# Appendix Appendix 3: Business Centres Public Domain Technical Manual

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## 1 PURPOSE

- 1. The Business Centres Public Domain Strategy (BCPDS) specifies the design and construction of the public domain within the various retail precincts of Wollongong. The details and elements contained in the BCPDS will provide continuity in design language, and a standardisation of materials.
- 2. The BCPDS will form the reference document for the conditioning of the streetscape / public domain components of development applications. In addition it will be the basis for design within the public domain by WCC.

# 2 DESIGN PRINCIPLES OF THE BCPDS

- 1. The strategy establishes a series of materials and finishes to be used in the public domain, including a standard range of high quality furniture and specific paving and surface treatments for each business centre.
- 2. Footway pavements are specified for longevity, neutral colour to minimise the effect of soiling and to provide a modern urban appearance. Unit paving has been selected in high use footways to simplify the footway construction and allow the removal and reinstatement of the surface by service authorities. In general the range includes high quality clay paving units, and basalt (the local naturally occurring stone) depending on the hierarchy of the particular retail centre.
- 3. Establishing street trees as part of the revitalization of the city is very important. Street trees improve the amenity and quality of city streets in measurable ways such as reduction of dust, glare and temperature extremes, and more subtle ways that improve the visual quality of the street. Due to the importance of these streetscape elements, it is vital that correct stock is selected and correct methods of planting are applied, as per the specifications contained in Section 9 of this chapter.

Note: Where less than 50% of a street is likely to be redeveloped to its urban potential within a 10 year time frame, and the footpath requires replacement, Council reserves the right to repair or replace the footway with an appropriate pavement as an interim measure.

# 2.1 Amenity and Security

- 1. Streets and open spaces should be safe, convenient and comfortable pedestrian spaces that cater to the needs of all users, including people with mobility disabilities. The design of the public domain should include facilities for disabled users, such as pedestrian crossovers, and the choice of paving and street furniture should meet slip resistance and access codes.
- 2. Design for pedestrian amenity should maximise the actual and perceived sense of safety in the public domain. Active use of all spaces, and passive surveillance of streets and parks should be encouraged, particularly at night.

# 2.2 Services within the Footway

- 1. The apparently random location of services and access pits coupled with the sporadic maintenance and access requirements of the utilities has an enormous impact on the appearance of the public domain.
- 2. Coordination with all the utilities is required from the earliest stage of the design and needs to be an ongoing process. Coordination in the early stages of the design should attempt to rationalise trenches and access pits to minimise their impact on the homogeneity and simplicity of the paving

system and to reduce constraints on future tree planting. The under-grounding or bundling of above ground cables should be pursued as part of this process. See Section 8 of this chapter for details.

# **3 STRUCTURE OF THE BCPDS**

- 1. The Wollongong Local Government Area is characterised by a business centres hierarchy comprising of five main levels of business centres. The organising principle of the BCPDS is based on the following hierarchy of business centre types, as described below.
- a) Regional City (Regional Centre) Wollongong City Centre (refer to the Wollongong City Centre Public Domain Technical Manual at Appendix 2 to this DCP).
- b) Major Regional Centres (Sub-Regional Centres) Warrawong and Dapto (emerging)
- Serves a population of up to 100,000 people;
- Generally anchored by at least one discount department store and at least one or two full line supermarket(s) with higher order retailing and a range of non-retail services including cinemas, community services, commercial office space and professional / specialist services serving the subregional population;
- Generally located on major public transport networks.
- c) Major Town Centres (District Centres) Corrimal, Figtree, Fairy Meadow (emerging) and Unanderra (emerging)
- Serves a population of up to 50, 000 people;
- Generally anchored by one discount department store, at least one or two medium to full line supermarkets and other specialty retail shops providing for the major weekly shopping and convenience retail needs of the surrounding population of more than one residential suburb as well as a range of non-retail businesses;
- Close to public transport (rail and / or bus) services.
- d) Town Centres (Neighbourhood Centres)
- Serves a population of 10,000 20,000 people;
- Approximate 800 metre 1 kilometre catchment radius;
- Generally anchored by a medium to full sized supermarket;
- May include a fruit and vegetable store, bakery, butcher and a limited range of non-retail services including a pharmacy, hairdresser(s), medical services, video / entertainment hire outlet etc;
- Close to public transport (bus) services.
- e) Villages (Local Centres)
- Approximately 5- 30 shops;
- Approximate radius of 600 800 metres or a 5 10 minute walk between shops and surrounding residential population;

- Generally served by a small to medium sized supermarket and or mixed business type shop, take away restaurant, bakery, butcher and some limited non-retail services including a hairdresser, video / entertainment hire outlet etc;
- Serves a population of up to 10,000 people.

