015*



Figure 1 - Newcastle development control plan

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2.0 Process Overview

2.1 How do I select items for a project?

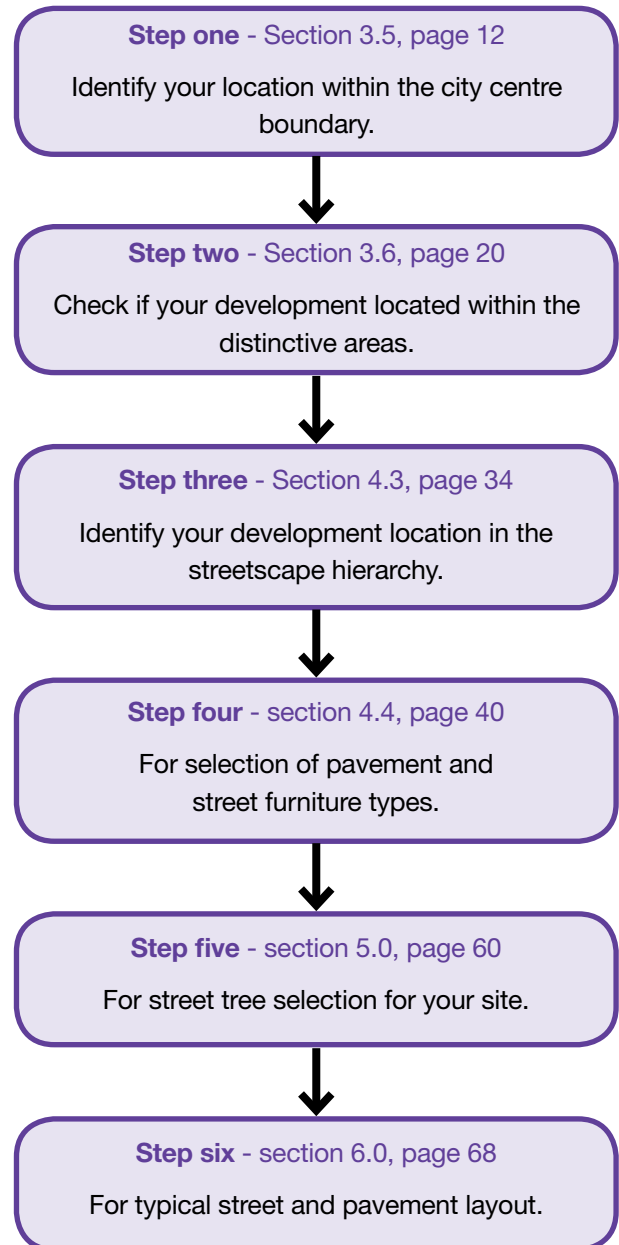
All items in this manual are suitable for use for the three precincts within city centre area. Selection of items, e.g. paving type is to be from this document. If one development falls within the distinctive areas you are required to work with Council officers to develop bespoke element details.

To support the various items within the manual Council is developing a suite of standard drawings to be found at the following link:

www.newcastle.nsw.gov.au/building_and_planning/planning_controls/standard_drawings

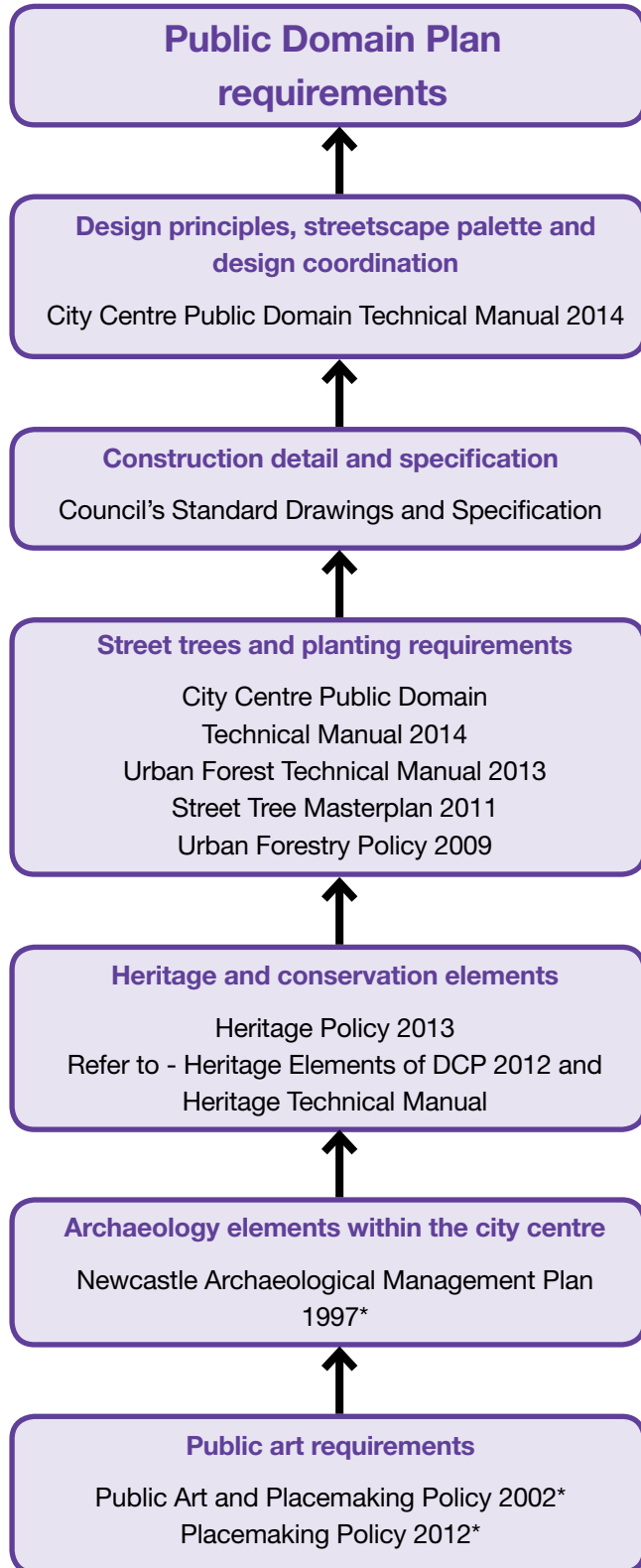
2.2 How to use the Technical Manual

The following steps provide a step by step guide to using the manual.



2.3 Documents to reference

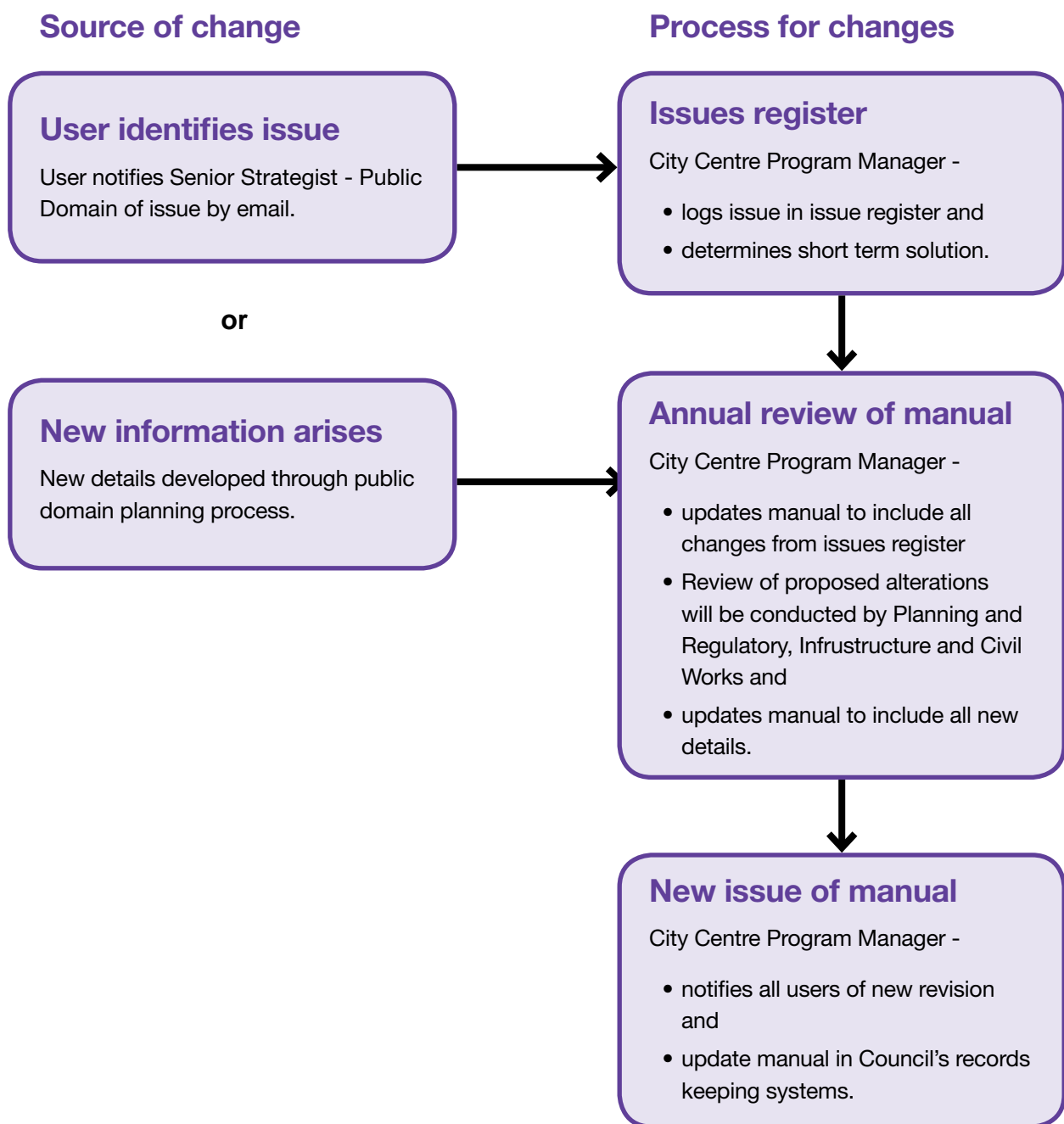
The following documents will guide the public domain plan for your development.



**Proposed for review in 2014/2015*

2.4 Revision process

This manual will be reviewed annually by the City Centre Program Manager. Requests for amendments can be made year round to the Senior Strategist – Public Domain as per the process outlined below.



2.5 Sample issues register

Date	Proposed Change	Description	Change Requested By	Priority	Status	Actioned
xx/xx/xx	Seating Type 2 is no longer in production	Seating Type 2 (S2) Streetscape	Bloggs Building Services	High	Open	-

3.0 City Wide

3.1 The importance of streetscape and the public domain

Streets are fundamental to the form and function of the urban environment and will play an important role in the city centre public domain amenity.

Newcastle streetscape currently shares a diverse mix of uses such as pedestrian activity, active shop fronts, alfresco dining, cycling and vehicular traffic and parking. Currently, Newcastle has a focus on facilitating vehicle movements and parking, resulting in streetscape that is less friendly to people and impacting pedestrian activity and presence in our streets.

The Hunter street Revitalisation Strategic Masterplan Framework (2010) and the draft Newcastle Urban Renewal Strategy (2012) also highlighted this issue. The strategies place an importance on creating an attractive street for people to use, a place based approach to design and creating legible streetscapes to aid wayfinding in the city centre. It is envisaged by 2036 there will be 3,000 university students, 10,000 additional jobs and 6,000 new dwellings within the city centre. This will place a greater importance on places for people to meet and socialise helping to reinforce the liveability of our city environment.

The City Centre Public Domain Technical Manual recognises and promotes the need for a more balanced approach to our city street design that will improve public life and accommodate our growing city centre population. The manual will promote positive pedestrian and cyclist amenity whilst catering for public transport and vehicular functions in the city centre.

The City Centre Public Domain Technical Manual promotes the following:

- a streetscape that is more accessible and safer to all users;
- a visually attractive streetscape that integrates street trees and landscape treatments to create natural shade and a greening of our city;
- attractive streetscapes and public domains that provide a setting and backdrop for vibrant street life and activity for all lifestyles and uses;

- sustainability in material selection including life cycle costing and provenance ;
- acknowledging the distinctive character of the three precincts by allowing the material palette to reflect their individual character;
- sensitivity to the various precincts character, activity nodes and distinctive places within our city centre;
- a healthy and well connected community;
- encourages pride and ownership of our city streets and public domain; and
- incorporate existing heritage elements in the city centre.

The delivery of high quality public domain spaces provides good amenity for people and encourages use of city spaces. The creation of a higher quality, liveable street environment encourages activity which improves the safety, economic outcomes and promotes our city as a vibrant place for people to live, work and play.

3.2 Sustainability in our city

Streets occupy a large part of the city's area. This provides significant opportunities to contribute to sustainability outcomes to create a positive environment for the people.

The City Centre Public Domain Technical Manual will achieve this by:

- selecting materials that aim to have low embodied energy, high recycled content, local governance, high durability, long service life and low maintenance.
- creating a green streetscape through increasing tree planting and landscape treatments aims to reduce the extent of hard surfaces and improve canopy cover, biodiversity, microclimate and the pedestrian environment.
- integrating Water Sensitive Urban Design (WSUD) principles into streetscape and landscape areas within the city centre. With consideration of passive watering of trees from street gutters, hard stand areas, porous paving and trees.

3.3 Active connected streetscape

The City Centre Public Domain Technical Manual will promote the active and connected streetscape by:

- providing a connected and legible pedestrian and bicycle network that facilitates safety and accessibility for all users;
- providing amenities such as seats, bubblers and bike racks to support pedestrian, public transport, bicycle and vehicle use; and
- ensuring universal design and accessibility for ease of use and access to destinations for all people, particularly those with visual or mobility impairments.

3.4 Heritage conservation area

The Newcastle city centre is listed as a Heritage Conservation Area in the Newcastle LEP 2012 and is regulated through development controls in the DCP and Heritage Technical Manual. In addition, the City Centre contains many heritage listed buildings and features that will be respected and interpreted in public domain works in the city centre. The City Centre Public Domain Technical Manual will ensure:

- heritage elements within the city centre are acknowledged and where appropriate integrated into the design of the public domain and streetscape; and
- the reinstatement of heritage elements where appropriate and in consultation with Council Heritage Strategist.



City hall

3.5 City centre precincts

Newcastle city centre is characterised by a grid network of streets laid down by Henry Dangar in 1822. A predominance of long east to west road and railway connections reflects the elongated peninsula setting of the city centre. Hunter street is the main east to west connector within the city centre stretching 4 km in length.

Hunter street has traditionally been recognised as the premier main street of Newcastle and is the location of key city centre destinations such as, its abundance of heritage buildings is reflected in its Heritage Conservation Area status, boutique retail, government agencies, health organisations and cultural destinations. A number of public parks and plazas are also located in the city centre.

The future of Newcastle city centre will be a vibrant regional hub for business, education, residents and visitors through three distinctive precincts.

The selection of materials and furniture relates to the following precincts -

- West end - refer to page 14
- Civic - refer to page 16
- East end - refer to page 18

The City of Newcastle will also be preparing public domain plans within the city centre public domain boundary (Refer to Figure 2) for each precinct that will provide an implementation plan for Newcastle city centre improvements.





Figure 2 - City centre public domain boundary*

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West End precinct

The West End precinct is located between Tudor Street and Union Street (Refer to Figure 3). The West End is the western gateway into Newcastle city centre. The West End precinct has great potential for improvement, to become a more inviting environment for pedestrians and businesses. Today we are starting to see an emerging alternative culture with street art, place making activities and a strong small business community. Dealing with the large building allotments and car domination of the streetscape will assist amenity improvements in the area.

In 2014 Minister for Transport and the Hunter, announced the first stage of the heavy rail line truncation at Wickham station. The NSW Government has made a commitment to start early works on the project by the end 2014. The Wickham project will provide a fully-accessible transport interchange that will link rail, light rail, buses and taxis for the city centre.

This project along with changes proposed in the draft Newcastle Urban Renewal Strategy will see an exciting transformation of the West End precinct into the Newcastle central business district over the long term. The proposed public domain plans for this area will help position the west end as the city's future CBD, implementing improvements such as a tree lined road network, increased pedestrian spaces, public transport hub, allocated bike lanes, and promoting specific physical improvements around Birdwood Park and Cottage Creek. This is also supported in the draft Newcastle City Centre Development Control Plan (2014), which highlights West End and Parry Street as character areas with in the West End precinct. The design principles set out within this document support the long term vision for the West End, to incorporate the new transport interchange into a pedestrian friendly streetscape, with the surrounding green and public spaces such as Birdwood Park and Cottage Creek, providing a inviting entry statement for the city. All public domain elements will need to cater for the increasing development of offices, commercial and residential spaces in the West end.



Mural by Adnate as part of Hit The Bricks Festival 2013. Stewart Ave, Maryville



Figure 3 - West End precinct*

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Civic precinct

The Civic precinct is located between Union and Darby Streets (refer to Figure 4). The Civic precinct is currently known as the administrative and cultural hub of Newcastle. It is home to the Council office buildings, Newcastle Art Gallery, Newcastle Library, Civic Theatre, Civic Park, Wheeler Place, Newcastle Museum and Honeysuckle.

