

Attachment A
Public Domain Manual

Public Domain Manual

Oran Park Town

May 2011 – Issue FINAL



Planning



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1.

Introduction

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Introduction

1.2 Who Should use this Manual

This manual should be used by developers and design consultants in formulating their designs for the public domain of OPTC. It will also aid Council staff in the approvals process for new developments in OPTC. Further, it will provide managers of the OPTC area with a useful tool in the ongoing maintenance of public domain areas in OPTC.

1.3 Land to Which this Public Domain Manual Applies

This manual applies to the design of public domain areas within the OPTC as shown in the plan below.

Special Areas Requiring a Part B DCP

- Precinct boundary
- Denbigh Transition Area
- Land containing a Riparian Protection Area
- Oran Park Northern and Southern Neighbourhood Centres
- Oran Park Town Centre
- Oran Park Employment Area



Introduction

1.4 Vision

The Oran Park Town Centre is the heart of the Oran Park community and a place that welcomes everybody to shop, work, learn and play. The Town Centre is designed at a human scale to ensure pedestrian comfort and legibility. It has an architectural quality that is attractive, diverse, iconic and interesting, through innovative and sustainable design.

At the heart of the Oran Park Town Centre itself is the community. Public open space, civic and community buildings, pedestrian friendly streets, shared ways and car-free areas are significant elements of the Town Centre. The design of the public and private realms are integrated to provide a sense of openness and space, with strong views and vistas both internally and to important external landmarks. The Town Centre is designed to be used. A variety of spaces are located and designed for community interaction in large and small groups. Places are provided for recreation and entertainment, including community activities and cultural events. A key focus of the Town Centre is education, with a range of opportunities for life-long learning provided. Exceptional employment opportunities in a range of industries and professions are also critical to the success of the Town Centre. Quality living opportunities are available for people to enjoy all of the benefits of town centre living. The Town Centre is prosperous and vibrant during the day and at night and all people feel safe and comfortable moving through the Town Centre at any time. The Oran Park Town Centre is not only a shopping centre, it is a true community hub, providing all of the services and facilities that a community needs.

In its transition from a working dairy farm and raceway into a modern thriving community, the Oran Park Town Centre is founded on a healthy respect for its rich and varied history and at the same time is forging a new and interesting history for the future community. Elements of traditional town centre design are balanced with new creative and unique directions for town centre design. Together, the blending of the old and new will create a unique Oran Park Town Centre experience for all. This experience will be one that encourages inclusiveness and celebrates difference, provides excellent legibility and opportunities for exploration, offers a wide mix of land uses and encourages appropriate niche marketing, and combines the comfort of an indoor shopping experience with traditional elements of a main street type centre.



- Pedestrian Friendly Street at Bondi Junction



- Main street / Town square water feature at Rouse Hill

Introduction

1.5 Accessibility

The Federal Government, through the Australian Disability Discrimination Act 1992 (DDA) acknowledges the right of all individuals to equitable access. The New South Wales Anti-Discrimination Act 1977 (ADA) was amended in 1994 to comply with the DDA.

It is a requirement of Camden Council that any proposed development within the LGA, to take into account provisions for persons with a disability.

Development within OPTC must enable a person with a disability to freely move and integrate with others without any barrier. It involves the seamless blending of numerous key components, such as communication, transport, employment, education, external pathways, community awareness, housing and buildings.

Special onerous access provisions should not be necessary if the environment is built to adequately reflect the diversity and needs of the community.

Good design should seamlessly provide access for all. Access should be a fundamental part of good design rather than something that is provided at a later stage to solve problems.

1.6 Sustainability

Achieving a sustainable outcome should be a major goal for designers and developers operating in OPTC. The careful design, selection and use of materials, the management of stormwater, management of waste, water and energy use and consumption and incorporation of plant material should be dealt with in this context.

Where possible recycled, renewable and reusable materials should be used in the public domain works.

1.7 How to Use This Manual

This manual consists of the following Sections:

Section 1 - Introduction

Provides a general outline of the contents and need for a Public Domain Manual for Oran Park Centre.

Section 2 – Masterplan

Provides a brief outline on the process of formulating and the planning guiding the Oran Park Town Centre Masterplan.

Section 3 – Design Principles

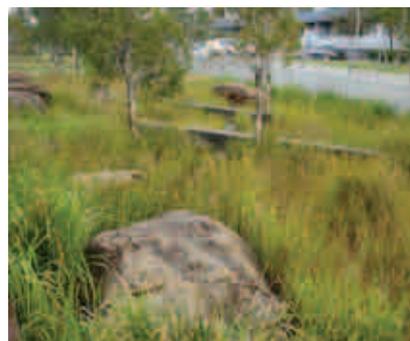
Provides an illustrative design treatment for the public domain elements and description of the finishes and materials used in each public domain element.

Section 4 – Materials and Finishes

Provides a detailed description of each of the finishes and materials used to create the public domain elements.



- Accessible stairs in Oran Park Temporary Park



- Example of sustainable water management at Victoria Park, Zetland.

2.

Masterplan

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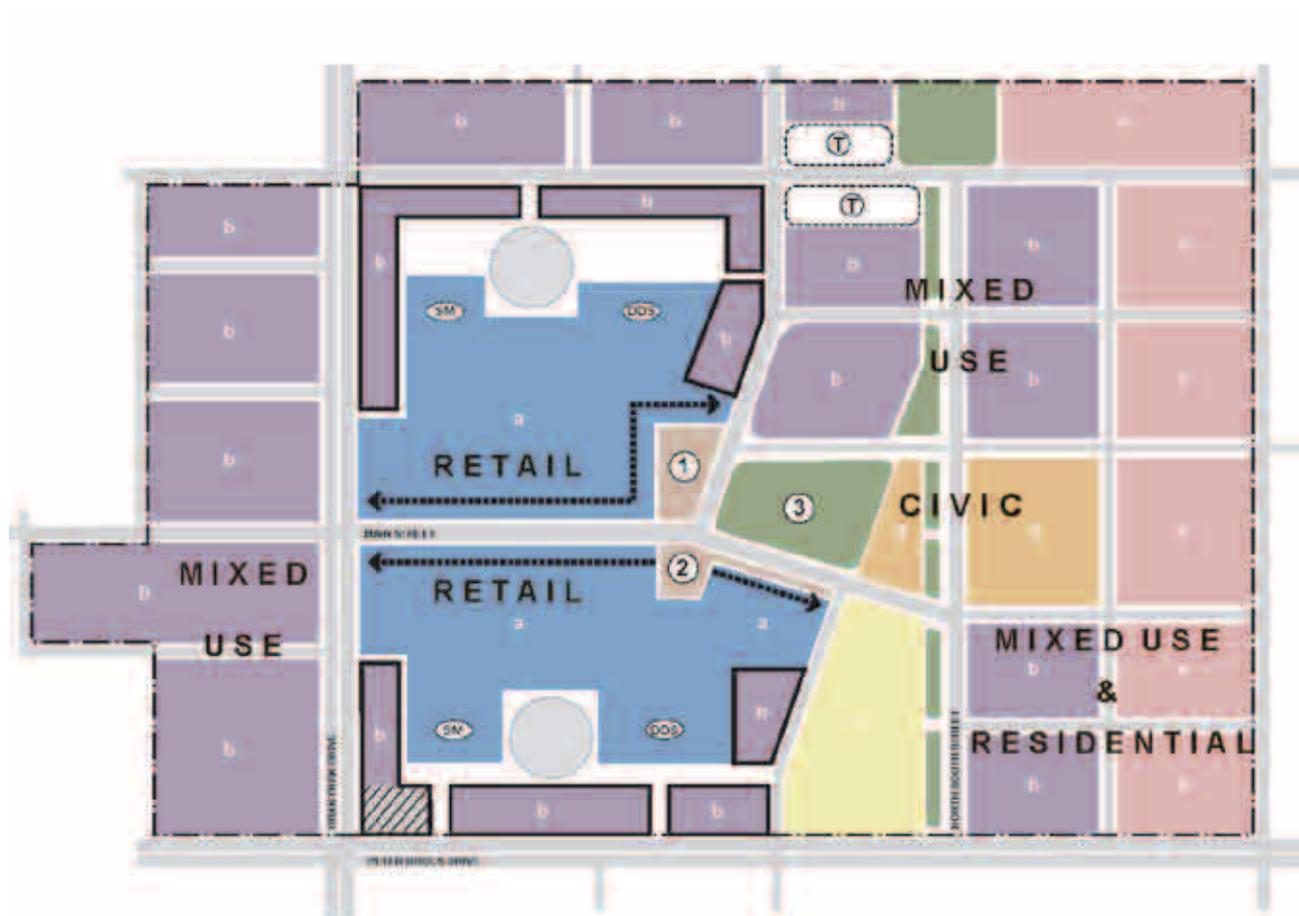
Masterplan

2.0 Generally

OPTC is a rectangular shaped block of approximately 38.25 hectares, located centrally within the Oran Park Town area.

The OPTC Masterplan has been developed through a consultation process between the Department of Planning, Camden Council, Landowners, future stakeholders and the consultant team.

The OPTC consists of a mix of retail, commercial, residential, civic developments within a framework of streets and an open space network.



Oran Park Town Structure Plan (LFA)

Masterplan

2.1 Town Centre Street Network

The OPTC Street Network Structure Plan provides a clear hierarchy of street types.

The street network is made up of the following street types:

- Perimeter Streets - sub-arterial roads that feed into OPTC from outlying parts of Oran Park.
- Main Street an east west orientated street which will be the focal point of the retail area of OPTC;
- North South Street which essentially marks the division between the retail portion of OPTC from the civic and mixed use precincts and also acts as a green corridor through OPTC linking the Learning Common through the education precinct to the south of OPTC and the riparian corridor to the north;
- Secondary Streets which create the block arrangement and access through the mixed use and civic precinct.
- Calmed Streets will provide the interface between the retail precincts and the Town Park;
- Service and parking access points which essentially are driveways off the Perimeter Streets into underground carparks, ongrade carparks or service/delivery bays.



The scale, character and purpose of the roads will determine the style of treatment and street tree planting of the roads.



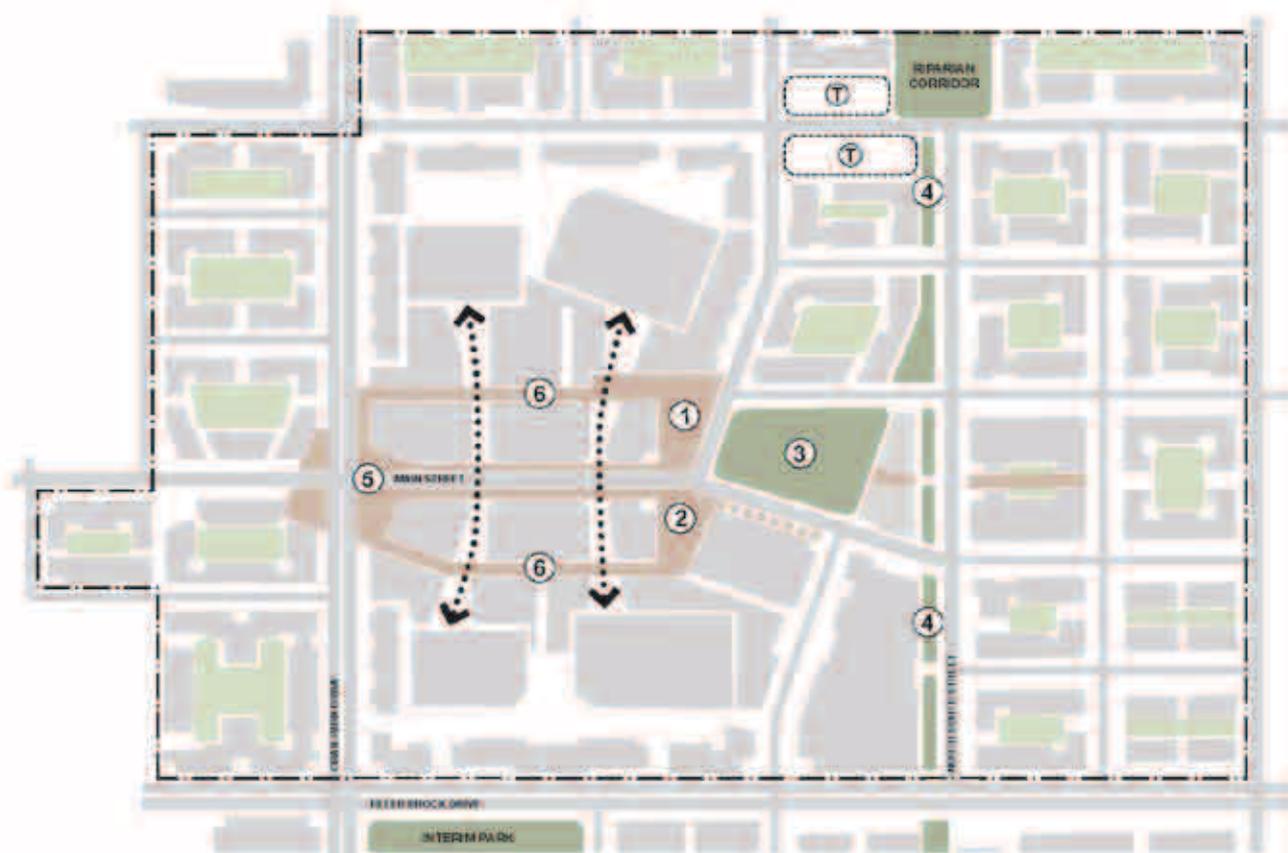
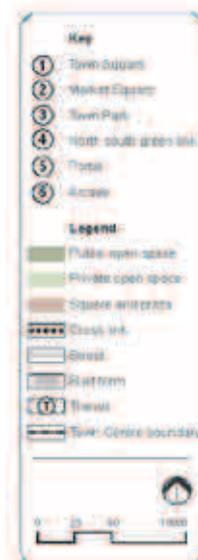
Oran Park Town Street Hierarchy Plan (LFA)

Masterplan

1.2 Open Space

OPTC contains a range of well connected open space areas, parks and plazas. These open space areas are primarily passive open spaces strongly associated with urban living. The main open space areas are:

- Town Park – a village green type gathering / event / passive space located in the heart of OPTC;
- Town Square - located west of Town Park;
- Market Square located south and west of Town Park;
- North South Green Link – a green artery running through the centre of OPTC providing a strong pedestrian / cycleway connection to outlying areas of Oran Park;
- Riparian Corridor – a parkland area bringing the surrounding bushland environment and character to the doorstep of OPTC.



Oran Park Town Open Space Hierarchy Plan (LFA)

Masterplan

1.3 Street Tree Network

“Trees in streets are essential for a high quality streetscape.”

“Healthy, established urban trees provide a long term legacy for the community. Many of the most memorable streets and localities can attribute their noteworthy status to the presence of large healthy trees. At the regional scale street trees contribute to the overall percentage canopy cover which in turn delivers a variety of environmental benefits.”

Street Tree Design Guidelines for Landcom Projects May 2008

Street tree planting in OPTC responds to:

- the scale of the subject street;
- the lot layout, street lighting, services and drainage layout;
- the visual prominence of the street;
- natural habitat;
- the requirement to provide visual amenity, shade and temperature control.
- the need to address and increase solar access and temperature control to open space areas and streetscapes and homes has led to the general use of deciduous trees on east-west road axis and evergreen species on north south road axis. This ensures solar penetration into north facing areas and lots during winter days

All street tree plantings and street tree pits will be protected by street tree posts and will be underplanted with a range of ground cover plantings within a timber for road verge planting or concrete edge for street tree pits.



Oran Park Town Street Tree Network

3.

Design Principles

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Design Principles

2.1 Generally

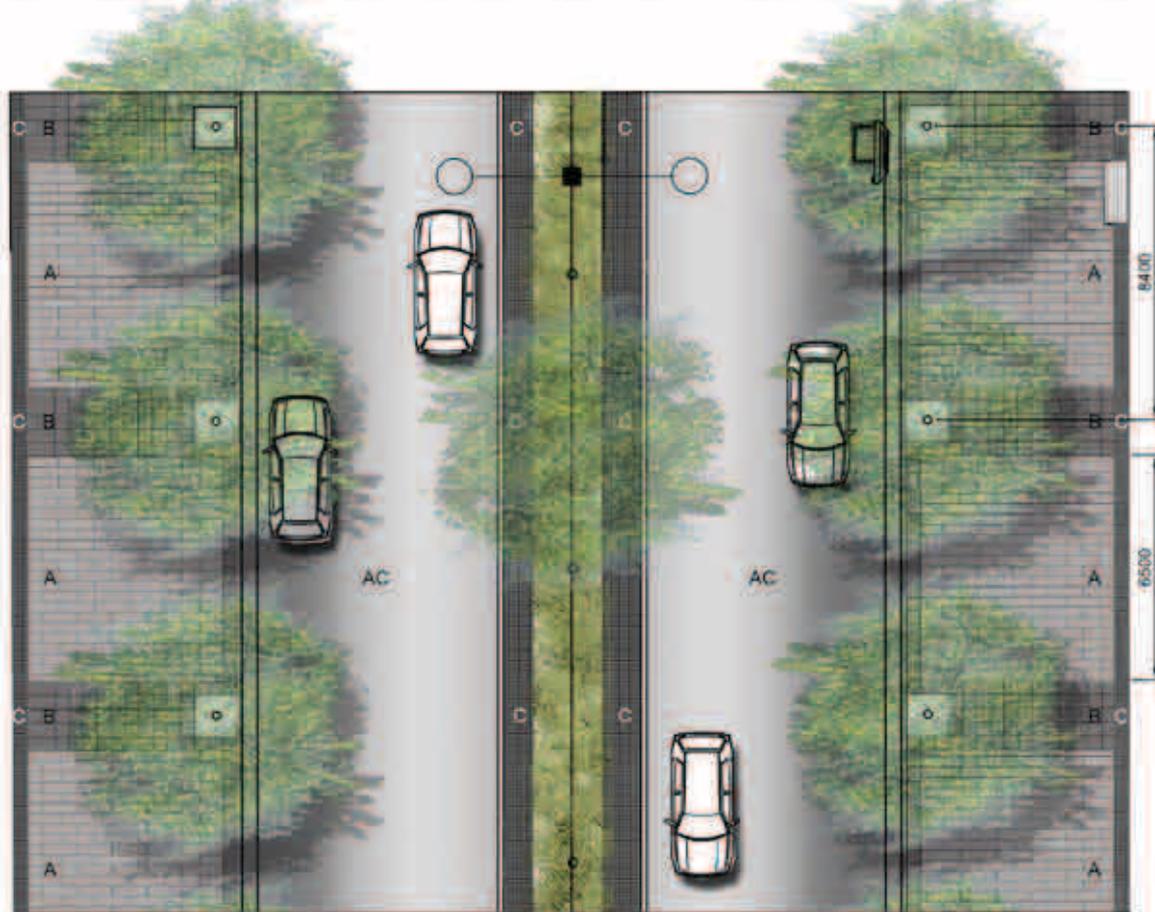
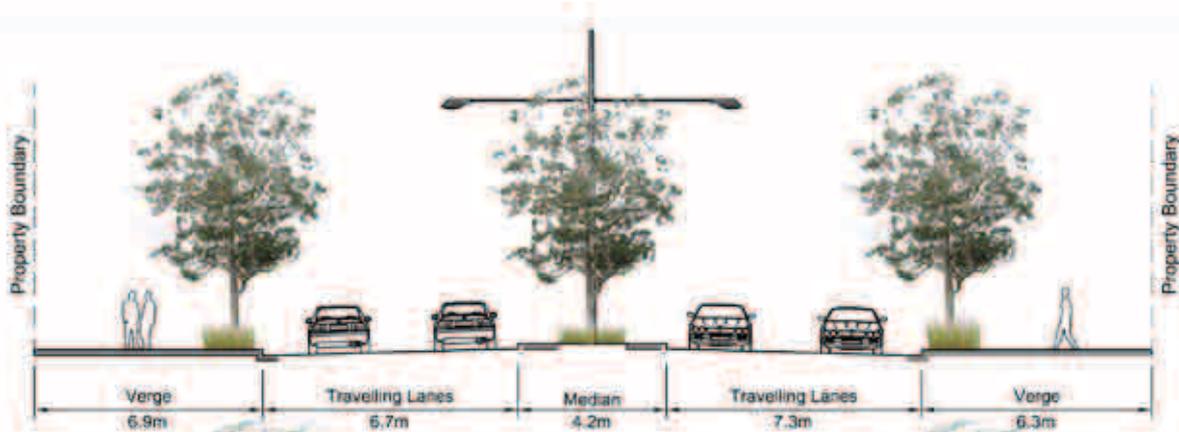
Design principles have been developed for each of the main elements within the public domain of OPTC. OPTC will have a unified and integrated character through a consistency of complementary materials, details, finishes and treatments.

Criteria for the selection and use of materials, elements and finishes within the public domain of OPTC were:

- design – items are to be functional and meet the needs of OPTC users;
- aesthetics – items are to relate to the scale, style and character of OPTC;
- availability and ongoing supply – selection of items such as furniture and pavements e.g. should have a long term view of availability and supply for replacement parts and servicing;
- cost – items are to be affordable and within the means of ongoing OPTC public domain managers;
- maintenance – items must be easily maintained and not have onerous demanding ongoing maintenance requirements;
- life span / longevity – items selected should be looking at as long a lifespan as feasible to ensure OPTC public domain managers are not incurred with expensive recurrent replacement costs;
- workability – items should be chosen for their simplicity;
- sustainability – ESD principles of each item selected should be reviewed prior to final selection;
- accessibility – all items must conform to with the Australian Disability Discrimination Act 1992 and relevant Australian Standards;
- vandal resistance – all items must be implemented with view to reducing vandalism and a suitable repair programme in place;
- safety - items must conform to relevant codes and Australian Standards.

Design Principles

3.2 Perimeter Streets (General Arrangement)



LEGEND

- | | | |
|--|--|------------------------------------|
| Type 'A' paver - 1000 x 300 x 40mm 'Sesame Grey' exfoliated granite finish. | Street lighting - Smart pole, type to Electrical Engineers details | Mass Planting |
| Type 'B' paver banding - 400 x 400 x 40mm: 'Raven Black' exfoliated granite finish | Bench Seat | Road pavement to Engineers details |
| Type 'C' paving: 'Raven Black' natural split 90 x 90 x 40mm granite sett paving. | Street Tree with mass planting beneath | |

Design Principles

3.2 Perimeter Streets

The Perimeter Streets are important roads that effectively mark the extent of the OPTC. They will act as the commuter roads that provide access to and around the OPTC. Treatment of each of the four Perimeter Roads will be consistent in road verge paving and street tree planting and will be the signal that you are entering the Town Centre.

Road Verge Paving

- Paving Types A, B and C stone paving;
- Tactile pavers used at pram ramps and driveway crossings;
- Paving Type C with brass edge used to delineate public / private realms;
- Concrete kerbing.

Road Pavement

- AC 10 Asphalt paving with coloured concrete banding and Paving Types E and G at Pedestrian Crossing Points

Median Treatment

- Concrete kerbs with 1.0m wide Paving Type C stone paving to median edges;
- The centre of the median to be mass planted with hardy ground covers and strappy plants.

Street Lighting

- Location of street lighting to be carefully co-ordinated with street tree placements and building awnings and to co-ordinate with built elements ie colonnades etc ;
- Street light poles to be set back 900mm from face of kerb to line up with street trees;
- Setout street lighting to authority requirements;
- 'Smart Pole Type'.

Seating

- Locate permanent seating at approximately 50m intervals along Perimeter Streets.

Bollards

- Stainless steel type set at 1500mm centres to prevent vehicular access

Rubbish Bin Enclosures

- Rubbish bin enclosures to be located at regular intervals ie near street corners and adjacent food court and outdoor cafe areas;

Bicycle Racks

- Locate bicycle racks on each side of road toward beginning and end of the street;



- Perimeter Street Character
Bingara Gorge

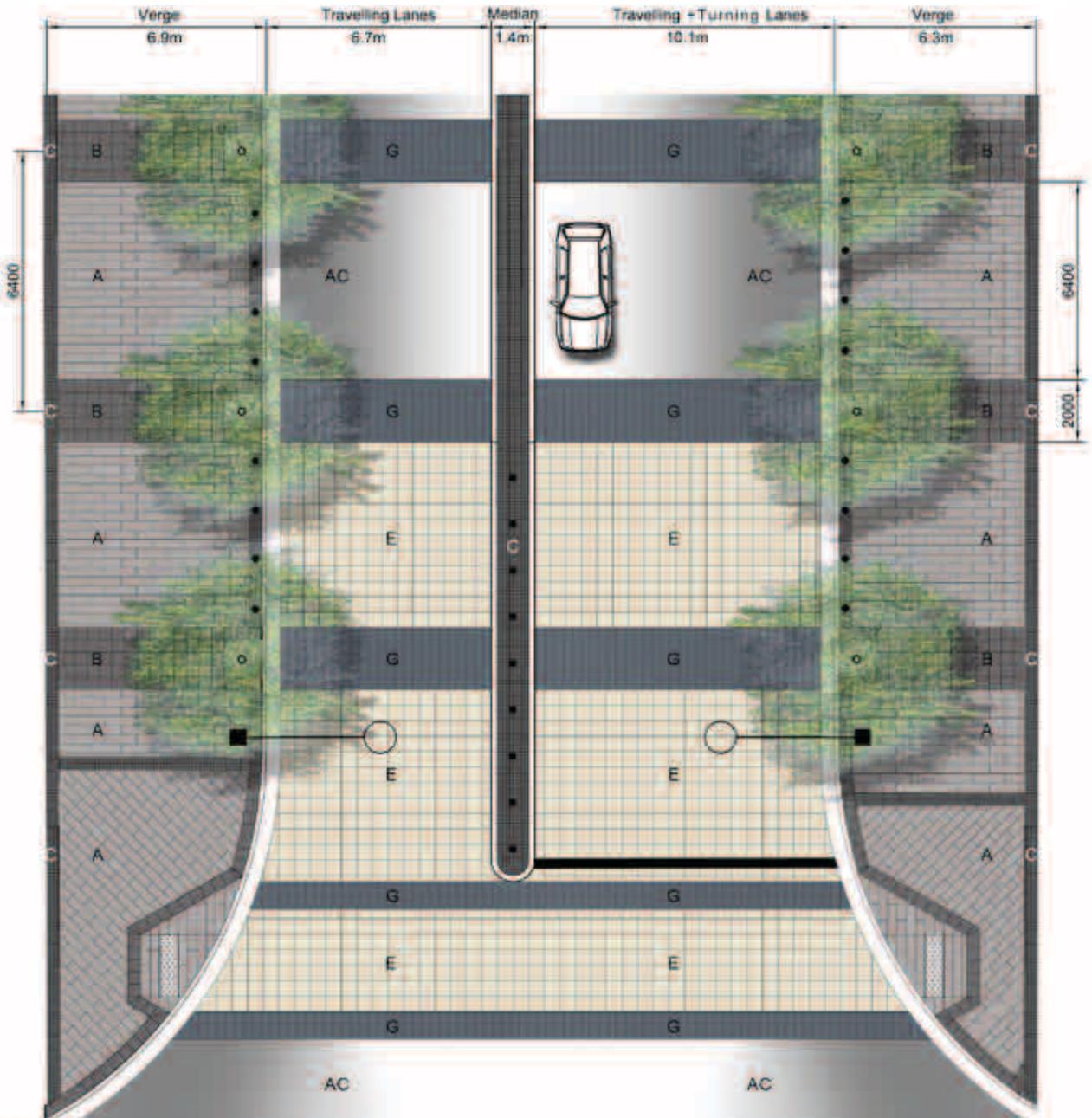


- Broadscale grand streets that delineate the
Town's edge (Gelong)

Perimeter Streets (cont next page)

Design Principles

3.2 Perimeter Streets (Intersection)



LEGEND

- | | | |
|---|--|--|
|  Type 'A' paver - 1000 x 300 x 40mm 'Sesame Grey' exfoliated granite finish. |  Type 'G' paving - reinforced charcoal coloured concrete. |  Street Tree with mass planting beneath |
|  Type 'B' paver banding - 400 x 400 x 40mm; 'Raven Black' exfoliated granite finish. |  Tactile Paving - Charcoal or White contrasting colour to verge paving. |  Street lighting - Smart pole, type to Electrical Engineers details |
|  Type 'C' paving: 'Raven Black' natural split 90 x 90 x 40mm granite sett paving. |  Road pavement according to Engineers details |  Fixed bollards at 1500 ctrs as specified |
|  Type 'E' paving - reinforced wet concrete, saw cut & lightly washed. | | |

Design Principles

3.2 Perimeter Streets (continued)

Signage

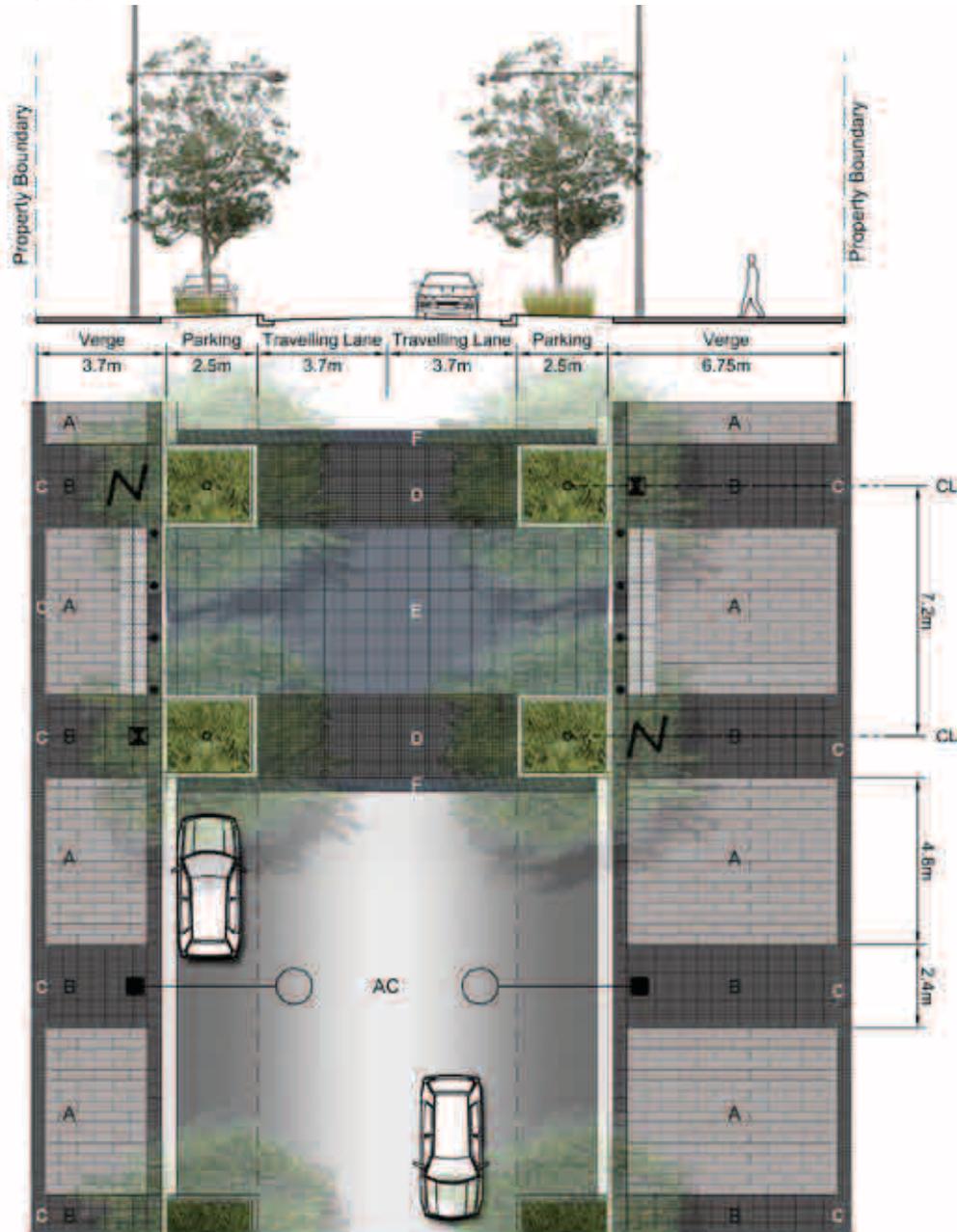
- Incorporate signage and traffic control devices into street light columns where possible;

Street and Median Trees

- Ensure sufficient soil volume, soil depth, drainage and water for street trees – ensure absolute minimum of 25m² per tree by 1000mm depth;
- Provide street and median trees at 10-12m spacings to both sides of the road;
- Species – Pin Oak (*Quercus palustris*)

Design Principles

3.3 Main Street



LEGEND

	Type 'A' paver - 1000 x 300 x 40mm 'Sesame Grey' exfoliated granite finish.		Type 'F' paving: Lightly washed plain concrete, 600mm wide.		Bicycle rack
	Type 'B' paver banding - 400 x 400 x 40mm: 'Raven Black' exfoliated granite finish.		Street Tree with mass planting beneath		Rubbish bin enclosure
	Type 'C' paving: 'Raven Black' natural split 90 x 90 x 40mm granite sett paving		Street lighting - Smart pole, type to Electrical Engineers details		Mass Planting
	Type 'D' paving: 'Shingle Black' exfoliated basalt finish.		Fixed bollards at 1500 ctrs		Road pavement to Engineers details
	Type 'E' paving: reinforced charcoal coloured concrete with 600x600 saw-cuts		Tactile Paving - Charcoal or White contrasting colour to verge paving		

Design Principles

3.3 Main Street

The Main Street will be an inviting and exciting place with active street frontages that encourage day and night usage year round.