# 4 STREETSCAPE DESIGN STRATEGY

1. This section of the document nominates the specific treatment for each business centre in accordance with their category. Each centre has an individual streetscape design strategy, which designates the furniture, pavement type and street tree species.

# 4.1 Major Regional Centre - Dapto



Figure 1: Locality Map of Dapto Business Centre

## **Furniture (Section 8)**

a) Seat: Type 1

## **Footway Pavement**

- a) Pattern: 90° herringbone pattern with basalt feature banding.
- b) Pavers: 230x114x50mm, Amber Prestige 'Black and Tan' or approved equivalent
- c) Basalt: 600x400x 40mm Basalt 'Dark' by Sam the Paving Man or approved equivalent

# **Tree Species**

a) Lophostemon confertus (Brush Box)



Figure 2: Example of Pavement type



# 4.2 Major Regional Centre - Warrawong

#### Figure 3: Locality Map of Warrawong Business Centre

## **Furniture (Section 8)**

a) Seat: Type 1

#### **Footway Pavement**

- a) Pattern: 3 rows of stretcher bond course adjacent to the kerb. Header course along the boundary line, with a double header course perpendicular to the kerb at approximately 7m intervals. Pavement body in a stretcher bond pattern perpendicular to kerb
- b) Pavers: 230x114x50mm, Austral, Grove, Firestone Red or approved equivalent

## **Tree Species**

a) Cupaniopsis anacardioides (Tuckeroo)



Figure 4: Example of specified pavement type



# 4.3 Regional Town Centre - Fairy Meadow

Figure 5: Locality Map of Fairy Meadow Business Centre

## **Furniture (Section 8)**

a) Seat: Type 1

## **Footway Pavement**

- a) Pattern: Basket weave in diagonal bands, four pavers wide, 45° to the kerb at 6m intervals. Single header course adjacent to the kerb and boundary line with a carborundum coated asphalt infill.
- b) Pavers: 230x114x50mm, Austral, Grove, 'Firestone Red' or approved equivalent
- c) Note: Existing exposed aggregate infill panels to be discontinued and replaced with asphalt infill as above.

# **Tree Species**

a) Robinia pseudoacacia 'Frisia'



Figure 6: Example of specified pavement type

# 4.4 Regional Town Centre – Figtree



Figure 7: Locality Map of Figtree Business Centre

a) Seat: Type 1

#### **Footway Pavement**

- a) Pattern: Header course to back of kerb and along the boundary line, with a header course perpendicular to the kerb at approximately 7m intervals. Herringbone pattern infill, 90° to the kerb.
- b) Pavers: 230x114x50mm, Austral, Grove, 'Firestone Red' or approved equivalent

#### **Tree Species**

a) Robinia pseudoacacia 'Frisia' (Robinia)



Figure 8: Example of specified pavement type

# 4.5 Regional Town Centre – Unanderra



Figure 9: Locality Map of Unanderra Business Centre

a) Seat: Type 1

#### **Footway Pavement**

- a) Pattern: Header course adjacent to the kerb and boundary, around tree pits and perpendicular to the kerb at approximately 7m intervals. 45° herringbone infill pattern.
- b) Pavers: 230x114x50mm, Amber Prestige 'Black and Tan' or approved equivalent

#### **Tree Species**

a) Lagerstroemia indica (Crepe Myrtle)



Figure 10: Example of specified pavement type

## 4.6 Town Centre – Balgownie



Figure 11: Locality Map of Balgownie Business Centre

a) Seat: Type 1

## **Footway Pavement**

- a) Pattern: Header course adjacent to the kerb and boundary and around tree pits with a carborundum coated asphalt infill.
- b) Pavers: 230x114x50mm, Austral, Grove, 'Firestone Red' or approved equivalent

#### **Tree Species**

a) Lagerstroemia indica (Crepe Myrtle)



Figure 12: Example of specified pavement type

# 4.7 Town Centre - Berkeley



Figure 13: Locality Map of Berkeley Business Centre

a) Seat: Type 1

#### **Footway Pavement**

- a) Pattern: Header course adjacent to the kerb and boundary, around tree pits and perpendicular to the kerb at approximately 7m intervals. Carborundum coated asphalt infill.
- b) Paver: 230x114x50mm, Austral, Grove, 'Firestone Red' or approved equivalent
- c) Note: Existing coloured asphalt to be discontinued and replaced with asphalt infill as above.