Currently the Civic precinct is seeing the initial stages of change with small cafes and boutique shops opening within the precinct and Wheeler Place hosting a number of place making activities in the space during 2013/14. In 2013, the precinct also saw construction start on the new state court house complex, which is due for completion in early 2015. The University of Newcastle is developing a new city campus Newspace, at the corner of Hunter and Auckland Street, with the opening due for the first semester in 2017.

The public domain plan design for Civic will provide an implementation plan for the delivery of objectives laid out in the Hunter street Revitalisation Strategic Framework (2010), the Draft Newcastle Urban Renewal Strategy (2012) and the Draft Newcastle City Centre Development Control Plan (2014). The Civic precinct design will focus on strengthening the precinct as the main civic, educational and cultural hub of Newcastle and promoting specific physical improvements and linkages to Civic Park, Wheeler Place. These plans will strengthen future pedestrian north south linkages from Civic Park to Honeysuckle and further activate this area to create vibrant public spaces, lanes and through-site links. This will improve wayfinding and pedestrian friendly connections in the precinct.



City hall steps



Figure 4 - Civic precinct*
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East End precinct

The East End precinct is located from Darby Street to the foreshore and west of Newcastle Beach (refer to Figure 5). The key characteristics of East End include heritage buildings, tourism elements, the former Hunter street Mall and an increasingly vibrant streetscape bounded by the harbour foreshore, city beaches and the hilly topography. The East End's close proximity to transport, the harbour, Foreshore Park, Pacific Park and city beaches makes it an ideal locale for residents and a great destination for visitors.

The future of the East End will focus on fostering the growth of residential development, boutique small retail, cafes, tourism and adaptive reuse of existing building stock. Developments like the former Royal Newcastle Hospital site provides an example of this mixed development for the East End precinct. This will be reinforced with the future redevelopment of various buildings within the former Hunter street Mall.

The Public Domain Plan design for the East End will provide an implementation plan for the delivery of objectives laid out in the Hunter street Revitalisation Strategic Framework (2010), the draft Newcastle Urban Renewal Strategy (2012) and the Draft Newcastle City Centre Development Control Plan (2014).

The former Hunter street Mall area public domain plan will focus on encouraging widened footpaths and the creation of vibrant spaces for outdoor dining and activity. The second public domain plan will be focused on the redesign of Pacific Park. This design will integrate the proposal of the Light Rail terminus to create a green space for passive and active recreation, and to develop strong connections to Foreshore Park, Newcastle Beach and Bathers Way.

Respecting heritage is important to the East End. The Newcastle East Heritage Conservation Area is located within the East End precinct. This area has been characterised by its intact heritage streetscape and by the number of state significant heritage buildings and items such as Newcastle Post Office. This unique characteristic provides a record of the early development of Newcastle, which needs to be maintained.



Hunter street mall



Figure 5 - East End precinct*

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3.6 Distinctive places in the city

In draft Newcastle Urban Renewal Strategy (2012) and draft Newcastle City Centre Control Plan (2014) highlight the importance of distinctive places within the city. The draft Newcastle City Centre Development Control Plan (2014) includes a number of character areas within the three main precincts for the city centre. These character statements have principles for developments and are place-specific. In order to provide important direction for the development controls and built form guidelines.

Key sites within the city centre are identified in the draft Newcastle Urban Renewal (2012) (refer to figure 6). These locations require a special treatment rather than the standard approach applied to Hunter street and secondary streets. (refer to figure 9, page 29)

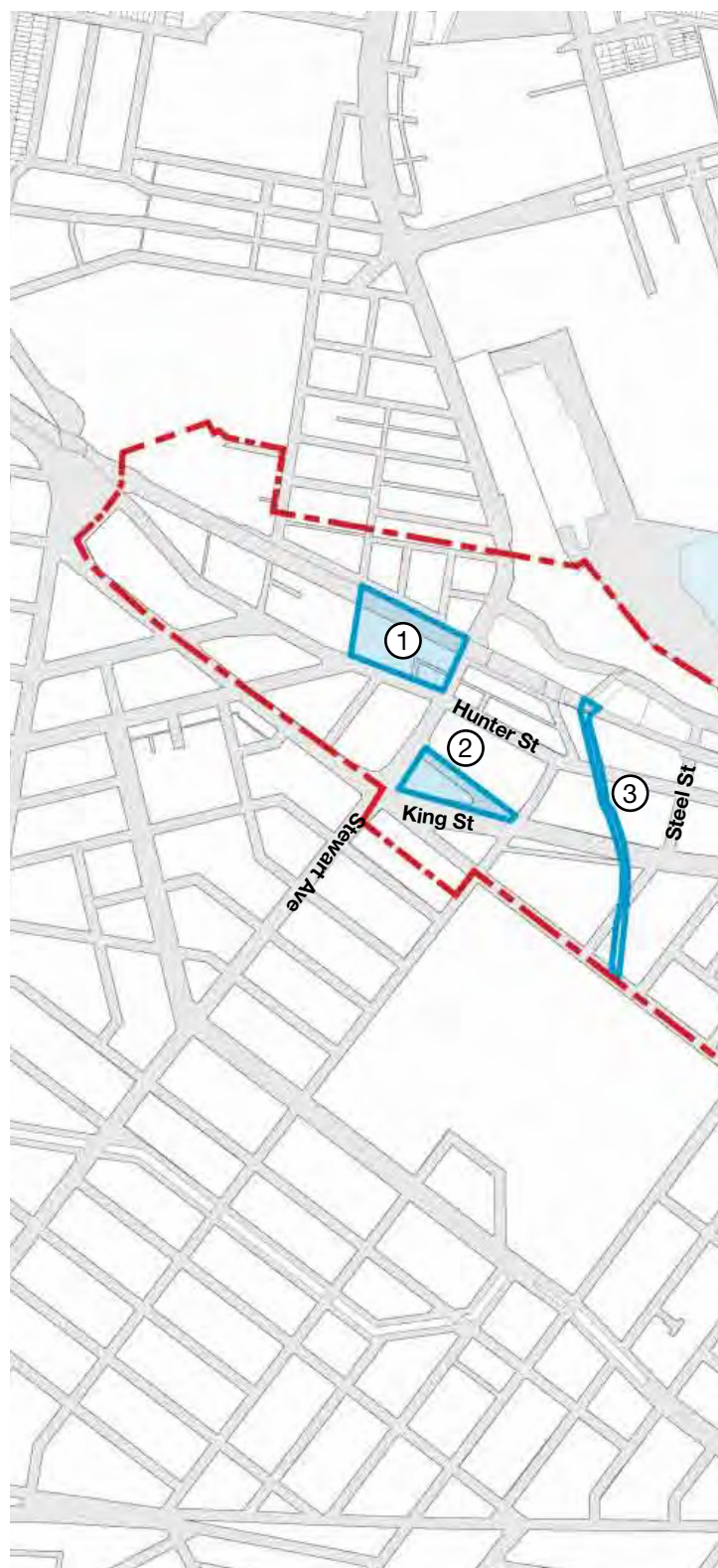
The character of distinctive places can be expressed through customised designs for street lighting, furniture, paving inserts and patterns as well as public art. It is imperative, however, that continuity of some base materials should be maintained to enhance legibility in the streetscape.

The distinctive places identified in the draft Newcastle Urban Renewal Strategy (2012) and they are:

- 1 - The Store site and surrounds
- 2 - Birdwood park
- 3 - Cottage creek
- 4 - The emporium and Devonshire street
- 5 - Civic
- 6 - Crown street
- 7 - Hunter street mall

The Hunter street Strategic Masterplan (2010) also identified an additional distinctive place for the city centre, namely:

- 8 - Pacific park



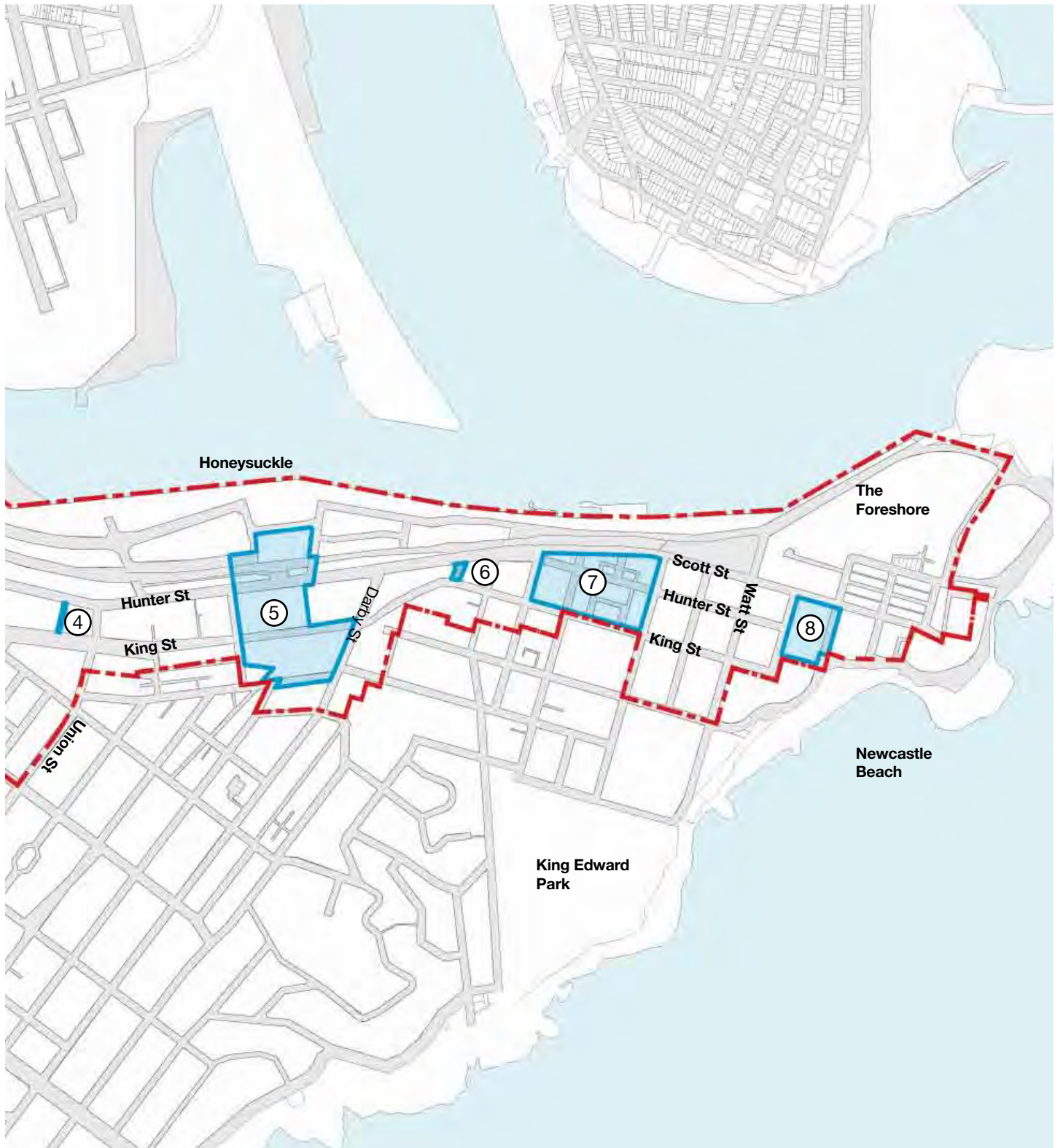


Figure 6 - Distinctive places*

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3.7 Public art

With the significant development of the city centre precincts over the coming years, public art will become an integral part of Newcastle's streetscape and public domain. The future of city centre public art will aim for new permanent works of art that promote inspiring, singular qualities and have landmark, placemaking and potential way finding qualities for our city centre streetscape and public domain spaces. The public art role within our city centre can range from strong bold works of monumental scale to small intricate or delicate works that add texture and intimacy to the urban experience. Public art will create opportunities to integrate a cultural layer into the overall design of the public domain and enhance private development in the city precincts.

Engaging developers, architects and landscape architects in incorporating elements of public art into facades of buildings, entry spaces and open space within the development will help make Newcastle a interesting, distinctive place that celebrates art and culture. The draft Newcastle City Centre Development Control Plan 2014 encourages this approach and developments over 45m in height should allocate 1% of the building value to art works in the public domain.

Public art can be incorporated into essential infrastructure elements or could be used as marker points for an area of significant connection within the city centre. The development of strong north/south view and access corridors will be incorporated into the future public domain works from Hunter street to Honeysuckle. Various art works in these locations will enhance and strengthen wayfinding cues for people to navigate the different city precincts and the new north south corridors.

In the short term or during periods of construction, Council will encourage installation of temporary public art, furniture, street art or events that could help revitalisation or alleviate the inconvenience during construction phases. It will also allow people in the city to define and rediscover parts of the city that are evolving into new and exciting spaces for people to be in. Temporary art can create further opportunity for Council to encourage community partnership projects.





Margel Hinder James Cook Memorial Fountain 1966
Civic park, Laman street, Newcastle

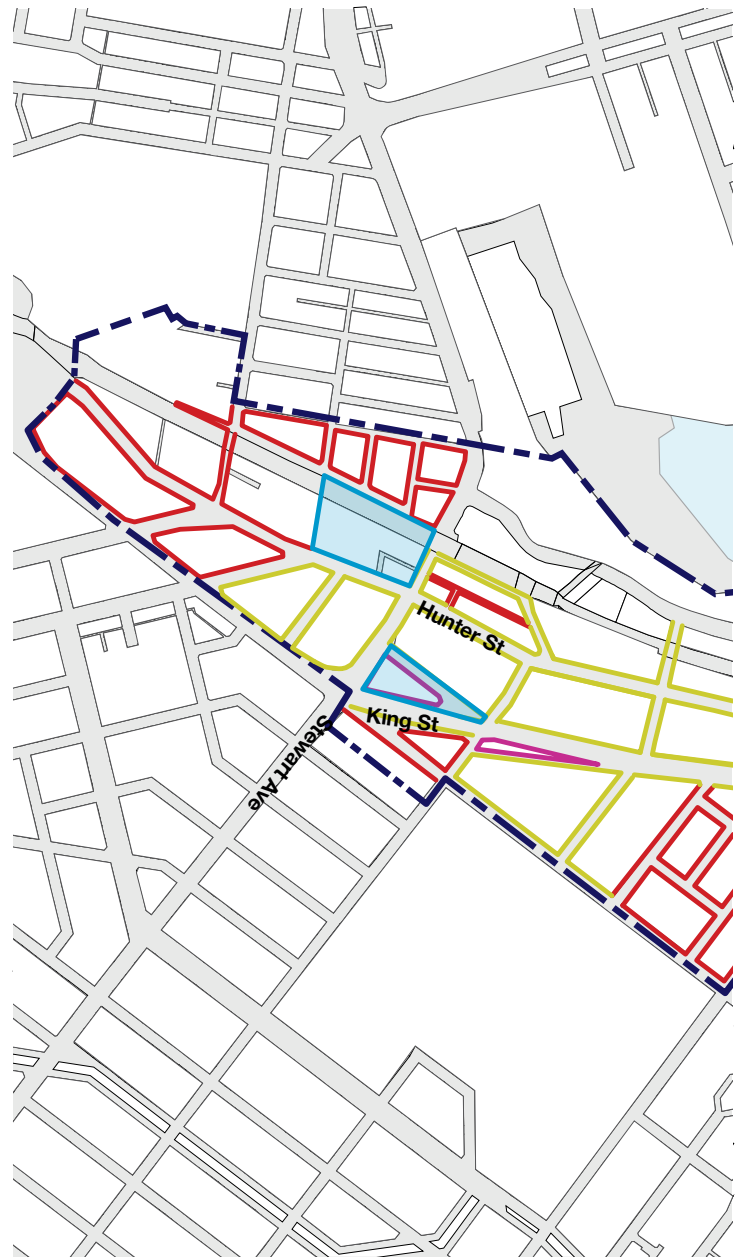
3.8 Lighting

Newcastle is a different place after dark with lower levels of activity and increased anti-social behaviour. Good lighting should enhance the economic and social outcomes desired from our after dark city centre. In doing this, it should produce positive changes that enrich people’s experiences and enhance their comfort, safety, points of interests and wayfinding.

The issues of safety and amenity cannot be separated. People’s perceptions of safety are influenced by factors such as visual comfort, way finding, and the ease with which objects and places can be recognised. At night, the presence of artificial light affects these factors. Lighting determines our ability to negotiate the city and perform tasks comfortably, efficiently and safely within the city centre.