Traffic will be slowed through a range of traffic calming measures, such as, pavement variations, street furniture, in-street tree planting, pedestrian crossing points and sign posting.

Road Verge Paving

- Paving Types A, B and C stone paving;
- Tactile pavers used at pram ramps and driveway crossings;
- Paving Type C with brass edge used to delineate public / private realms;
- Concrete kerbing.

Road Pavement

- AC 10 Asphalt paving with coloured concrete banding and Paving Types D, E and F at Pedestrian Crossing Points

Street Lighting

- Location of street lighting to be carefully co-ordinated with street tree placements and building awnings and to co-ordinate with built elements ie colonnades etc ;
- Street light poles to be set back 900mm from face of kerb to line up with street trees;
- Setout street lighting to authority requirements;
- 'Smart Pole Type'.

Seating

- Locate permanent seating at approximately 50m intervals along Main Street.

Bollards

- Stainless steel type set at 1500mm centres to prevent vehicular access

Rubbish Bin Enclosures

- Rubbish bin enclosures to be located at regular intervals adjacent food court precincts and pedestrian crossings;

Bicycle Racks

- Locate bicycle racks on each side of road toward beginning and end of the street;

Signage

- Incorporate signage and traffic control devices into street light columns.

Street Trees

- Ensure sufficient soil volume, soil depth, drainage and water for street tree pits – ensure absolute minimum of 25m² per tree by 1000mm depth;
- Provide street trees at 10-12m spacings to both sides of the road;
- Species – Chinese Tallowood (*Sapium sebiferum*)



- Main Streets should be intimate, inviting, lively and active places



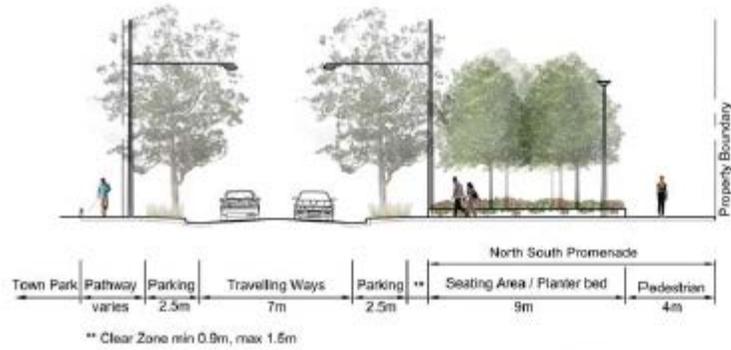
- Example of Main Street character, Parramatta, NSW



- Main Streets should be intimate, inviting, lively and active places

Design Principles

3.4A North South Street with Promenade (Activation Zones)



Design Principles

3.4A North South Street with Promenade (Activation Zones)

The North South Street and promenade is a very strong pedestrian / cycleway link providing significant vehicle, pedestrian and cycle connectivity between outlying areas north and south of the Town Centre to the the Town Park, Civic and Leisure precinct.

The street will be a wonderful, wide tree-lined street with a boulevard character that incorporates feature plantings and urban amenities. There is also a wonderful opportunity to incorporate a variety of public art along the length of the street.

Treatment of North South Street in the activation zones is a harder edged and more formalised character with a range of urban, boulevard treatments, generous seating opportunities and feature garden beds with tree planting.

Road Verge Paving

- Paving Types A, B, C and D stone paving and concrete kerbing;
- Tactile pavers used at pram ramps and driveway crossings;
- Paving Type C with brass edge used to delineate public/private realms.

Road Pavement

- AC 10 Asphalt paving with concrete dish drains between carriageway and parking areas, coloured concrete banding and Paving Types E and G at Pedestrian Crossing Points (refer Perimeter Streets Intersection Plan).

Street Lighting

- Location of street lighting to be carefully co-ordinated with street tree placements, and to co-ordinate with street furniture and paving bands;
- Multi function Pole street lights to be typically set back 900mm from face of kerb;
- Setout street lighting to authority requirements.

Seating

- Locate permanent seating and ancillary seating throughout the promenade corridor to cater for large numbers of users during events and lunch time crowds from surrounding activities and uses.

Bollards

- Stainless steel type set at 1500mm centres, as required.

Rubbish Bin Enclosures and Bicycle Racks

- Locate rubbish bin enclosures and bicycle racks on each side of road toward beginning and end of the street.

Signage

- Incorporate signage and traffic control devices into street light columns, where possible.

Street Trees

- Ensure sufficient soil volume, soil depth, drainage and water for street tree pits;
- Species – Big, evergreen species Brush Box (*Lophostemon confertus*) to line streets and Jeffers Red Maple (*Acer x freemanii* 'Jeffers Red') along promenade.
- Provide street trees at nominally 20m spacings to both sides of the road allowing for three carpark spaces.



- Example of civic planting and seating promenade in Adelaide



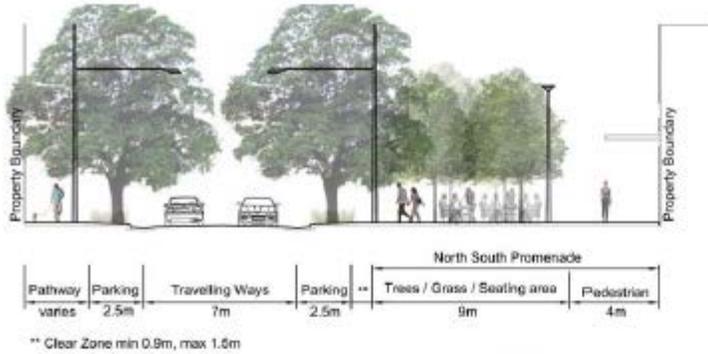
- Example of street tree species *Lophostemon confertus*



- Example of promenade street tree species *Acer x freemanii* 'Jeffers Red'

Design Principles

3.4B North South Street with Promenade (Multiuse Zones)



Design Principles

3.4B North South Street with Promenade (Multiuse Zones)

The North South Street and promenade is a very strong pedestrian / cycleway link providing significant vehicle, pedestrian and cycle connectivity outlying areas north and south of the Town Centre to the the Town Park, Civic and Leisure precinct.

The street will be a wonderful, wide tree-lined street with a boulevard character that incorporates feature plantings, urban amenities. There is also an opportunity to incorporate grass areas with tree planting, outdoor eating and dining in front of cafes and restaurants.

Treatment of North South Street in the multiuse zones is a less formal, softer landscape character with select areas of paving and seating that relate to adjacent uses as well as trees in open grass areas.

Road Verge Treatment

- Paving Types A, B, C and D stone paving and concrete kerbing;
- Tactile pavers used at pram ramps and driveway crossings;
- Paving Type C with brass edge used to delineate public/private realms;
- Trees in turf areas.

Road Pavement

- AC 10 Asphalt paving with concrete dish drains between carriageway and parking.

Street Lighting

- Location of street lighting to be carefully co-ordinated with street tree placements, and to co-ordinate with street furniture and paving bands;
- Multi function Pole street lights to be typically set back 900mm from face of kerb;
- Setout street lighting to authority requirements.

Seating

- Locate permanent seating and ancillary seating throughout the promenade corridor that responds to adjacent uses and business types ie commerical office, retail, cafe/restaurants, etc;
- Provide opportunities along the street for spaces to be leased such as cafe and restaurant dining areas and other uses.

Rubbish Bin Enclosures and Bicycle Racks

- Locate rubbish bin enclosures and bicycle racks on each side of road toward beginning and end of the street.

Signage

- Incorporate signage and traffic control devices into street light columns, where possible.

Street Trees

- Ensure sufficient soil volume, soil depth, drainage and water for street tree pits;
- Species – Big, evergreen species Brush Box (*Lophostemon confertus*) to line streets and Jeffers Red Maple (*Acer x freemanii* 'Jeffers Red') along promenade.
- Provide street trees at nominally 20m spacings to both sides of the road allowing for three carpark spaces.



- Example of planting and seating promenade in Dandenong, Victoria



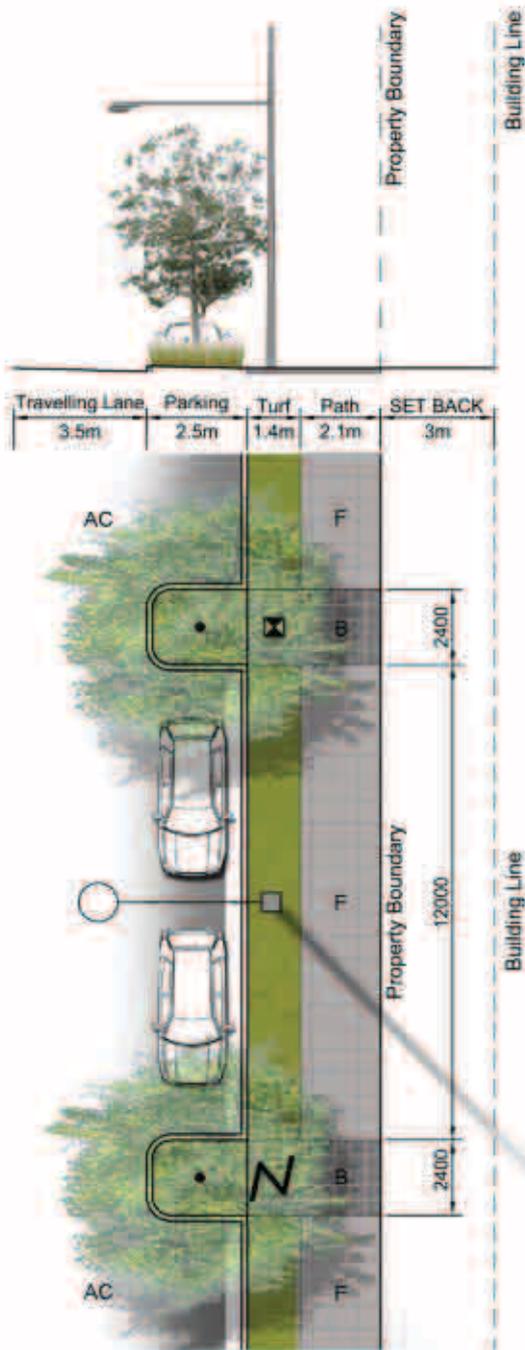
- Example of street tree species *Lophostemon confertus*



- Example of promenade street tree species *Acer x freemanii* 'Jeffers Red'

Design Principles

3.5 Secondary Streets



LEGEND

-  Road pavement according to Engineers details
-  Type 'B' paver banding - 400 x 400 x 40mm: 'Raven Black' exfoliated granite finish.
-  Type 'F' pavement: reinforced wet concrete, saw cut & lightly washed.
-  Bicycle rack
-  Rubbish bin enclosure
-  Street lighting - Smart pole, type to Electrical Engineers details.
-  Street Tree with mass planting beneath
-  Turf

Design Principles

3.5 Secondary Streets

Secondary streets will provide an inviting and pleasant character with a high level of pedestrian amenity providing a clear line of travel along building frontages.

Secondary streets will have a strong urban character with wide paved footways to the property line (with private garden beyond) and narrow green buffers to the back of the kerb.

Road Verge Paving

- Lightly washed reinforced concrete pavement 2.4m wide with sawcut pattern and decorative gravel with 900wide turf edge to back of kerb;
- Tactile pavers used at pram ramps and driveway crossings;
- Concrete kerbing.

Road Pavement

- AC 10 Asphalt paving

Street Lighting

- Location of street lighting to be carefully co-ordinated with street tree placements;
- Street light poles to be set back 900mm from face of kerb to line up with street trees;
- Setout street lighting to authority requirements;
- 'Smart Pole Type'.

Seating

- Locate permanent seating halfway along each block at street tree planting areas.

Rubbish Bin Enclosures

- Rubbish bin enclosures to be located at regular intervals ie near street corners and adjacent food court and outdoor cafe areas;

Signage

- Incorporate signage and traffic control devices into street light columns.

Street Trees

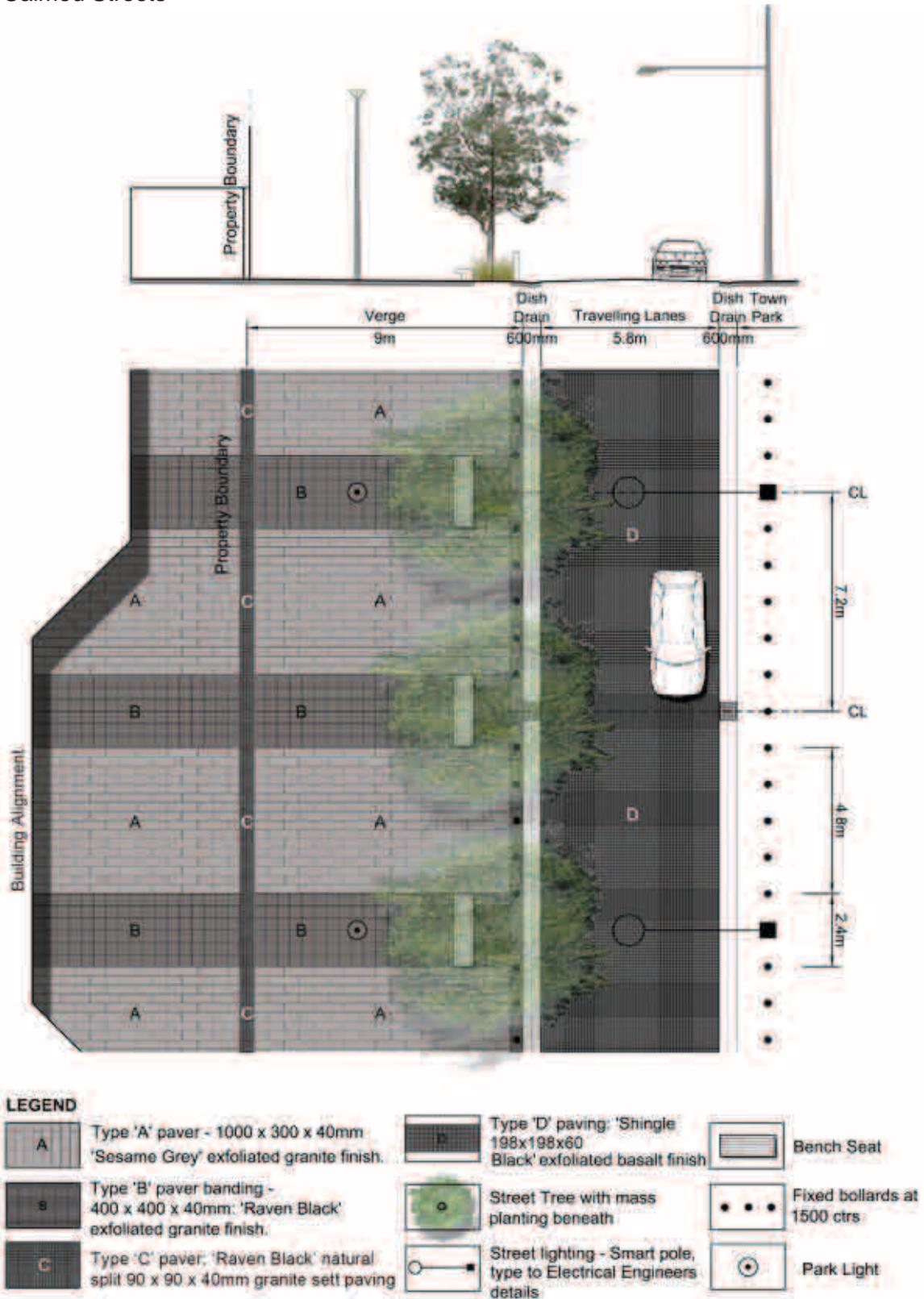
- Ensure sufficient soil volume, soil depth, drainage and water for street tree pits – ensure absolute minimum of 25m² per tree by 1000mm depth;
- Provide street trees at 14-16m spacings to both sides of the road to break up car park bays;
- East-west axis streets will be planted with medium sized deciduous trees such as Chinese Elm (*Ulmus parvifolia*) to winter sun into north facing properties;
- North –south axis streets will be planted with medium sized evergreen trees such as Tuckeroo (*Cupaniopsis anacardioides*), to provide a canopy to ameliorate building mass and provide leafy canopy throughout OPTC.



- Example of Secondary Street character Kogarah, NSW

Design Principles

3.6 Calmed Streets



Design Principles

3.6 Calmed Streets

The Calmed Streets that interface the Town Square, Market Square and Town Park will be Share Traffic Zones creating an inviting and active place that encourages day and night usage year round.

Traffic will be slowed through a range of traffic calming measures, to strongly reinforce pedestrian priority, such as, pavement variations, street furniture, in-street tree planting, pedestrian crossing points and sign posting.

Road Verge Paving

- Paving Types A, B and C stone paving;
- Tactile pavers used at pram ramps and driveway crossings;
- Paving Type C with brass edge used to delineate public / private realms;
- Concrete kerbing.

Road Pavement

- Paving Type D with contrasting coloured concrete edge strips;

Street Lighting

- Location of street lighting to be carefully co-ordinated with street tree placements and building awnings and to co-ordinate with built elements ie colonnades etc ;
- Street light poles to be set back 900mm from face of kerb to line up with street trees;
- Setout street lighting to authority requirements;
- 'Smart Pole Type'.

Seating

- Seating will be provided in adjacent open space areas.

Bollards

- Stainless steel type set at 1500mm centres to prevent vehicular access

Rubbish Bin Enclosures

- Rubbish bin enclosures will be provided in adjacent open space areas and at regular intervals adjacent to food court areas;

Bicycle Racks

- Bicycle racks will be provided in adjacent open space areas;

Signage

- Incorporate signage and traffic control devices into street light columns.

Street Trees

- Ensure sufficient soil volume, soil depth, drainage and water for street tree pits – ensure absolute minimum of 25m² per tree by 1000mm depth;
- Provide street trees at 8-10m spacings to both sides of the road;



- Example of Calmed Street character
Docklands, Melbourne

Design Principles

3.7 Main Service and Parking Access

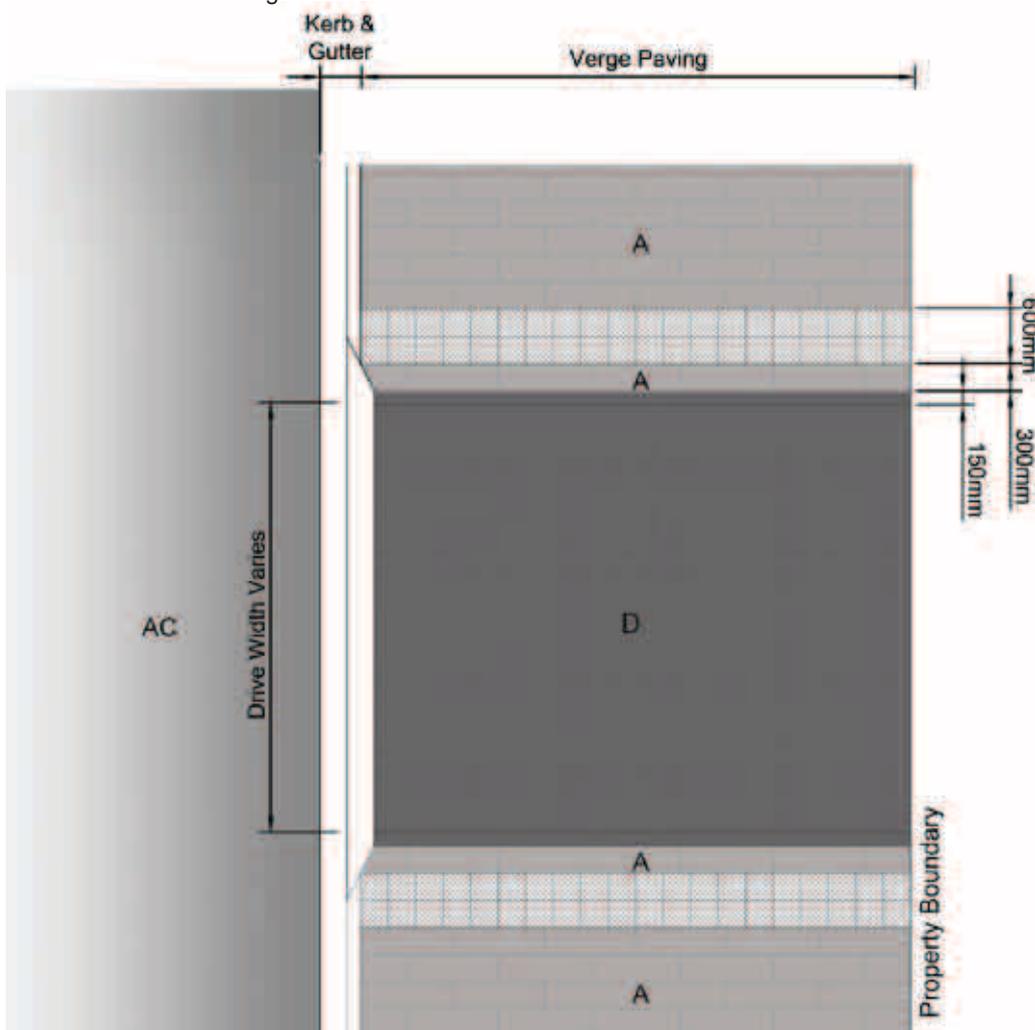
Service and parking access driveways must be clearly delineated, finish flush and level with the adjacent verge, be clearly understood and read as part of the streetscape. They also must be very hard wearing as they will take large volumes of traffic and heavy loads from delivery and service vehicles.

Driveway Paving

- Paving Type D stone paving with concrete edge restraints;
- Tactile pavers of a contrasting colour to the road verge paving must clearly signal a driveway crossing;
- Concrete kerbing.



- Example of driveway crossing at Oran Park



A	Type 'A' paver - 1000 x 300 x 40mm 'Sesame Grey' exfoliated granite finish.	AC	Road pavement according to Engineers details
D	Type 'D' paving: 'Shingle Black' exfoliated basalt finish.	[Tactile Paving Icon]	Tactile Paving - Charcoal or White contrasting colour to verge paving

Design Principles

3.8 Town Park

The Town Park is located at the core of OPTC and will be a focal point for events and festivals in OPTC as well as being a highly visible space located at the end of a number of prominent vistas and being viewed from adjacent apartment housing.

It will be a very flexible space able to cater for a range of events but also providing a range of passive recreational opportunities for OPTC patrons. The design of the park will encourage day and night use through out the year.

Paving

- Paving Types A, B and C stone paving;
- Compacted decomposed granite paving behind seating steps;
- Tactile pavers used at pram ramps;
- Concrete kerbing.

Area Lighting

- Lighting to be provided throughout Town Park to meet Council Standards and provide a safe and comfortable level of night lighting;
- Lighting posts to be co-ordinated with paving and tree planting design;

Seating

- Locate permanent seating and ancillary seating throughout the park to cater for large numbers of park users during events and lunch time shopping crowds;
-

Play Equipment

- Play equipment must be attractive, well finished, durable and sculptural;
- Play equipment and surfacing of playgrounds must meet AS4685;
- Minimise play equipment with moving parts such as swings – incorporate more climbing, balancing or imaginative play elements;

Water Play Elements

- Water play elements must be attractive, well finished, durable and sculptural;
- Ponding of water will not be permitted, ensure all water drains freely to a well or sumps;

Public Art

- Ensure public art elements are relevant and responsive to the nature of OPTC;

Bollards

- Stainless steel type set at 1500mm centres to prevent vehicular access

Rubbish Bin Enclosures

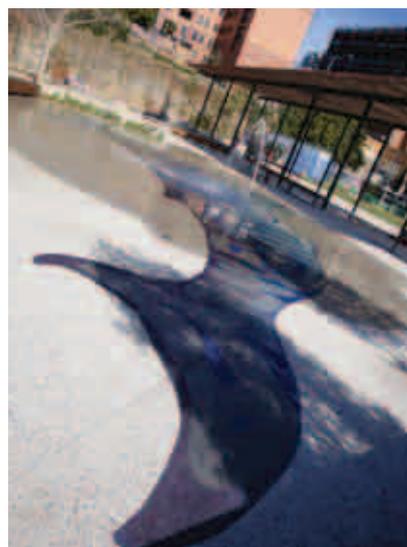
- Rubbish bin enclosures to be located at regular intervals throughout the park;



- Example of open space terracing



- Example of playground



- Example of water play, Pirrama Park, Pyrmont

Town Park (cont next page)

Design Principles

3.8 Town Park



LEGEND

	Raised planter		Street lighting - Smart pole, type to Electrical Engineers details
	Grass		Performance space
	Seating elements		Pergola
	Water feature		Market Stalls
	Street Tree with mass planting beneath		Seating walls with reconstituted concrete between

Design Principles

3.8 Town Park (continued)

Bicycle Racks

- Locate bicycle racks adjacent to major bicycle entry points into the park;

Signage

- Incorporate signage into street light and area light columns to reduce the number of poles in the landscape.

Park Tree Species

- Ensure sufficient soil volume, soil depth, drainage and water for park tree pits – allow 30m² per tree 1000mm depth.
- Species –

Symbol	Location	Species	Common Name	Mature Hgt & Spd (m)
	Feature Tree	Ficus macrophylla	Morton Bay Fig	25 x 25
	Canopy Tree	Corymbia citriodora	Lemon Scented gum	25 x 8
	Civic Forecourt	Ulmus parvifolia	Chinese Elm	12 x 10
	Park Edge	Sapium sebiferum	Chinese Tallow	10 x 10

Watering Points

- Ensure all open space areas are connected to the town recycled water supply;
- Ensure sufficient watering points are supplied throughout the park in the form of hose cocks and quick coupling valves to provide additional water to plantings and turf areas during dry times and for cleaning purposes;



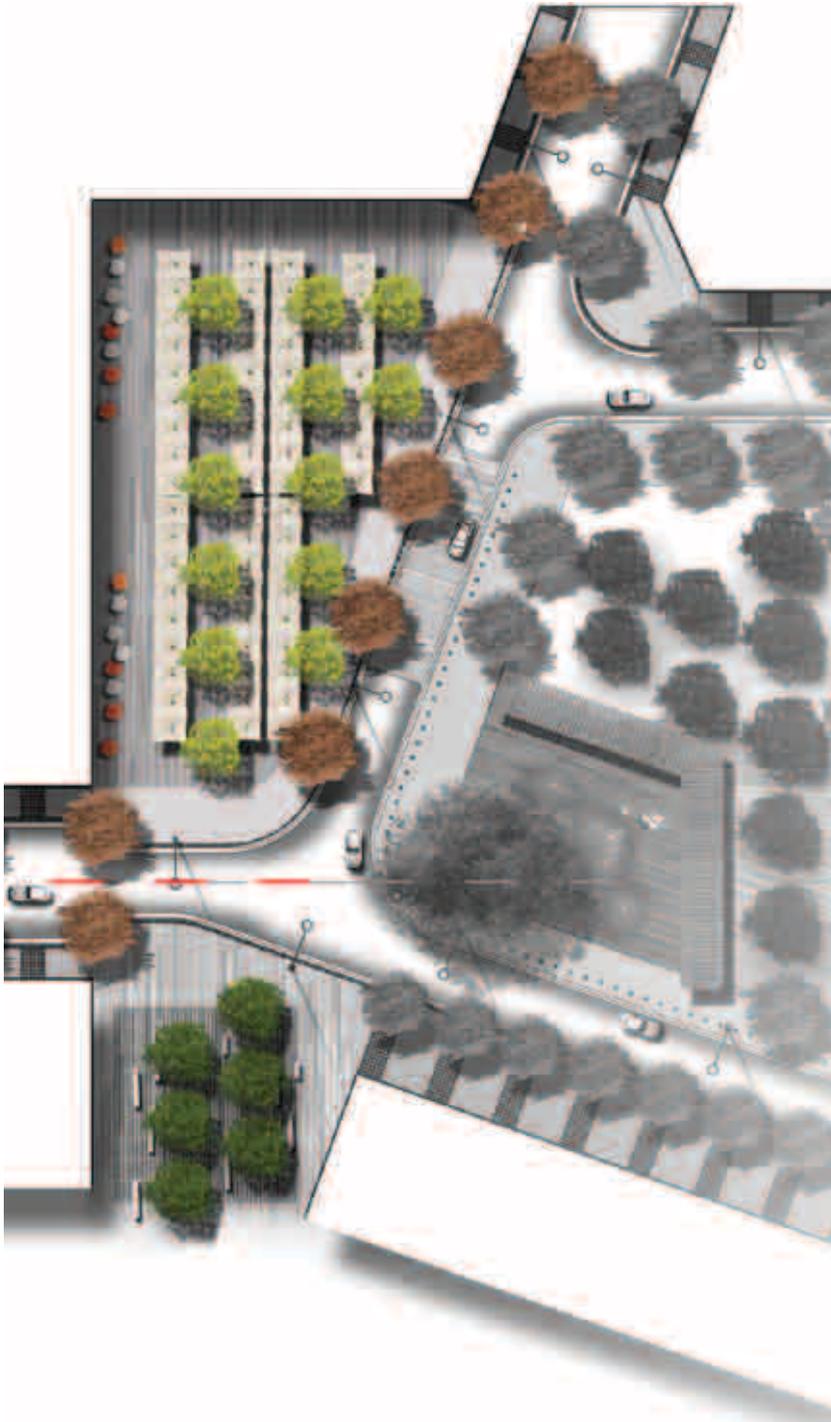
- Example of shelter character, Pirrama Park, Pyrmont



- Example of tree species Ficus macrophylla

Design Principles

3.9 Town Square/ Market Square



LEGEND

-  Raised planter
-  Grass
-  Seating elements
-  Water feature
-  Street Tree with mass planting beneath
-  Street lighting - Smart pole, type to Electrical Engineers details
-  Performance space
-  Pergola
-  Market Stalls
-  Seating walls with reconstituted concrete between

Design Principles

3.9 Town Square/ Market Square (continued)

The Town Square and Market Square are located adjacent the Town Park at the core of OPTC and will have a heavy focus on retail and commercial use. Both squares are backed by retail use and will create very active frontages to the adjacent shops. Both squares will be treated quite simply to ensure a very flexible use of the spaces throughout the day and night and across the seasons.