## **Tree Species**

a) Robinia pseudoacacia 'Frisia' (Robinia)



Figure 14: Example of specified pavement type

# QUILKEY PLACE **GWYTHER AVENUE PRINCES HIGHWAY** BANK STREET VEIGALS LANE NE 57 STOKES LANE RAILWAY STREET STATION STREET FRANKLINAVENUE MOLLOYSTREE RIXON AVENUE 1159 WILLCAT

# 4.8 Town Centre - Bulli

#### Figure 15: Locality Map of Bulli Business Centre

## **Furniture (Section 8)**

a) Seat: Type 1

## **Footway Pavement**

- a) Pattern: Basket weave pattern with a contrasting header course adjacent to the kerb and boundary and around tree pits.
- b) Pavers:
- c) Body 230x114x50mm PGH, Wirecut 'Acorn' or approved equivalent
- d) Header Coure 230x114x50mm PGH, Wirecut 'Classic Cream' or approved equivalent

## **Tree Species**

a) Livistona australis (Cabbage Tree Palm) – To be planted on wider footways only, to ensure there is no conflict with pedestrians using the footpath, including people with a disability or people pushing a



pram.

b) Robinia pseudoacacia 'Frisia' (Robinia)

Figure 16: Example of specified pavement type

# 4.9 Town Centre – Cringila



#### Figure 17: Locality Map of Cringila Business Centre

## **Furniture (Section 8)**

a) Seat: Type 1

## **Footway Pavement**

- a) Pattern: Header course adjacent to the kerb and boundary, around tree pits and perpendicular to the kerb at approximately 7m intervals. Carborundum coated asphalt infill.
- b) Paver: 230x114x50mm, Amber Prestige 'Black and Tan' or approved equivalent
- c) Note: Existing coloured asphalt to be discontinued and replaced with asphalt infill as above.

#### **Tree Species**

a) Tristaniopsis laurina (Water Gum)



Figure 18: Example of specified pavement type

# 4.10 Town Centre - Helensburgh



Figure 19: Locality Map of Helensburgh Business Centre

## **Furniture (Section 8)**

a) Seat: Type 1

#### **Footway Pavement**

- a) Pattern: Header course to back of kerb and along the boundary line, with a header course perpendicular to the kerb at approximately 7m intervals. Herringbone pattern infill, 90° to the kerb.
- b) Pavers: 230x114x50mm, Austral, Grove, 'Firestone Red' or approved equivalent

## **Tree Species**

a) Lophostemon confertus (Brushbox)



Figure 20: Example of specified pavement type

# 4.11 Town Centre - Port Kembla



Figure 21: Locality Map of Port Kembla Business Centre

a) Seat: Type 1

#### **Footway Pavement**

- a) Patterns: Main body of pavement Brick format header course with carborundum coated asphalt infill.
- Intersections Granite sett banding edge, 3 rows wide, honed black oxide concrete body, finished with quartz broadcast to the surface to match existing.
- c) Pavers: 230x114x50mm Rocla Trupave 'Charcoal' honed finish or approved equivalent

#### **Tree Species**

- a) Lagerstroemia indica (Crepe Myrtle)
- b) Araucaria cookii (Column Pine)



Figure 22: Examples of specified pavement types







# 4.12 Town Centre – Thirroul

Figure 23: Locality Map of Thirroul Business Centre

## **Furniture (Section 8)**

a) Seat: Type 1

## **Footway Pavement**

- a) Pattern: Basalt header course with carborundum coated asphalt infill and 3 rows of granite setts (90 x 90 x 40mm) at 9m centres perpendicular to the kerb.
- b) Intersections basalt paving from kerb to boundary
- c) Basalt: (400 x 600 x 40mm) Basalt 'Black' by Sam the Paving Man or approved equivalent

## **Tree Species**

a) Cupaniopsis anacardiodes (Tuckeroo)



Figure 24: Example of specified pavement type



# 4.13 Town Centre – Windang

Figure 25: Locality Map of Windang Business Centre

a) Seat: Type 1

#### **Footway Pavement**

- a) Pattern: Herringbone, 90° to the kerb. Header course surround to body of pavement.
- b) Pavers: 230x114x50mm, Austral, Grove, 'Firestone Red' or approved equivalent