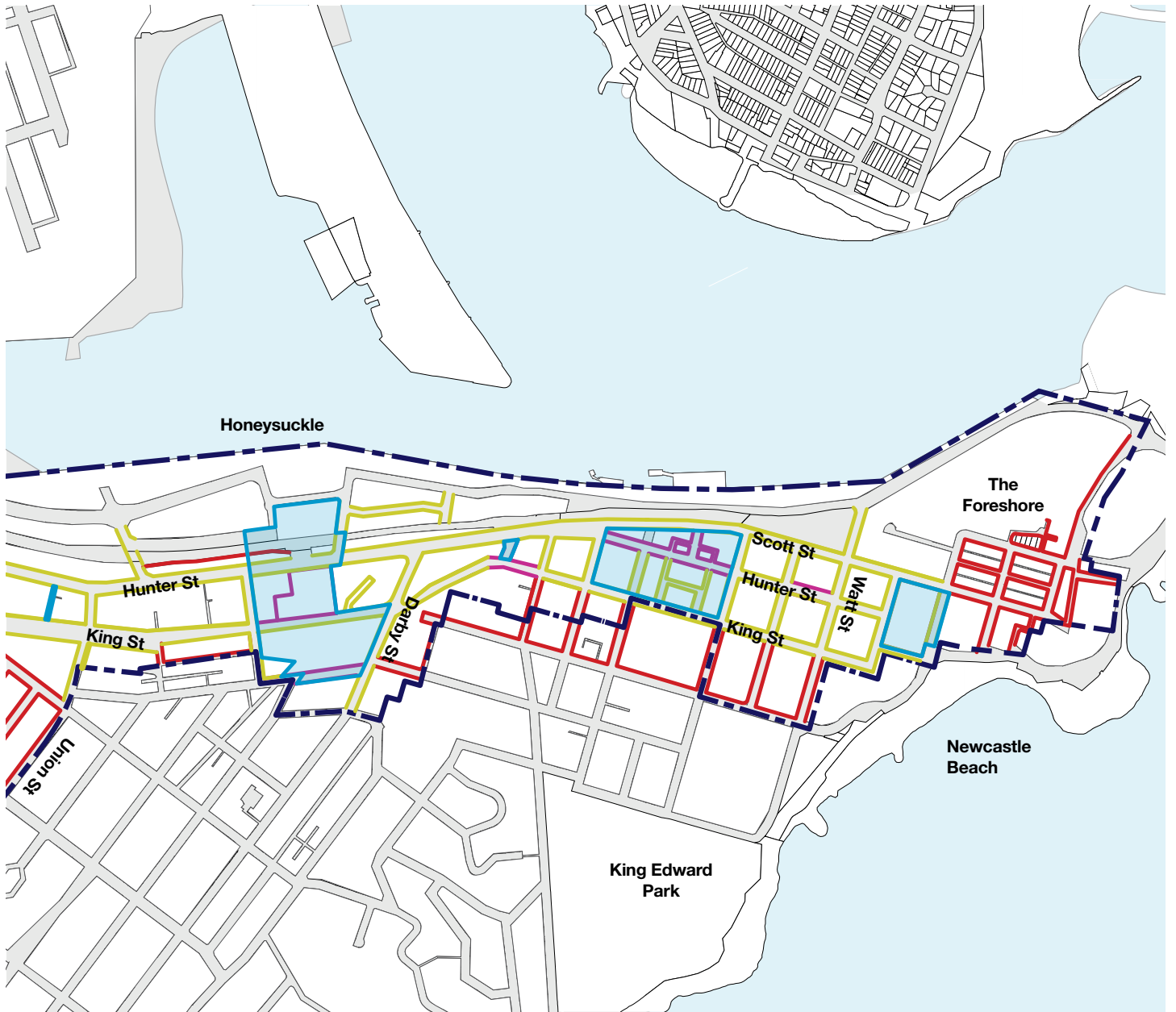
The primary objective for lighting within the City Centre Public Domain Technical Manual is to improve the quality, consistency and efficiency of lighting our streets and other public spaces (refer to figure 9) The City Centre Public Domain Technical Manual will provide direction for public and private external lighting throughout the city centre. The manual will be a helpful resource for designers to outline general street lighting and up lighting, but it does not prescribe specific applications for projects, precise measurements or technical details.

While lighting for traffic is of importance the manual will only focus on lighting for pedestrians to create streets that will be comfortable at a human scale. A holistic approach to lighting design for the city centre will look to coordinate public and private lighting for footpaths, especially around bars and restaurants with appropriate uplighting of street tree foliage, landmark and heritage buildings. Council has in place a Walk Smart program to provide well lit pedestrian pathways through key areas of the city. Lighting aims to give a sense of scale to distinctive sites and to provide a high standard of illumination along streets in popular areas. Lighting will be designed to ensure the colour and intensity of street lighting is compatible with footpath activity at a pedestrian scale.



Functional hierarchy of street pedestrian lighting

1. Main streets
2. Distinctive places
3. Secondary streets
4. Residential streets



Legend

- Distinctive place
- Main streets
- Council owned lights
- Residential street

Figure 9 - Lighting hierarchy *

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3.9 Heritage

Newcastle city centre and Newcastle East Heritage Conservation Area contain a rich mix of commercial, retail and residential buildings, creating the backdrop for a cityscape of distinctive character and heritage significance. The city has played an important role in the history of Australia as a place of convict settlement from 1801. As such, Newcastle's long history is reflected in the range of historic buildings, sites and landscape features that reveal its unique identity. A number of buildings are of national significance because they are associated with Newcastle's convict history including Rose Cottage on Bolton Street (c1828), Clarendon House (1830) and the military barracks and hospital within the James Fletcher Hospital (1840). East of Brown Street, the city layout and subdivision pattern is a key historical element that dates from 1828 and gives a fine grain to the urban core. Newcastle is also a city with a rich archaeological heritage that has the potential to yield insights about the history of one of Australia's oldest cities.

Further east of the city centre is the Newcastle East Heritage Conservation Area, a significant historical landscape shaped by the interaction of people with the local environment, by the harbour and the sea and the influence of human activity over the millennia. Newcastle East contains important evidence of Aboriginal life before the arrival of colonial settlement in sites at the Convict Lumber Yard and The Foreshore Park.

Newcastle East has a unique and interesting character associated with the maritime and industrial history of the city. As a residential area it is significant for its streetscapes of two and three storey terraces dating from the mid-19th to early 20th centuries. The social history of Newcastle East makes this place a community and home for many. Recreation facilities like the Ocean Baths, Nobbys Beach, and Foreshore Park add to the dynamic and eclectic nature of Newcastle East.

Well designed development and improvements to the public domain in Newcastle City Centre (refer to figure 7) and Newcastle East Heritage Conservation Area (refer to figure 8) will reinforce this distinctiveness and city character.

Heritage elements contained in the Newcastle DCP 2012 and the Heritage Technical Manual, as well as the Newcastle Archaeological Management Plan.



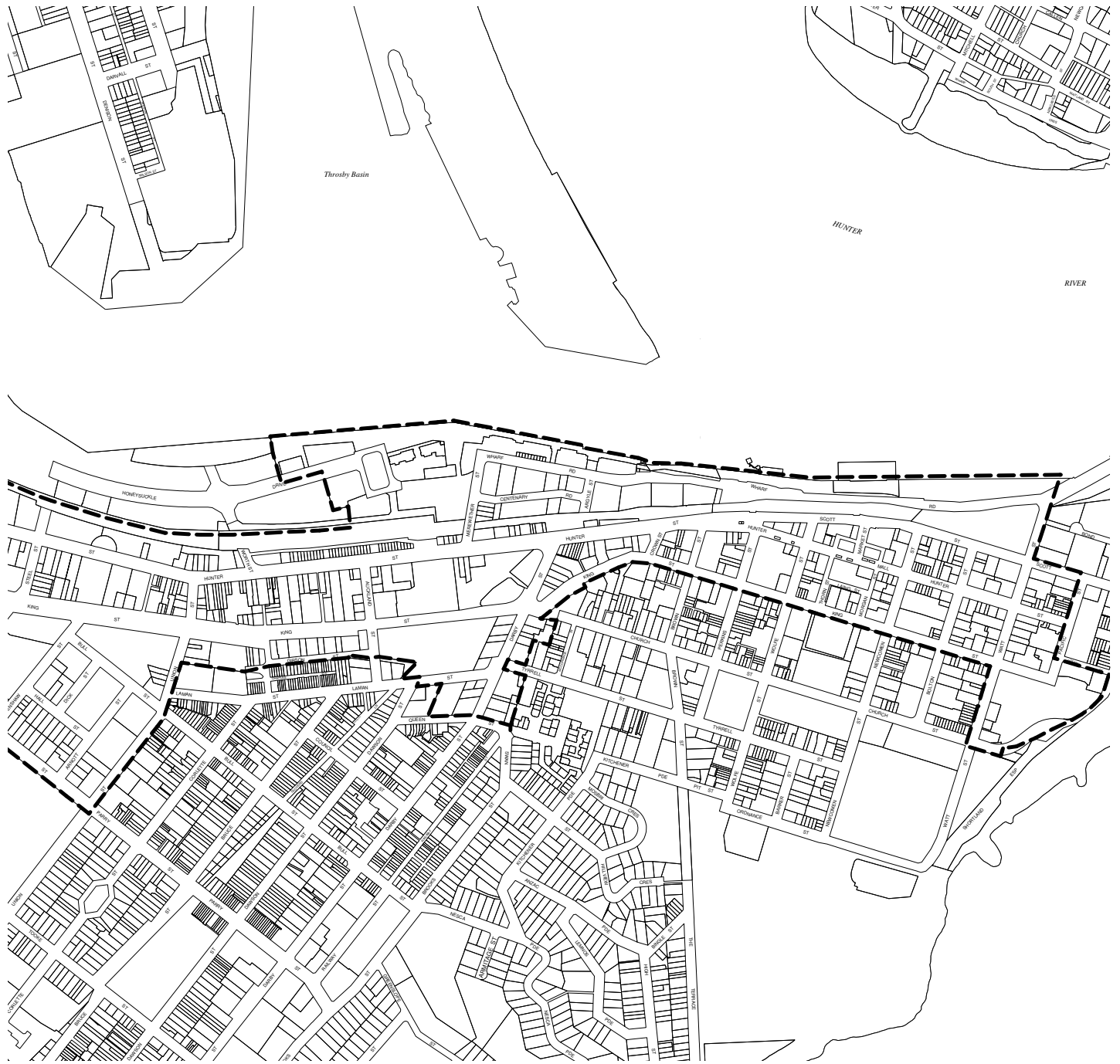


Figure 7 - City centre conservation area plan



3.10 The importance of street trees

Trees are an important urban asset – providing environmental, aesthetic, cultural, wayfinding and economic benefits for the city centre. Trees also offer a contrast with the building facades that dominate most city streets soften traffic noise, screen unwanted views, reduce glare and provide shade during the warmer months of the year.

The overall objective of street trees within the city centre is to provide a multipurpose infrastructure asset that achieves key goals outlined in the Hunter street Revitalisation Masterplan Strategic Framework (2010). The main goal being to integrate green infrastructure into the streetscape to improve the micro climate, amenity and wayfinding in our city. Tree lined streets, green entrances into key precinct locations, open spaces and gardens will give our city a structured and cohesive green canopy.

Both the Hunter street Revitalisation Masterplan Strategic Framework (2010) and in the draft Newcastle Urban Renewal Strategy (2012) recommended avenue tree lined streets and greening our streets as important goals for revitalising the city. These key recommendations also reflect the Newcastle Street Tree Masterplan (2011) which was an action from the Urban Forest Policy (2007) to further develop street tree establishment, maintenance and processes.

Council has a great opportunity to place trees at regular intervals along the streetscape. This will help create the street tree ‘boulevard’ effect highlighted in the Hunter street Revitalisation Masterplan Strategic Framework (2010).

The location of trees within our city warrants a multi-disciplinary approach to integrating urban design and street tree selection, which should be considered during the development of the various streetscape and public domain plans for the city.

Selection of the preferred tree species will be from the species matrix in the Newcastle Street Tree Master Plan (2011). The species selected, whether native or exotic, will be assessed on their suitability to the precinct location and future space allocation within

the streetscape. Further investigation into the soil conditions will be required before the final species is agreed.

Trees are an important long lived asset for our city may outlive several surface changes it is important in tree selection that adequate space from awnings, intersections and services are taken into consideration for healthy growth of the tree during its life time. Street trees have a life cycle and will need to be replaced or relocated as determined by Council’s city arborists.



4.0 City centre palette

4.1 Material palette selection

The palette of materials in this manual was determined by the following selection criteria.

4.2 Selection criteria

The City of Newcastle used the following five selection criteria to select the various elements for the City Centre Public Domain Technical Manual.

Character and design

- Reinforce a visual character for the city centre precincts;
- Provide a unified streetscape that showcases high quality, durable and timeless design
- Create of a suitable streetscape setting to complement city buildings
- Products to reflect the level and type of activities and uses
- Provide materials and colours that reflect and reinforce the heritage attributes of the city centre.

Functionality

- User comfort
- Meets(Disabilities and Discrimination Act (DDA) requirements
- Crime Prevention through Environmental Design (CPTED) principles
- Safety for all users

Availability

- Lead times for supply
- Supplier location
- Ability to match discontinued products
- Ease of replacement

Life cycle cost

- Cost of product including installation
- Quality (design life of product under normal conditions)
- Maintenance (ongoing cost to maintain to acceptable condition)
- Waste cost or disposal cost (if applicable)
- Waste minimisation and ability to be recycled
- embodied energy
- fair trade

Maintenance

- Maintenance program
- Ease and availability of parts, fixings + construction
- Ease of cleaning and handling
- Ease of removing graffiti and chewing gum
- Work Place Health and Safety (WHS) consideration
- Resistance to environmental elements and vandalism
- Utility within the streetscape



4.3 Streetscape hierarchy

Streetscape type 1 - distinctive places

Key sites in the city centre have been identified as *distinctive places* (refer to figure 10). These locations require special treatment rather than a standard approach to Hunter street and secondary streets.

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

Streetscape type 2 - Hunter street

The selection of a high quality palette of materials that respond to aesthetic requirements befitting a public domain area of importance for the city. The high volume of pedestrian, commercial and transport uses associated with the main street, areas requires improved amenity and a strong connection to the distinctive places.

Streetscape type 3 - North/South Streets connecting with Hunter street

A high quality, durable palette of materials has been selected that is appropriate for the north/south streets connecting to Hunter street. The materials palette complements and responds to the level of amenity appropriate for the connecting streets off our main street. Given the pending removal of the heavy rail line, north south connections from King street to the harbour will increase in importance and improved wayfinding along these thoroughfares will be essential.

Streetscape Type 4 - Minor streets






The selection of simple, durable and robust palette of materials appropriate for secondary streets that complements the distinctive places and Hunter street palettes.

Streetscape Type 5 - Residential streets

A simple, durable and robust palette of materials appropriate for residential streets with lower levels of pedestrian volume and commercial daytime activity. Pavement selection should reflect the heritage buildings within the immediate context where appropriate.



Legend

-  Streetscape Type 1 - Distinctive places
-  Streetscape Type 2 - Hunter street
-  Streetscape Type 3 - North/south streets connecting with Hunter street
-  Streetscape Type 4 - Minor streets
-  Streetscape Type 5 - Residential streets

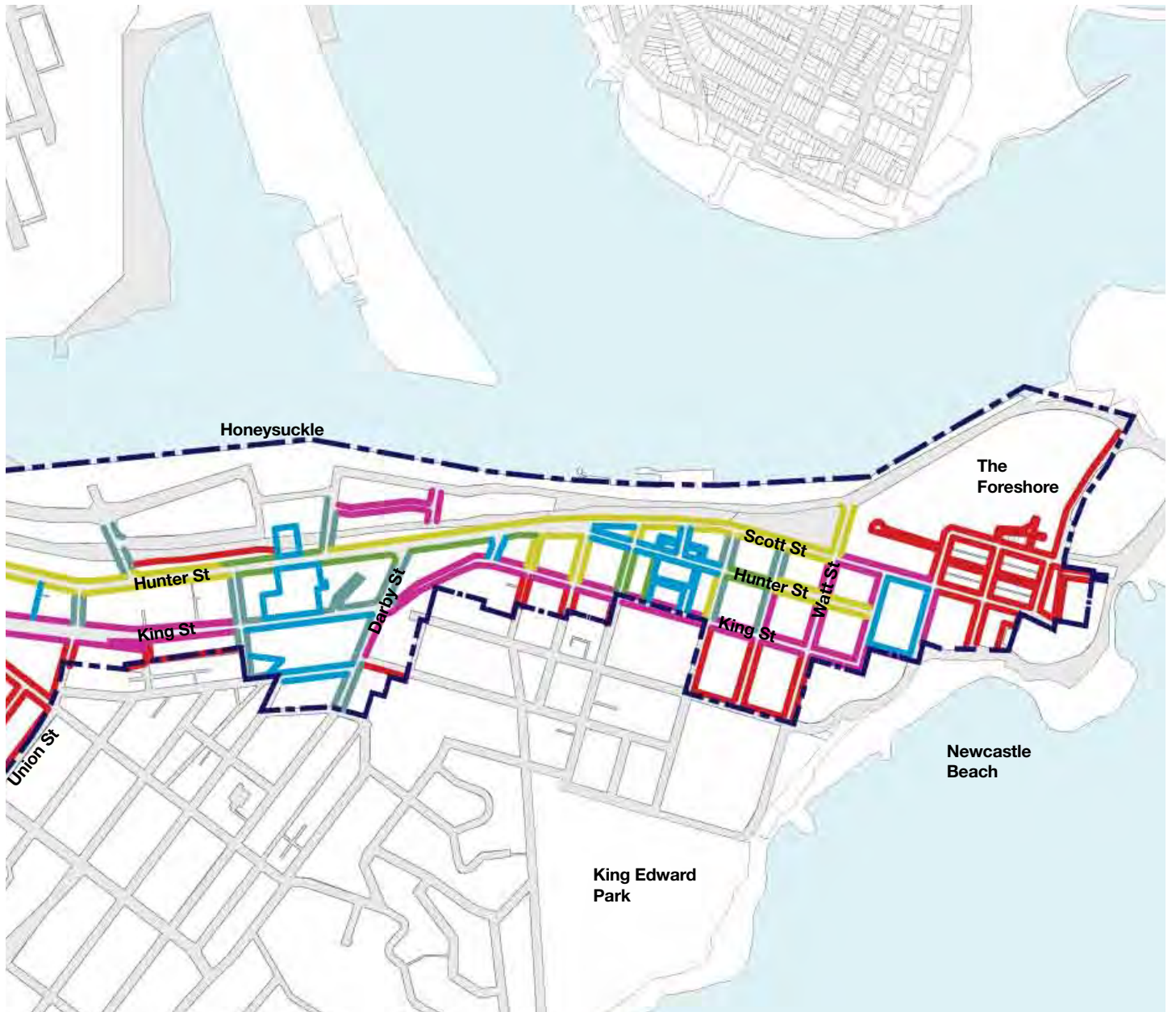


Figure 10 - Street hierarchy*

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West End precinct - Pavement treatments layout