It is envisaged that these squares will be heavily used for outdoor dining, cafes, growers markets, busking, people watching etc.

Paving

- Paving Types A, B and C stone paving;
- Paving Type C with brass edge used to delineate public / private realms;
- Tactile pavers used at pram ramps;
- Concrete kerbing.

Street Lighting

- Location of street lighting to be carefully co-ordinated with street tree placements and building awnings and to co-ordinate with built elements ie colonnades etc ;
- Street light poles to be set back 900mm from face of kerb to line up with street trees;
- Setout street lighting to authority requirements;
- 'Smart Pole Type'.

Area Lighting

- Lighting to be provided throughout the Town Square and Market Square to meet Council Standards and provide a safe and comfortable level of night lighting;
- Lighting posts to be co-ordinated with paving and tree planting design;

Seating

- Locate permanent seating and ancillary seating to the edges of the spaces to ensure flexibility of the use of the areas and to cater for large numbers of users during events and lunch time shopping crowds;

Public Art

- Ensure public art elements are relevant and responsive to the nature of OPTC;

Bollards

- Stainless steel type set at 1500mm centres to prevent vehicular access



- Example of Town Square character



- Example of Town Square character Kogarah, NSW



- Example of In situ wall character

Town Square/ Market Square (cont next page)

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Design Principles

3.9 Town Square/ Market Square (continued)

Rubbish Bin Enclosures

- Rubbish bin enclosures to be located at regular intervals throughout the park;

Bicycle Racks

- Locate bicycle racks adjacent to major bicycle entry points into the squares;

Signage

- Incorporate signage into street light and area light columns to reduce the number of poles in the landscape.

Park Tree Species

- Ensure sufficient soil volume, soil depth, drainage and water for street tree pits – ensure absolute minimum of 25m² per tree by 1000mm depth;
- Species – Chinese Tallowood (*Sapium sebiferum*)

Watering Points

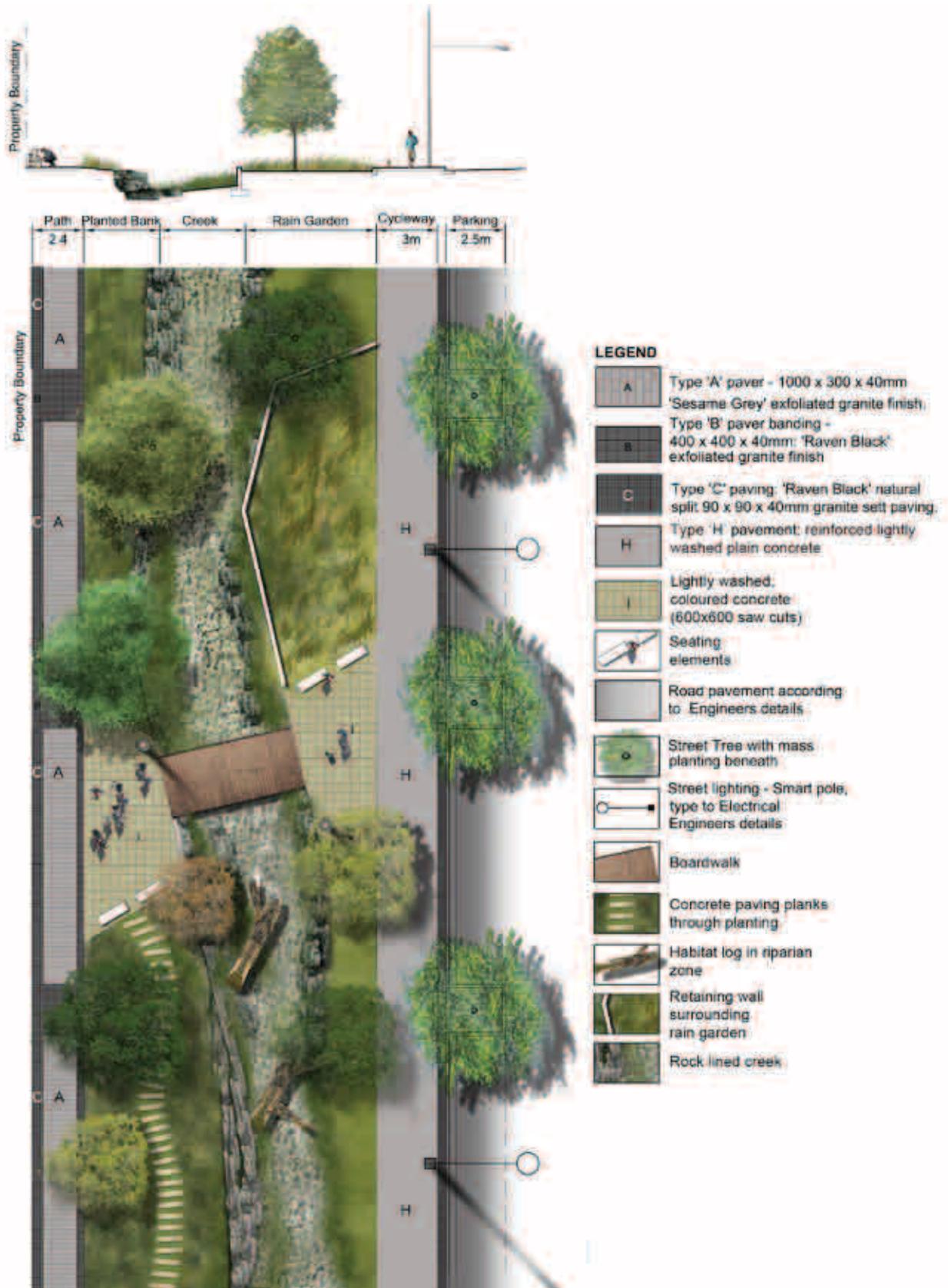
- Ensure all open space areas are connected to the town recycled water supply;
- Ensure sufficient watering points are supplied throughout the parks in the form of hose cocks and quick coupling valves to provide additional water to plantings during dry times and for cleaning purposes;



- Example of Town Square character
Bondi Junction, NSW

Design Principles

3.10 North South Green Link



Design Principles

3.10 North South Green Link

North South Green Link is a very strong pedestrian / cycleway link connecting through to the Learning Common in the education precinct to the south and via the riparian corridor in the north.

This Link will be a wonderful wide green canopied artery incorporating WSUD initiatives and providing a green spine and pedestrian corridor through the Town Centre. Stormwater from adjacent streets will be piped to this area and treated using various WSUD techniques before being released to the riparian corridor to the north.

Treatment of North South Green Link will vary from a more formalised, harder edged character in the civic / leisure precinct to a looser more relaxed character in the mixed use areas.

Cycleway / Shareway

- Lightly washed / grit blast concrete pavement with Type C pavement to back of kerb;

Paving (Civic and Leisure Precinct)

- Paving Types A, B and C stone paving;
- Tactile pavers used at pram ramps and driveway crossings;
- Paving Type C with brass / metal edge used to delineate public / private realms;
- Concrete kerbing.

Paving (Mixed Use Precinct)

- Type I pavement, lightly washed reinforced coloured concrete paving with sawcut pattern and decorative gravel;
- Tactile pavers used at pram ramps and driveway crossings;
- Concrete kerbing.

Lighting (Civic Precinct and Mixed Use Precinct)

- Lighting to be provided throughout North South Link to meet Council Standards and provide a safe and comfortable level of night lighting;
- Lighting posts to be co-ordinated with paving and tree planting design;

Boardwalks and Decking

- Provide boardwalks and decking to cross the man made creek bed;

Play Equipment

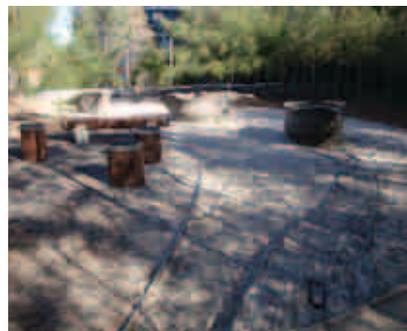
- Play equipment must be attractive, well finished, durable and sculptural;
- Play equipment and surfacing of playgrounds must meet AS4685;
- Minimise play equipment with moving parts such as swings – incorporate more climbing, balancing or imaginative play elements;



- North South Green Link - Public Art at Kings Park, Perth



- Example of Dry Creek Bed (Mt Annan)



- Example of informal nature play (Melbourne Docklands)

North South Green Link (cont next page)

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Design Principles

3.10 North South Green Link (continued)

Public Art

- Ensure public art elements are relevant and responsive to the nature of OPTC;

Seating

- Locate permanent seating at approximately 50m intervals along North South Green Link.

Bollards

- Stainless steel type set at 1500mm centres to prevent vehicular access as necessary

Rubbish Bin Enclosures and Bicycle Racks (Civic Precinct and Mixed Use Precinct)

- Locate rubbish bin enclosures and bicycle racks on each side of Green Link toward beginning and end of the street;

Signage (Civic Precinct and Mixed Use Precinct)

- Incorporate signage and traffic control devices into street light columns.

Plantings

- Naturalistic plantings of locally indigenous species of the Cumberland Plain Woodland.

Watering Points

- Ensure all open space areas are connected to the town recycled water supply;
- Ensure sufficient watering points are supplied throughout the park in the form of hose cocks and quick coupling valves to provide additional water to plantings and turf areas during dry times and for cleaning purposes;



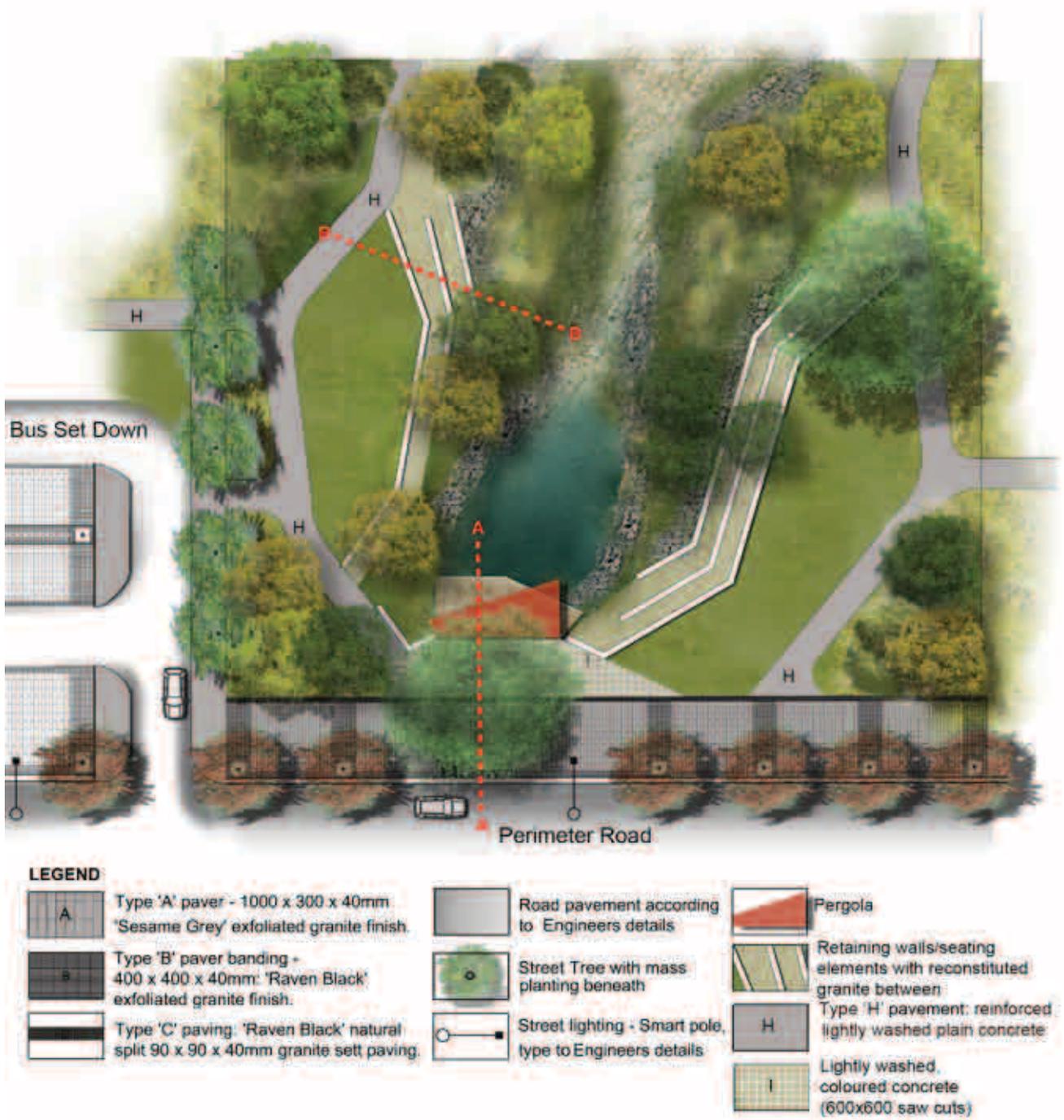
- Example of raingarden (Melbourne, Docklands)



- Example of boardwalk through raingarden (Victoria Park, Zetland)

Design Principles

3.11 Riparian Corridor



Design Principles

3.11 Riparian Corridor

The riparian corridor at the northern edge of OPTC is a wonderful way to introduce the surrounding bushland character of Oran Park into OPTC. It will also be the start of the cycleway / shareway links north of the OPTC and provides a strong connection to the adjacent transit area.

This portion of the riparian corridor will also be an important passive recreation area for adjacent residents and workers.

Cycleway / Shareway

- Type H pavement -lightly washed concrete pavement;

Paving

- Paving Types A, B and C stone paving;
- Tactile pavers used at pram ramps and driveway crossings;
- Concrete kerbing.

Lighting

- Lighting to be provided throughout the riparian corridor to meet Council Standards and provide a safe and comfortable level of night lighting;

Decking and Viewing Platforms

- Provide decking and viewing platforms to disguise stormwater outlets and provide views along the riparian corridor;

Public Art

- Ensure public art elements are relevant and responsive to the nature of OPTC;

Seating

- Locate permanent seating at approximately 60-80m intervals along cycleway / shareway.
- Provide ancillary seating in the form of concrete seating terraces to overlook the riparian corridor.

Bollards

- Stainless steel type set at 1500mm centres to prevent vehicular access as necessary

Rubbish Bin Enclosures and Bicycle Racks

- Locate rubbish bin enclosures and bicycle racks adjacent the viewing platform;

Signage

- Incorporate signage and traffic control devices into street light columns.

Plantings

- Naturalistic plantings of locally indigenous species of the Cumberland Plain Woodland.



- Oran Park Town OSD4 viewing deck



- Public art character image. Ishi Buki artwork at Sydney Olympic Park

Design Principles

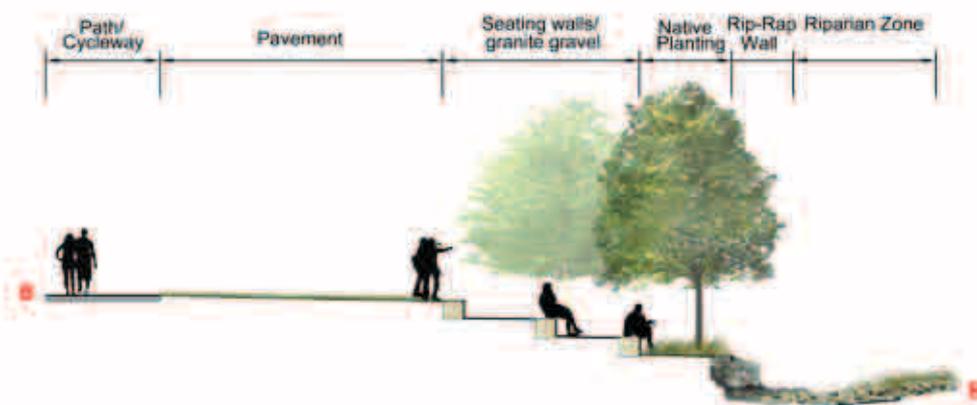
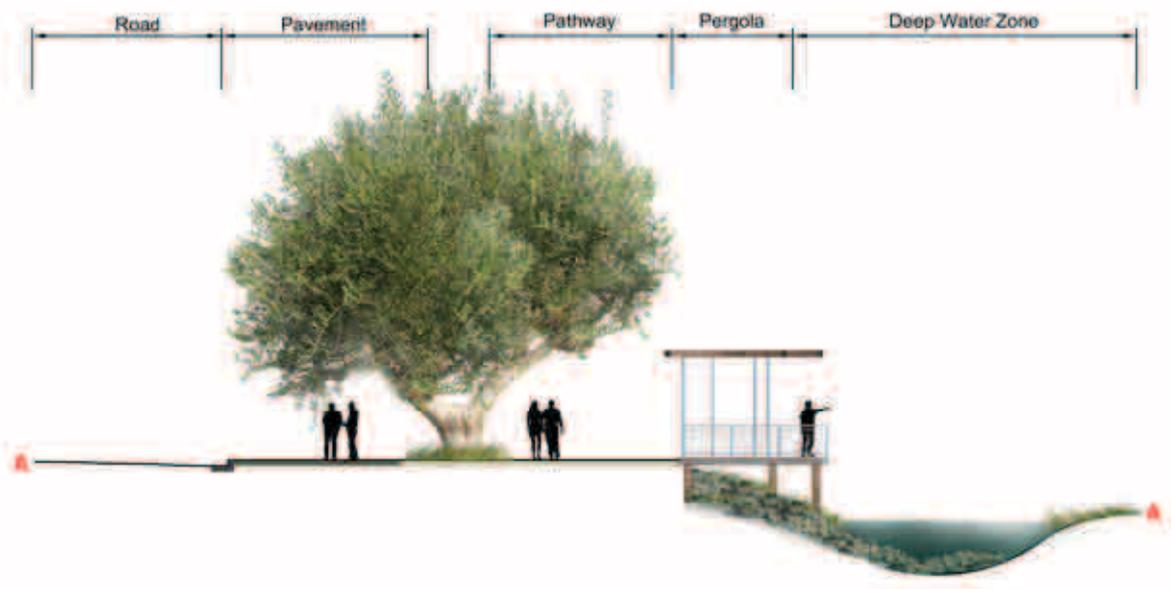
3.11 Riparian Corridor (Sections)

Watering Points

- Ensure all open space areas are connected to the town recycled water supply;
- Ensure sufficient watering points are supplied throughout the park in the form of hose cocks and quick coupling valves to provide additional water to plantings and turf areas during dry times and for cleaning purposes;

WSUD

- Ensure adequate access to WSUD initiatives for maintenance;
- Incorporate interpretive information outlining purpose and aims of WSUD structures;



4.

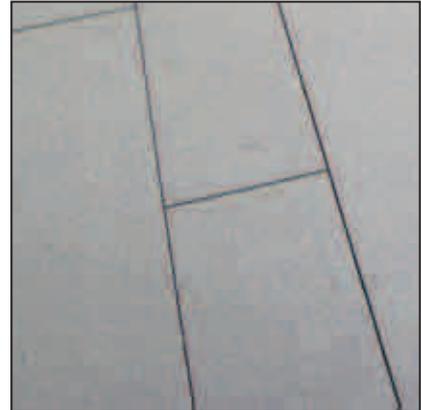
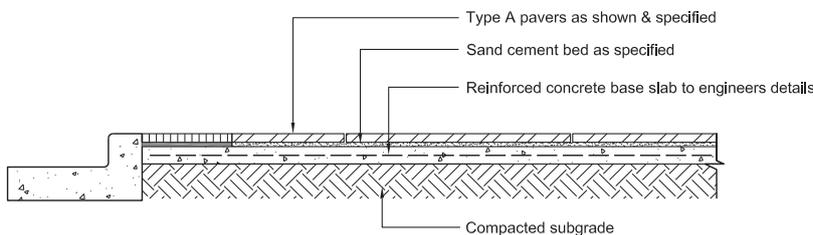
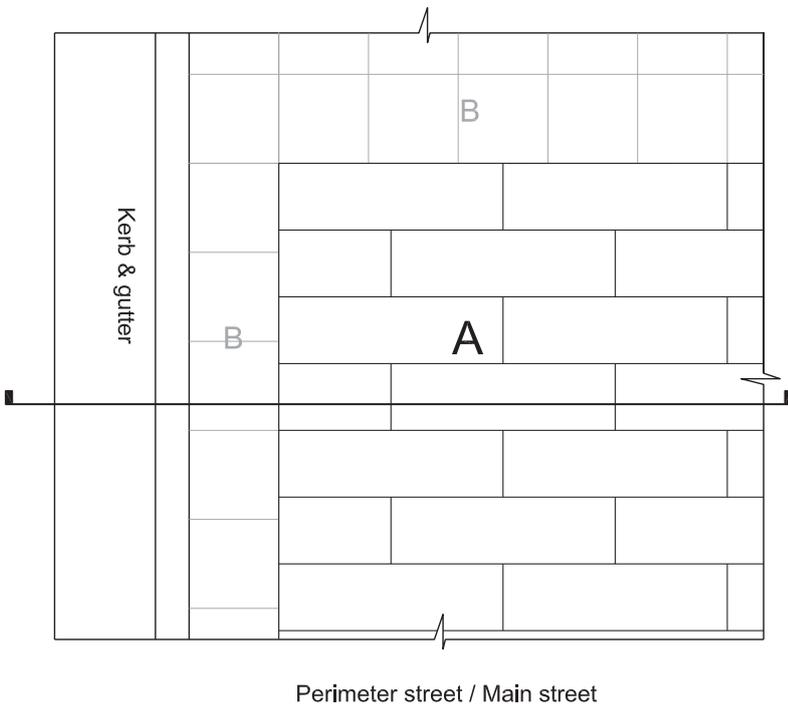
Materials & Finishes

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Materials & Finishes

4.1 Pavements and Integrated Elements

4.1.1 Type A Pavement



4.1.1 Type A Pavement

Location

For use as a general paver in road verges to Perimeter Streets, Main Street, Calmed Streets, Town Park, Town Square, Market Square and on the western side of the North South Green Link in the Civic Precinct.

Principles

- Sawn granite paving to be laid butt jointed with a 2mm gap +/- 1mm on a 6:1 sand:cement bed over a reinforced concrete base to engineers details on a compacted subgrade.
- Pavers are to be cut neatly around services and finish flush with adjacent pavements to reduce trip hazards.
- Pavers are to be sealed with a commercial grade low sheen, non slip, protective sealer to reduce risk of staining to pavements.

Materials

Paving unit size sawn 1000mm x 300mm x 40mm

Exfoliated granite finish

Colour mid-grey equivalent to that supplied by Sam Stone 'Sesame Grey'

Maintenance

Regular sweeping

High pressure gurney clean to remove stains

Replace broken and damaged paving units to match existing

If pavement is to be opened up for any reason, carefully lift out pavers and stockpile neatly for reuse. Reinstall pavers as per specification, including resealing.

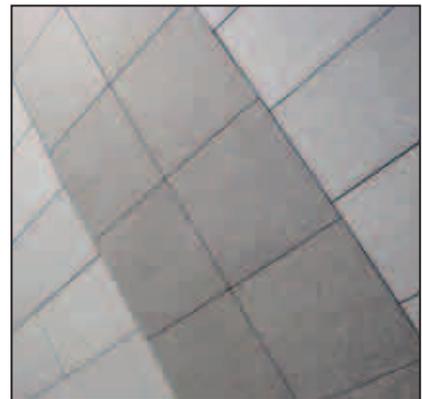
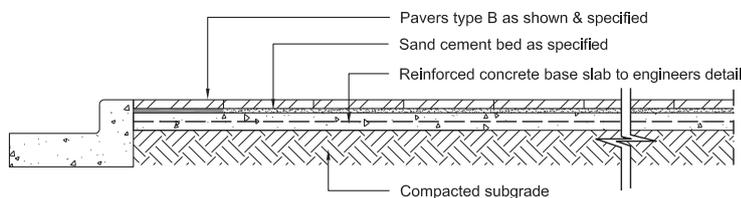
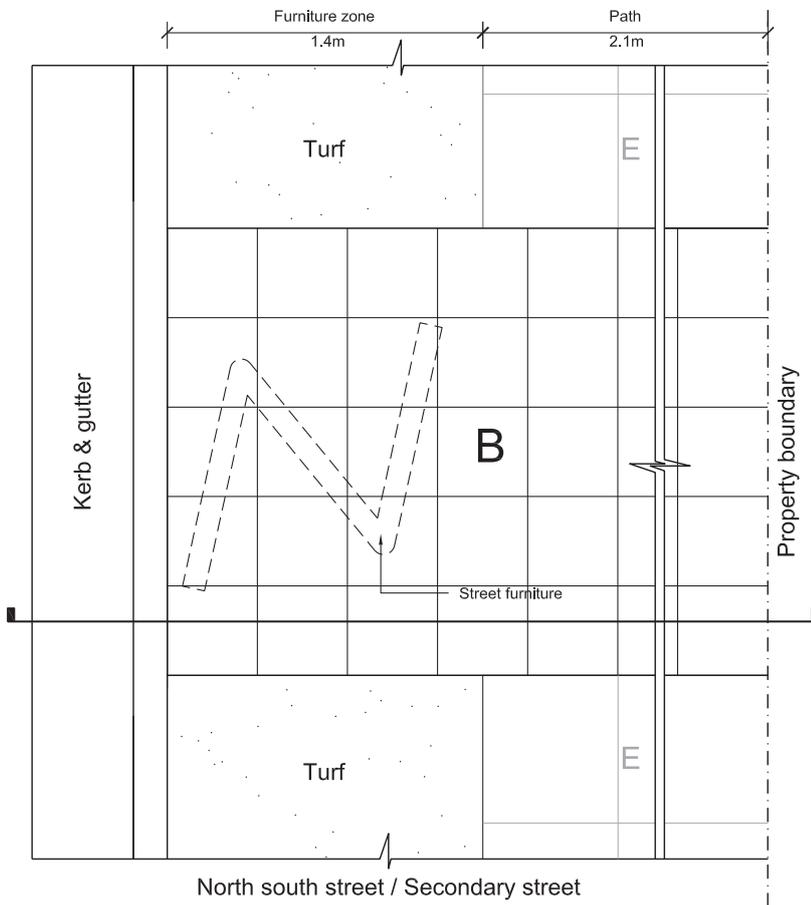
Ongoing Maintenance Costs

Description	Frequency	Cost
Resealing	3-4 years	\$18/m ²
Reinstatement	As requir'd	\$190/m ²

Materials & Finishes

4.1 Pavements and Integrated Elements

4.1.2 Type B Pavement



4.1.2 Type B Pavement

Location

For use as a detail paver in road verges to Perimeter Streets, Main Street, Calmed Streets, North South Street, Secondary Streets, Town Park, Town Square, Market Square and on the western side of the North South Green Link in the Civic Precinct to provide change in colour and texture and express architectural details such as colonnades etc.

Principles

- Sawn granite paving to be laid butt jointed with a 2mm gap +/- 1mm on a 6:1 sand:cement bed over a reinforced concrete base to engineers details on a compacted subgrade.
- Pavers are to be cut neatly around services and finish flush with adjacent pavements to reduce trip hazards.
- Pavers are to be sealed with a commercial grade low sheen, non slip, protective sealer to reduce risk of staining to pavements.

Materials

Paving unit size sawn 400mm x 400mm x 40mm
Exfoliated granite finish
Colour dark grey-black equivalent to that supplied by Sam Stone 'Raven Black'

Maintenance

Regular sweeping
High pressure gurney clean to remove stains
Replace broken and damaged paving units to match existing
If pavement is to be opened up for any reason, carefully lift out pavers and stockpile neatly for reuse. Reinstall pavers as per specification, including resealing.