## **Tree Species**

a) Cupaniopsis anacardiodes (Tuckeroo)



Figure 26: Example of specified pavement type

# 5 VILLAGE CENTRES - DESIGN STRATEGY SUMMARY

Villages	Pavement Type	Furniture (Section 8)	Tree Planting (Section 9)
Austinmer	A/UP(R)	Type 2	N/A (Wires and awnings)
Bellambi	A/UP ( R/B)	Type 2	Lagerstroemia indica (Crepe Myrtle)
Coniston	A/UP(R)	Type 2	Fraxinus griffithii (Evergreen Ash)
Cordeaux Heights	A/UP ( R/B)	Type 2	Lophostemon confertus (Brushbox)
Coledale	A/UP (R/B)	Type 2	Alphotinia excelsa (Mountain Ash)
Corrimal East	Match existing	Туре 2	Cupaniopsis anacardioides (Tuckeroo)
Farmborough Heights	A/UP ( R )	Type 2	Fraxinus griffithii (Evergreen Ash)
Gywnneville	A/UP (B)	Type 2	Gordonia axillaris (Fried Egg Tree)
Horsley	A/UP (R/B)	Туре 2	Robinia psuedoacacia 'Frisia' (Robinia)

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Villages	Pavement Type	Furniture (Section 8)	Tree Planting (Section 9)
Kanahooka	A/UP (R/B)	Туре 2	Tristaniopsis laurina (Water Gum)
Keiraville	Match existing	Туре 2	Tristaniopsis laurina (Water Gum)
Koonawarra	A/UP (R/B)	Туре 2	Callistemon spp (Bottlebrush)
Mangerton /	A/UP ( R )	Туре 2	N/A (Wires and awnings)
Mt St Thomas			
Primbee	A/UP (R/B)	Туре 2	Tristaniopsis laurina (Water Gum)
Stanwell Park	A/UP (R/B)	Туре 2	<i>Brachychiton acerifolius</i> (Illawarra Flame)
Tarrawanna	UP (R/B)	Туре 2	Robinia psuedoacacia 'Frisia' (Robinia)
Woonona East	A/UP (B)	Туре 2	Lophostemon confertus (Brushbox)

#### Legend

A / UP = Clay unit paver header course with a carborundum coated asphalt infill

R = 230x114x50mm Austral Grove 'Firestone Red' or approved equivalent

B = 230x114x50mm, Amber Prestige 'Black and Tan' or approved equivalent

R/B = 230x114x50mm, PGH Wirecut 'Pompeii' or approved equivalent

Note: Where existing footways are paved with clay unit pavers, developers are to match existing colour and type.

# 6 FURNITURE (APPLICABLE TO ALL BUSINESS CENTRES)

# 6.1 Litterbin

- a) Emerdyn Cronulla Sulo Enclosure (or approved equivalent)
- b) Colour : Black



# 6.2 Bike Rack

- a) LEDA SBR85F (or approved equivalent)
- b) Materials: stainless steel
- c) Subsurface or surface mounted



## 6.3 Seats

- a) The park seat should be located where it is possible to get some shade. Seats should be positioned so that they back on to structures where possible.
- b) The wooden slats are fixed to the frame and are easily replaceable, should any damage occur. Where the seat is positioned on a concrete pad on grass, the concrete should be placed flush with adjoining grades for ease of access and mowing.

## 6.3.2 Type 1 Seat

a) Town and Park Timber and Aluminium Metro Seat (or approved equivalent)

Note: Dividing arm rests at max 1.5m centres installed where necessary





#### 6.3.3 Type 2 Seat

a) Street Furniture Australia Plaza Seat (or approved equivalent)

# 7 LARGE SERVICE LIDS IN FOOTWAYS (APPLICABLE TO MAJOR REGIONAL CENTRES AND MAJOR TOWN CENTRES)



NEW METAL PIT COVER AND FRAME WITH PAVING INFILL, NUMBER OF LID PANELS VARIES.