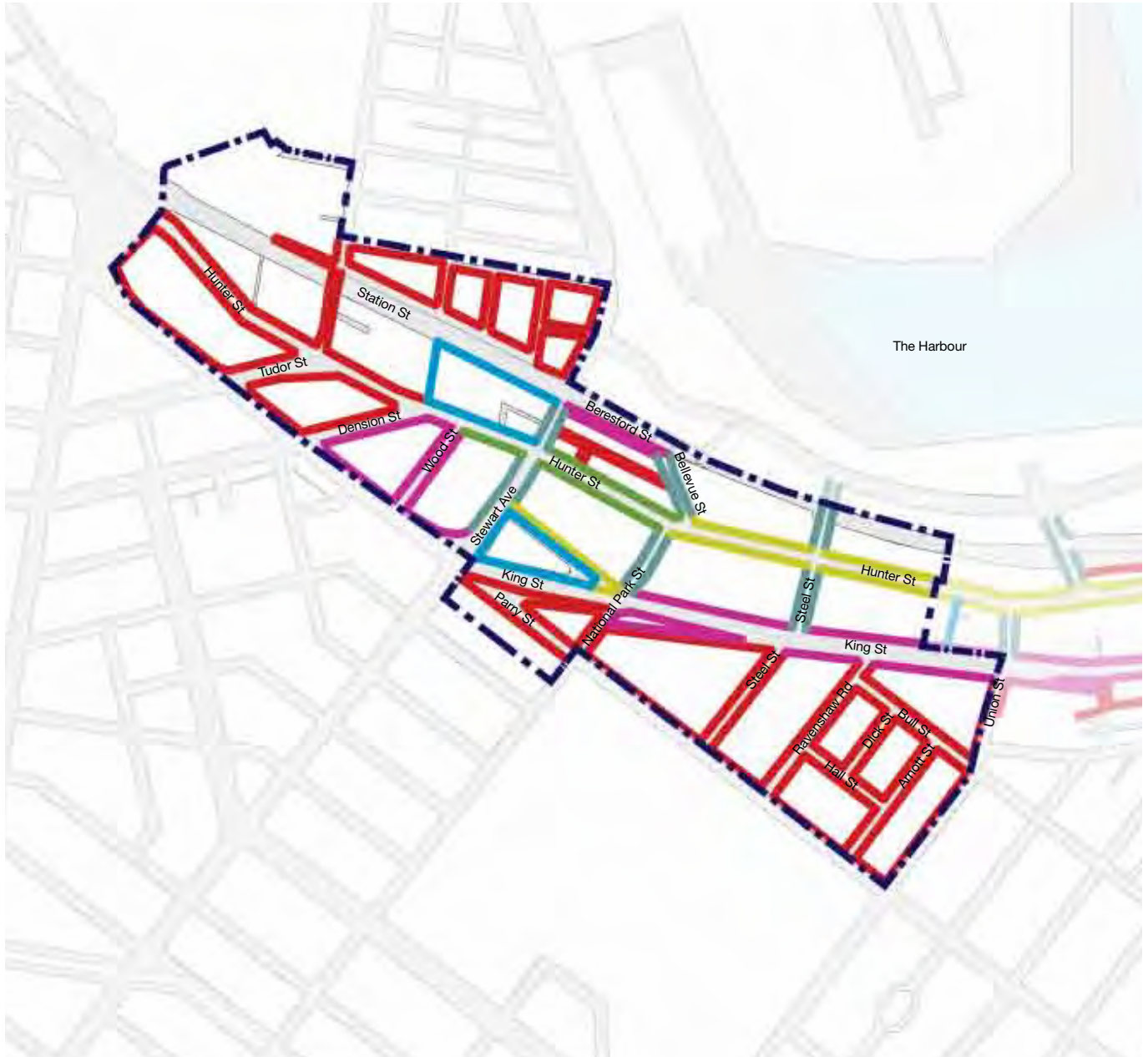


Figure 11 - West End precinct paving treatment plan*

**This plan is to be printed in colour*

Legend

- Pavement type 1 - Distinctive places
- Pavement type 2 - Hunter street high pedestrian areas
- Pavement type 3 - Hunter street medium pedestrian areas
- Pavement type 4 - North/south connections
- Pavement type 5 - Secondary streets
- Pavement type 6 - Residential streets

Civic precinct - Pavement treatments layout

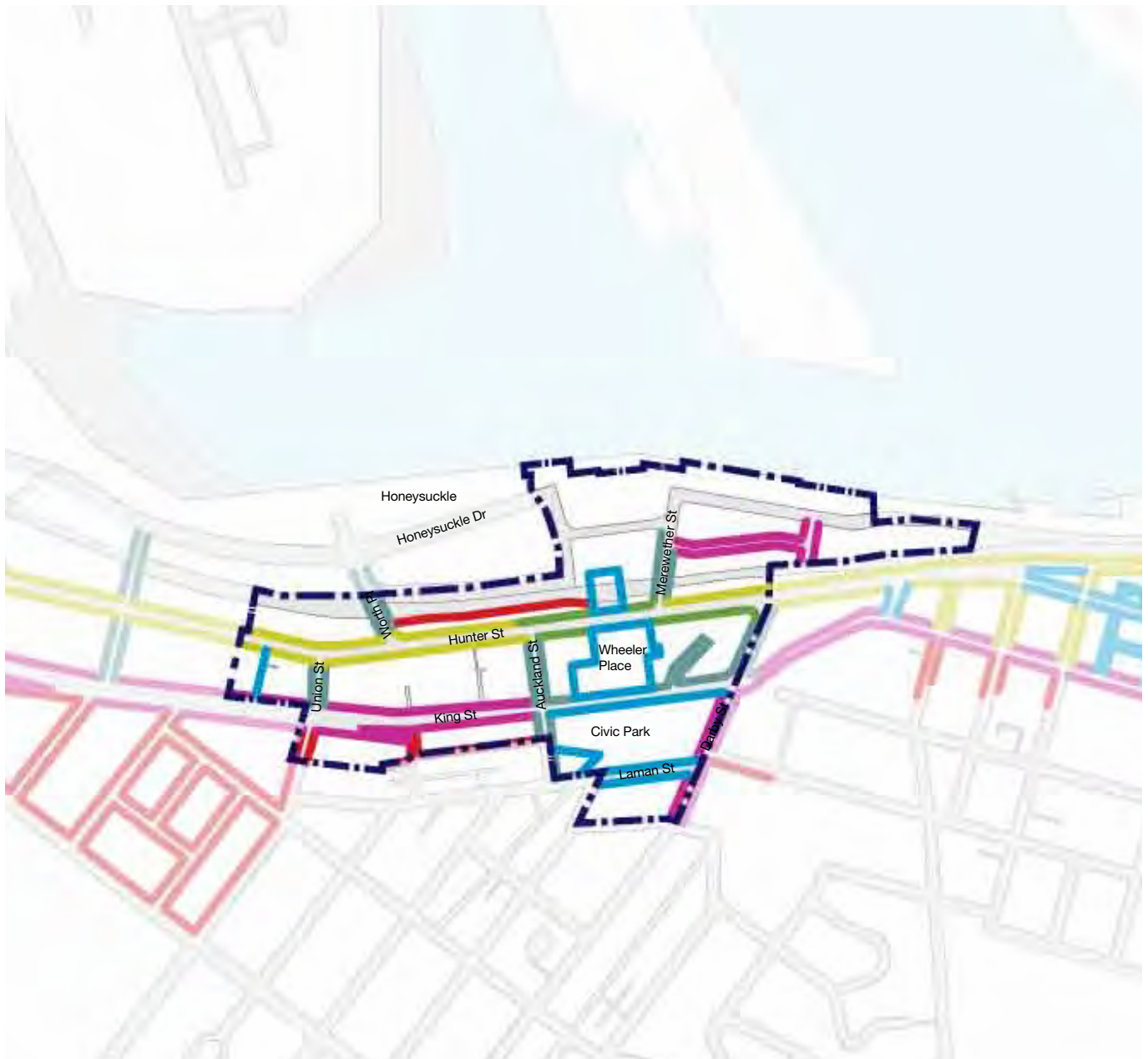


Figure 12 - Civic precinct paving treatment plan*

**This plan is to be printed in colour*

Legend

- Pavement type 1 - Distinctive places
- Pavement type 2 - Hunter street high pedestrian areas
- Pavement type 3 - Hunter street medium pedestrian areas
- Pavement type 4 - North/south connections
- Pavement type 5 - Secondary streets
- Pavement type 6 - Residential streets

East End precinct - Pavement treatments layout

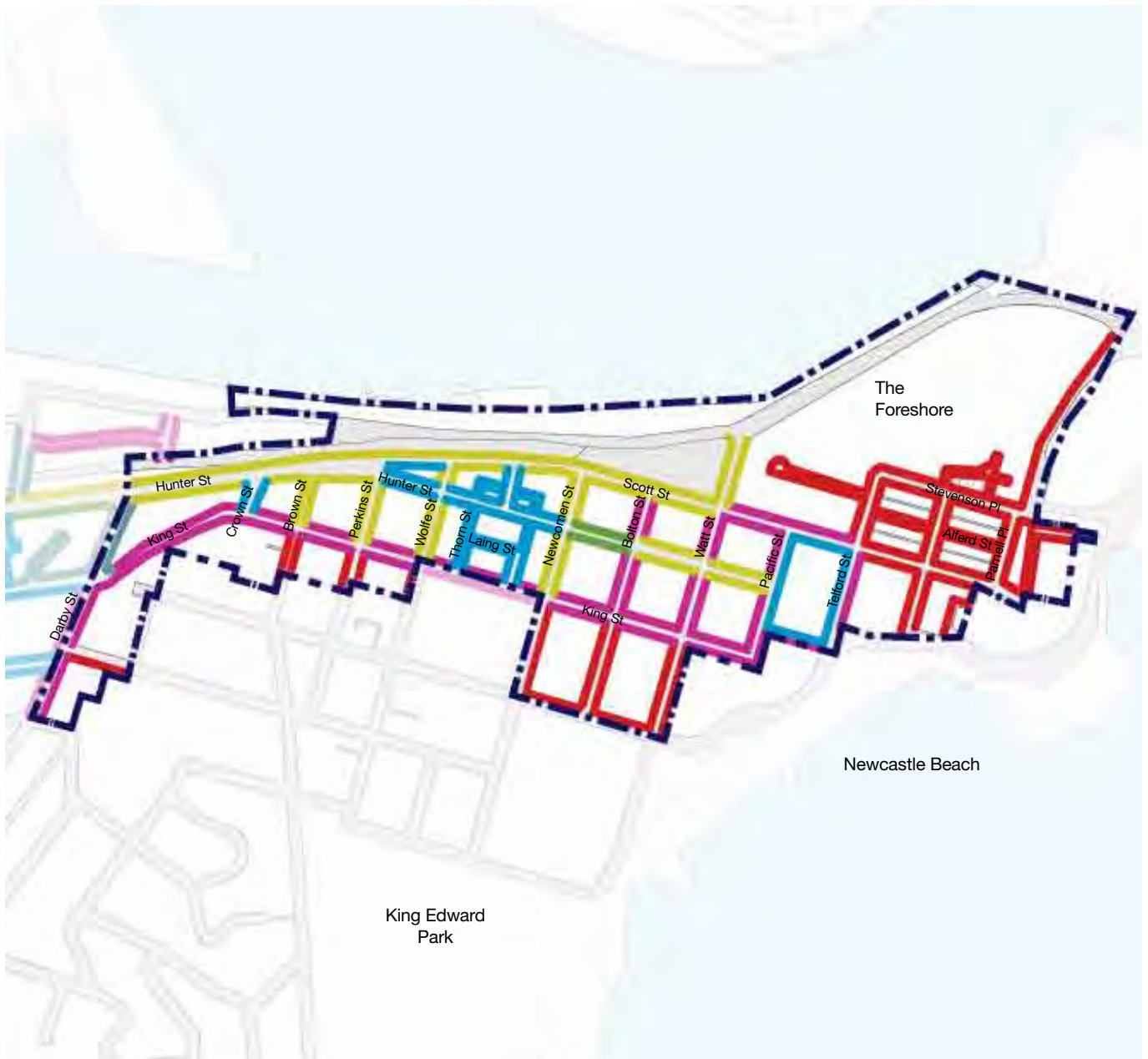


Figure 13 - East End precinct paving treatment plan*

Legend

- Pavement type 1 - Distinctive places
- Pavement type 2 - Hunter street high pedestrian areas
- Pavement type 3 - Hunter street medium pedestrian Areas
- Pavement type 4 - North/south connections
- Pavement type 5 - Secondary streets
- Pavement type 6 - Residential streets



4.4 Public domain palette

Pavement treatments

Pavement type 1 (PT1) stone

Specially design paving for specified areas only. Paving type 1 allows for unique paving designs to define distinctive places within the city centre. The various colours and finishes will help define and provide another layer of wayfinding for pedestrians

Material	Bluestone, basalt and granite unit paver - refer to section 7.0 for specific materials requirements
Size	A) 450 x 450 x 40 B) 600 x 450 x 40 C) 900 x 450 x 40 D) 900 x 150 x 40 E) 150 x 150 x 40
Finish	Scratched, honed and sandblasted
Pattern	-
Colour	Black, dark grey light grey, white
Supplier	Council approved
Detail reference number	A1405



** Image is only indicative*

Pavement type 2 (PT2) stone

Hunter street pavement treatment for locations adjacent to distinctive places and activity nodes located within the city centre

Material	Bluestone unit paver - refer to section 7.0 for specific materials requirements
Size	A) 450 x 450 x 40 B) 600 x 450 x 40 C) 900 x 450 x 40
Finish	Sandblasted
Pattern	Refer to section 6.0
Colour	Dark grey
Supplier	Council approved
Detail reference number	A1405



Pavement type 3 (PT3) stone and concrete

Secondary treatment for Hunter street and specific north/south connecting streets

Material	Bluestone unit paver and concrete
Size	450 x 450 x 40 and concrete
Finish	Bluestone - Sandblasted Concrete - Medium abrasive blast Refer to section 7.0 for specific materials requirements
Pattern	Refer to Section 6.0
Colour	Natural dark bluestone, concrete - grey aggregate mix - <ul style="list-style-type: none">• 50% blue metal, 20mm• 25% blue metal, 10mm• 25% quartz, 10mm
Supplier	Council approved
Detail reference number	A1409

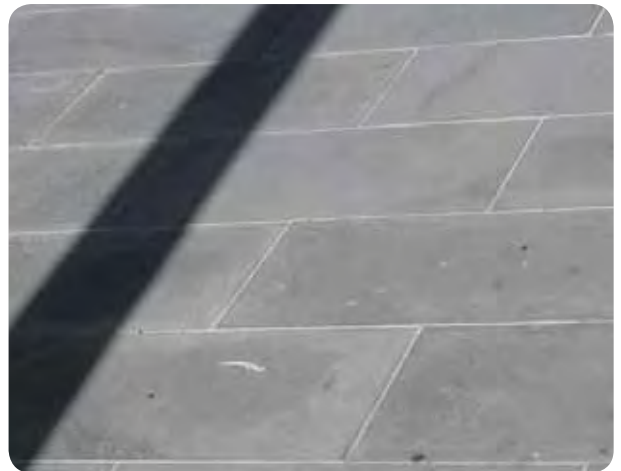


** Image is only indicative*

Pavement type 4 (PT4) stone

North /south streets connecting to pavement type 2 locations and distinctive places

Material	Bluestone unit paver - refer to Section 7.0 for specific materials requirements
Size	A) 600 x 300 x 40 B) 300 x 300 x 40
Finish	Sandblasted
Pattern	Refer to section 6.0
Colour	Natural dark bluestone
Supplier	Council approved
Detail reference number	A1405



Pavement treatments

Pavement type 5 (PT5) stone and asphalt

King street, minor street and other medium use streets within the city centre

Material	Bluestone unit paver and asphalt - refer to section 7.0 for specific materials requirements
Size	450 x 450 x 40 and asphalt
Finish	Unit Pavers to be Sandblasted. Asphalt
Pattern	Refer to Section 6.0
Colour	Natural Dark Bluestone
Supplier	Council Approved
Detail reference number	A1410



Pavement type 6 (PT6) asphalt

Residential streets within the city centre boundary

Material	Asphalt - refer to section 7.0 for specific materials requirements
Size	-
Finish	Asphalt
Pattern	Refer to section 6.0
Colour	Black
Supplier	Council approved
Detail reference number	A1403



Speciality pavement treatments

Pavement type 7 (PT7) interlocking paver

On street paving for tree surrounds / parking areas

Material	Permeable concrete - refer to section 7.0 for specific materials requirements
Size	88 x 181 x 60
Finish	Exposed aggregate
Pattern	-
Colour	Charcoal
Supplier	Council approved
Detail reference number	A1105



Pavement type 8 (PT8) porous concrete paver

On street paving / parking areas.