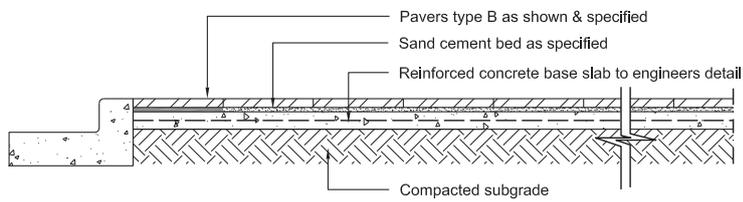
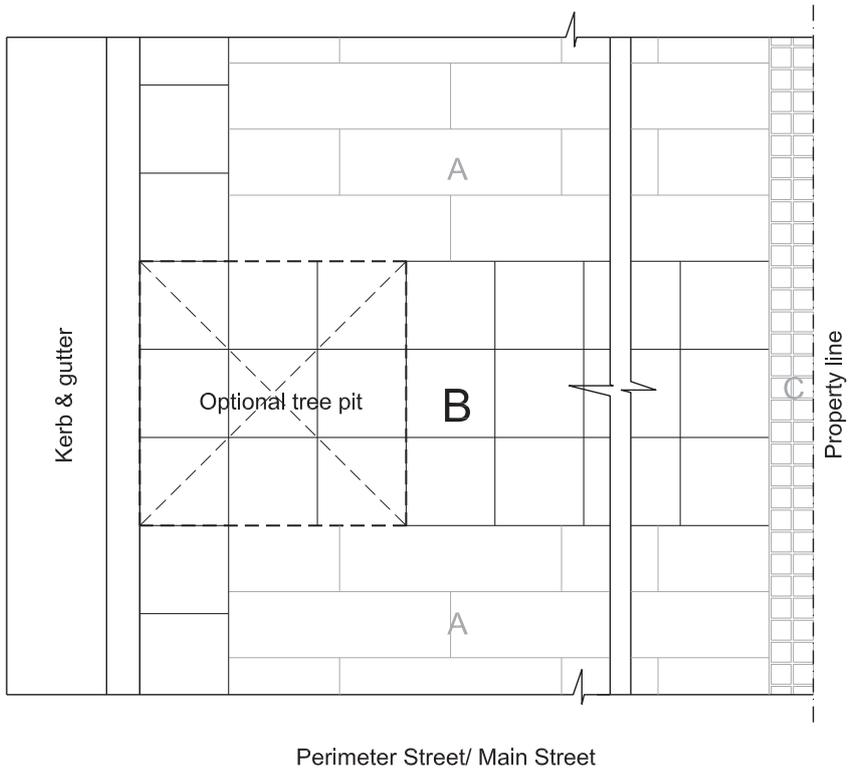
Ongoing Maintenance Costs

Description	Frequency	Cost
Resealing	3-4 years	\$18/m ²
Reinstatement	As requir'd	\$220/m ²

Materials & Finishes

4.1 Pavements and Integrated Elements

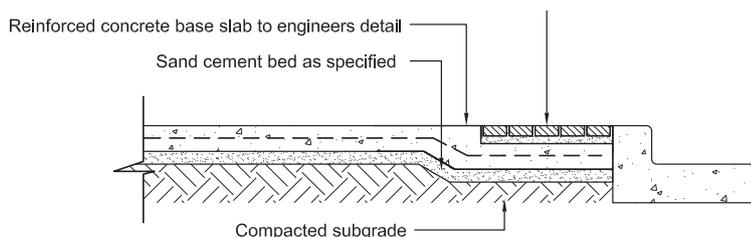
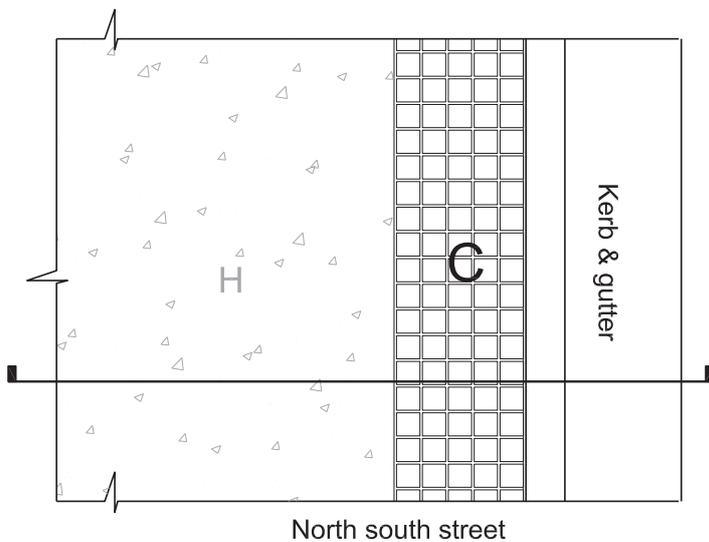
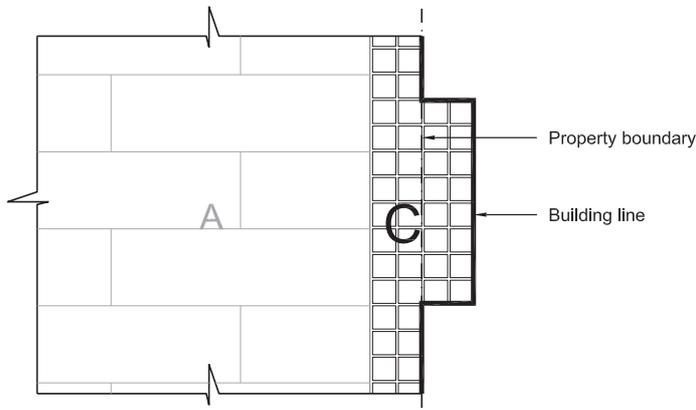
4.1.2 Type B Pavement (continued)



Materials & Finishes

4.1 Pavements and Integrated Elements

4.1.3 Type C Pavement



4.1.3 Type C Pavement

Location

For use as a detail paver in road verges and medians to Perimeter Streets, Main Street, Calmed Streets, North South Street, Town Park, Town Square, Market Square and on the western side of the North South Green Link in the Civic Precinct. For finer grain use to provide change in colour and texture and express architectural details such as articulation along building lines.

Principles

- Split granite setts to be laid on a 4:1 sand:cement mortar bed with a 10mm mortar gap +/- 5mm of 4:1 sand:cement mortar over a reinforced concrete base to engineers details on a compacted subgrade.
- Setts are to be cut neatly around services and finish flush with adjacent pavements to reduce trip hazards.
- Setts are to be sealed with a commercial grade low sheen, non slip, protective sealer to reduce risk of staining to pavements.

Materials

Split granite setts 90 x 90 x 40mm units
Split finish
Colour dark grey-black equivalent to that supplied by Sam Stone 'Raven Black'

Maintenance

Regular sweeping
High pressure gurney clean to remove stains
Replace broken and damaged paving units to match existing
If pavement is to be opened up for any reason, carefully lift out pavers and stockpile neatly for reuse. Reinstall pavers as per specification, including resealing.

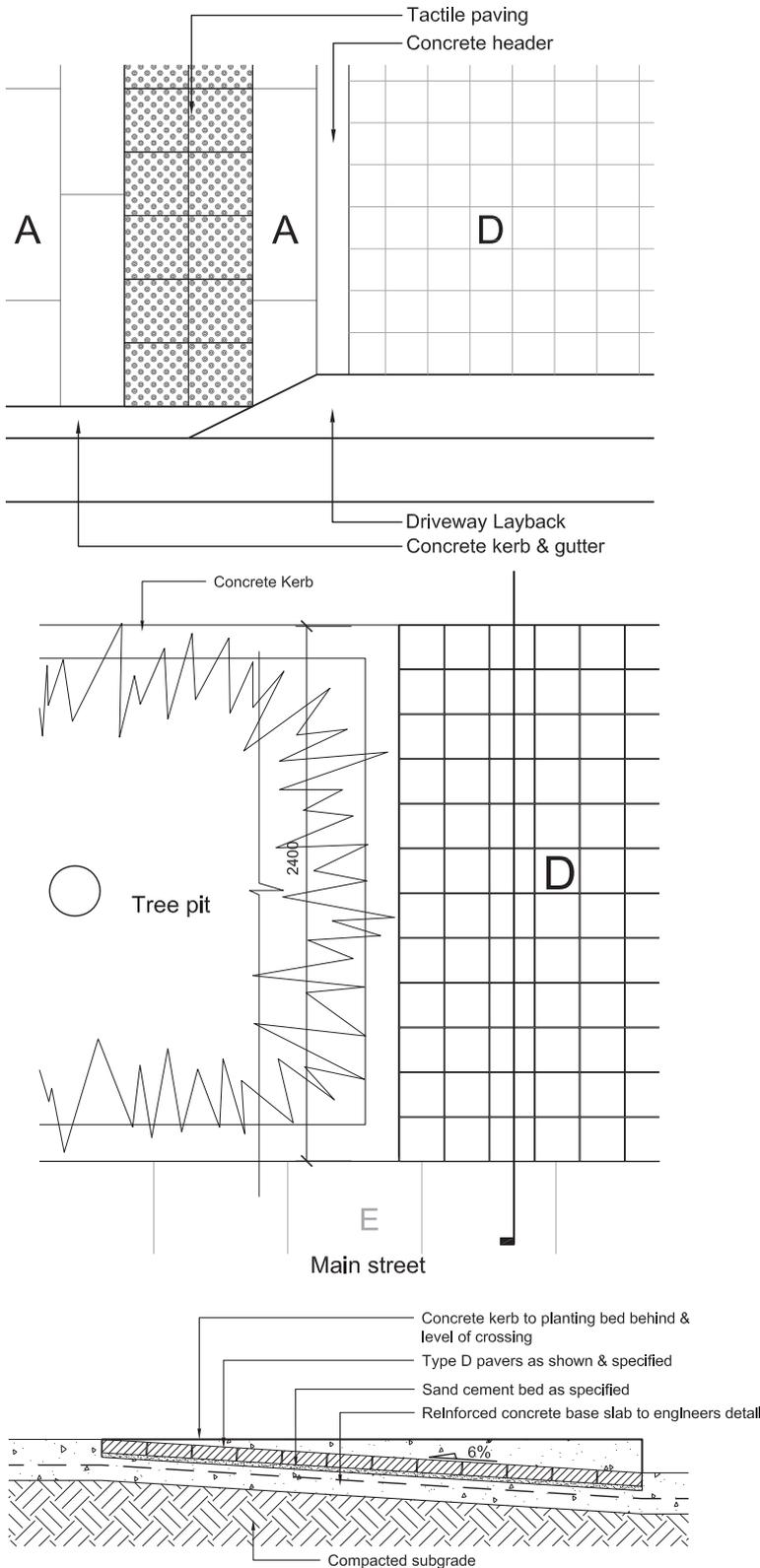
Ongoing Maintenance Costs

Description	Frequency	Cost
Resealing	3-4 years	\$18/m ²
Reinstatement	As requir'd	\$220/m ²

Materials & Finishes

4.1 Pavements and Integrated Elements

4.1.4 Type D Pavement



4.1.4 Type D Pavement

Location

For use as a paver to driveways and service access ways across verges to Perimeter Streets and Secondary Streets, as ramps to either side of raised pedestrian crossings and in Shared Zones of Calmed Streets adjacent Town Park.

Principles

- Sawn basalt paving to be laid on a 3:1 sand:cement mortar bed with a 4mm mortar gap +/-2mm of 3:1 sand:cement mortar over a reinforced concrete base to engineers details on a compacted subgrade.
- Pavers are to be cut neatly around services and finish flush with adjacent pavements to reduce trip hazards.
- Pavers are to be sealed with a commercial grade low sheen, non slip, protective sealer to reduce risk of staining to pavements.

Materials

Paving unit size sawn 198mm x 198mm x 60mm

Exfoliated basalt finish

Colour dark grey-black equivalent to that supplied by Sam Stone 'Shingle Black'

Maintenance

Regular sweeping

High pressure gurney clean to remove stains

Replace broken and damaged paving units to match existing

If pavement is to be opened up for any reason, carefully lift out pavers and stockpile neatly for reuse. Reinstall pavers as per specification, including resealing.

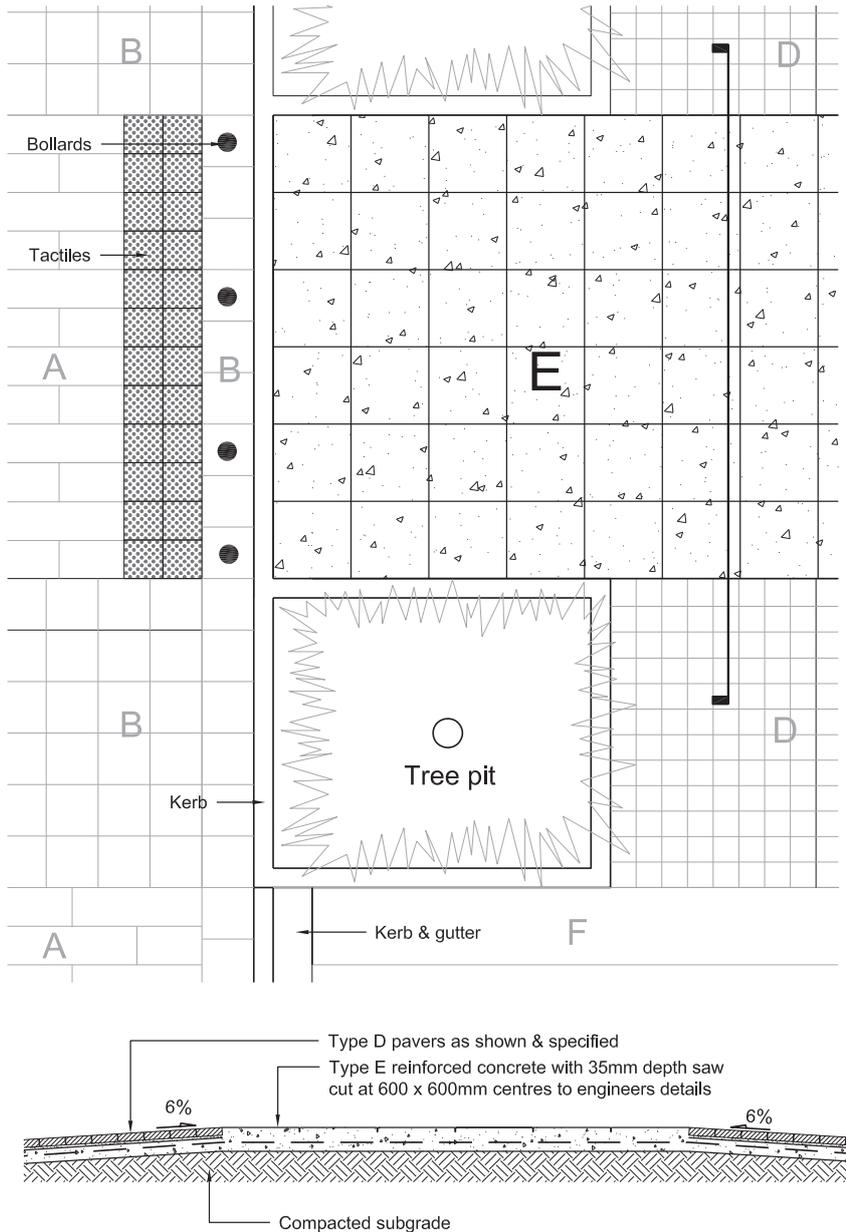
Ongoing Maintenance Costs

Description	Frequency	Cost
Resealing	3-4 years	\$18/m ²
Reinstatement	As requir'd	\$240/m ²

Materials & Finishes

4.1 Pavements and Integrated Elements

4.1.5 Type E Pavement



4.1.5 Type E Pavement

Location

To pedestrian zones of shareways or formalised raised crossings.

Principles

- A hard wearing clearly visible, even, non slip attractive finish to pedestrian zones of relevant pedestrian crossing points.

Materials

Concrete – N32 concrete with colour additive to match CCS Ghost Gum (pale grey colour) with 20mm Nepean River Gravel aggregate.

Finishes - Lightly washed or grit blast reinforced concrete with 35mm depth saw cuts at 600x600mm centres to engineers details.

Pavement is to be sealed with a commercial grade low sheen, non slip, protective sealer to reduce risk of staining to pavement.

Maintenance

Regular sweeping
High pressure gurney clean to remove stains

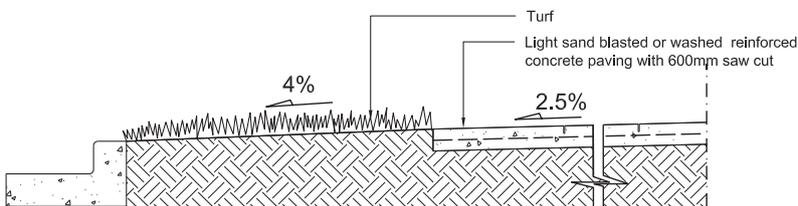
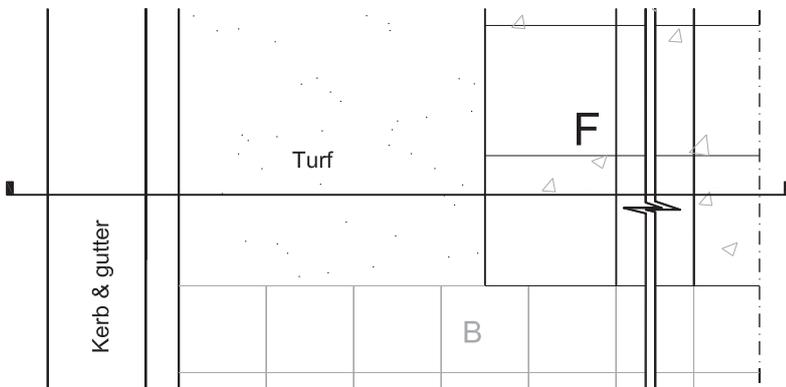
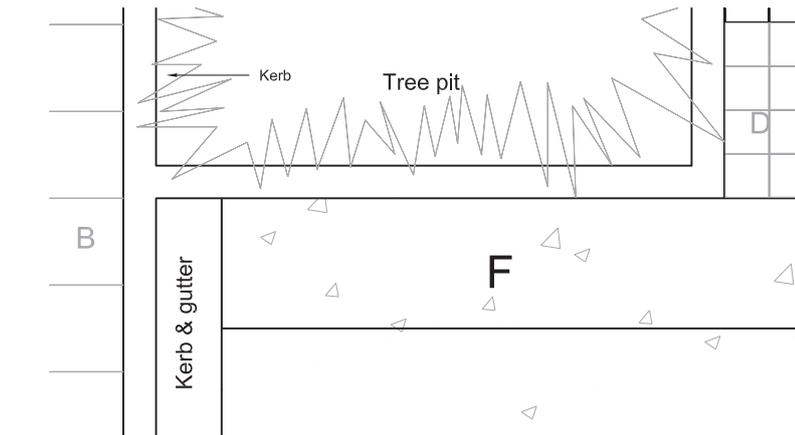
Ongoing Maintenance Costs

Description	Frequency	Cost
Resealing	3-4 years	\$18/m ²
Reinstatement	As requir'd	\$160/m ²

Materials & Finishes

4.1 Pavements and Integrated Elements

4.1.6 Type F Pavement



4.1.6 Type F Pavement

Location

For use as a general pavement in road verges to east side of North South Street and Secondary Streets.

Principles

- A hard wearing clearly visible, even, non slip attractive finish to pedestrian zones of relevant pathways.

Materials

Concrete – N32 concrete with colour additive to match CCS Liquorice (charcoal colour) with 20mm Nepean River Gravel aggregate. Finishes – Lightly washed or light grit blast finish to expose aggregate, reinforced concrete to engineers details. Pavement is to be sealed with a commercial grade low sheen, non slip, protective sealer to reduce risk of staining to pavement.

Maintenance

Regular sweeping
High pressure gurney clean to remove stains

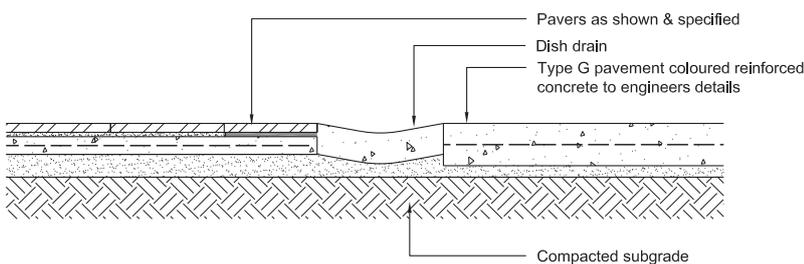
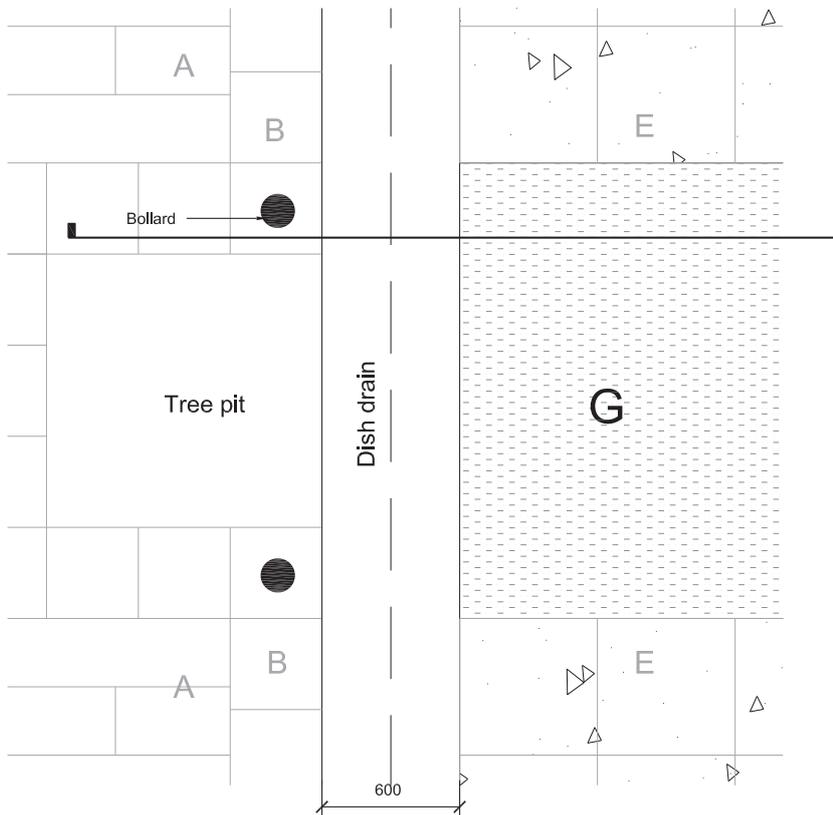
Ongoing Maintenance Costs

Description	Frequency	Cost
Resealing	3-4 years	\$18/m ²
Reinstatement	As requir'd	\$120/m ²

Materials & Finishes

4.1 Pavements and Integrated Elements

4.1.7 Type G Pavement



4.1.7 Type G Pavement

Location

For use as a detail paving strip and contrasting colour to Type E Pavement at pedestrian crossings at intersections of Perimeter Streets.

Principles

- A hard wearing clearly visible, contrasting, even, non slip attractive finish to pedestrian zones.

Materials

Concrete – N32 coloured concrete – colour equivalent to CCS Liquorice (charcoal colour).

Finishes – Light broom finish applied perpendicular to vehicle travel. Pavement is to be sealed with a commercial grade low sheen, non slip, protective sealer to reduce risk of staining to pavement.

Maintenance

Regular sweeping
High pressure gurney clean to remove stains

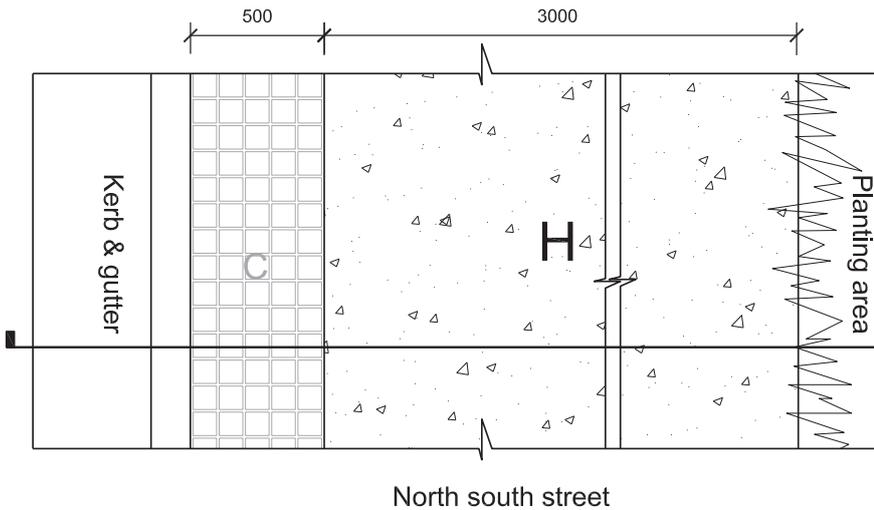
Ongoing Maintenance Costs

Description	Frequency	Cost
Resealing	3-4 years	\$18/m ²
Reinstatement	As requir'd	\$160/m ²

Materials & Finishes

4.1 Pavements and Integrated Elements

4.1.8 Type H Pavement



4.1.8 Type H Pavement

Location

For use as a general pavement to shareways and cycleways on North South Green Link and Riparian Corridor.

Principles

- A hard wearing, even, non slip attractive finish to shareways.

Materials

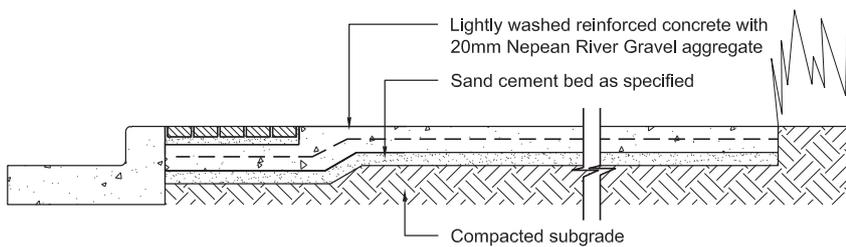
Concrete – N32 concrete with 20mm Nepean River Gravel aggregate.
 Finishes - Lightly washed or light grit blast reinforced concrete to engineers details.

Maintenance

Regular sweeping
 High pressure gurney clean to remove stains

Ongoing Maintenance Costs

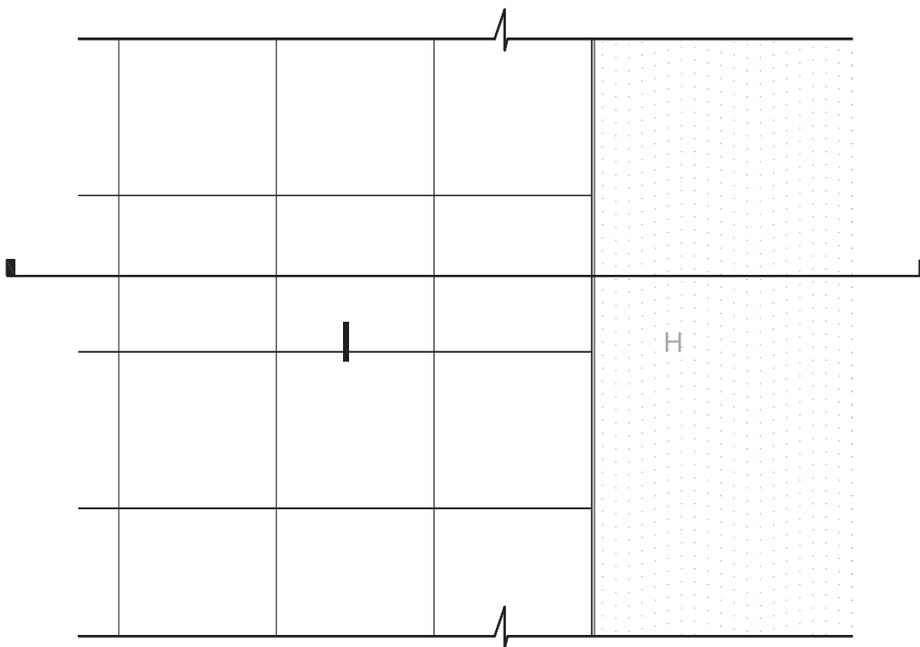
Description	Frequency	Cost
Reinstatement	As requir'd	\$100/m ²



Materials & Finishes

4.1 Pavements and Integrated Elements

4.1.9 Type I Pavement



4.1.9 Type I Pavement

Location

For use as a detail pavement at meeting points and nodes such as at North South Green Link and Riparian Corridor.

Principles

- A hard wearing, even, non slip attractive finish to shareways.

Materials

Concrete – N32 concrete with colour additive to match CCS Suntan with 20mm Nepean River Gravel aggregate.

Finishes - Lightly washed or light grit blast reinforced concrete with 35mm depth saw cuts at 600x600mm centres to engineers details.

Pavement is to be sealed with a commercial grade low sheen, non slip, protective sealer to reduce risk of staining to pavement.