NOTE: WHERE POSSIBLE REALIGN EXISTING PIT COVER TO MATCH NEW PAVING PATTERN. MAXIMUM REALIGNMENT TO BE 5 DEG. OBTAIN PERMISSION FROM RELEVANT AUTHORITY FOR COVER REALIGNMENT KEYHOLES WITH STAINLESS STEEL EXTENSION PIECES

STAINLESS STEEL EXTENSION PIECES TO EDGES OF LID AND FRAME TO ALIGN WITH TOP OF ADJACENT PAVERS BEAM BELOW

LINE OF SETDOWN IN CONCRETE SLAB BELOW

75MM DIA. STAINLESS STEEL DISK EPOXY FIXED TO PAVERS. ENGRAVE SURFACE SYMBOL TO DETAIL CUT PAVERS TO FIT INTO METAL PIT LID TO CONTINUE PATTERN OF SURROUNDING PAVING. LOCATION OF COVER IN RELATION TO PAVING

PATTERN VARIATIONS

PLAN - NTS



# 8 SMALL SERVICE LIDS IN FOOTWAYS (APPLICABLE TO MAJOR REGIONAL CENTRES AND MAJOR TOWN CENTRES)



PLAN - NTS

NOTE: WHERE POSSIBLE REALIGN EXISTING PIT COVER TO MATCH NEW PAVING PATTERN. MAXIMUM REALIGNMENT TO BE 10 DEG. OBTAIN PERMISSION FROM RELEVANT AUTHORITY FOR COVER REALIGNMENT

75MM STAINLESS STEEL DISK EPOXY FIXED TO PAVERS. ENGRAVE SURFACE SYMBOL TO DETAIL

CUT PAVERS TO FIT INTO METAL PIT LID TO CONTINUE PATTERN OF SURROUNDING PAVING. LOCATION OF COVER IN RELATION TO PAVING PATTERN VARIES

10MM SEALANT JOINT AROUND PERIMETER OF METAL FRAME. SEALANT TO BE: 1 PART HIGH PERFORMANCE POLYURETHANE, NON STAINING AND COLOUR MATCHING TO STONE



**SECTION - NTS** 

The provision for underground power is an Integral Energy requirement. The sheet below is a typical detail for underground ducting of electricity in Major Regional Centres and Major Town Centres. The developer shall contact Integral Energy for their requirements.



# 9 TREE PLANTING & SPECIFICATIONS (APPLICABLE TO HIGH VANDALISM AREAS ONLY)



EXTRACT FROM NATSPEC SPECIFIYING TREES			
Nominal Container Volume (L)	Height (m) Measure from top of rootball	Calliper (mm)	Minimum Rootball Diameter
100	3	40	500

## 9.1 Root Barrier

1. Lay continuous lengths of root barrier to protect underground services and prevent root penetration directly under pavement surface. Sprinkle CASORON (or approved equivalent) – root growth inhibitor 100mm wide band outside the perimeter of the excavated pit before placing the root barrier. Use 20g of CASORON – root growth inhibitor per 1sqm.

# 9.2 Sub Soil Drainage

1. Ensure positive drainage to all tree pits prior to backfilling. If not install sub-soil drainage lines and connect to available stormwater system. Notify Certifying Authority with two days notice for inspection of drainage operation prior to backfilling.

# 9.3 Soil Media

1. To be used in tree pits as detailed.

## Soil Mix

- 1. Soil shall be a thoroughly combined mix of 1 part sandy loam to 1 part dolerite with the following properties. Submit sample from suppliers for testing by a competent laboratory for conformance to AS4419.
- Organic Matter <1% by weight
- PH in water 5.5 6.5
- Electrical Conductivity 1.2 dS/m
- Ammonium 20-200mg/kg
- Phosphorous 10-50mg/kg

# 9.4 Street Tree Layout

1. The limitations to the positioning of street trees on footways immediately behind the kerb line are listed below:

LIMIT	CLEARANCE NEEDED
Street intersection	10m from intersection kerb line
Telegraph pole	5m from centre of pole
Storm water inlet	2m from edge of inlet
Major underground service junction	3m from edge of junction box
Bus stops	No trees planted along length of stop
Traffic lights	10m from pole of traffic lights
Driveways	4m from vehicle crossing

# 9.5 Tree Planting Under Wires

- 1. The following species are suitable for planting under wires:
- Fraxinus griffithii (Evergreen Ash)
- Gordonia axillaris (Fried Egg Tree)
- Tristaniopsis laurina (Water Gum)

## 9.6 Maintenance

- 1. All newly planted street trees must be installed with a watering pipe as per the details shown above. Newly planted street trees require deep watering once a week during their first growing season unless frequent heavy rain has occurred or drainage from the tree hole is poor. At each watering the stakes, ties, and guards should be checked and repaired or tightened as necessary.
- 2. The maintenance period is to conclude after a minimum of one full growing season but may continue until the tree is considered established.