Material	Porous Concrete - refer to section 7.0 for specific materials requirements
Size	206 x 135 x 80mm
Finish	Exposed aggregate
Pattern	Stretcher bond
Colour	Charcoal
Supplier	Council approved
Detail reference number	A1105



Pavement type 9 (PT9) stone and brass

Way finding in ground signs in the street scape at intersections and distinctive places

Material	Brass/stainless steel and bluestone/ granite - refer to section 7.0 for specific materials requirements
Size	900 x 450 x 40
Finish	Varies
Pattern	Wording and graphics developed during detail design
Colour	Dark grey bluestone, white granite
Supplier	Council approved
Detail	To be approved by Council



Pavement type 10 (PT10) concrete

Preferred treatment for key pedestrian crossing to Hunter street and King street. Council to allocate this crossing location during the development of the various public domain plan for the city centre

Material	Concrete - refer to section 7.0 for specific materials requirements
Size	
Finish	Exposed and sand blasted
Pattern	Bespoke
Colour	Council approved
Supplier	Council approved
Detail reference number	To be approved by Council



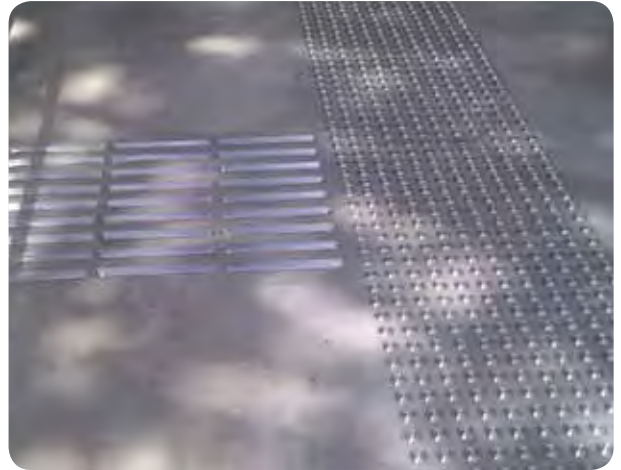
** Image is only indicative to the style that might be details during public domain planning*

Tactile pavement treatments

Tactile paving (TP1) distinctive area

Stainless steel tactile paving treatment to be used in distinctive areas only. Directional and caution tactiles - to conform with AS1428.4 2002 and are slip resistant to ASNZ 4586:1999

Material	316 Stainless steel- refer to section 7.0 for specific materials requirements
Size	Manufactures recommendations
Finish	Manufactures recommendations
Colour	Black (min 30% contrast to footpath treatment)
Supplier	Council approved
Detail reference number	A1201



Tactile paving (TP2) Hunter street and north/south crossing streetscape

Directional and cautional tactile paving - to conform with AS1428.4 2002 and are slip resistant to ASNZ 4586:1999

Material	Polyurethane
Size	Manufactures recommendations
Finish	Manufactures recommendations
Colour	Black (min 30% contrast to footpath treatment)
Supplier	Council approved
Detail reference number	A1500



Tactile paving (TP3) minor and residential streetscape

Directional and cautional tactile paving - to conform with AS1428.4 2002 and are slip resistant to ASNZ 4586:1999

Material	Fiber reinforced polymer cement tactile
Size	300 X 300mm X 6.5mm
Finish	Manufactures recommendations
Colour	Black (min 30% contrast to footpath treatment)
Supplier	Council approved
Detail reference number	TBC



Furniture

Seating type 1 (S1) bespoke

Bespoke seating design for distinctive areas only. This is to be apart of a unique furniture suite area.

Material	Refer to section 7.0 for specific materials requirements
Size	To be approved by Council
Finish	Varies
Colour	To be approved by Council
Supplier	Council approved
Detail	To be approved by Council



* Image is only indicative

Seating type 2 (S2) streetscape

Seating to be used in streetscape through out the city centre

Material	Timber, stainless steel and paint - refer to section 7.0 for specific materials requirements
Size	min 1800mm
Finish	Timber stain
Colour	TBC
Supplier	Council approved
Detail reference number	TBC



Seating type 3 (S3) park and open green space

Parks and green spaces within the city centre

Material	Timber, stainless steel and paint - refer to section 7.0 for specific materials requirements
Size	min 1800mm
Finish	Timber stain
Colour	TBC
Supplier	Council approved
Detail reference number	TBC



Bollards

Bollard type 1 (BO1) bespoke

Bespoke seating design for Distinctive Areas only. This is to be apart of a unique furniture suite for distinctive areas.

Material	Varies - refer to section 7.0 for specific materials requirements
Size	To be approved by Council
Finish	Varies
Colour	To be approved by Council
Supplier	Council approved
Detail	To be approved by Council



* Image is only indicative

Bollard type 2 (BO2) stainless steel

Streetscape and parks

Material	Stainless steel - refer to section 7.0 for specific materials requirements
Size	min 100min DIA x 900m high
Finish	Stainless steel
Colour	-
Supplier	Council approved
Detail reference number	TBC



Bollard type 3 (BO3) rigid/recoverable bollards

Shared Zones and high vehicle traffic areas

Material	Elastomeric pilymer shape memory
Size	90 DIA x min 900mm high
Finish	-
Pattern	-
Colour	Black unless approved by Council
Supplier	Council approved
Detail reference number	TBC

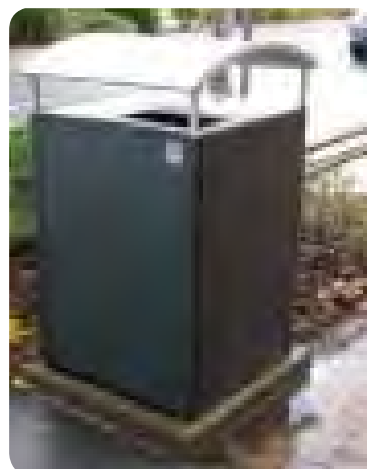


Bins and bubblers

Bin type 1 (B1)

Streetscape within the city centre boundary

Material	Marine grade aluminium - refer to section 7.0 for specific materials requirements
Size	240L
Finish	Marine grade aluminium - refer to section 7.0 for specific materials requirements
Pattern	-
Colour	Dark charcoal
Supplier	Council approved
Detail reference number	TBC



Bubbler type 1 (BU1)

Streetscape within the city centre boundary

Material	Stainless steel - refer to section 7.0 for specific materials requirements
Size	Refer to manufactures details
Finish	Stainless steel
Extras	<ul style="list-style-type: none">• Bottle refill station• Dog bowl
Colour	-
Supplier	Council approved
Detail reference number	TBC



Bike racks

Bike rack type 1 (B1) bespoke

Bespoke bike rack design for distinctive areas only. This is to be apart of a unique furniture suite area.

Material	Varies - refer to section 7.0 for specific materials requirements
Size	To be approved by Council
Finish	Varies
Colour	To be approved by Council
Supplier	Council approved
Detail	To be approved by Council



** Image is only indicative to the style that might be details during public domain planning*

Bike racks type 2 (B2) hoop

Circle loops to be secured by bolts at ground level onto footing

Material	316 Stainless steel - refer to section 7.0 for specific materials requirements
Size	600mm
Finish	Stainless steel
Pattern	-
Colour	-
Supplier	Council approved
Detail reference number	TBC



Bike racks type 3 (B3) pole - mounted bike ring

Infrastructure galvanise steel O-Bike racks to be fitted to signage poles within the city centre

Material	Marine grade galvanised steel - refer to section 7.0 for specific materials requirements
Size	min 600mm
Finish	Marine grade galvanised steel
Pattern	-
Colour	-
Supplier	Council approved
Detail reference number	TBC



Tree surrounds and guards

Tree surrounds (TS1) streetscape

Stainless steel tree surrounds to be used in distinctive areas only

Material	Stainless steel - refer to section 7.0 for specific materials requirements
Size	1200 x 1200 x 40 OD 400mm
Finish	316 Stainless steel
Colour	-
Supplier	Council approved
Detail reference number	TBC



Tree surrounds (TS2) streetscape

Marine grade mild steel tree surrounds to be used within the streetscape for the city centre boundary

Material	Marine grade mild steel - refer to section 7.0 for specific materials requirements
Size	1600 x 1600 x OD 400mm
Finish	Powder coated mild steel
Colour	Black
Supplier	Council approved
Detail reference number	TBC



Tree surrounds (TS3) streetscape

Porous paving tree surrounds for high pedestrian streetscape locations

Material	Porous paving - refer to section 7.0 for specific materials requirements
Size	6mm
Finish	Exposed aggregate
Colour	Blue metal
Supplier	Council approved
Detail reference number	TBC



Tree surrounds

Tree surrounds (TS4) streetscape

Wet pour soft fall tree surrounds within the streetscape for the city centre boundary

Material	Wet pour rubber
Size	Manufactures recommendations
Finish	Exposed aggregate
Colour	Grey/Black
Supplier	Council approved
Detail reference number	TBC



Pavement type 7 (PT7) interlocking paver

On street paving for tree surrounds / parking areas

Material	Permeable concrete - refer to section 7.0 for specific materials requirements
Size	88 x 181 x 60
Finish	Exposed aggregate
Pattern	-
Colour	Charcoal
Supplier	Council approved
Detail reference number	A1105



Tree guards (TG1)

Streetscape within the city centre boundary

Material	Marine grade mild steel - Refer to Section 7.0 for specific materials requirements
Size	Manufactures detail
Finish	Powder coated mild steel
Pattern	Black
Colour	Council approval
Detail reference number	TBC



Lighting

Light poles (L1) distinctive place

Council owned street lighting and distinctive areas

Material	Aluminium
Size	Min 4.5m high
IP rating	Min IP65
Finish	Manufactures details
Colour	Aluminium
Supplier	Council approved
Detail	Install as per manufactures detail and specification



Under awning lighting (L2)

Under awning lighting to be used on existing buildings to up lighting to be used to light the under awnings and footpaths

Material	Stainless steel - refer to section 7.0 for specific materials requirements
Size	300mm
IP rating	Min IP65
Finish	Glass and stainless steel
Supplier	Council approved
Detail	Install as per manufactures detail and specification



Inground uplighting (L3) streetscape

Feature Inground Paving up lighting to be used to up light trees and footpaths

Material	Stainless Steel- refer to section 7.0 for specific materials requirements
Size	300mm DIA
IP rating	Min IP67
Finish	Glass and stainless steel
Supplier	Council approved
Detail	Install as per manufactures detail and specification



4.5 Heritage elements

Newcastle city centre is covered by an overall Conservation Area and the Newcastle East Heritage Conservation Area. Both conservation areas contain a rich mix of commercial, retail and residential heritage buildings and other streetscape treatments that create a distinctive character for the city.

To maintain this distinctive heritage character Newcastle needs to preserve the various elements that have been catalogued by council. If your development has any of the following elements you will need to contact Council's Heritage Officer.

Footpath paving

Cross hatch (Pineapple) pavers located in various areas locations

Material	Brick
Size	Typically 76 x 230 x 110mm
Finish	Cross hatch
Pattern	Herring bone pattern
Colour	Polychromatic features reds, brown, and terracotta.
Detail reference number	A 1405



Footpath paving

Rising sun pavers located in various areas locations

Material	Brick
Size	Typically 76 x 230 x 110mm
Finish	Embossed pattern into brick
Pattern	Herring bone pattern
Colour	Typically red and brown
Detail reference number	A 1405



Footpath paving

Concrete flagstone paving located in various areas locations

Material	Concrete
Size	Varies
Pattern	Stretcher bond
Colour	Grey
Detail reference number	TBC



Retaining walls

Sandstone block wall and gutter located in various areas locations

Material	Sandstone
Size	Varies
Finish	Naturally weathered stone
Pattern	Random rubble
Colour	Natural
Detail reference number	TBC



Retaining walls

Sandstone block wall located in various areas locations

Material	Sandstone block
Size	Varies
Finish	Naturally weathered stone
Pattern	Random rubble
Colour	Natural
Detail reference number	TBC



Heritage elements

Retaining walls

Sandstone wall with sandstone capping located in various areas locations

Material	Sandstone capping and block
Size	Varies
Finish	Naturally weathered stone
Pattern	Stretcher bond
Colour	Natural colour with traditional lime mortar joints
Detail reference number	TBC



Retaining wall and handrail

Sandstone block wall and handrail

Material	Sandstone block
Size	Varies
Finish	Finish naturally weathered stone
Pattern	Coursed sandstone
Colour	Natural with traditional lime mortar joints
Detail reference number	TBC



Retaining wall

Sandstone block retaining wall located in various areas locations

Material	Sandstone block work
Size	Varies
Finish	Finish naturally weathered stone
Pattern	Random rubble
Colour	Natural
Detail reference number	TBC



Retaining wall

Sandstone wall and sandstone block capping located in various areas locations

Material	Sandstone block work and capping
Size	Varies
Finish	
Pattern	Coursed rubble with block
Colour	Naturally weathered stone
Detail reference number	TBC



Steps

Sandstone steps located in various areas locations

Material	Sandstone
Size	Varies
Finish	Naturally weathered stone
Colour	Natural
Detail reference number	TBC



Road

Sandstone block kerb located in various areas locations

Material	Sandstone block kerb
Size	Varies
Finish	Naturally weathered stone
Colour	Natural
Detail reference number	A1202



Heritage elements

Road

Sandstone block kerb and gutter

Material	Sandstone kerb and gutter
Size	Varies
Pattern	Gutter stretcher bond, kerb butt joint blockwork
Colour	Natural
Detail reference number	A1202



Road

Sandstone gutter located in various areas locations

Material	Sandstone block
Size	Varies
Finish	Naturally weathered stone
Colour	Natural
Detail reference number	A1202



Road

Sandstone block kerb and gutter located in various areas locations

Material	Sandstone kerb and gutter
Size	Varies
Finish	Naturally weathered stone
Colour	Natural
Detail reference number	A1202



Road

Gniess stone border

Material	Gniess stone
Size	Varies
Finish	Naturally weathered stone
Pattern	Butt joint blockwork
Colour	Natural
Detail reference number	A1202



Road

Street name inset into the gutter

Material	Brass
Size	Varies
Finish	-
Pattern	-
Colour	Natural
Detail reference number	TBC



Lighting post

Concrete post with glass found in various locations

Material	Concrete post with glass lamp standard
Size	-
Finish	Raw concrete weathered to a natural patina
Pattern	Facetted shaft on a classical base
Colour	-
Detail reference number	TBC



Heritage elements

Lighting Post

Entrance lamp post - 01 outside City Hall on King street

Material	Cast iron post with glass lamp
Finish	Painted
Pattern	Classical base with a faceted shaft
Colour	Original colour scheme from 1929
Detail reference number	Refer to City Hall Conservation Management Plan



Lighting post

Entrance lamp post - 02 outside City Hall on King street

Material	Cast iron post with glass lamp
Finish	Painted
Pattern	Classical base with a faceted shaft.
Colour	Original colour scheme from 1929
Detail reference number	Refer to City Hall Conservation Management Plan



Lighting post

Entrance lamp post - 03 King street

Material	Cast iron post with glass lamp
Finish	Painted
Pattern	Classical base with a faceted shaft.
Colour	Original colour scheme from 1929
Detail reference number	Refer to City Hall Conservation Management Plan





5.0 Street trees

West End precinct - tree plan

The West End precinct is located between Tudor Street and Union Street (Refer to 14). This precinct will see the most dramatic changes to the city centre streetscape and public open space. With the Wickham interchange development, various mixed use development and overall improvements to the green space in the precinct, there is the opportunity for greening the new streetscape and public spaces to visually distinguish the area.

Precinct objective

- Plant trees that will provide a unique 'avenue' entry into our city centre
- Plant trees that will reinforce and enhance the existing character of the area
- Develop opportunities for the location of the trees to be incorporated into the public domain plan for the Wickham Interchange
- Reinforce the importance of green open space e.g. Birdwood Park

Current precinct conditions

The existing trees in the West End precinct are a mix of established trees dominated by London Plane trees located in Hunter street, boulevard planting of Paperbarks in King street and established Fig species in Birdwood Park.