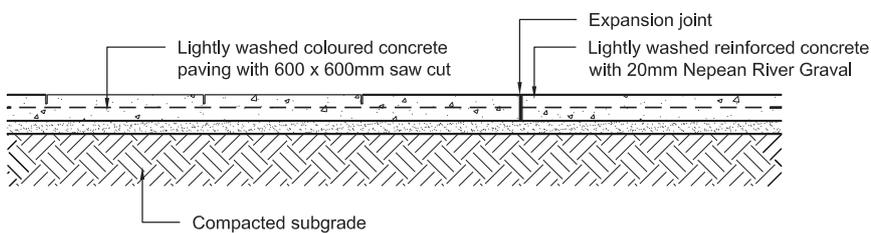
Maintenance

Regular sweeping

High pressure gurney clean to remove stains

Ongoing Maintenance Costs

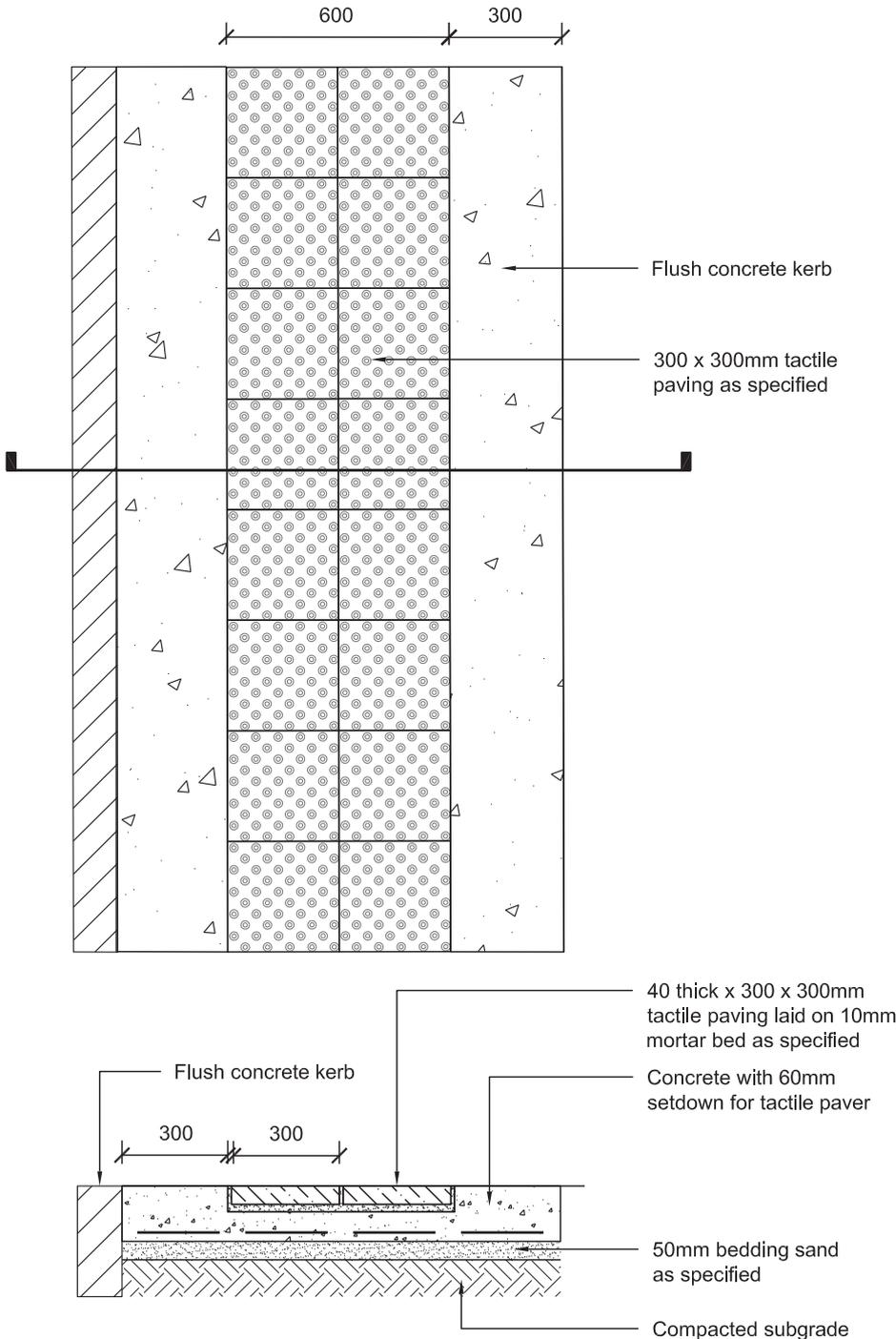
Description	Frequency	Cost
Resealing	3-4 years	\$18/m ²
Reinstatement	As requir'd	\$160/m ²



Materials & Finishes

4.1 Pavements and Integrated Elements

4.1.10 Tactile Pavements



4.1.10 Tactile Pavements

Location

As required in accordance with AS 1428.1.

Principles

- A hard wearing clearly visible, contrasting, even, non slip attractive finish to pedestrian zones.

Materials

Paving unit size sawn 300mm x 300mm x 40mm.

Tactile indicators in accordance with 1428.4(2002)

Exfoliated basalt finish

Colour to contrast with adjacent pavements either dark grey-black equivalent to that supplied by Sam Stone 'Shingle Black' or Sam Stone 'White' or precast concrete unit pavers 300mm x 300mm x 40mm as supplied by Stone Directions Pty Ltd Ph (07) 3879 3900 in colours Pearl Grey or Gunmetal or equivalent

Maintenance

Regular sweeping

High pressure gurney clean to remove stains

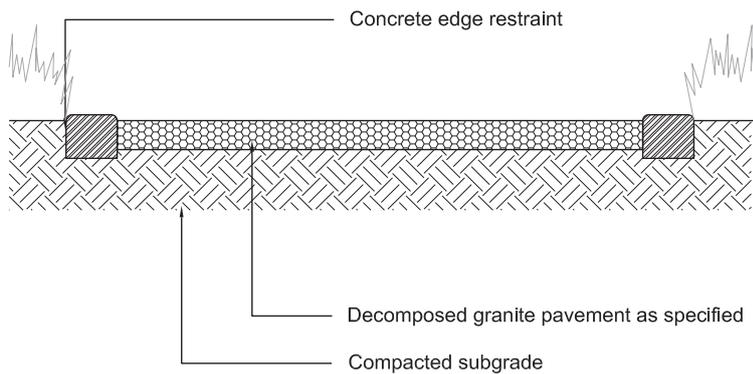
Ongoing Maintenance Costs

Description	Frequency	Cost
Resealing	3-4 years	\$18/m ²
Reinstatement	As requir'd	\$240/m ²

Materials & Finishes

4.1 Pavements and Integrated Elements

4.1.11 Decomposed Granite Pavement



4.1.11 Compacted Decomposed Granite

Location

For use as an informal and permeable type pavement in areas such as Town Park, North South Green Link and Riparian Corridor

Principles

- To be used in areas with very shallow falls of <3% grade and in areas where it cannot be tracked in doors in wet conditions etc. Compacted decomposed granite is to be used within a formed edge such as a concrete edge or similar.

Materials

Decomposed granite may be mixed with 'Soilbond' GS01 C (Concentrate) as supplied by Huntsman Chemical Company. Mix Soilbond GS01 C (Concentrate) with water to manufacturer's instructions. Mix at 2% by dry weight in decomposed granite. Product to be factory premixed not site mixed.

Maintenance

Regular sweeping

Reinstate eroded or scuffed decomposed granite with 'Soilbond' to manufacturer's instructions

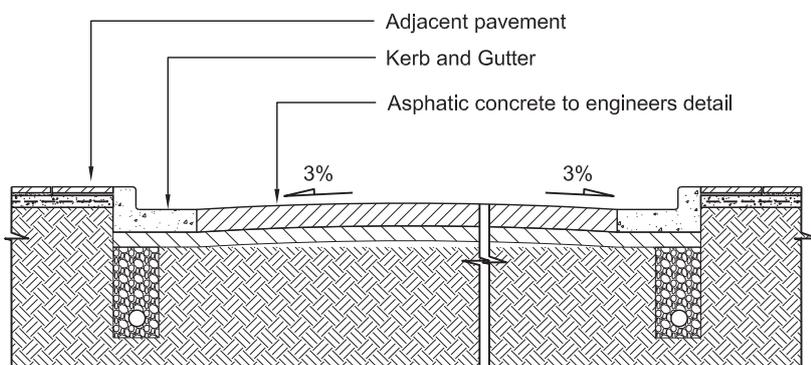
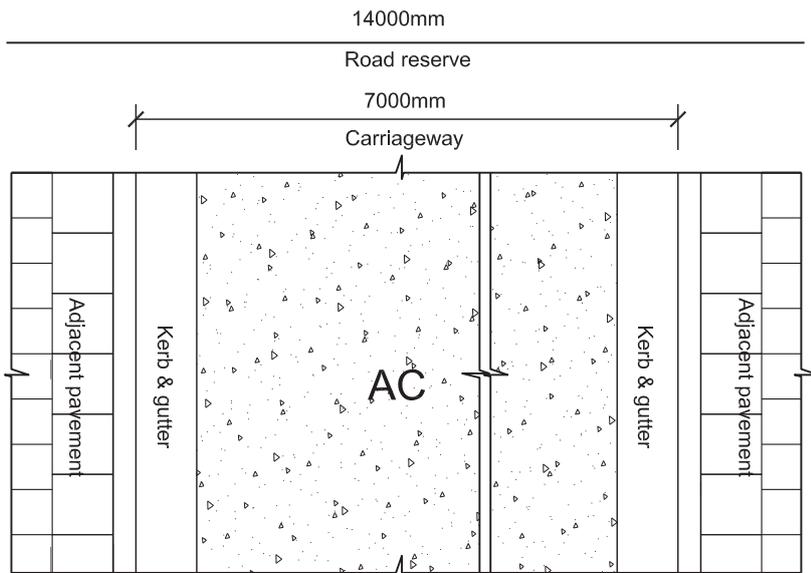
Ongoing Maintenance Costs

Description	Frequency	Cost
Reinstate eroded areas	As requir'd	\$24/m ²

Materials & Finishes

4.1 Pavements and Integrated Elements

4.1.12 Road Pavements and Kerbs



- Extract from Camden Council Engineering Construction Specification (February 2009)



4.1.12 Road Pavements and Kerbs

Location

All vehicular trafficable road pavement areas and kerb and guttering.

Principles

- In accordance with Camden Council Engineering Design Specification 2009 and Engineering Construction Specification 2009

Materials

Wearing course for all roads to be AC10. Kerbs profiles to Camden Council standards and specifications

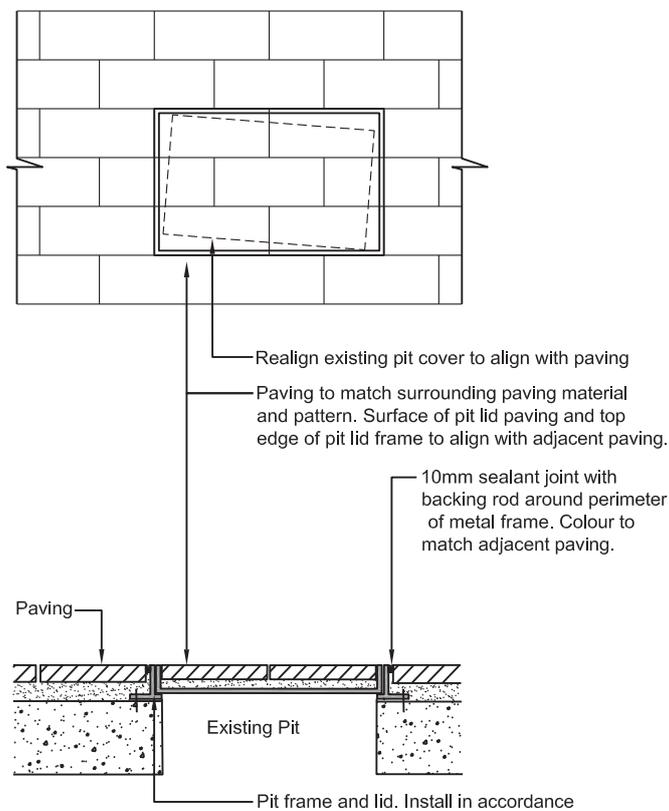
Maintenance

Regular street sweeping
Line marking as required

Materials & Finishes

4.1 Pavements and Integrated Elements

4.1.13 Service Pits



4.1.13 Service Pits

Location

In any pavement Type A – Type I

Principles

- Locate pit cover in relation to paving pattern.
- Locate pits in respect to location and level where possible to minimise small cuts to paving units.
- Ensure pits are square to paving pattern and/or square to adjacent elements or paving edges.
- In situ concrete areas ensure pits are square to adjacent elements or paving edges.
- Cut paving units to fit close to metal frame of pit lid.
- Ensure pit finishes flush with pavement level to reduce trip hazard
- Ensure pit strength is adequate to take relevant traffic loads
- Ensure pit infills are neatly finished and cuts to unit pavers finish close to frame and ribs and maintain paving pattern

Materials

Caste iron or caste aluminium

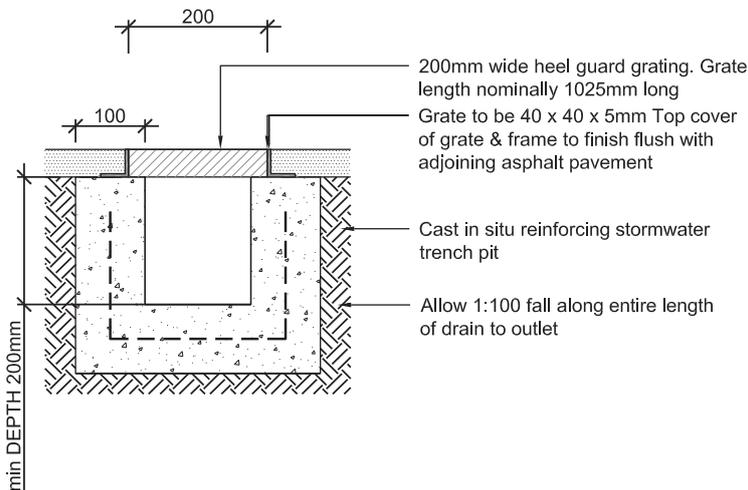
Maintenance

As for paving type

Materials & Finishes

4.1 Pavements and Integrated Elements

4.1.14 Grated Drains



4.1.14 Grated Drains

Location

Where required for stormwater drainage purposes in pavements

Principles

- Locate drainage grates in relation to paving patterns.
- Locate drainage grates in respect to location and level where possible to minimise small cuts to paving units.
- Ensure drainage grates are square to paving pattern and/or square to adjacent elements or paving edges.
- Cut paving units to fit close to drainage grate surrounds.
- Ensure drainage grates finish at a level to catch water and flush with adjacent pavements to reduce trip hazard
- Ensure grate strength is adequate to take relevant traffic loads

Materials

Lockable stainless steel heel guard type grating.

Maintenance

Clean out drains on a regular basis to prevent stormwater blockages.

Ongoing Maintenance Costs

Description	Frequency	Cost
Clean drains	2 times/yr	\$30/event

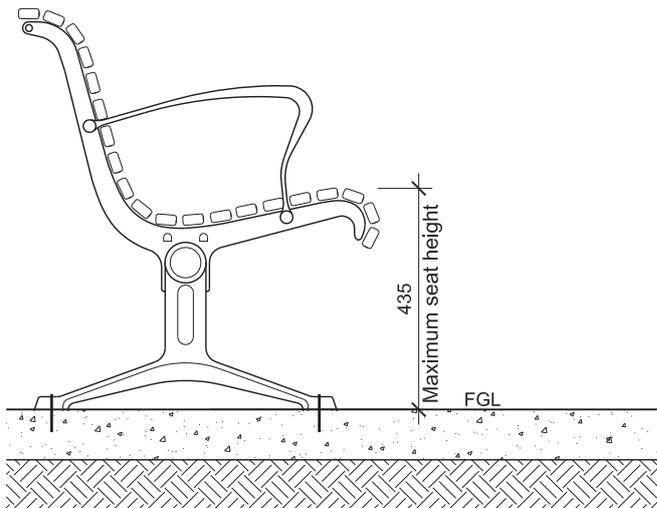
Materials & Finishes

4.2 Street & Park Furniture

4.2.1 Seats

Seat with hook armrests and tee legs.
Surface mounted

Support legs positioned as shown.
Legs must be plumb front to back &
side to side



4.2 Street and Park Furniture 4.2.1 Seats

Location

for use in open space areas and road verges

Principles

Seats are to be;

- provided at regular intervals throughout OPTC (nominally 50-75m centres);
- located parallel to traffic flow;
- located in line with other elements within the verge such as street trees, rubbish bin enclosures, light poles and bicycle racks etc;
- provided with back to planting, other landscape element (eg walls) or traffic;
- installed on hard wearing surface;
- surface mounted, with anti-vandal fixings;
- installed level not at grade with pavement;
- fitted with anti-skate seat slugs;
- installed with armrests.

Materials

Equivalent to Street Furniture Australia Galleria Style CMG 101 seat with hook armrests, tee legs and jarrah battens fitted with stainless steel seat slugs (two per leading batten). Alternatively use a recycled timber batten appropriate for external high use areas.

Maintenance

Jarrah battens to be oiled annually. Apply two coats of Bunnings Colour Guard to manufacturers recommendations; Inspect seats at six-monthly intervals to check fixings etc, tighten as necessary; Light graffiti - sand back and re-oil battens as soon as possible after event; Replace battens damaged beyond repair.

Ongoing Maintenance Costs

Description	Frequency	Cost
Light sand reoil	Annually	\$160/seat
Replace battens	As requir'd	\$140/batten

Materials & Finishes

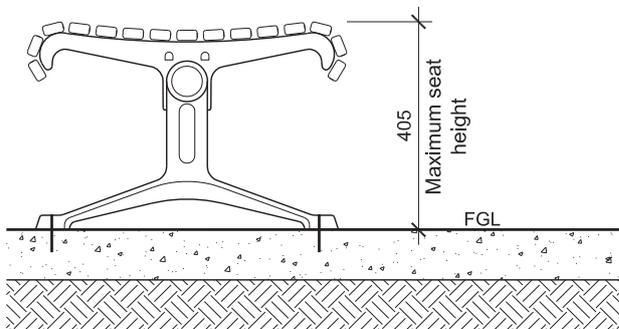
4.2 Street & Park Furniture

4.2.2 Benches



Bench with tee legs. Surface mounted

Support legs positioned as shown.
Legs must be plumb front to back & side to side



4.2.2 Benches

Location

- for use in open space areas

Principles

Benches are to be;

- provided in association with tables in open space areas;
- installed on hard wearing surface;
- surface mounted, with anti-vandal fixings;
- installed level not at grade with pavement;
- fitted anti-skate seat slugs.

Materials

Equivalent to Street Furniture Australia Style Galleria Style CMG 406 bench with tee legs and jarrah battens with seat slugs (two per outside batten). Alternatively use a recycled timber batten appropriate for external high use areas.

Maintenance

Jarrah battens to be oiled annually. Apply two coats of Bunnings Colour Guard to manufacturers recommendations; Inspect seats at six-monthly intervals to check fixings etc, tighten as necessary; Light graffiti - sand back and re-oil battens as soon as possible after event; Replace battens damaged beyond repair.

Ongoing Maintenance Costs

Description	Frequency	Cost
Light sand reoil	1 years	\$160/bench
Replace battens	As requir'd	\$140/batten

Materials & Finishes

4.2 Street & Park Furniture

4.2.3 Tables

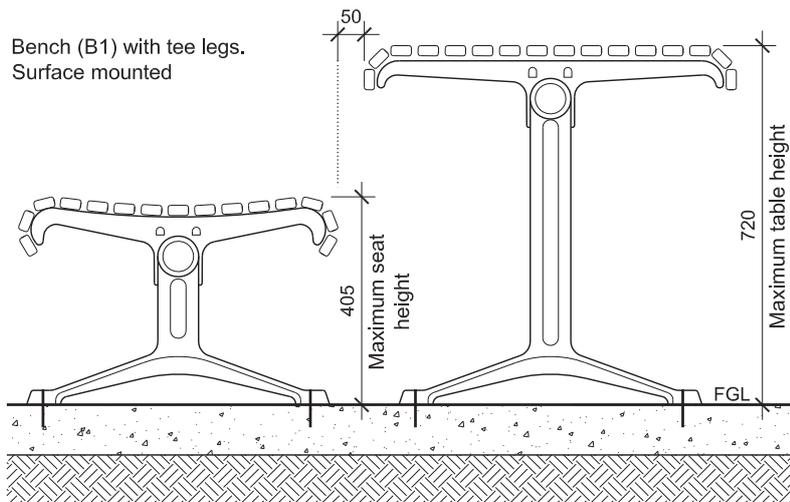


- Table & Bench – Town Centre Future

Table with tee legs. Surface mounted

Support legs positioned as shown. Legs must be plumb front to back & side to side

Bench (B1) with tee legs. Surface mounted



4.2.3 Tables

Location

- for use in open space areas

Principles

Tables are to be;

- provided in association with benches in open space areas;
- installed on hard wearing surface;
- surface mounted, with anti-vandal fixings;
- installed level not at grade with pavement.

Materials

Equivalent to Street Furniture Australia Galleria Style CMG 608 table with tee legs and jarrah battens.

Alternatively use a recycled timber batten appropriate for external high use areas.

Maintenance

Jarrah battens to be oiled annually. Apply two coats of Bunnings Colour Guard to manufacturers recommendations; Inspect seats at six-monthly intervals to check fixings etc, tighten as necessary; Light graffiti - sand back and re-oil battens as soon as possible after event; Replace battens damaged beyond repair.

Ongoing Maintenance Costs

Description	Frequency	Cost
Light sand recoil	1 years	\$180/table
Replace battens	As requir'd	\$140/batten

Materials & Finishes

4.2 Street & Park Furniture

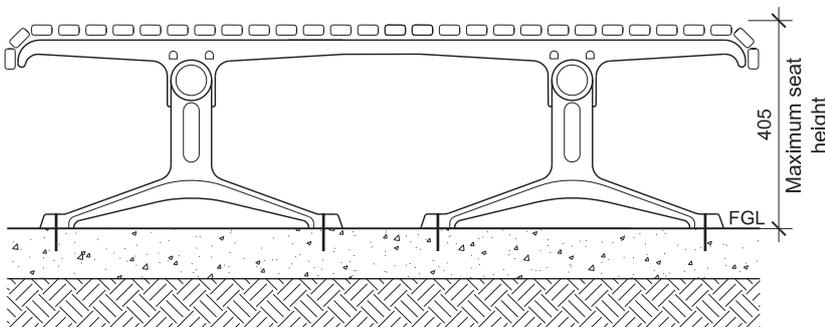
4.2.4 Table Seats



- Table Seat – Town Centre Future

Table Seat with tee legs.
Surface mounted

Support legs positioned as shown.
Legs must be plumb front to back &
side to side



4.2.4 Table Seats

Location
for use in open space areas

- Principles**
Table seats are to be;
- provided in open space areas;
 - installed on hard wearing surface;
 - surface mounted, with anti-vandal fixings;
 - installed level not at grade with pavement.

Materials
equivalent to Street Furniture Australia Galleria Style CMG 608 table seat with tee legs and jarrah battens. Alternatively use a recycled timber batten appropriate for external high use areas.

Maintenance
Jarrah battens to be oiled annually. Apply two coats of Bunnings Colour Guard to manufacturers recommendations; Inspect seats at six-monthly intervals to check fixings etc, tighten as necessary; Light graffiti - sand back and re-oil battens as soon as possible after event; Replace battens damaged beyond repair.

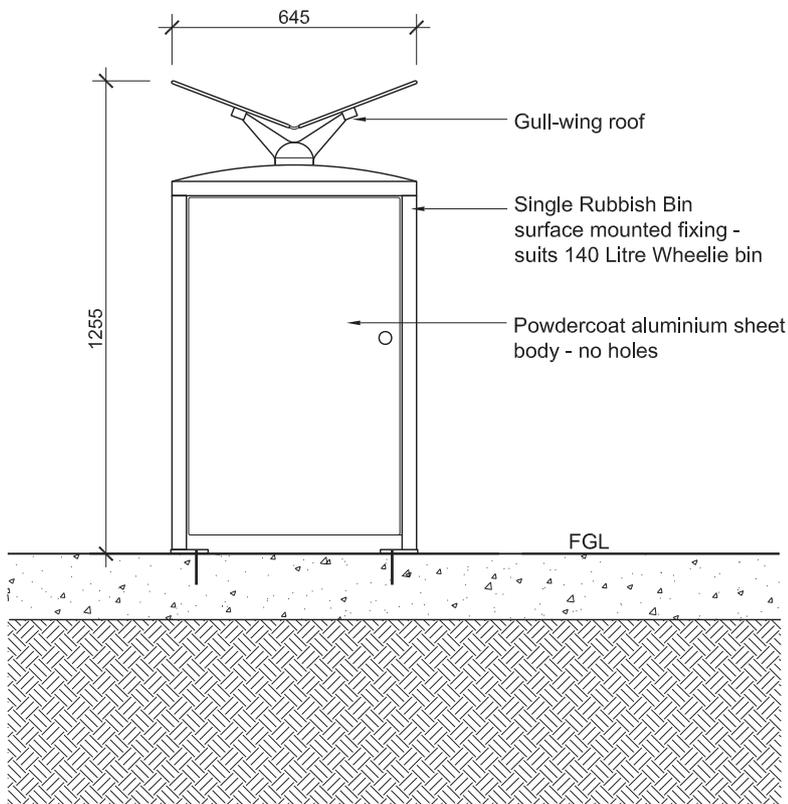
Ongoing Maintenance Costs

Description	Frequency	Cost
Light sand recoil	1 years	\$180/table
Replace battens	As requir'd	\$140/batten

Materials & Finishes

4.2 Street & Park Furniture

4.2.5 Rubbish Bin Enclosures



- Rubbish Bin Enclosure – Town Centre Future

4.2.5 Rubbish Bin Enclosures

Location

- for use in road verges and open space areas

Principles

Rubbish bin enclosures are to be;

- provided in open space areas adjacent groups of seating and shelters etc;
- provided on road verges in retail areas at regular intervals especially adjacent food courts;
- located in line with other elements within the verge such as street trees, seats, light poles and bicycle racks etc;
- installed on hard wearing surface;
- surface mounted, with anti-vandal fixings.

Materials

Equivalent to Street Furniture Australia Style WBE-A-140K

Powdercoat finish to metal panels in Windspray. Gull wing roof in black.

Maintenance

Inspect rubbish bin enclosures annually to check fixings etc, tighten as necessary; Clean the visible external panels of rubbish bin enclosures on a quarterly basis;

Light graffiti – remove graffiti as soon as possible after event;

Heavy graffiti (structural damage) – remove and replace bin and replace damaged panels.

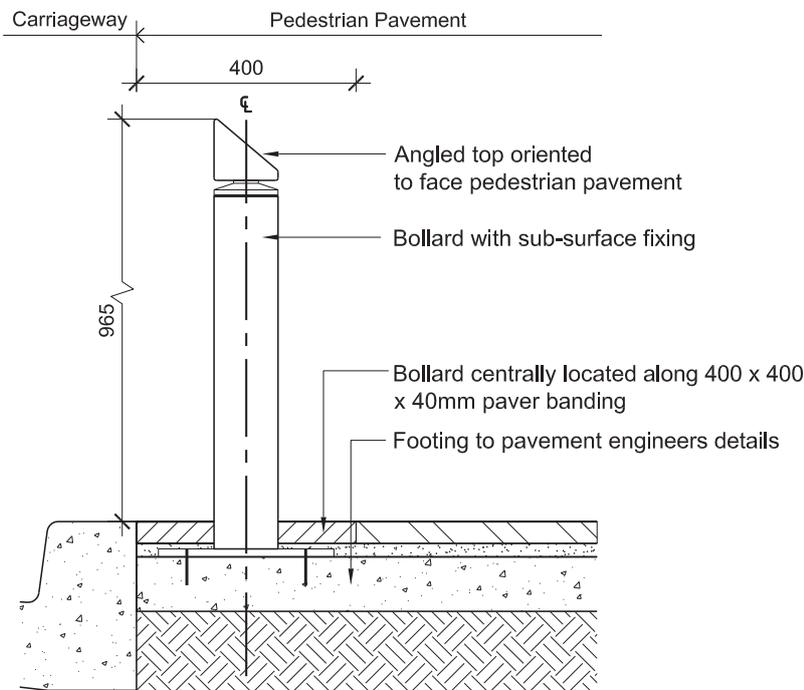
Ongoing Maintenance Costs

Description	Frequency	Cost
Clean	4 times/yr	\$40/bin
Graffiti removal	As requir'd	\$140/bin
Replace bin	As requir'd	\$2,400/bin

Materials & Finishes

4.2 Street & Park Furniture

4.2.6 Bollards



- Bicycle Holding Rail – Town Centre Future

4.2.6 Bollards

Location

To separate vehicular and pedestrian traffic

Principles

Bollards to be

- used only when other traffic control measures are inadequate such as kerb and gutter and or planting or other form of barrier.
- at nominal 1500mm centres to control vehicular access.
- removable bollards where required to allow service vehicle entry.
- surface mounted, with anti-vandal fixings

Materials

Equivalent to Street Furniture Australia Galleria Style Geo-Bollard, Type B 14 (Slope).

Bollards to have cast aluminium cap with finished grade 316 stainless steel finish body

Maintenance

Nil

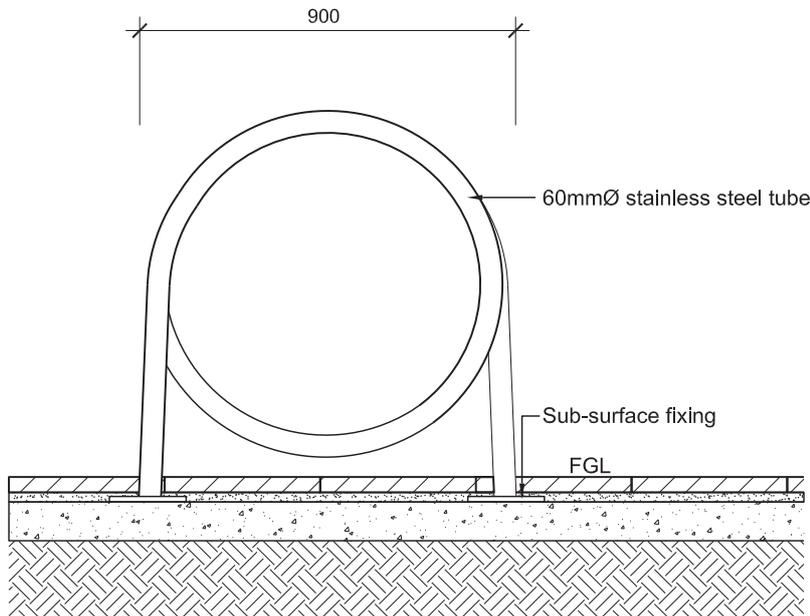
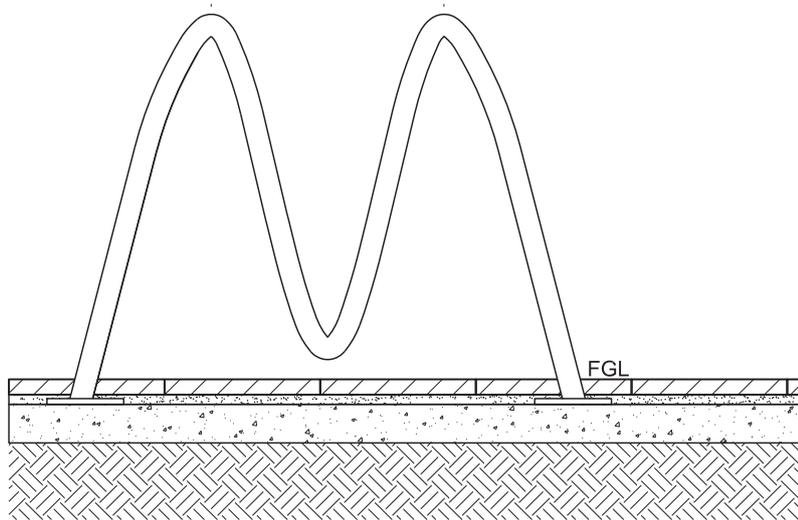
Ongoing Maintenance Costs

Description	Frequency	Cost
Replacement	As requir'd	\$760/bollard

Materials & Finishes

4.2 Street & Park Furniture

4.2.7 Bicycle Racks



- Bicycle Racks – Town Centre Future

4.2.7 Bicycle Racks

Location

Parks and open space areas.
Adjacent main shopping entries and cafe areas.
Adjoining shareway routes.