Proposes primary tree species palette

Main Street

Species	Common Name	Deciduous
<i>Acer rubrum</i> 'Fairview Flame'	Red Maple	Y
<i>Cupaniopsis Anacardioides</i>	Tuckeroo	N
<i>Liquidambar formosana</i>	Formosan Sweetgum	Semi
<i>Xanthostemon chrysanthus</i>	Golden Penda	N

Secondary street and north/south streets

Species	Common Name	Deciduous
<i>Elaeocarpus eumundi</i>	Smooth-leaved Quandong	N
<i>Caesalpinia ferrea</i>	Leopard Tree	Y
<i>Cupaniopsis Anacardioides</i>	Tuckeroo	N
<i>Fraxinus pennsylvanica</i>	Green Ash	Y
<i>Pyrus calleryana capital</i>	Ornamental Pear	Y
<i>Waterhousea floribunda</i>	Weeping Lilly Pilly	N

Residential street

Species	Common Name	Deciduous
<i>Alloxylon flammeum</i>	Tree Waratah	N
<i>Caesalpinia ferrea</i>	Leopard Tree	Y
<i>Cupaniopsis anacardioides</i>	Tuckeroo	N
<i>Fraxinus pennsylvanica</i>	Green Ask	Y
<i>Pyrus calleryana capital</i>	Ornamental Pear	Y
<i>Nyssa sylvatica</i>	Black Gum	Y
<i>Waterhousea floribunda</i>	Weeping Lilly Pilly	N



Figure 14 - West End precinct tree species plan

Civic precinct - tree plan

The Civic precinct is located between Union and Darby Streets (refer to Figure 15). The Civic precinct is currently known as the administrative, education and cultural hub of Newcastle. There are opportunities for greening the new streetscape and public spaces to distinguish this precinct visually and through improved amenity.

Precinct objective

- Plant trees that will reinforce the avenue or boulevard of tree plantings in Civic along both Hunter street and King streets
- Plant trees to provide a green canopy for the Civic that will reinforce and enhance the existing character of the area
- Develop opportunities for creating a North/South green avenue that visually connects the Newcastle Art Gallery, Civic Park, Wheeler Place, Civic Station and through to Honeysuckle
- Trees to be incorporated into the design for new developments including the new court house development and the University site
- Reinforce the importance and variety of open space elements in the precinct

Current precinct conditions

The existing trees in the Civic precinct are a mix of established trees dominated by the London Plane Tree located in Hunter street.

Proposes primary tree species palette

Main Street

Species	Common Name	Deciduous
<i>Acer rubrum</i> 'Fairview Flame'	Red Maple	Y
<i>Cupaniopsis Anarcardioides</i>	Tuckeroo	N
<i>Liquidambar formosana</i>	Formosan Sweetgum	Semi
<i>Xanthostemon chrysanthus</i>	Golden Penda	N

Secondary street and north/south streets

Species	Common Name	Deciduous
<i>Elaeocarpus eumundi</i>	Smooth-leaved Quandong	N
<i>Caesalpinia ferrea</i>	Leopard Tree	Y
<i>Cupaniopsis Anarcardioides</i>	Tuckeroo	N
<i>Fraxinus pennsylvanica</i>	Green Ash	Y
<i>Pyrus calleryana capital</i>	Ornamental Pear	Y
<i>Waterhousea floribunda</i>	Weeping Lilly Pilly	N

Residential street

Species	Common Name	Deciduous
<i>Alloxylon flammeum</i>	Tree Waratah	N
<i>Caesalpinia ferrea</i>	Leopard Tree	Y
<i>Cupaniopsis anarcardioides</i>	Tuckeroo	N
<i>Fraxinus pennsylvanica</i>	Green Ask	Y
<i>Pyrus calleryana capital</i>	Ornamental Pear	Y
<i>Nyssa sylvatica</i>	Black Gum	Y
<i>Waterhousea floribunda</i>	Weeping Lilly Pilly	N



Figure 15- Civic precinct tree species plan

East End precinct - tree plan

The East End precinct is located from Darby Street to the foreshore and Newcastle Beach (Refer to Figure 16). The precinct includes the Newcastle East Heritage Conservation Area (Refer to Figure 8, page 26). This area celebrates the characteristics of its intact heritage streetscape and a number of state significant heritage buildings and items.

Precinct objective

- Plant trees that will reinforce the avenue or boulevard of tree plantings continuing in both Hunter street and King street.
- Select appropriate, salt tolerant tree species for the Newcastle East Conservation Area.
- Incorporate the location of the trees into the public domain plan for the GPT and Urban Growth Development and the former Hunter street Mall.
- Reinforce the importance of trees and greening in the variety of open spaces to cater for passive and active recreational activities.

Current precinct conditions

The existing trees in the East End Precinct are a mix of variety of established trees to the west and non performing trees to the east of the precinct. This is directly associated with the affect of sea spray in the precinct. These conditions affect the ability for various tree species to perform. Pacific Park, Foreshore Park and Parnell Place provides areas where established tree have proven successful in this coastal environment and this needs to be noted for future tree selection.

Proposes primary tree species palette

Main Street

Species	Common Name	Deciduous
<i>Araucaria columnaris</i>	Cook Pine	N
<i>Cupaniopsis Anarcardioides</i>	Tuckeroo	N
<i>Liquidambar formosana</i>	Formosan Sweetgum	Semi

Secondary street and north/south streets

Species	Common Name	Deciduous
<i>Araucaria heterophylla</i>	Norfolk Island Pine	N
<i>Elaeocarpus eumundi</i>	Smooth-leaved Quandong	N
<i>Cupaniopsis Anarcardioides</i>	Tuckeroo	N
<i>Pyrus calleryana capital</i>	Ornamental Pear	Y
<i>Nyssa sylvatica</i>	Black Gum	Y
<i>Waterhousea floribunda</i>	Weeping Lilly Pilly	N

Residential street

Species	Common Name	Deciduous
<i>Alloxyylon flammeum</i>	Tree Waratah	N
<i>Cupaniopsis Anarcardioides</i>	Tuckeroo	N
<i>Fraxinus pennsylvanica</i>	Green Ash	Y
<i>Pyrus calleryana capital</i>	Ornamental Pear	Y
<i>Nyssa sylvatica</i>	Black Gum	Y
<i>Waterhousea floribunda</i>	Weeping Lilly Pilly	N



Figure 16 - East End precinct tree species plan

Street tree images



Acer rubrum



Alloxylon flammeum



Elaeocarpus eumundi



Araucaria columnaris



Caesalpinia ferrea



Fraxinus pennsylvanica



Araucaria heterophylla



Cupaniopsis Anacardioides



Liquidambar formosana



Nyssa sylvatica



Xanthostemon chrysanthus



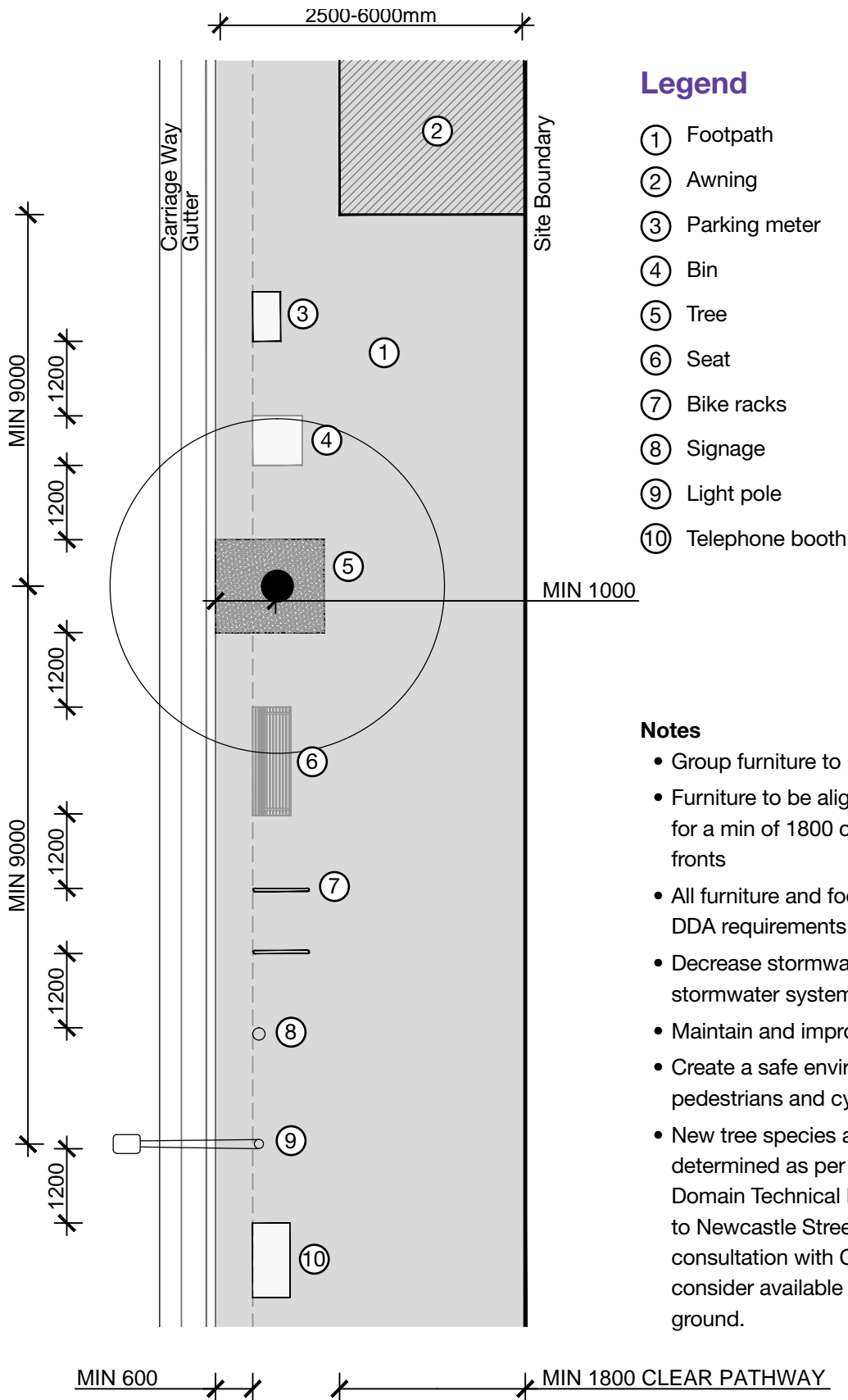
Pyrus calleryana capital



Waterhousea floribunda

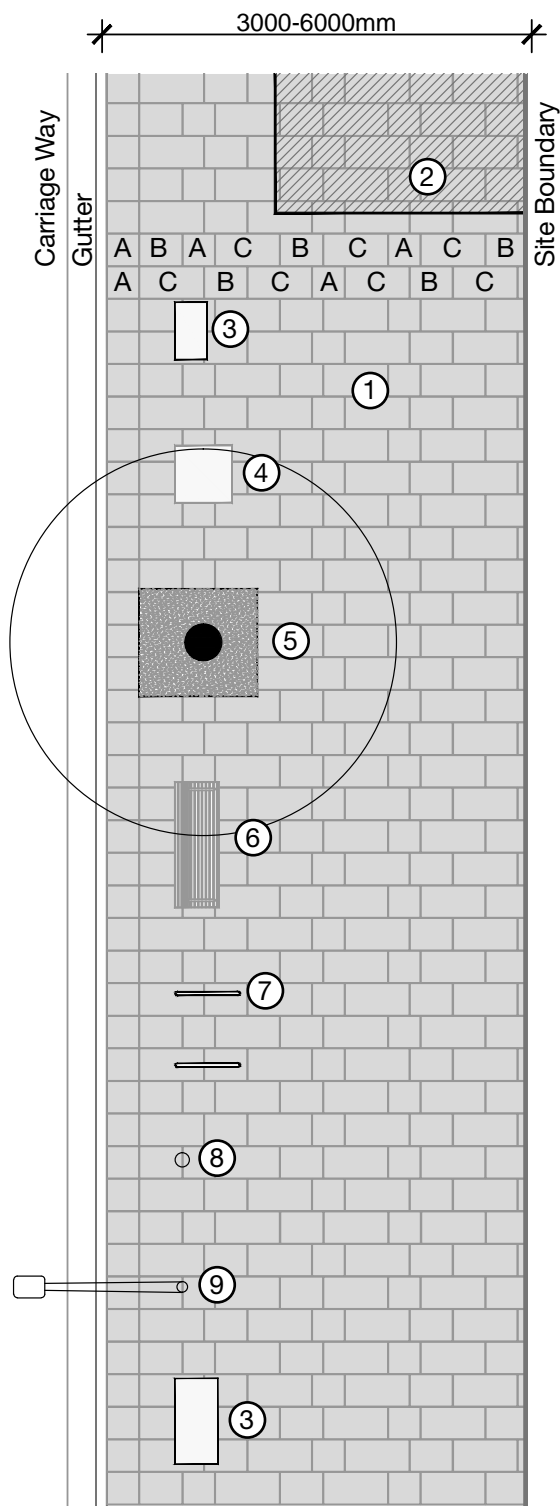
6.0 Typical street furniture layout

Typical street furniture layout



PLAN 1:100 @ A4

Pavement type 2 layout



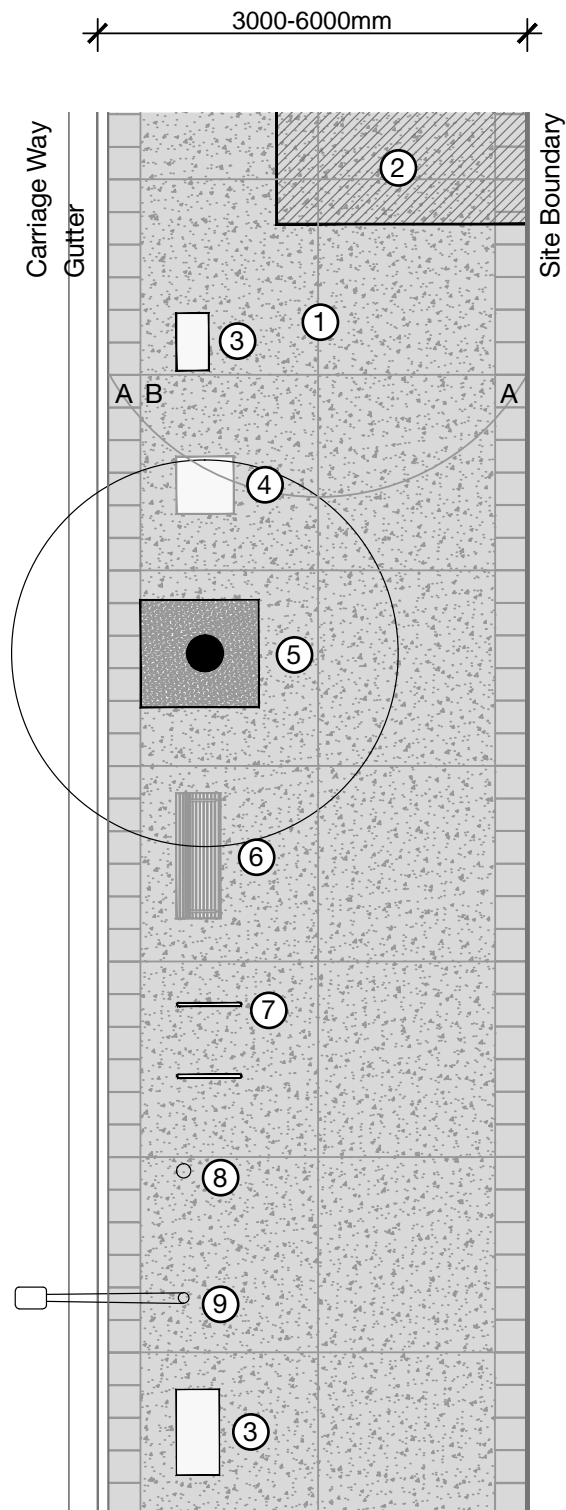
Legend

- ① Pavement type 2 (PT2)
Unit paving Sizes
 - A) 450 x 450 x 40
 - B) 600 x 450 x 40
 - C) 900 x 450 x 40
- ② Awning
- ③ Parking meter/ Telephone booth
- ④ Bin
- ⑤ Tree
- ⑥ Seat
- ⑦ Bike racks
- ⑧ Signage
- ⑨ Light pole

Notes

- Stretcher bond pattern, perpendicular to kerb
- Align full edging paver to back of kerb
- Finish flush with adjacent pavements
- Continue paving pattern across driveways and lane ways.

Pavement type 3 layout



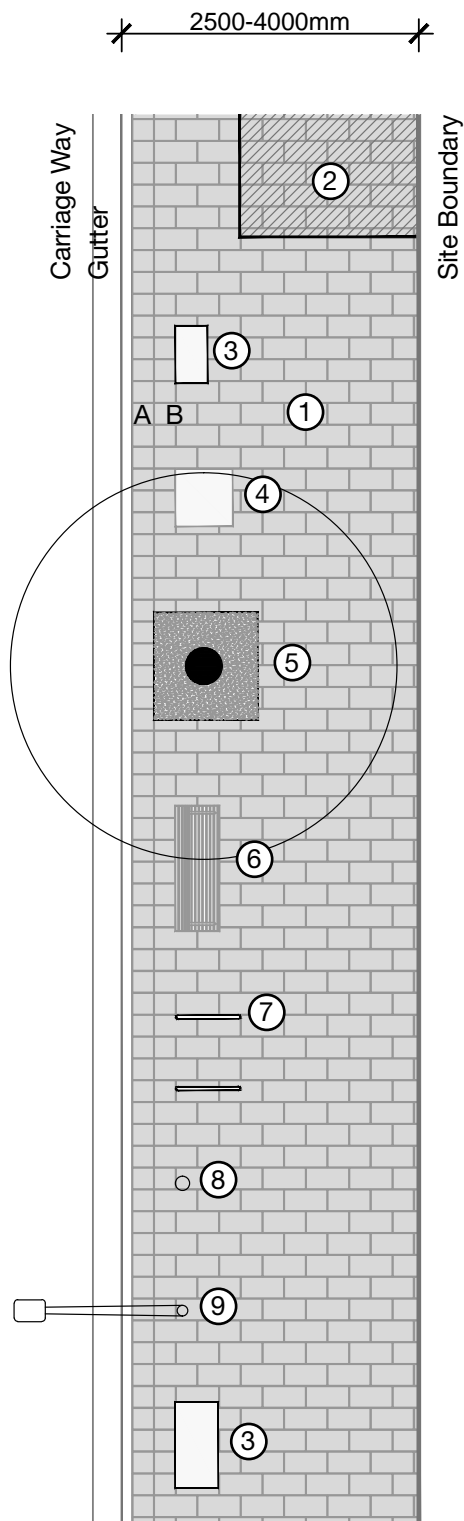
Legend

- ① Pavement type 3 (PT3)
 - A) Unit paving 450 x 450 x 40mm
 - B) Concrete
- ② Awning
- ③ Parking meter/telephone booth
- ④ Bin
- ⑤ Tree
- ⑥ Seat
- ⑦ Bike racks
- ⑧ Signage
- ⑨ Light pole

Notes

- Align full edging paver to back of kerb
- Paving to edge of building
- Finish flush with adjacent pavements
- Continue paving pattern across driveways and lane ways.