Principles

- Provide bicycle racks on hardstand areas
- Locate clear of pedestrian thoroughfares
- Surface mounted, with anti-vandal fixings

Materials

Bicycle rack supplied by Street and Park Pty Ltd Style 'Senate' or approved equivalent.
Bicycle rack to be grade 316 stainless steel finish body

Maintenance

Nil

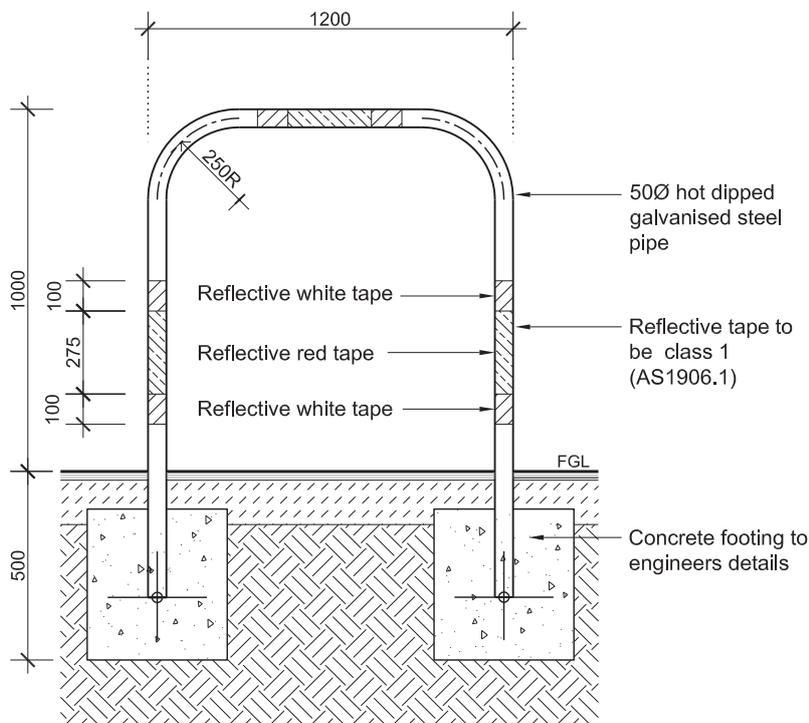
Ongoing Maintenance Costs

Description	Frequency	Cost
Replacement	As requir'd	\$1,800/rack

Materials & Finishes

4.2 Street & Park Furniture

4.2.8 Bicycle Holding Rail



4.2.8 Bicycle Holding Rails

Location

Parks and open space areas
At start and finish of shareway runs at road edges

Principles

- Locate in accordance with Austroads Part 14 – Bicycles
- To be fabricated in accordance with Camden Council Standard Pathway Rails SD06

Materials

Hot dip galvanised steel with painted finish and reflective tape

Maintenance

Nil

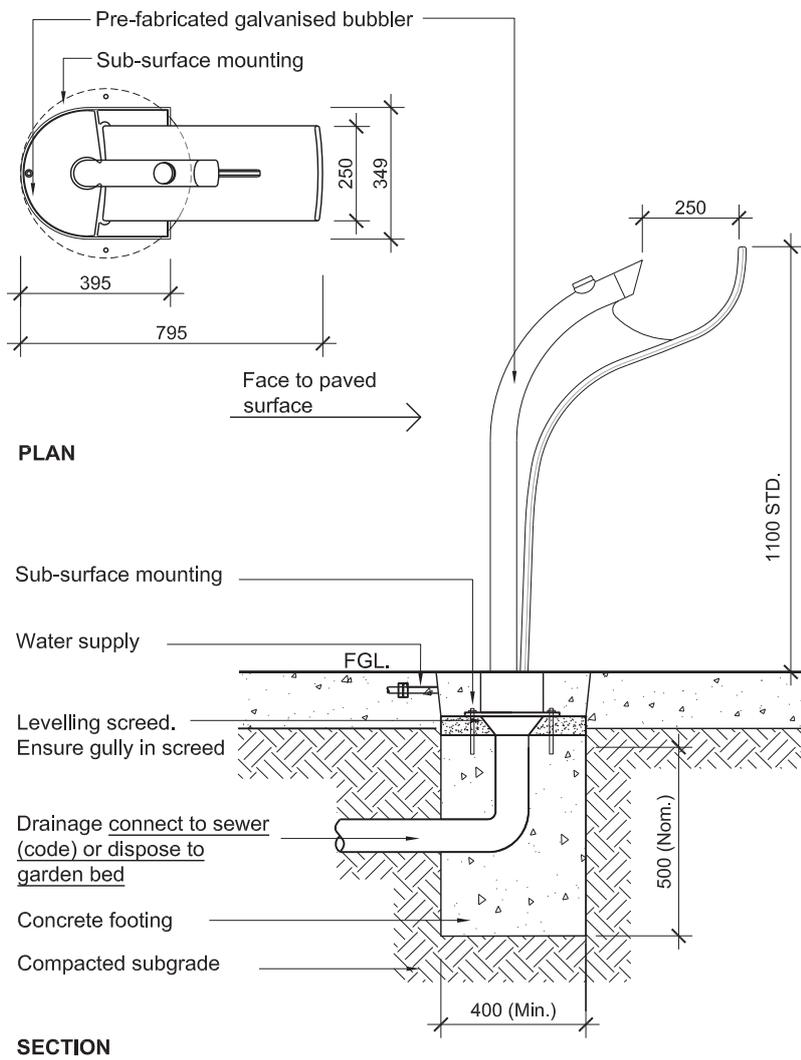
Ongoing Maintenance Costs

Description	Frequency	Cost
Replacement	As requir'd	\$720/rail

Materials & Finishes

4.2 Street & Park Furniture

4.2.9 Drinking Fountains



- Drinking Fountain – Town Centre Future

4.2.9 Drinking Fountains

Location

Parks and open space areas
Along shareways

Principles

- Drinking fountains to be universally accessible
- Locate clear of pedestrian thoroughfares
- Drinking fountain to be surface mounted

Materials

Drinking Fountains shall be solid DA01 grade cast aluminium equivalent to Street Furniture Australia Drinking Fountain DF 4 Drinking Fountain to be surface mounted to manufacturers details

Maintenance

Fix blockages at water spout
Maintain spring mechanisms

Ongoing Maintenance Costs

Description	Frequency	Cost
Clear blockages	As requir'd	\$40/event

Materials & Finishes

4.2 Street & Park Furniture

4.2.10 Play Equipment

4.2.10.1 Play Equipment

Location

Parks and open space areas and along shareways

General (From Open Space Design Guidelines produced by Landcom)

Swings and spring animals continue to provide much fun for children, but our collective understanding of the play environment and what stimulates children has expanded greatly beyond the simple provision of play equipment. However, designing for imaginative play and providing opportunities for adventure and physical challenge are often circumscribed by community concerns for children's safety and security. Design and delivery considerations for play and playgrounds should include:

- **Age range:** is the expected age range properly catered for in the design? In many cases the needs of preadolescent children is poorly addressed.
- **Safety and liability:** the understandable fear of child injury and resultant litigation often encourages play design that is uninspiring or unchallenging. Opting for standard equipment and softfall will reduce those risks and provide acceptable solutions in many cases, but the opportunity to provide site specific responses should always be considered and integrated where possible.
- **Imaginative play and sensory stimuli:** providing opportunities for children to create their own play scenarios usually encourages more enduring participation. The role of art and the integration of nature (bushland paths, water, textures, scents etc) can greatly expand the play realm.
- **Proprietary equipment:** many Councils have specific requirements with respect to the style of equipment preferred and approved suppliers to ensure some consistency in maintenance and replacement. This needs to be understood and consulted on at the outset of the project.
- **Fencing:** in environments away from dangers such as roads, cycle paths and large crowds playground fences may not be needed and indeed their omission can create a greater degree of integration in the landscape. Parents may sometimes leave children unattended in fenced playgrounds near cafes. Where fencing is required the space should be generous enough to include shaded seating for supervising adults.
- **Softfalls:** the technology of synthetic softfalls has improved greatly in recent years and has wide application, particularly where the problems of needles, broken glass and dog faeces may be prevalent. However, playground designers are also reverting to the use of sand in play areas as an interactive medium universally popular with children; all parties must understand and agree to the maintenance, safety and health implications and concur on how these will be addressed. Design of play environments has become a specialised discipline in recent years and for some projects, particularly where art, imaginative play and one-off play features are proposed this may require the appointment of a specialist play consultant. In particular the various Australian Standards that govern playgrounds must be well understood by the designer.

Maintenance

Operation and maintenance manuals should be provided for all play equipment items with detailed schedules on the suppliers, contact numbers, frequency of inspection, routine maintenance checks etc.

Play equipment and play areas should be regularly checked for safety reasons. Play equipment and softfall areas should be checked on a daily basis and items that are damaged or broken should be immediately fenced off and access to these elements prevented. Repairs should be carried out as soon as feasible.



- Oran Park Town children's bicycle loop (Temporary Park)



- Oran Park Town flying fox and swings (Temporary Park)

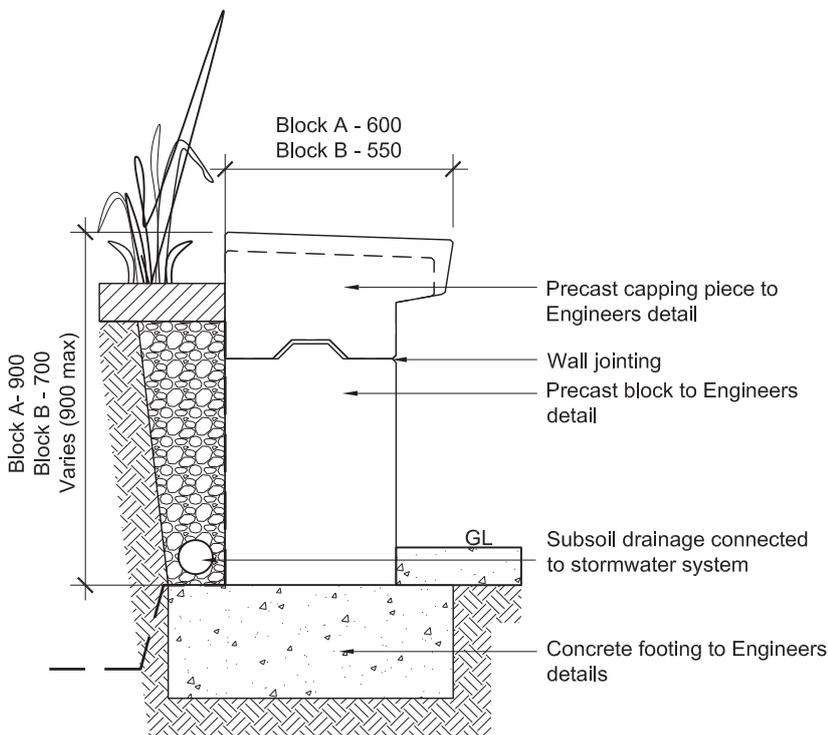


- Oran Park Town Display Office

Materials & Finishes

4.3 Level Changes

4.3.1 Walls: Precast



- Precast walls

Location

Parks and open space areas where level changes necessitate low walls (< 1.0m) or terracing.

Principles

- Precast walling treatments may also be used as incidental seating.
- Walls may be full depth colour concrete.
- Walls may be finished in a variety of treatments – off-form, shot blast, honed, etched etc.
- Painting of walls is not acceptable.
- Ensure walling units are designed to deter skaters or are designed to withstand skating.
- Treat prominent walls with an anti-graffiti product if necessary.
- Ensure rear of walls are well drained.

Materials

Precast N40 concrete units with hidden lifting lugs.

Maintenance

Graffiti removal as required as soon as feasible after incidence

Ongoing Maintenance Costs

Description	Frequency	Cost
Graffiti removal	As requir'd	\$180/event

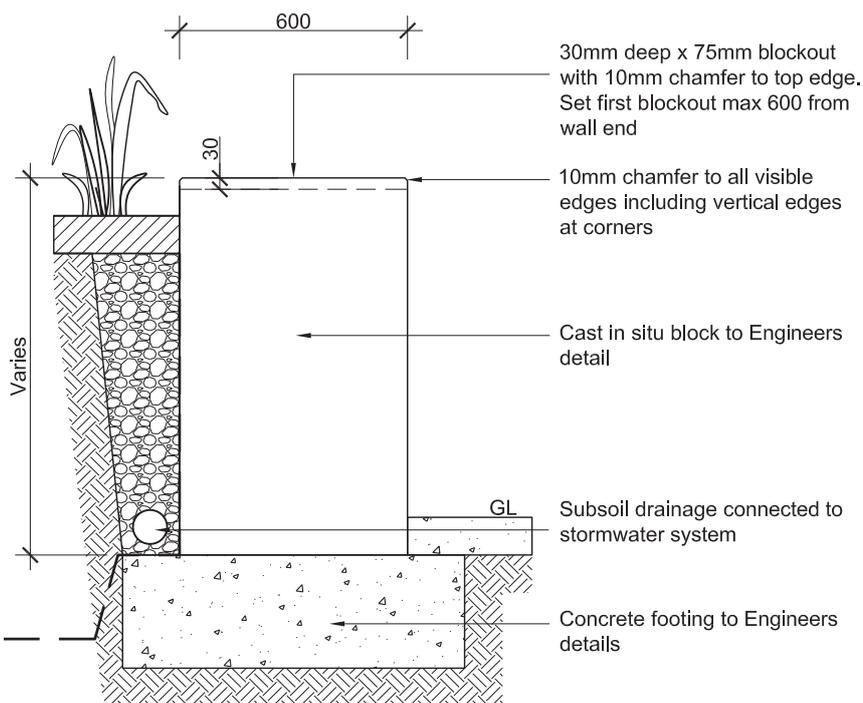
Materials & Finishes

4.3 Level Changes

4.3.2 Walls: Cast In-situ



- Cast In-situ walls



4.3.2 Walls: Insitu

Location

Parks and open space areas where level changes necessitate low walls (< 1.0m) or terracing.

Principles

- Insitu walling treatments may also be used as incidental seating.
- Walls may be full depth colour concrete.
- Walls may be finished in a variety of treatments – off-form, shot blast, honed, etched etc.
- Painting of walls is not acceptable.
- Ensure walls are designed to deter skaters or are designed to withstand skating.
- Treat prominent walls with an anti-graffiti product if necessary.
- Ensure rear of walls are well drained

Materials

N32 concrete.

Maintenance

Graffiti removal as required as soon as feasible after incidence

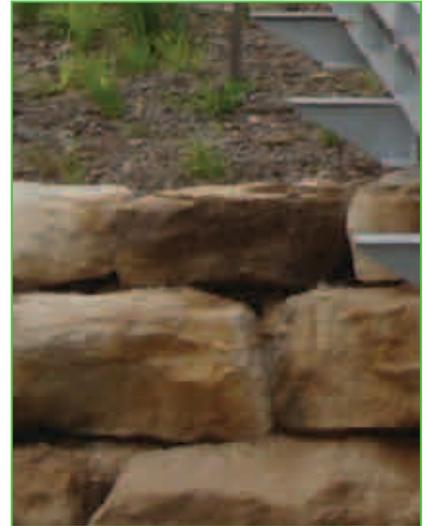
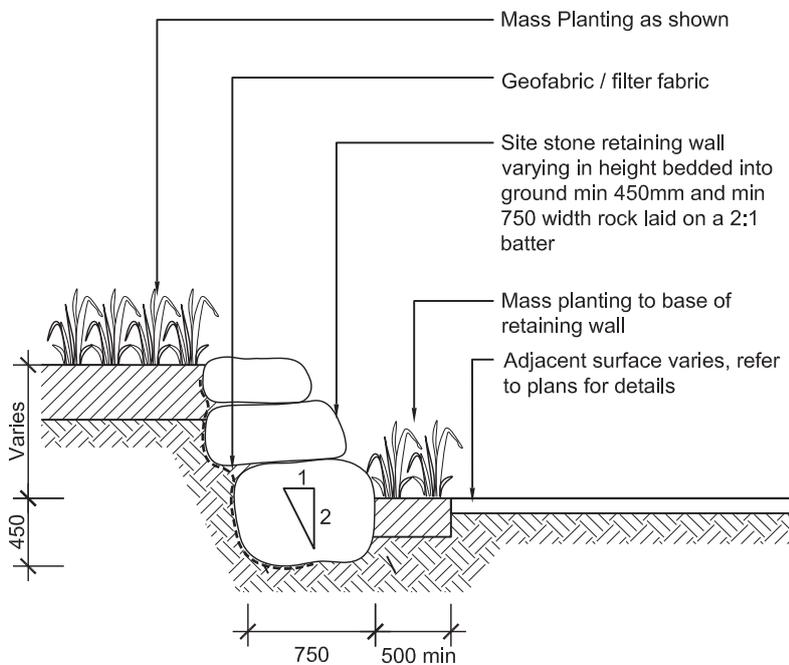
Ongoing Maintenance Costs

Description	Frequency	Cost
Graffiti removal	As requir'd	\$180/event

Materials & Finishes

4.3 Level Changes

4.3.3 Low rip rap wall



4.3.3 Low Rip Rap Walls

Location

Informal areas of parks and open space areas where level changes necessitate low walls (< 1.0m) or terracing. Riparian Corridor and North South Green Link

Principles

- Rip rap walls are to be sandstone only, other forms of stone are not acceptable.
- Rip rap walls should be used for soft engineering level changes.
- Ensure rear of walls are well drained

Materials

Sandstone rip rap shall be random sized roughly rectangular shaped pieces to suit, min thickness of 600x400x600mm, split faced, hard durable stone with an even white/buff colour with some visible banding. Sandstone shall be equivalent to Gosford Quarries 'Mt White - Brown', from Somerset Quarry, with a compressive strength dry of min. 57MPa or equivalent.

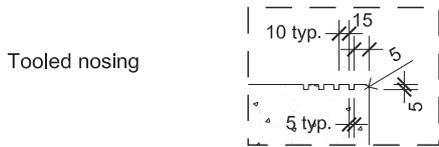
Maintenance

Nil

Materials & Finishes

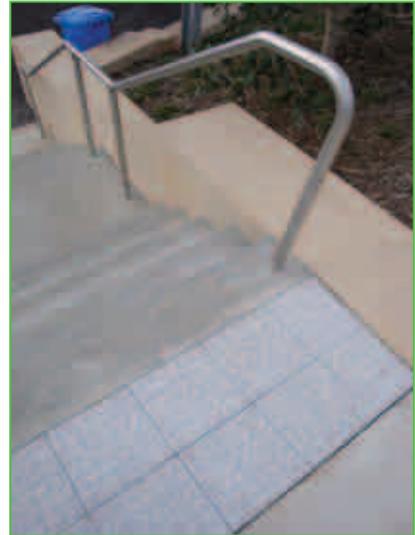
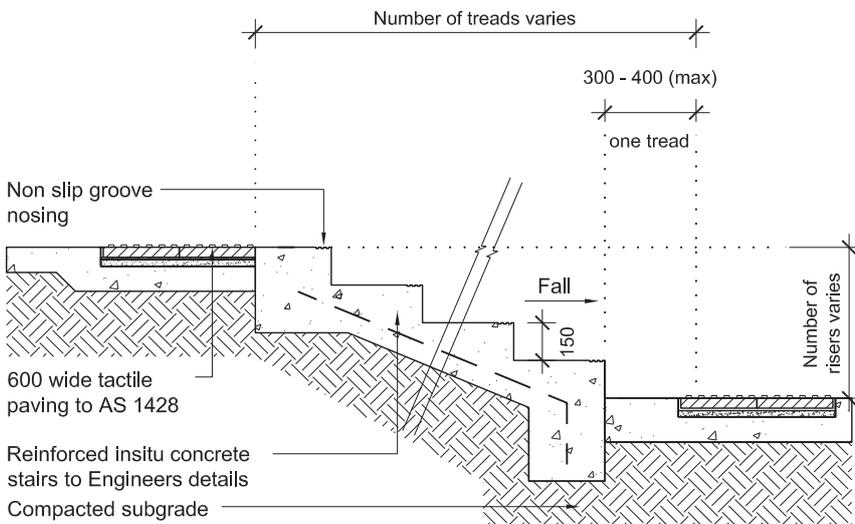
4.3 Level Changes

4.3.4 Stairs



Tooled nosing

Non slip groove nosing



- Cast In-situ walls

4.3.4 Stairs

Location

Parks and open space areas where level changes necessitate the need for stairs.

Principles

- Only use stairs where absolutely necessary as they restrict use of an area by wheeled elements.
- Stairs to be constructed to Building Code of Australia (BCA) for riser and tread dimensions.
- Stairs to be fitted with nosings, handrails and tactile indicators to AS 1428.

Materials

Stairs may be finished in the following materials consistent with Pavements:

- Type A Pavement;
- Type H Pavement;
- Type I Pavement;

Maintenance

Nil

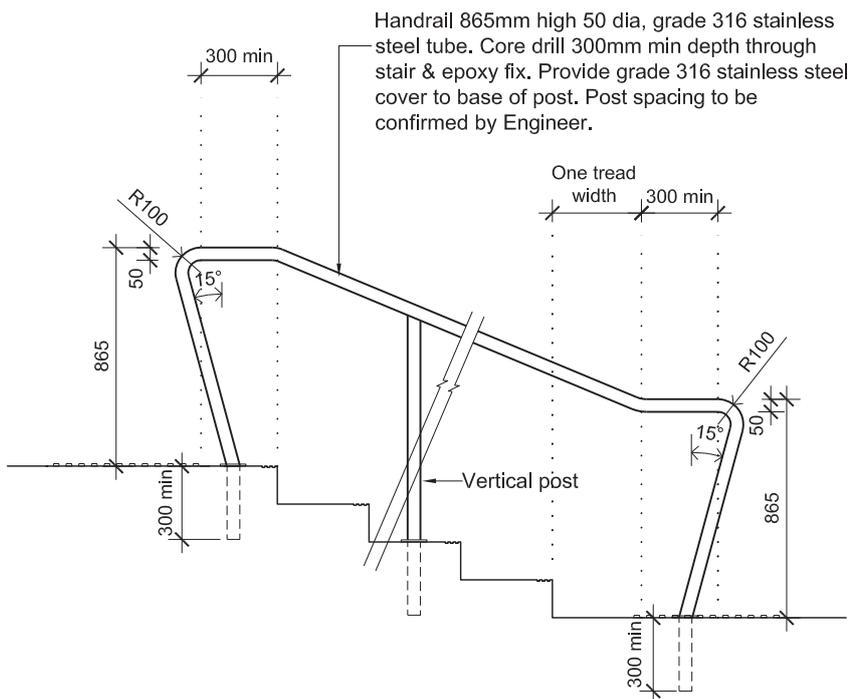
Materials & Finishes

4.3 Level Changes

4.3.5 Handrails and Balustrades



- Handrail



4.3.5 Handrails and Balustrades

Location

Parks and open space areas where level changes necessitate the need for stairs, ramps or sudden level changes with a vertical drop in excess of 600mm.

Principles

- Handrails and balustrades to be in accordance with BCA and AS 1428

Materials

Grade 316 Stainless Steel

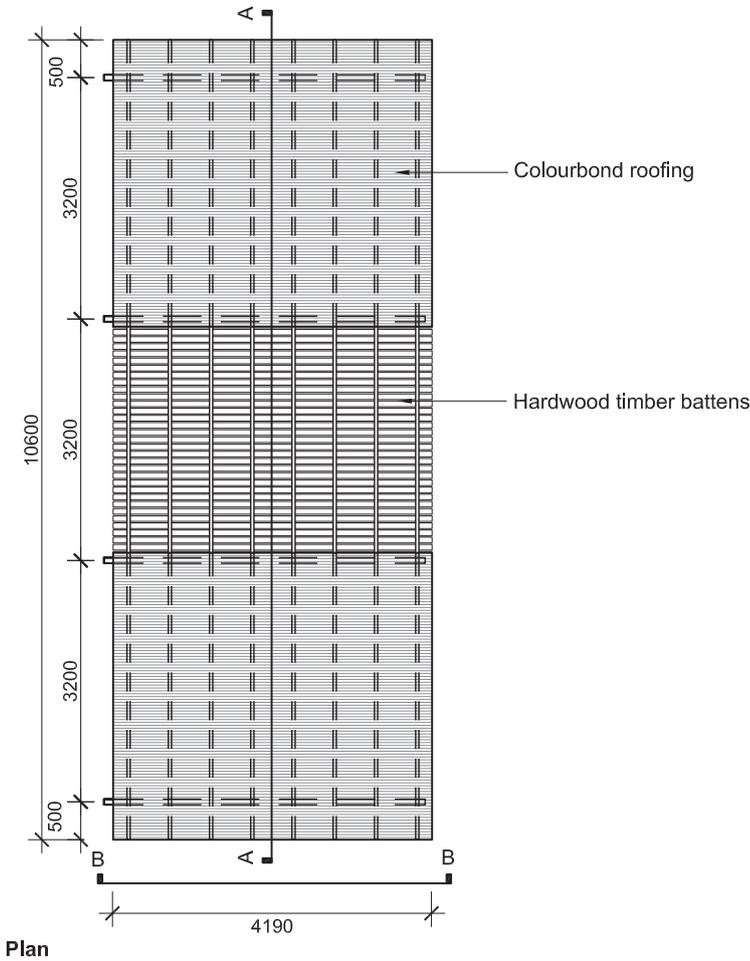
Maintenance

Regular sweeping
High pressure gurney clean to remove stains

Materials & Finishes

4.4 Structures

4.4.1 Shelter Type 1



- Shelter 1 – Town Centre Future

4.4.1 Shelter Type 1

Location

for use in open space areas and riparian corridors

Principles

Shelters and shade structures are to be;

- provided in open space areas and riparian corridors where sufficient immediate shade or weather protection is not available or where a sense of enclosure is considered desirable ;
- provided over table and bench settings and table seats where weather protection is desirable;
- sited so that roof water is shed into garden areas;
- installed on hard wearing surface;
- surface mounted, with anti-vandal fixings;
- installed level not at grade with pavement.

Materials

Structural hot dip galvanised steel, colourbond roofing and durability class 1 hardwood.

Maintenance

Remove graffiti and litter from roofing as soon as possible after event; Inspect shelters and shade structures annually to check fixings etc, tighten as necessary.

Timber elements have a natural finish and should be allowed to weather.

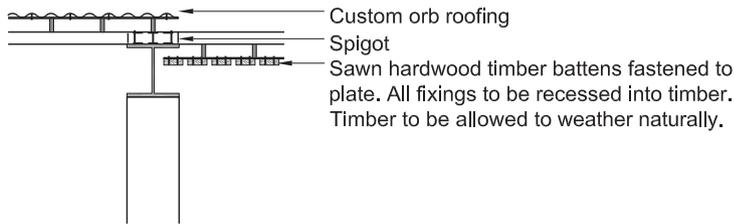
Ongoing Maintenance Costs

Description	Frequency	Cost
Graffiti removal	As requir'd	\$140/shelter

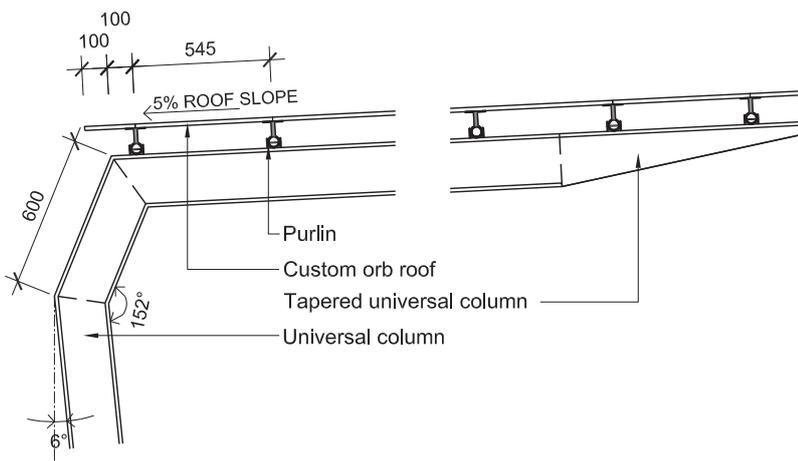
Materials & Finishes

4.4 Structures

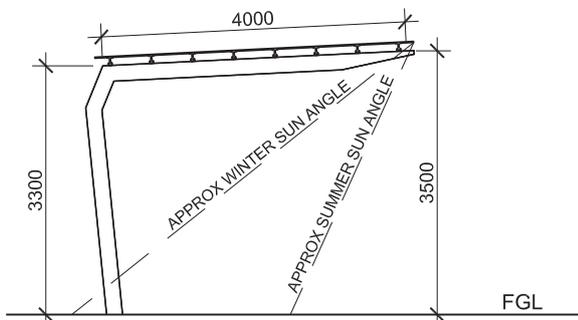
4.4.1 Shelter Type 1 (Continued)



Typical roofing detail



Typical post



Elevation BB



- Shelter 1 – Town Centre Future



- Shelter 1 – Town Centre Future



- Shelter 1 – Town Centre Future

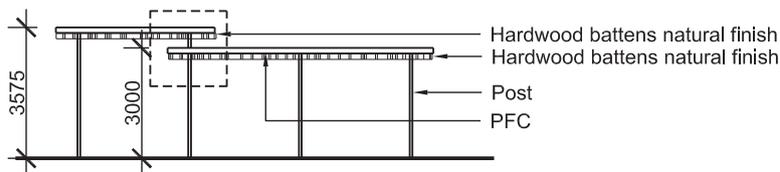
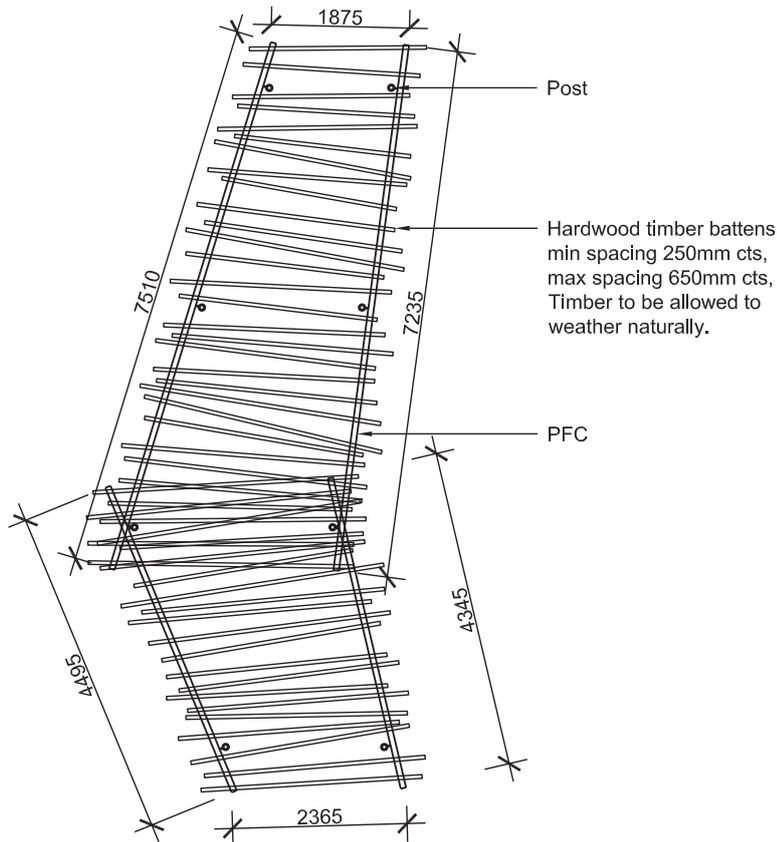


- Shelter 1 – Town Centre Future

Materials & Finishes

4.4 Structures

4.4.2 Pergola Type 1



- Oran Park Town pergola



- Oran Park Town pergola

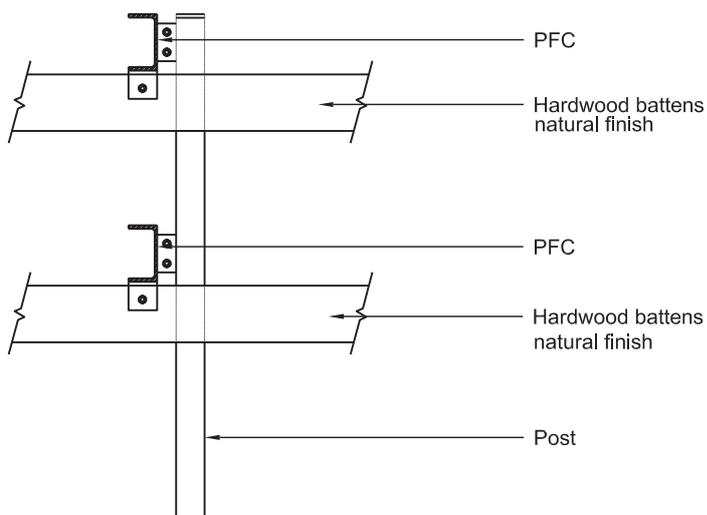
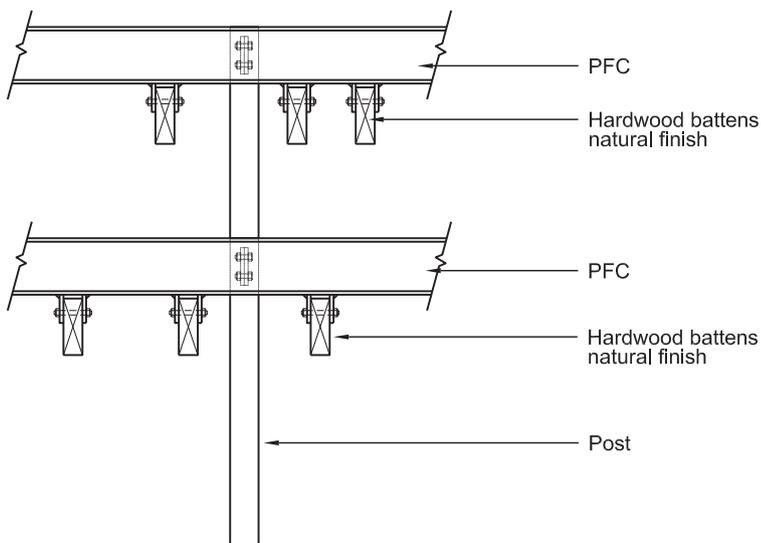


- Oran Park Town pergola

Materials & Finishes

4.4 Structures

4.4.2 Pergola Type 1 (Continued)



4.4.2 Pergola Type 1

Location

For use in open space areas and riparian corridors

Principles

Pergola Type 1 is to be;

- provided in open space areas and riparian corridors where sufficient immediate shade is not available or where a sense of enclosure is considered desirable ;
- provided over table and bench settings and table seats where shade is desirable;
- installed on hard wearing surface;
- surface mounted, with anti-vandal fixings;
- installed level not at grade with pavement.