Pavement type 4 layout



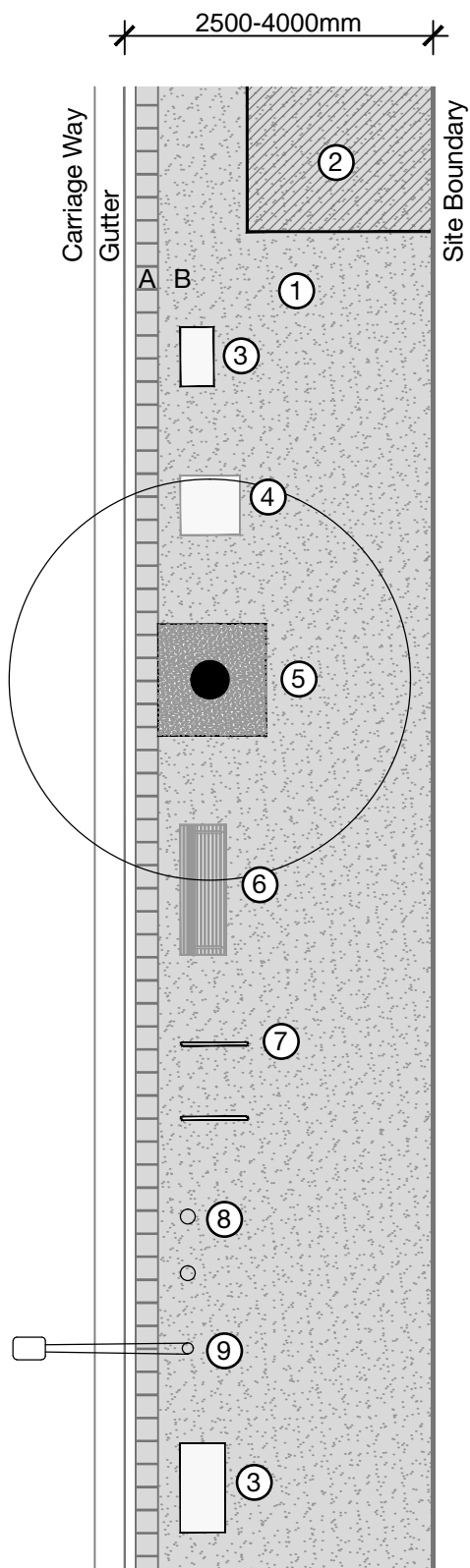
Legend

- ① Paving type 4 (PT4)
Unit paving size
A) 300 x 300 x 40mm
B) 300 x 600 x 40mm
- ② Awning
- ③ Parking meter/ telephone booth
- ④ Bin
- ⑤ Tree
- ⑥ Seat
- ⑦ Bike racks
- ⑧ Signage
- ⑨ Light pole

Notes

- Align full edging paver to back of kerb
- Paving to edge of building
- Finish flush with adjacent pavements
- Continue paving pattern across driveways and lane ways.

Pavement type 5 layout



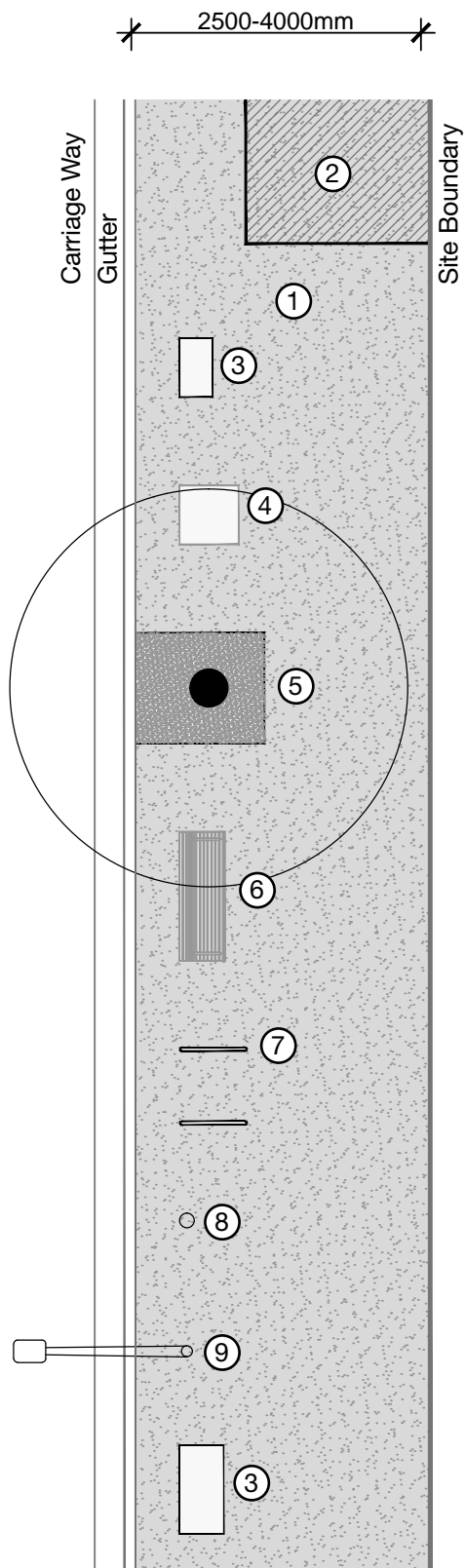
Legend

- ① Paving type 5 (PT5)
 - A) Unit Paving 450 x 450 x 40mm
 - B) Asphalt
- ② Awning
- ③ Parking meter/ telephone booth
- ④ Bin
- ⑤ Tree
- ⑥ Seat
- ⑦ Bike racks
- ⑧ Signage
- ⑨ Light pole

Notes

- Align full edging paver to back of kerb
- Paving to edge of building
- Finish flush with adjacent pavements
- Continue paving pattern across driveways and lane ways.

Pavement type 6 layout



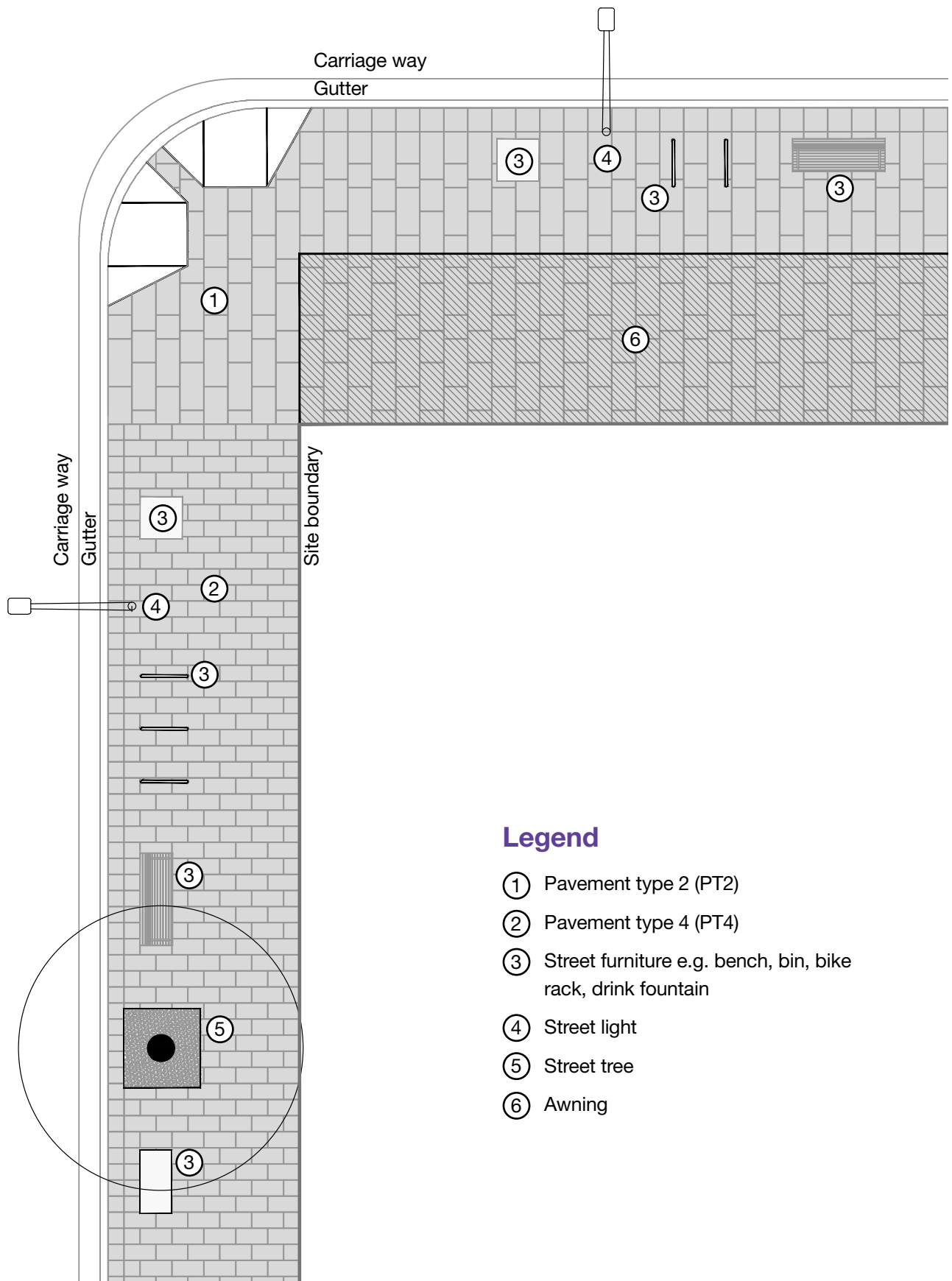
Legend

- ① Pavement type 6 (PT6)
- ② Awning
- ③ Parking meter/ telephone booth
- ④ Bin
- ⑤ Tree
- ⑥ Seat
- ⑦ Bike racks
- ⑧ Signage
- ⑨ Light pole

Notes

- Align full edging paver to back of kerb
- Paving to edge of building
- Finish flush with adjacent pavements
- Continue paving pattern across driveways and lane ways.

Pavement intersection layout

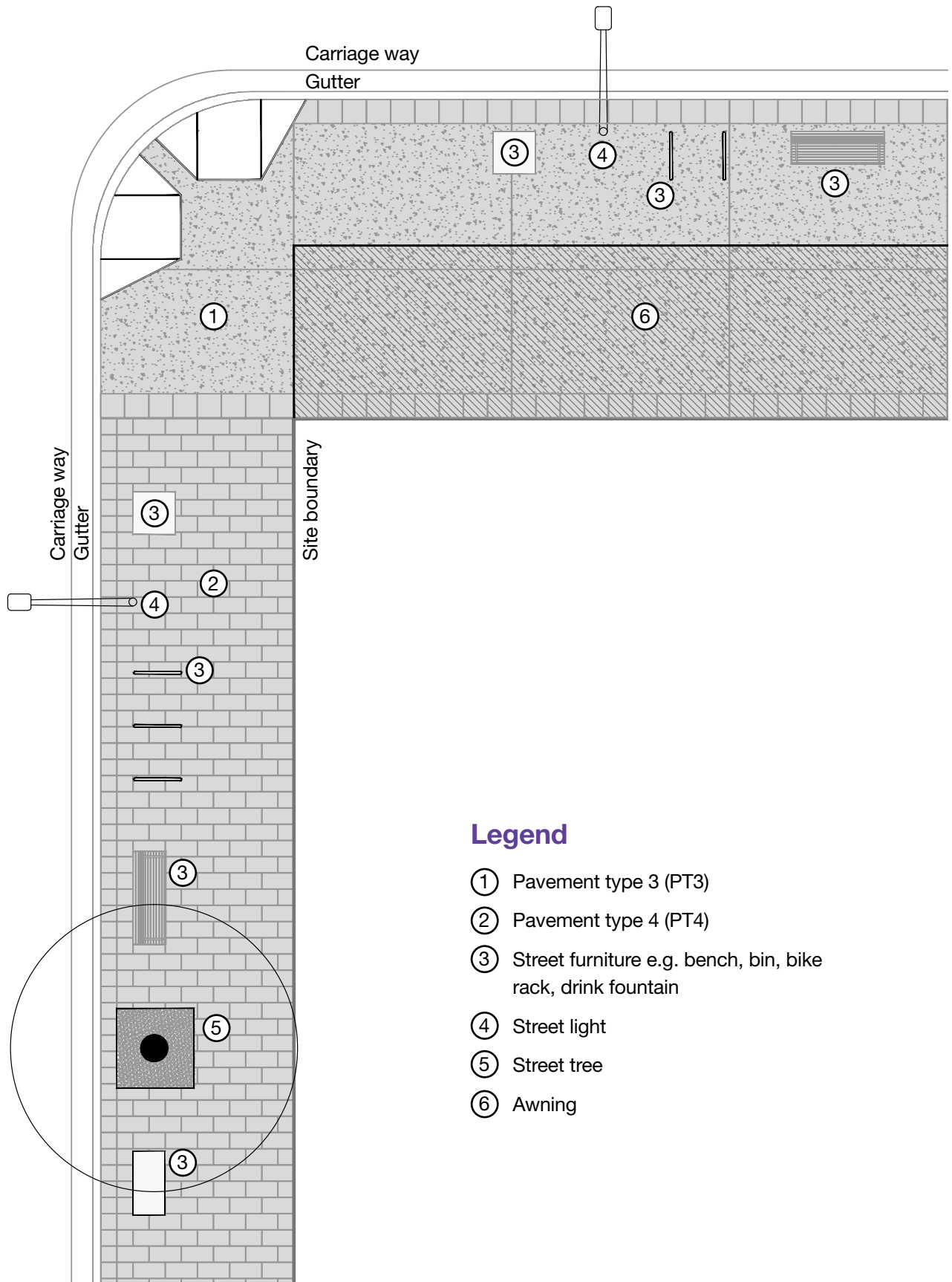


Legend

- ① Pavement type 2 (PT2)
- ② Pavement type 4 (PT4)
- ③ Street furniture e.g. bench, bin, bike rack, drink fountain
- ④ Street light
- ⑤ Street tree
- ⑥ Awning

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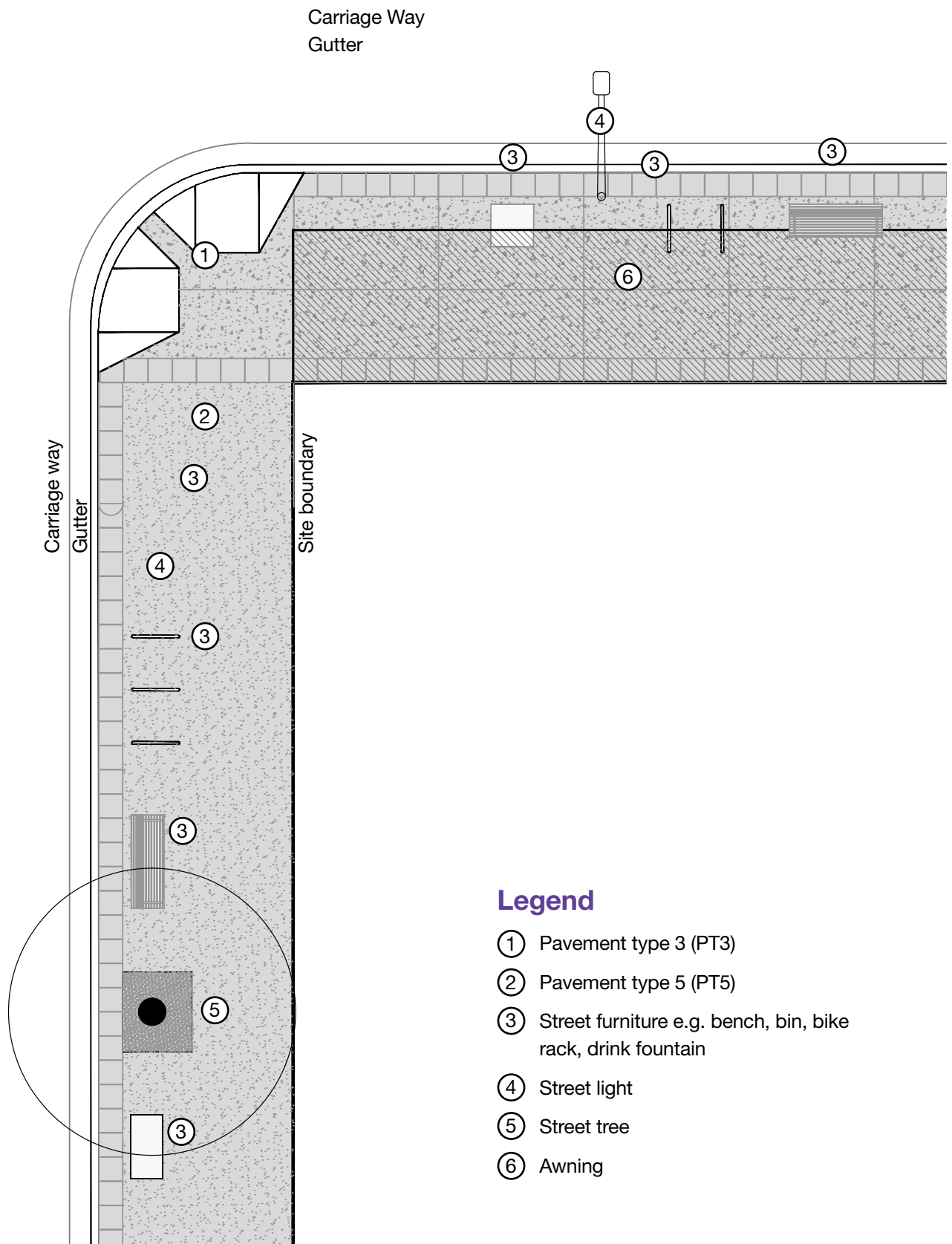
Pavement intersection layout



Legend

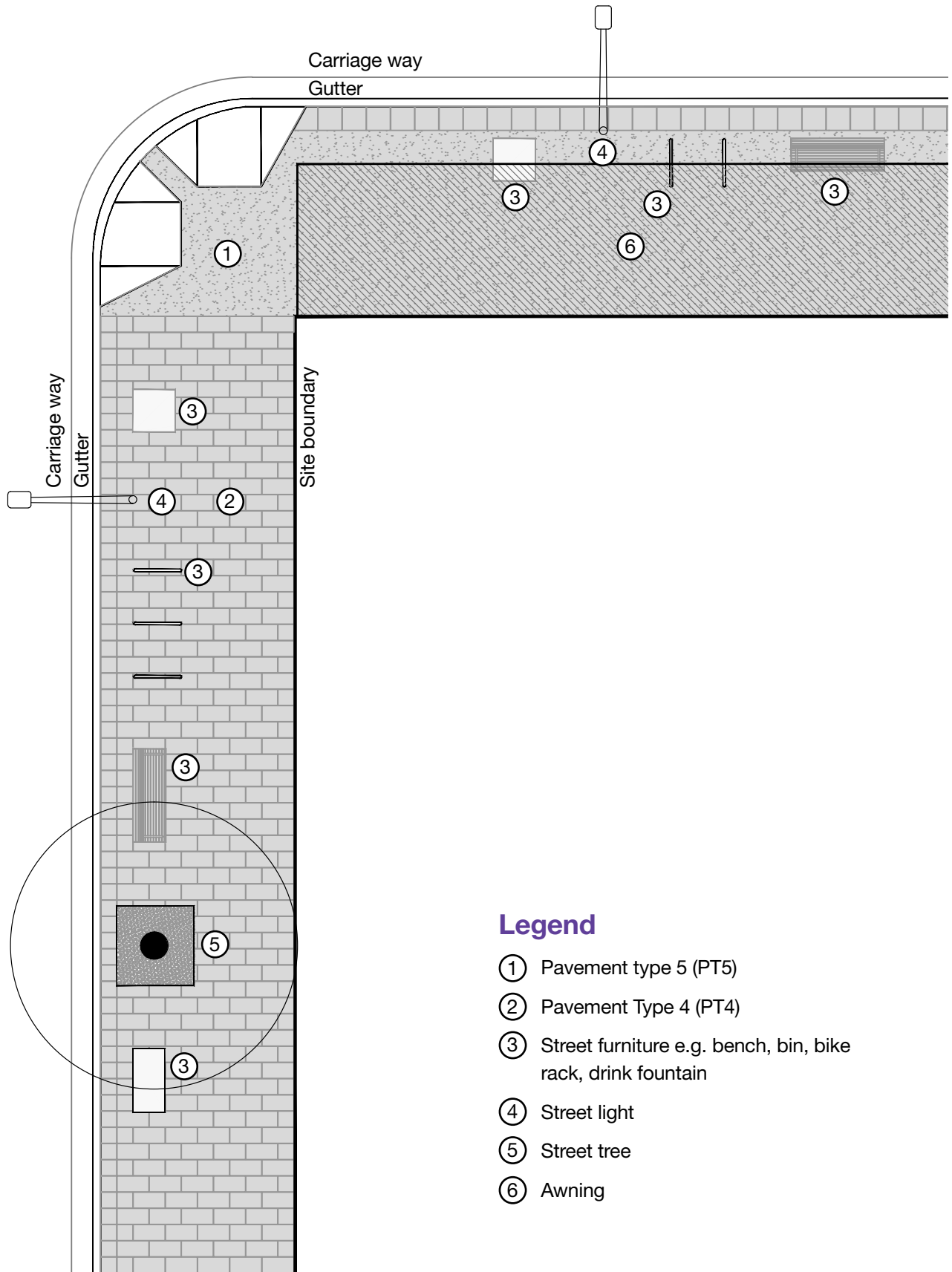
- ① Pavement type 3 (PT3)
- ② Pavement type 4 (PT4)
- ③ Street furniture e.g. bench, bin, bike rack, drink fountain
- ④ Street light
- ⑤ Street tree
- ⑥ Awning

Pavement intersection layout



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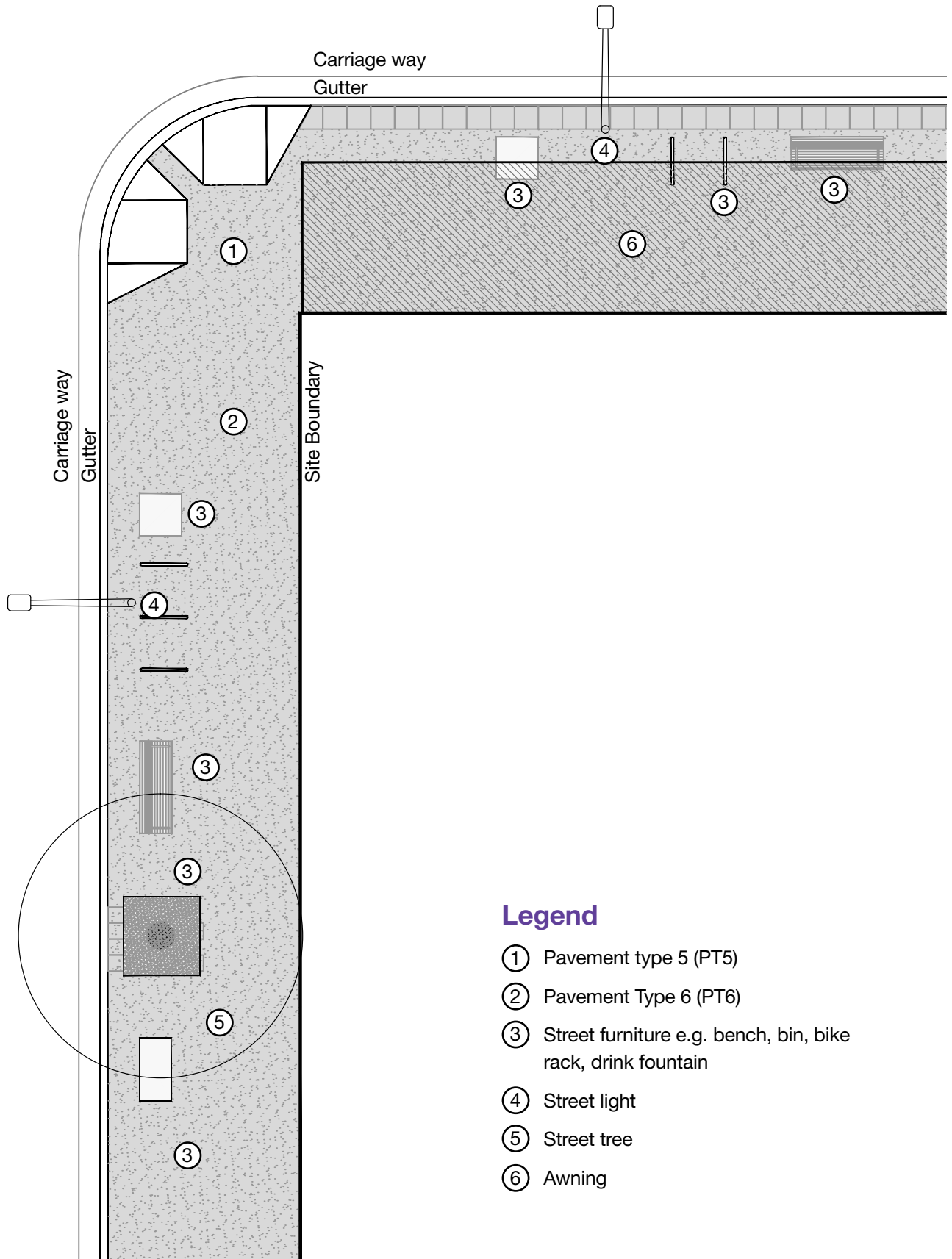
Pavement intersection layout



Legend

- ① Pavement type 5 (PT5)
- ② Pavement Type 4 (PT4)
- ③ Street furniture e.g. bench, bin, bike rack, drink fountain
- ④ Street light
- ⑤ Street tree
- ⑥ Awning

Pavement intersection layout



Legend

- ① Pavement type 5 (PT5)
- ② Pavement Type 6 (PT6)
- ③ Street furniture e.g. bench, bin, bike rack, drink fountain
- ④ Street light
- ⑤ Street tree
- ⑥ Awning

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7.0 Specification requirement

7.1 Specification material requirements

Concrete

- Generally as noted on standard drawings
- Placed on a minimum sub-grade CBR of 5%.
- Coloured full depth with colour added at concrete plant.
- Off form, abrasive blasted, pre-cast or polished finishes are acceptable
- Rendered, paint or faced with tiles or stack stone type products are not acceptable.

Stainless Steel

- If not required to maintain a shiny appearance Grade 316 untreated may be used.
- All other stainless steel elements shall be 316 marine grade with a finish 0.5 microns. Pickle and passivate after fabrication.
- Use nylon grommets/sleeves at junctions between stainless steel and other metallic materials to prevent dissimilar corrosion.

Steel

- All steel sections greater than 3 mm shall be hot dipped galvanised after fabrication.
- Galvanised steel may be coated using the following process. Degrease (AS1627), whip blast to class 1 (AS1627) and paint with at least two coats of an epoxy paint to a total thickness not less than 200 microns.
- Un-galvanised steel may be coated using the following process. Degrease (AS1627), blast to class 2.5 (AS1627) and paint with at least two coats of an epoxy paint to a total thickness not less than 200 microns.
- Powder coating is not an acceptable paint finish.
- Uncoated, weathered steel is acceptable for decorative finishes. The use of Core 10 type material is required for this application.

Aluminium

- Untreated marine grade (Series 6061) or all other grades which are anodised are acceptable.
- Powder coating is not acceptable over any grade of aluminium.

Timber

- Use preferred hardwood Class 2 timber (Class 1 acceptable also) which is pre-seasoned or kiln dried.
- For on furniture items such as decking and timber facing use large sizes to maximise longevity eg. 140mm x 35mm.
- Timber furniture elements that are painted require one coat of acrylic primer and two coats of UV stabilised top coat paint.
- If stained timber is used, furniture elements require two coats of stain. Wet the timber before applying the first coat of stain. The additional coat/s can be applied after the timber has been rubbed down to remove excess stain. Unless otherwise stated by manufacturer's installation instructions

Pavers

- Paver installation shall be generally in accordance with the standard drawings.

Skate Deterrents

- Install skate deterrents on walls, seats, tables and all surfaces that are between 200 and 1000mm from the ground. Spacing shall be nominally 1200mm but can be spaced up to 2000mm to meet functional requirements. Devices may be indentations or projections. Projections shall be made from brass, bronze or grade 316 stainless or other approved similarly durable material inset into the top outermost edge to prevent the tracking of skateboards along the surface. The projection device shall be rounded on all edges.

Footway Surface Drainage

- Surface stormwater shall fall to surface pits, gutters or WSUD devices at grades no less than 1% and be designed no less than 2%.
- Pavement areas shall be designed as a series of single plane surfaces with falls to local depressions at pit locations.
- Minimise use of strip drains. Consider individual pits joining areas of a common finished level

rather than multiple isolated depressions.

- Design seating and outdoor dining areas with minimum falls to create a flat surface area suitable for tables and chairs. Avoid the passage of stormwater through dining areas when falling to pits and grates.

Lighting

- Lighting is to be designed to AS 1158 – Lighting P2 lighting category with due regard for AS 4282 – Control of the Obtrusive Effects of Outdoor Lighting.
- A nominal height of 4.5m for pole top luminaries from ground to light fitting.
- All underground cabling shall be double insulated PVC/PVC cables using stranded conductors.
- All underground conduits to be Heavy Duty PVC, minimum size 32mm. Use only large radius bends. Use Pits for Changes in Directions, with a maximum of two 90 degree bends for any run.

7.2 Material Palette Section Matrix

Street type 1 - Distinctive places

Pavement type	Speciality pavement type	Tactile treatments	Furniture	Bollard
Pavement type 1 (PT1)	Pavement type 8 (PT8) Paving type 9 (TP9)	Tactile paver 1 (TP1)	Seating type (S1) Seating type (S2)	Bollard type (Bo1) Bollard type (Bo2)

Street type 2 - Hunter street

Pavement type	Speciality pavement type	Tactile treatments	Furniture	Bollard
Pavement type 2 (PT2) (for locations adjoining distinctive areas) Pavement type 3 (PT3)	Pavement type 8 (PT8) Pavement type 9 (TP9) Pavement type 10 (PT10)	Tactile paver 2 (TP2)	Seating type (S2)	Bollard type (Bo2) Bollard type (Bo3) (Bo3 to be used in high vehicle use areas)

Street type 3 - North/south street connecting to Hunter street

Pavement type	Speciality pavement type	Tactile treatments	Furniture	Bollard
Pavement type 4 (PT4)	Pavement type 8 (PT8) Pavement type 9 (TP9) Pavement type 10 (PT10)	Tactile paver 2 (TP2)	Seating type (S2)	Bollard type (Bo2) Bollard type (Bo3)

Street type 4 - Minor Street

Pavement type	Speciality pavement type	Tactile treatments	Furniture	Bollard
Pavement type 5 (PT5)	Pavement type 7 (PT7) Pavement type 8 (PT8) Pavement type 9 (TP9)	Tactile paver 2 (TP2)	Seating type (S2)	Bollard type (Bo2) Bollard type (Bo3)

Street type 5 - Residential Street

Pavement type	Speciality pavement type	Tactile treatments	Furniture	Bollard
Pavement type 6 (PT6)	Pavement type 7 (PT7) Pavement type 8 (TP8)	Tactile paver 2 (TP2)	Seating type (S2)	Bollard type (Bo2) Bollard type (Bo3)

Street type 1 - Distinctive places

Bins and bubblers	Bike rack	Tree grates and surrounds	Lighting	Heritage element
Bin type (B1) Bubbler Type (BU1)	Bike Rack (B1) Bike Rack (B2)	Tree Surrounds (TS1) Tree Surrounds (TS3)	Light Poles (L1) Inground Uplighters (L3)	Site specific

Street type 2 - Hunter street

Bins and bubblers	Bike rack	Tree grates and surrounds	Lighting	Heritage element
Bin type (B1) Bubbler Type (BU1)	Bike Rack (B2) Bike Rack (B3)	Tree Surrounds (TS2) with Tree Guard (TG1) Tree Surrounds (TS3)	Inground Uplighters (L3)	Site specific

Street type 3 - North/south street connecting to Hunter street

Bins and bubblers	Bike rack	Tree grates and surrounds	Lighting	Heritage element
Bin type (B1) Bubbler Type (BU1)	Bike Rack (B2) Bike Rack (B3)	Tree Surrounds (TS2) Tree Surrounds (TS3) Tree Surrounds (TS4)	Inground Uplighters (L3)	Site specific

Street type 3 - North/south street connecting to Hunter street

Bins and bubblers	Bike rack	Tree grates and surrounds	Lighting	Heritage element
Bin type (B1) Bubbler Type (BU1)	Bike Rack (B2) Bike Rack (B3)	Tree Surrounds (TS2) Tree Surrounds (TS3) Tree Surrounds (TS4) Tree Surrounds (PT7)	Inground Uplighters (L3)	Site specific

Street type 5 - Residential Street

Bins and bubblers	Bike rack	Tree grates and surrounds	Lighting	Heritage element
Bin type (B1) Bubbler Type (BU1)	Bike Rack (B2) Bike Rack (B3)	Tree Surrounds (TS2) Tree Surrounds (TS4) Tree Surrounds (PT7)	Inground Uplighters (L3)	Site specific