Materials

Structural hot dip galvanised steel and durability class 1 hardwood battens. Timber battens to be either recycled hardwood or from sustainably managed forests.

Maintenance

Remove graffiti from structure as soon as possible after event;
 Inspect pergolas annually to check fixings etc, tighten as necessary.
 Timber elements have a natural finish and should be allowed to weather.

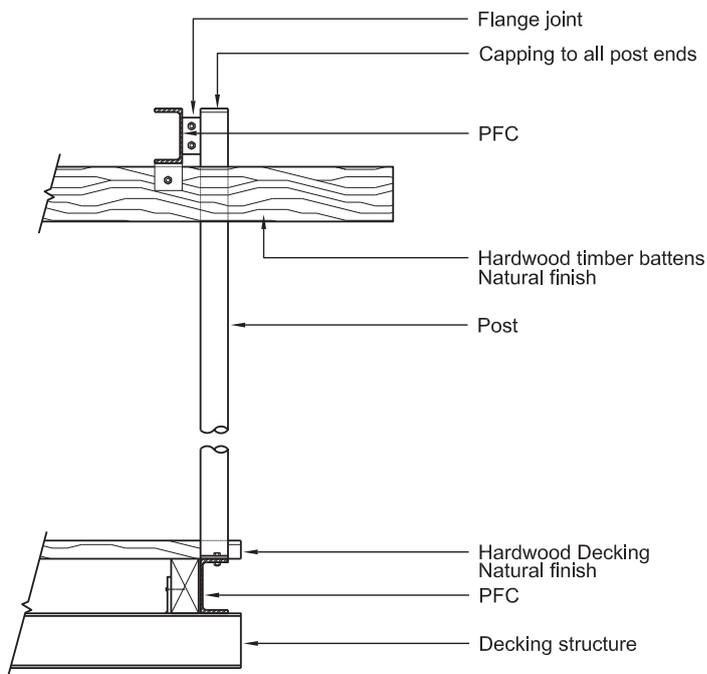
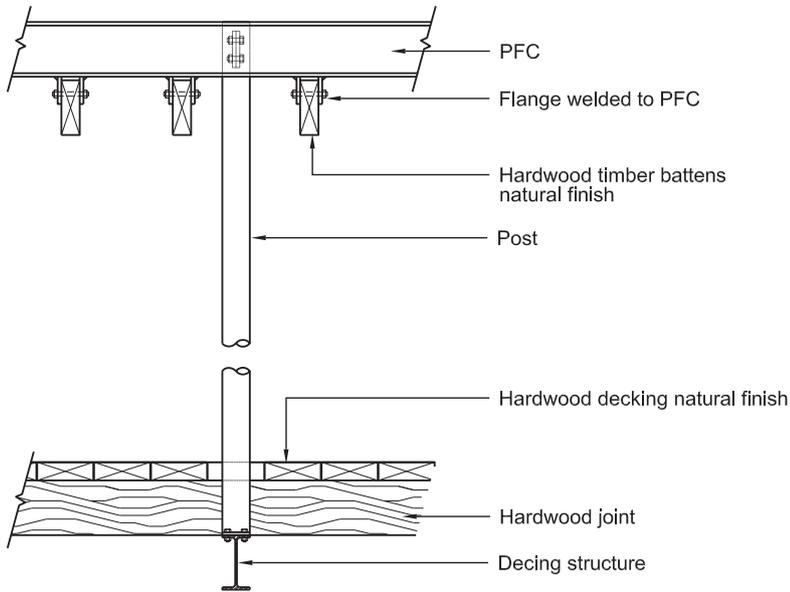
Ongoing Maintenance Costs

Description	Frequency	Cost
Graffiti removal	As requir'd	\$140/shelter

Materials & Finishes

4.4 Structures

4.4.2 Pergola Type 1 (Continued)

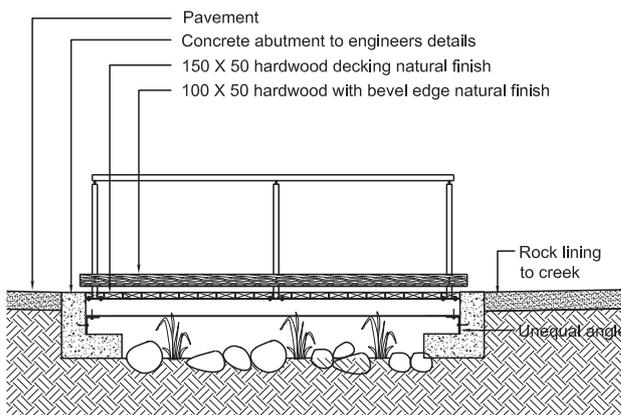
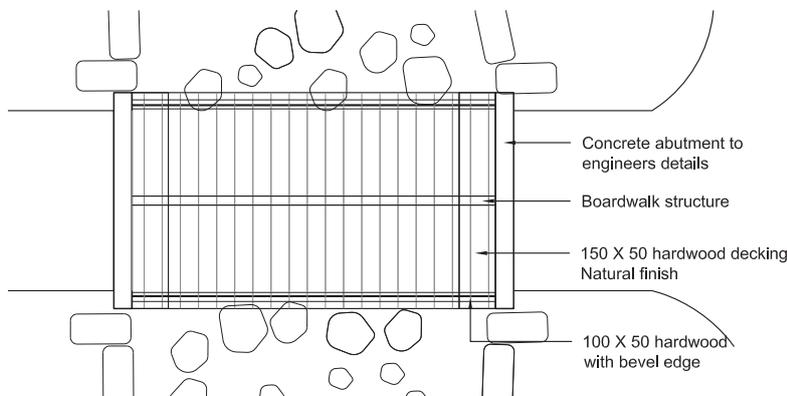


- Oran Park Town pergola

Materials & Finishes

4.4 Structures

4.4.3 Boardwalk



- Oran Park Town boardwalk

4.4.3 Boardwalks and Viewing Platforms

Location

For use in open space areas and riparian corridors

Principles

Boardwalks and Viewing Platforms may be used to

- provide access over spillways or viewing opportunities over water bodies;
- provide recreational or interpretational opportunities in riparian corridors or wetland areas;
- installed on hard wearing surface;
- surface mounted, with anti-vandal fixings;
- installed level not at grade with pavement.

Materials

Structural hot dip galvanised steel structure and balustrades and handrails with durability class 1 hardwood decking from sustainably managed forests..

Maintenance

Remove graffiti and litter from boardwalks and viewing platforms as soon as possible after event;

Inspect boardwalks and viewing platforms annually to check fixings etc, tighten as necessary.

Timber elements have a natural finish and should be allowed to weather.

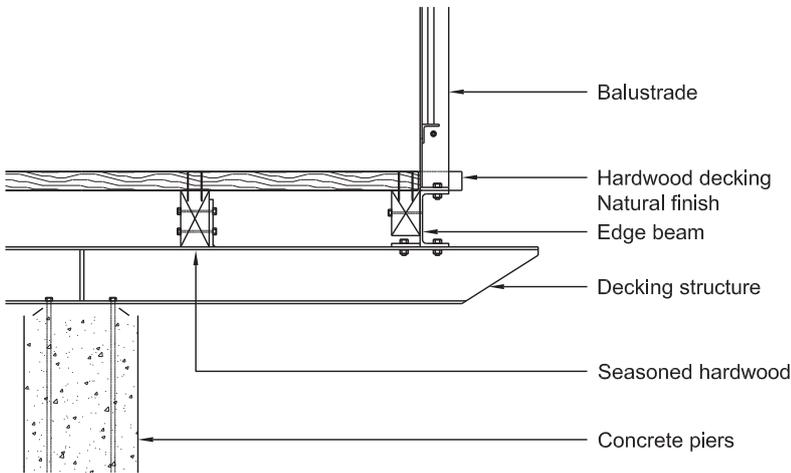
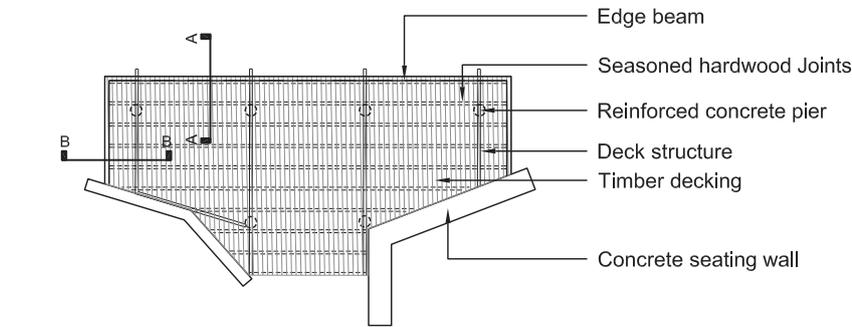
Ongoing Maintenance Costs

Description	Frequency	Cost
Graffiti removal	As requir'd	\$140/shelter
Timber deck replacement	As requir'd	\$240/m ²

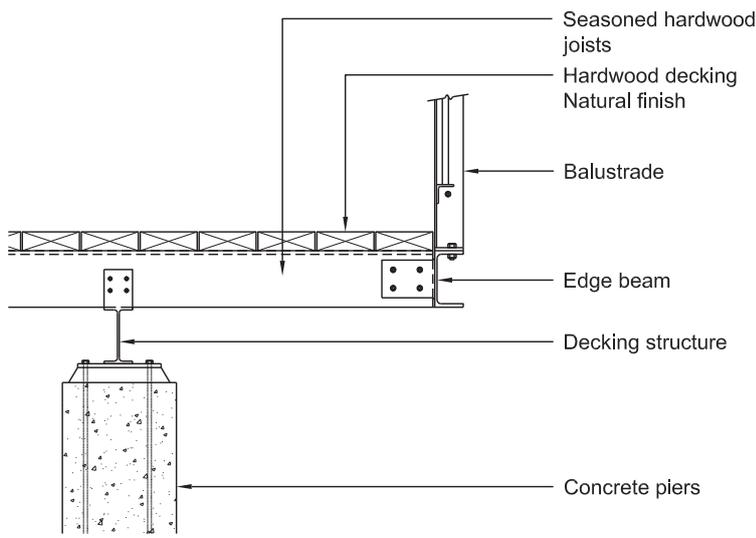
Materials & Finishes

4.4 Structures

4.4.4 Viewing Platform



Typical decking detail AA



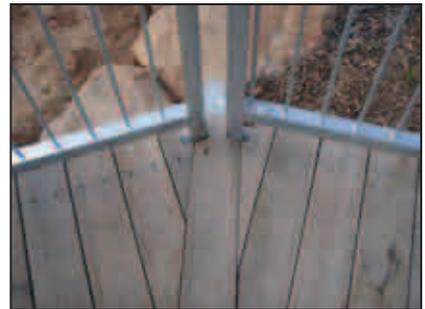
Typical decking detail BB



- Oran Park Town OSD4 deck



- Oran Park Town OSD4 deck

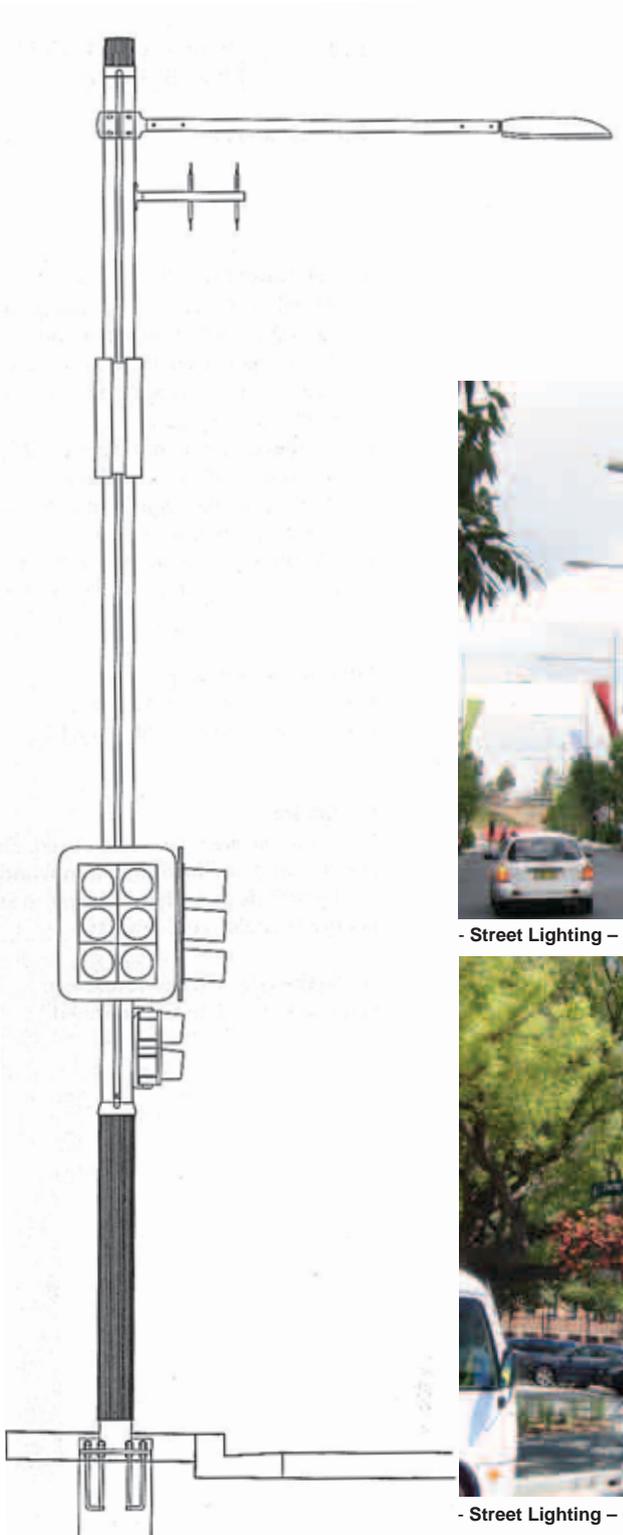


- Oran Park Town OSD4 deck

Materials & Finishes

4.5 Lighting

4.5.1 Street Lighting



- Street Lighting – Rouse Hill Town Centre



- Street Lighting – Glebe Point Road, Glebe

4.5.1 Street Lighting

Location

To all trafficable and pedestrian streets.

Principles

- Lighting levels to be applied in accordance with AS/NZS 1158 'Road Lighting'.
- Where possible ensure light poles align and are evenly spaced along roads.
- Align poles with architectural elements ie colonnades and street trees in Main Street and Calmed Streets to ensure unimpeded pedestrian flows along verges.
- Ensure underground cabling is provided.

Materials

Smart pole design or similar
Clear anodised or hot dipped galvanised finish to manufacturer's recommendations

Maintenance

Remove graffiti and bill postings from light poles as soon as possible after event;
Replace luminaires as required

Ongoing Maintenance Costs

Description	Frequency	Cost
Replace luminaires	As requir'd	\$180/ Lamp



- Street Lighting - City of Sydney

Materials & Finishes

4.5 Lighting

4.5.2 Carpark Lighting



- Car Park Lighting

4.5.2 Carpark Lighting

Location

For use in carpark areas where other means of support of luminaires is not available such as buildings etc.

Principles

- Lighting levels to be applied in accordance with AS/NZS 1158 'Road Lighting'.
- Where possible ensure light poles align and are evenly spaced.
- Align poles with architectural elements ie colonnades and street trees in Main Street and Calmed Streets to ensure unimpeded pedestrian flows along verges.
- Ensure underground cabling is provided.

Materials

Post top lights are to be an inverted conical style complete with control gear and lamps equivalent to that supplied by International Lighting Pty Ltd, ph 9816 4155, fax 9817 4166, email: enquiries@internationallighting.com.au.

Light Model: SLVT H-3
 Lamp: 70W CDMT / LG-P
 Finish: POWDERCOAT
 Colour: WINDSPRAY
 Post Height: 6m

Maintenance

Remove graffiti and bill postings from light poles as soon as possible after event;
 Replace luminaires as required

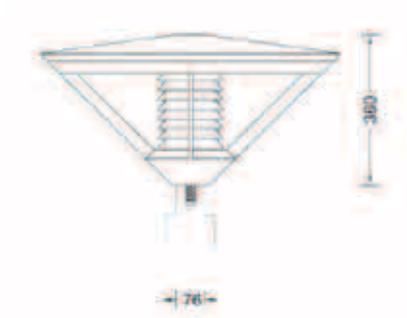
Ongoing Maintenance Costs

Description	Frequency	Cost
Replace luminaires	As requir'd	\$120/lamp

Materials & Finishes

4.5 Lighting

4.5.3 Open Space Lighting



- Open Space Lighting , Image from Oran Park

4.5.3 Open Space Lighting

Location

For use in open space areas such as Town Park, Town Square, Market Square, North South Green Link and Riparian Corridors

Principles

- Lighting levels to be applied in accordance with AS/NZS 1158.3 to achieve P3 level.
- Where possible ensure light poles align and are evenly spaced.
- Lights to provide indication of route of travel.
- Ensure lights adequately light stairs and level changes.
- Ensure underground cabling is provided.
- Ensure light poles along cycleways are in accordance with Austroads Part 14.

Materials

Post top lights are to be an inverted conical style complete with control gear and lamps equivalent to that supplied by International Lighting Pty Ltd, ph 9816 4155, fax 9817 4166, email: jamesv@internationallighting.com.au, contact: James Vlassis mobile 0407 023 030.

Light Model: SLVT H-3
 Lamp: 70W CDMT / LG-P
 Finish: POWDERCOAT
 Colour: WINDSPRAY
 Post Height: 4m

Maintenance

Remove graffiti and bill postings from light poles as soon as possible after event;
 Replace luminaires as required

Ongoing Maintenance Costs

Description	Frequency	Cost
Replace luminaires	As requir'd	\$120/lamp

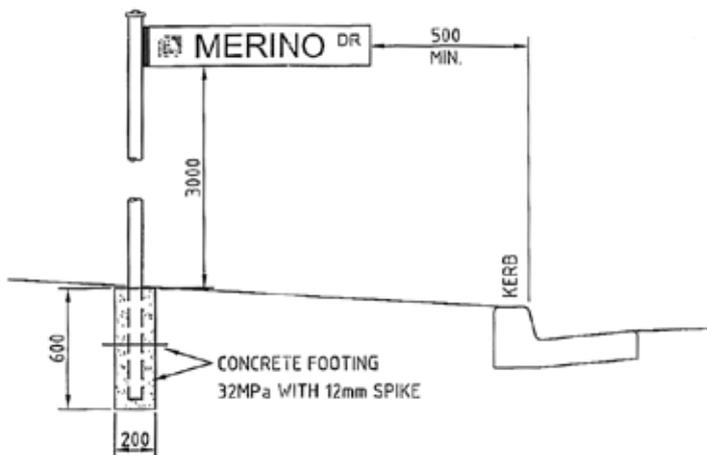
Materials & Finishes

4.6 Signage

4.6.1 General



Sign Layout



Typical Post Detail

4.6 Signage

Introduction

Street signage, way finding signage, information and interpretational signage will be important elements in the public domain of Oran Park Town.

To establish and reinforce Oran Park Town's identity it is recommended that a signage strategy is developed as early as possible to address way finding, information and interpretational signage. Street signage will be in accordance with Camden Council Engineering Construction Specification 2009.

Smart-pole type street light poles will be used predominantly to fix street signs. A simple pole system may be required where Smart-poles are not available. The Smart-pole street light poles should be used where possible to accommodate signage to minimise the number of poles and clutter in the streetscape and open space areas. However, where smart poles are not available other signage fixings and supports will be necessary.

Principles

- All signage is to conform to Australian Standards
- Signage should be simple and contemporary in design and graphic style
- The scale of the sign should be in keeping with the location of the sign
- All signage should be universally accessible and easily legible and conform to relevant Australian Standards
- Develop a hierarchy of signage throughout the town centre
 - town entry / identity
 - orientation
 - way finding
 - place
 - community information / event signage
- Ensure the design of information/ event signage is easily accessible and changeable

Materials

All signage and supports to be fabricated of hard wearing, UV stable, vandal resistant materials

Maintenance

Remove graffiti and bill postings over signage as soon as possible after event; Ensure that fixings are tamper proof and cannot be easily removed or stolen;

- Extract from Camden Council Engineering Construction Specification (February 2009)

Materials & Finishes



- Cow sculpture - Oran Park Town



- Barking Owl Seat (Art Is An Option) The Ponds, Kellyville



- Artwork in Redfern Park, Redfern



- Cynthia Turner's mosaic Seating, Waverly Library



- Ishi Buki artwork at Sydney Olympic Park

4.7 Public Art (From Public Art Guidelines produced by Landcom)

Introduction

Public art and design can be a memorable and energetic part of the public domain. Good art can create a destination that is revisited and enjoyed, increasing community use of public spaces and places. In turn this can provide opportunities for community members to use open space actively, meet others and participate in everyday community interactions.

Public art can be distinctive, making a strong visual statement that contributes to the cultural identity of a new locality. It has the capacity to respond to the local environment, reflect community heritage and comment on contemporary issues. The integration of art, urban design and landscape can create places of great beauty and relevance to local people. Participation in creative projects can support connections between individuals and groups encouraging a dialogue about community life. Communities are often proud of their achievements and have a strong sense of ownership of successful artworks.

Principles

1. Art that contributes to cultural identity and creates a distinctive sense of place;
2. Creative projects that help to build stronger, more connected communities;
3. Art that can be enjoyed, and experienced by people of different ages and cultural backgrounds;
4. Art that responds to themes of people and place – both past and present;
5. Art that relates well to the built and natural environment;
6. Art that exemplifies artistic excellence and integrity;
7. Art that responds to the challenge of climate change through sustainable design and fabrication;
8. Art that is appropriate and safe in public contexts and is easily maintained.

Materials and Maintenance

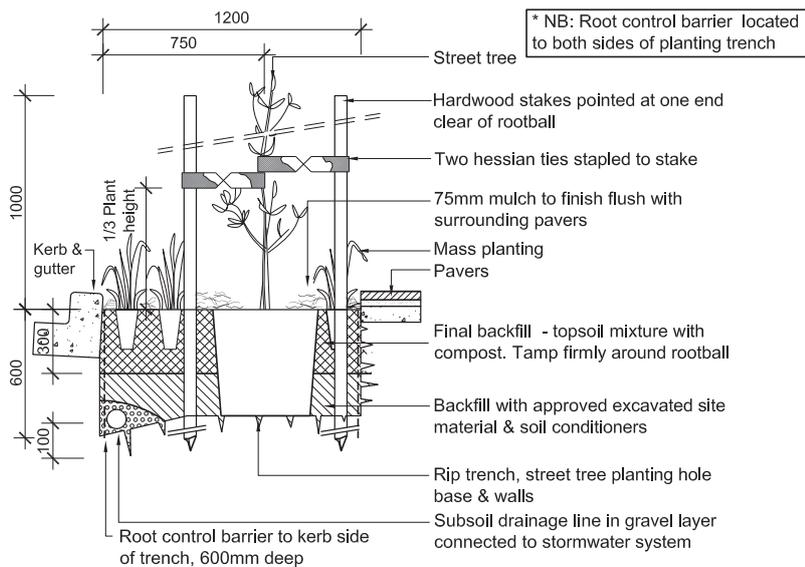
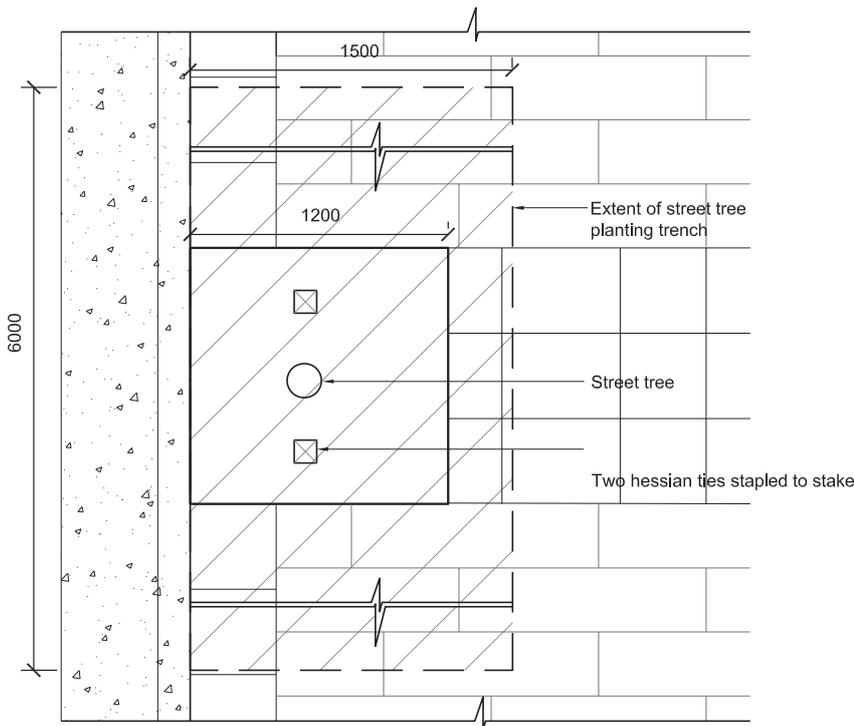
Artworks are designed to be structurally sound under an anticipated range of uses and conditions:

- Art in special contexts such as play areas or road reserves meets local government or other applicable standards;
- Permanent artworks are designed to be durable and able to be maintained;
- Plans, designs and specifications allowing repairs and replacements are provided with the completed artwork.

Materials & Finishes

4.8 Planting

4.8.1 Road Verge Street Tree Planting



4.8 Planting Areas

4.8.1 Road Verge Planting

Location

In road verges of streets throughout Oran Park Town Centre. Trees are generally to be located 900mm from face of kerb.

Principles

- Ensure species selected are suitable for planting in south western Sydney in respect of soils, climate and site character.
- Ensure street trees are planted in satisfactory soil quality and soil volume for healthy tree and tree root growth.
- Street trees to be planted at regular intervals along road verges at approximately 8 – 14m centres depending on scale of tree and street.
- Co-ordinate location of street trees with built elements, street lighting, signage and services.
- Ensure street trees are planted in locations that do not compromise drivers sight lines or visibility.
- Street trees are to be contract grown by a reputable nursery to ensure quality and availability.
- Provide colourful, textural understorey planting to street tree planting areas.

Materials

Semi-mature tree species 75-200 litre pot size in accordance with NATSPEC” Specification for Trees 2003

Maintenance

Regular weeding and removal of litter from planting areas.

Water root zones during periods of extended dry weather.

Carry out any pruning or ‘lifting’ of trees to A.S. 4373 2007 Pruning of Amenity Trees.

Replace dead or poor trees

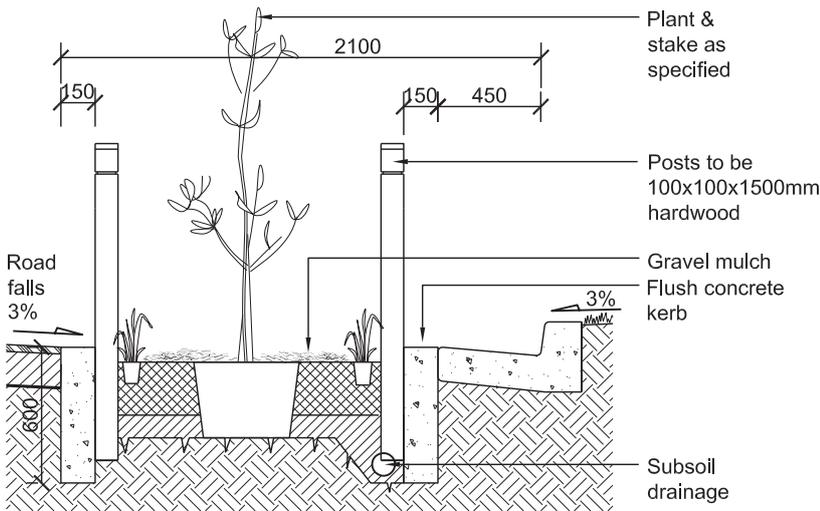
Ongoing Maintenance Costs

Description	Frequency	Cost
Weeding	6 times/yr	\$8/tree
Watering	As requir'd	\$2/tree
Pruning	1 time/ yr	\$25/tree
Fertilising	2 times/ yr	\$2/tree
Mulch Repl'ce	1 time/ yr	\$4.60/tree
Replace tree	As requir'd	\$400/tree

Materials & Finishes

4.8 Planting

4.8.2 Street Tree Pit Planting



4.8.2 Street Tree Pit Planting

Location

In streets in tree pits in parking lanes throughout Oran Park Town Centre

Principles

- Ensure species selected are suitable for planting in south western Sydney in respect of soils, climate and site character.
- Ensure street tree pits have satisfactory soil quality and soil volume for healthy tree and tree root growth.
- Trees in pits to be planted at regular intervals along parking lanes at approximately 14 -16m centres depending on scale of tree and street. Ensure at least two cars are able to park between tree pit plantings. Ensure gaps between tree pits are divisible by a car length ie 12m, 18m, 24m etc
- Co-ordinate location of street trees in tree pits with built elements, street lighting, signage and services.
- Ensure adequate subsoil drainage is available to tree pit hole.
- Street trees are to be contract grown by a reputable nursery to ensure quality and availability.
- Provide colourful, textural understorey planting to street tree pit planting areas.

Materials

Semi-mature tree species 75-200 litre pot size in accordance with NATSPEC" Specification for Trees 2003

Maintenance

Regular weeding and removal of litter from planting areas.

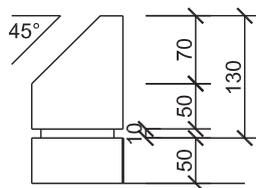
Water root zones during periods of extended dry weather.

Carry out any pruning or 'lifting' of trees to A.S. 4373 2007 Pruning of Amenity Trees.

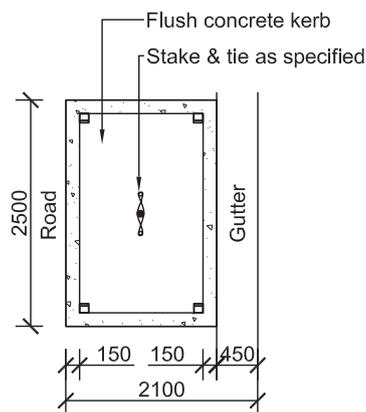
Replace dead or poor trees

Ongoing Maintenance Costs

Description	Frequency	Cost
Weeding	6 times/yr	\$8/tree
Watering	As requir'd	\$2/tree
Pruning	1 time/ yr	\$25/tree
Fertilising	2 times/ yr	\$2/tree
Mulch Repl'ce	1 time/ yr	\$8.0/tree
Replace tree	As requir'd	\$400/tree



Capitol detail

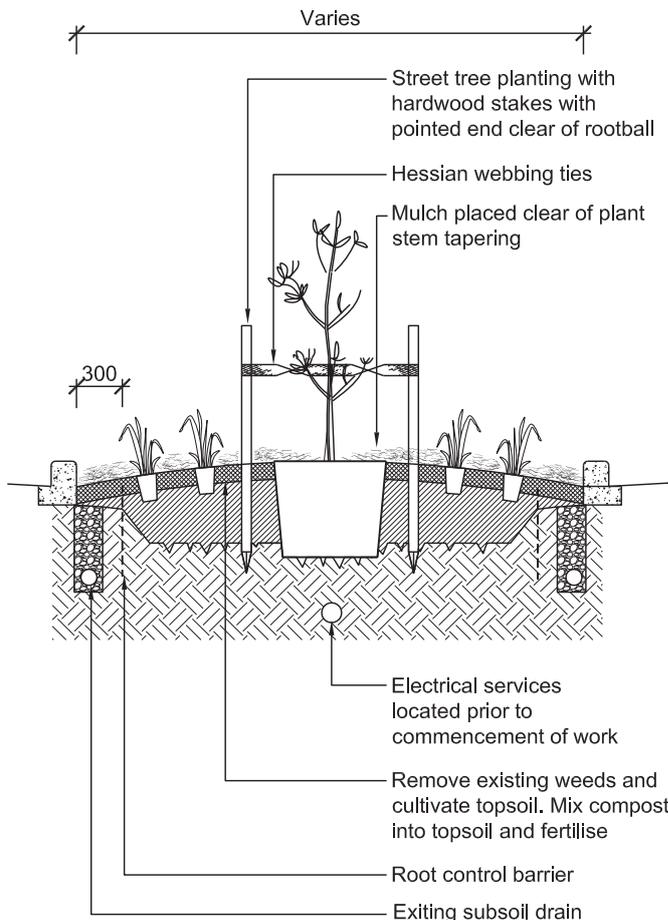
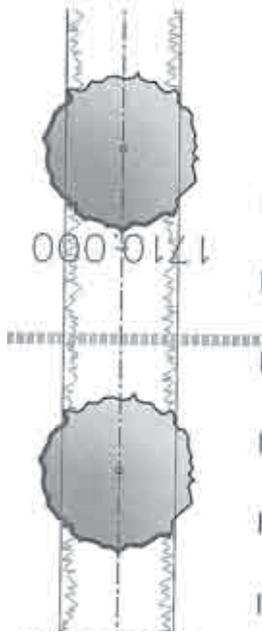


Tree guard setout

Materials & Finishes

4.8 Planting

4.8.3 Central Median Planting



4.8.3 Central Median Planting

Location

In Perimeter Roads around Oran Park Town Centre

Principles

- Ensure species selected are suitable for planting in south western Sydney in respect of soils, climate and site character.
- Ensure street trees are planted in satisfactory soil quality and soil volume for healthy tree and tree root growth.
- Trees in central medians are to be planted at regular intervals at approximately 10 -16m centres depending on scale of tree. Co-ordinate location of street trees with built elements, street lighting, signage and services.
- Co-ordinate location of street trees in tree pits with built elements, street lighting, signage and services.
- Ensure adequate subsoil drainage is available to medians.
- Street trees are to be contract grown by a reputable nursery to ensure quality and availability.
- Provide colourful, textural understorey planting to road median areas.

Materials

Semi-mature tree species 75-200 litre pot size in accordance with NATSPEC" Specification for Trees 2003

Maintenance

Regular weeding and removal of litter from planting areas.

Water root zones during periods of extended dry weather.

Carry out any pruning or 'lifting' of trees to A.S. 4373 2007 Pruning of Amenity Trees.

Replace dead or poor trees

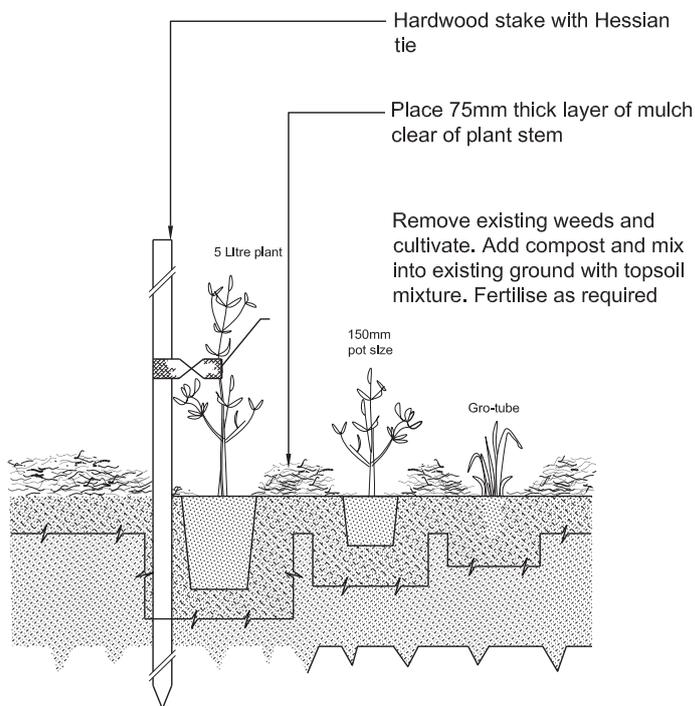
Ongoing Maintenance Costs

Description	Frequency	Cost
Weeding	4 times/yr	\$2/m ²
Watering	As requir'd	\$0.25/m ²
Pruning	1 time/2 yr	\$25/tree
Replace tree	As requir'd	\$400/tree
Replace mass planting	As requir'd	\$40/m ²

Materials & Finishes

4.8 Planting

4.8.5 Mass Planting in Existing Topsoil



4.8.4 Mass Planting in Existing Topsoil

Location

Generally in open space areas and riparian corridors.

Principles

- Ensure species selected are suitable for planting in south western Sydney in respect of soils, climate and site character.
- Mass planting species should be hardy, long lived, low water use species.
- Preference is given to native species.
- Ensure planting is in accordance with CPTED principles and strategies

Materials

Ground covers, native grasses and shrubs to be container grown by a reputable nursery to ensure quality and availability. Plants shall be vigorous, well established, of good form, not soft or forced, well hardened off, free from disease and pests with large healthy root systems, not pot bound, with no evidence of root spiralling. The root system shall be well balanced in relation to the size of the plant.

Maintenance

Regular weeding and removal of litter from planting areas. Water root zones during periods of extended dry weather. Carry out any tip pruning of shrubs and grasses to promote healthy dense growth as needed. Replace dead or poor plants.

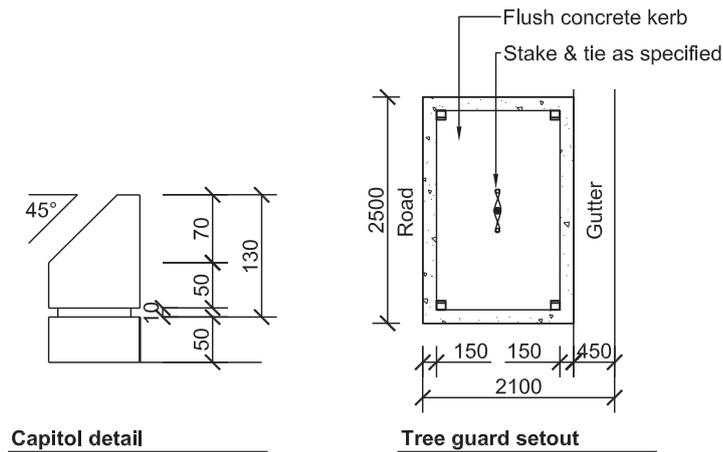
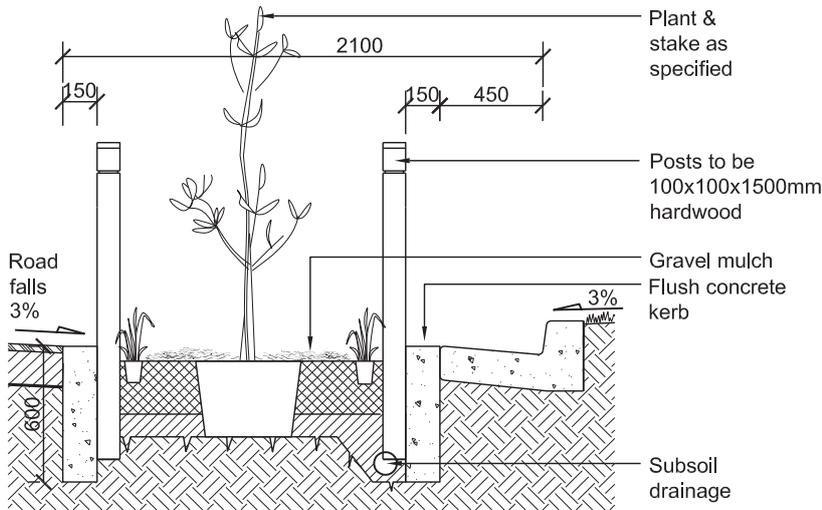
Ongoing Maintenance Costs

Description	Frequency	Cost
Weeding	4 times/yr	\$2/m ²
Watering	As requir'd	\$0.25/m ²
Pruning	1 time/2 yr	\$2/m ²
Replace mass planting	As requir'd	\$40/m ²

Materials & Finishes

4.8 Planting

4.8.6 Street Tree Posts



4.8.5 Street Tree Posts

Location

To road verge street trees and street tree pits

Principles

- Tree posts are provided to protect street trees during the establishment of the tree. Posts are to be removed after trees are established.
- Tree posts are to be highly visible to reduce risk of vehicles hitting the posts or the tree.

Materials

Painted timber, recycled timber or recycled plastic.

Maintenance

Straighten damaged posts as required.
Replace broken or vandalised posts

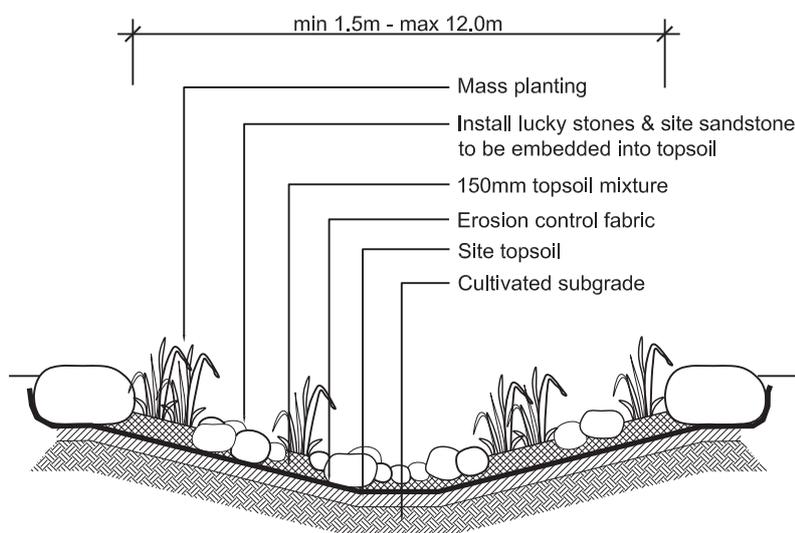
Ongoing Maintenance Costs

Description	Frequency	Cost
Straighten posts	As requir'd	\$8/post
Replace posts	As requir'd	\$80/post
Repaint posts	1/ 2 years	\$12/post
Remove posts	As requir'd	\$6/post

Materials & Finishes

4.8 Planting

4.8.7 Dry creekbed



- Dry Creekbed, Mt Annan

4.8.6 Dry Creek Bed

Location

North South Link and Riparian Corridor

Principles

- Informal naturalised creek to convey infrequent flows through to Riparian Corridor.
- Creek to be designed to prevent erosion
- Provide habitat opportunities within dry creek bed with logs, rock shelves, rock overhangs and hollows
- Install weirs to allow for ponding and ground water infiltration in small events
- Ensure water cannot pond to depth of >300mm
- Plant creek bed using locally indigenous riparian species

Materials

- Erosion control fabric equivalent to MaxJute Thick Mat min. mass 800gms/m², min. density 125 kg/cub. M 100% organic 100% biodegradable product;
- Install 50% lucky stones and 50% site sandstone to creek bed

Maintenance

Regular weeding and removal of litter from planting areas.

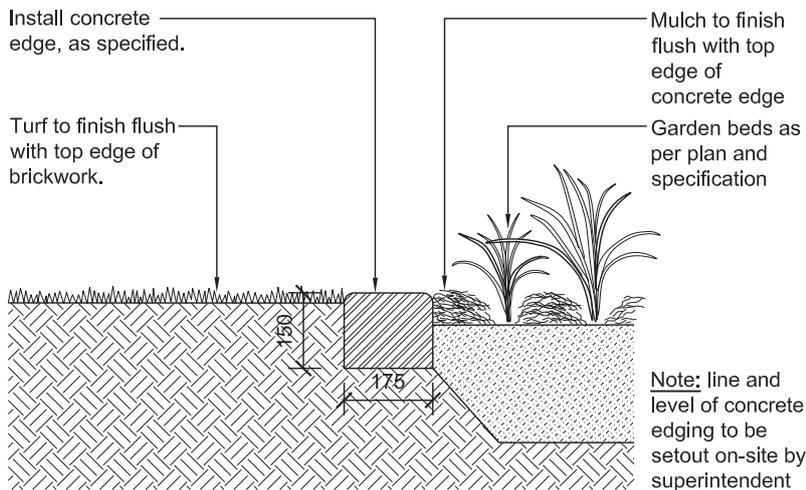
Ongoing Maintenance Costs

Description	Frequency	Cost
Weeding	4 times/yr	\$2/m ²
Watering	As requir'd	\$0.25/m ²
Pruning	1 time/2 yr	\$2/m ²
Replace mass planting	As requir'd	\$20/m ²

Materials & Finishes

4.8 Planting

4.8.8 Concrete Garden Edge



4.8.7 Concrete Garden Edge

Location

Generally in open space areas and riparian corridors.

Principles

- For use as a maintenance edge between turf areas and mass planting areas or as an edge to compacted decomposed granite or asphalt paths.

Materials

Concrete

Maintenance

Replace edging when it is broken and becomes unsightly or dangerous

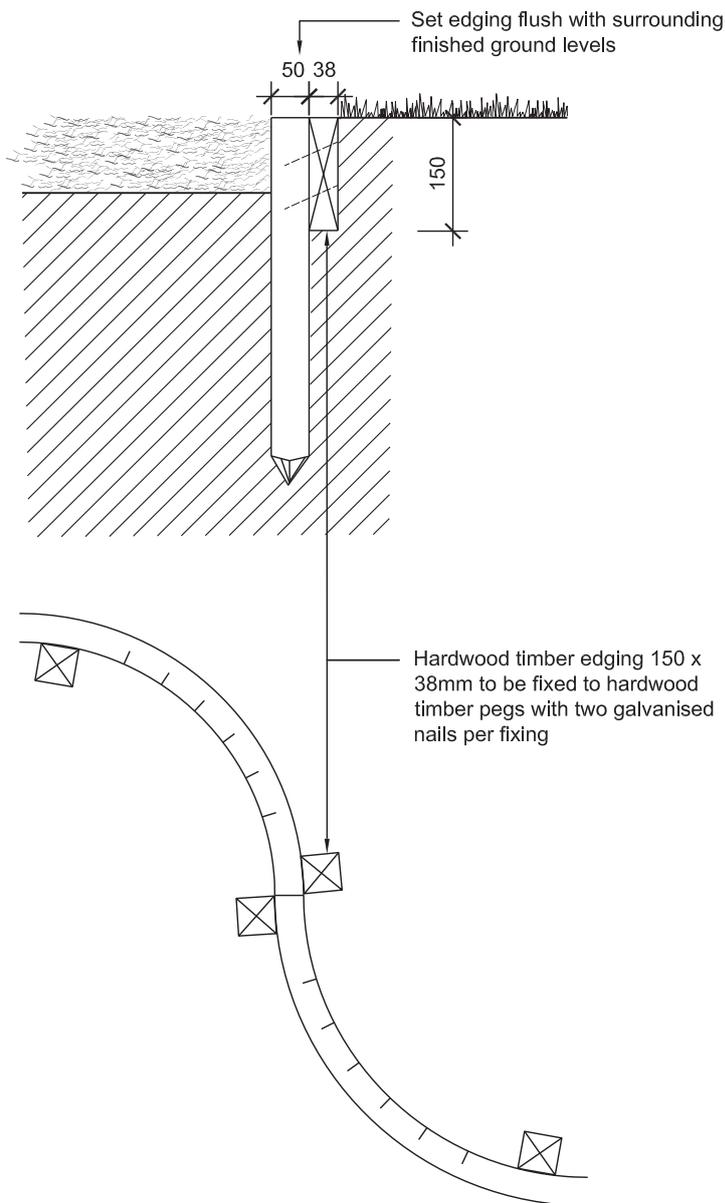
Ongoing Maintenance Costs

Description	Frequency	Cost
Replacement	As requir'd	\$48/m

Materials & Finishes

4.8 Planting

4.8.9 Timber Garden Edge



4.8.8 Timber Garden Edge

Location

Generally in open space areas and riparian corridors.

Principles

- For use as a maintenance edge between turf areas and mass planting areas.

Materials

Hardwood 150x38 Durability class 1

Maintenance

Replace edging when it is broken and becomes unsightly or dangerous

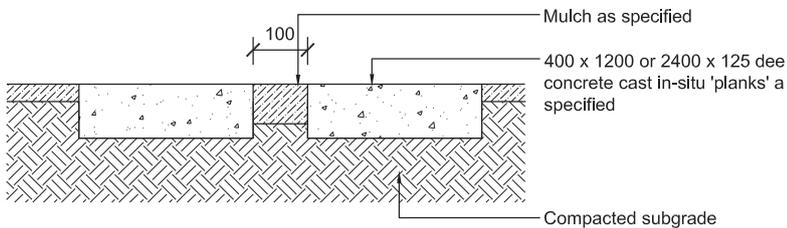
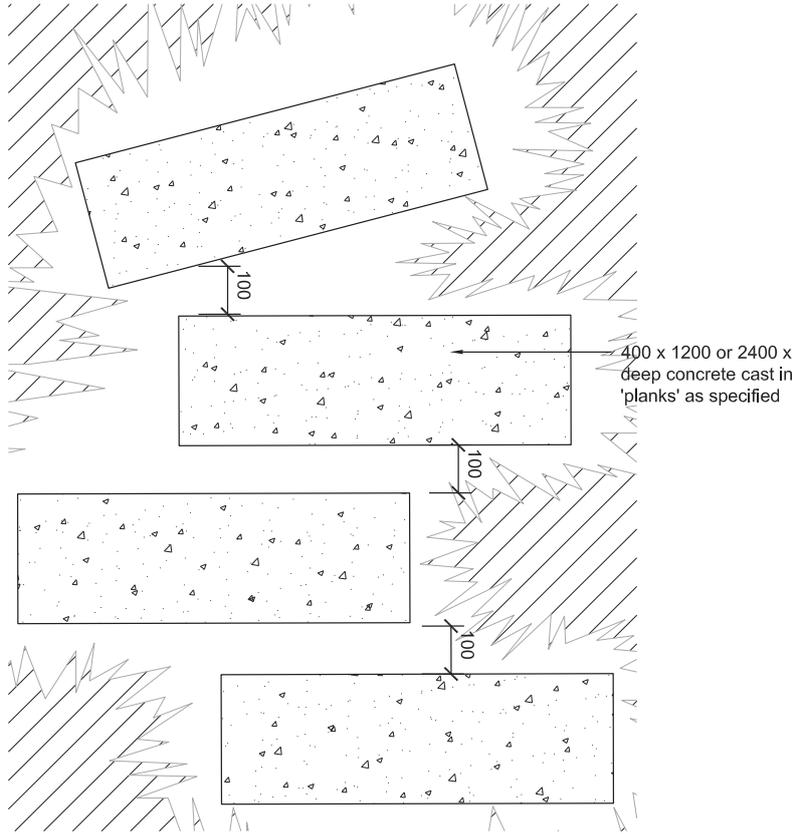
Ongoing Maintenance Costs

Description	Frequency	Cost
Replacement	As requir'd	\$22/m

Materials & Finishes

4.8 Planting

4.8.10 Concrete Garden Planks



4.8.9 Concrete Garden Planks

Location

Generally in open space areas and riparian corridors.

Principles

- For use as an incidental path through a garden area, as a stepping stone or play path in mass planting.

Materials

Concrete

Maintenance

Replace planks if they get broken and become unsightly or dangerous

Ongoing Maintenance Costs

Description	Frequency	Cost
Replacement	As requir'd	\$240/m

Attachment B
Sustainability Development Controls

Rev C: 8 August 2011

Oran Park

Sustainability Development Control Plan

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1. Purpose and Use

This development control plan sets out the sustainability vision, mandatory controls and performance for the Oran Park site. This Sustainability DCP should be read in conjunction with or integrated into other control documents to ensure that the intended performance and community outcomes are achieved.

A performance based approach has been selected for the project to provide the greatest flexibility to applicants to achieve efficient, low cost pathways to leading sustainability. The performance approach is also designed to support technological break-through and regulation over time. A high degree of emphasis will be placed on ensuring that all applications observe the reporting and submission requirements to provide consistency and efficient approval process.

Section 2 outlines the vision and mandatory development controls and provides a summary of performance criteria by occupancy type. This summary table is a quick reference guide to developers when preparing applications as to which sustainability aspects apply and the minimum performance required.

Section 3 outlines significant planning controls to ensure that all natural resources are maximised in their passive use to provide leading levels of comfort and quality for the community in their use and enjoyment of the public realm, landscaping and transport for the Town Centre. This section sets out the evidence requirements of applications to demonstrate their compliance with key controls.

Section 4 onwards provides greater detail on the performance criteria to be achieved as well as the requirements for submissions with applications for the purposes of assessment and approval.

2. Vision and Development Objectives

Vision

As a large greenfield redevelopment site in the heartland of working Sydney, the sustainability vision for the Oran Park project is to achieve sustainability outcomes which can be delivered well and which provide surety of outcomes over the long-term. An emphasis on reducing operating costs and exposure to inflationary risks of water, fuel and energy prices is a strong emphasis.

Oran Park will be a place where residents readily understand the health and wealth benefits arising from living, working, shopping and playing in a place which has leading levels of sustainability features, design and functionality. The community is actively engaged in the on-going performance of Oran Park and enjoy the tools provided which enable them to be active in social activities, events, monitoring and communicating success stories to a wide ranging audience.

The community embrace and are proud of the public place interpretation and features which are thoughtfully designed of recycled, sustainable materials and which are purpose designed to be easily re-freshed and re-newed for future generations. Social networks and community health is strong and vibrant through careful and leading design of walking, cycling, public transport and events infrastructure.

3. Development Sustainability Minimum Mandatory Controls

Table 3.1 provides a matrix of mandatory measurable sustainability performance criteria to be observed by all stages of the development.

To ensure that Oran Park keeps pace with its sustainability vision, the Minimum Mandatory Controls nominated in Table 3.1 are to be subject to a comprehensive review every five years from the date of the first Development Approval. This review is to be carried out on the basis of the reported actual data and information collected through the mandatory reporting requirements. Where it is clear that the Minimum Mandatory Control is substantially less stringent than what is being achieved or against prevailing regulatory requirements, then this control should be amended to reflect the principle of “leading”. If the Mandatory Control is shown to be consistent with actual outcomes and performance then it should be maintained for the next five year period.

Table 3.1 – Mandatory Minimum Controls – Built-form

Built-form	Operating Carbon	Embodied Carbon	Transport	Operating Water	Waste	Ecology / Environment	Operational Governance
Retail – Base Building	85 kg CO ₂ /m ² GLA/annum**	Quantify & report	Quantify & show initiatives	<1.0 kL/m ² GLA/annum (incl landscape)	90% recycling in construction and optimise docks	Demonstrate extent of optimisation	Management & reporting Plan
Retail – Tenant (food)	<180 kg CO ₂ /m ² GLA / annum**	n/a	Management plan#	Mandatory controls##	3 waste stream in tenancy	n/a	n/a
Retail – Tenant (non-food)	<100 kg CO ₂ /m ² GLA / annum	n/a	Management plan#	Mandatory controls##	3 waste stream in tenancy	n/a	n/a
Retail – Majors	20% better than BCA minimum	Quantify & report	Management plan#	Mandatory controls##	n/a	n/a	Management Plan
Office – Base Building	80 kg CO ₂ /m ² NLA/annum**	Quantify & report	Quantify & show initiatives	<1.0 kL/m ² NLA/annum (incl landscape)	90% recycling in construction and optimise docks	Demonstrate extent of optimisation	Management & reporting Plan
Office – Tenants	n/a	Quantify & report	Document initiatives	Mandatory controls##	Food recycling	Demonstrate extent of optimisation	Management & reporting Plan
Residential – Class 1	BASIX compliance	n/a	n/a	BASIX compliance	n/a	n/a	n/a
Residential – Other Classes (common areas)	Full end-use energy model required	Quantify & report	Document Transport plan & features	Mandatory controls##	90% recycle in construction and mandatory controls	Demonstrate extent of optimisation	Mandatory information and controls
Residential – Other Classes (occupancy)	Full end-use energy model required	n/a	n/a	Mandatory controls##	3 waste stream in kitchen	BCA compliance	Mandatory information and controls

Management Plan – refer to the relevant section of DCP for plan requirements

Mandatory Controls – refer to the details provided in the relevant section of the DCP

** Subject to a five year review of actual performance per Clause 3

Table 3.2 – Public Realm, Infrastructure, Landscaping

Aspect	Operating Carbon	Embodied Carbon	Transport	Operating Water	Waste	Ecology / Environment	Operational Governance
Public Realm (furniture/signage)	Mandatory controls	n/a	Bus shelter controls	Efficiency controls	Best-in-class public place	Demonstrate extent of optimisation	Life cycle report
Infrastructure - Roads	n/a	Quantify & report	n/a	n/a	90% recycling in construction	n/a	n/a
Infrastructure - Stormwater	n/a	Quantify & report	n/a	Mandatory controls###	n/a	Demonstrate extent of optimisation	Management Plan
Landscaping	Estimate lighting requirements	Quantify & report	n/a	Quantify & Report	Greenwaste management plan	Demonstrate extent of optimisation	

4. Submission Checklist

Refer to Appendix A for a submission checklist.

5. Urban Passive Climate and Comfort Optimisation

The mutually beneficial relationship between built-form, external comfort, landscaping and passive environmental resource is often ignored to the detriment of people and the environment. Oran Park town centre aspires to be a sustainable place for people which demonstrate a long-term commitment to smart sustainable outcomes. Thus it is the design of public place and urban landscaping which are critical elements to optimise the passive use of environmental resources for human and ecological comfort.

Whereas typical urban landscape design solutions seek to maximise uniformity and reduce operating costs – little consideration is given to how the selection of landscaping species fits the localised micro-climate forced by the built-form or what comfort and energy benefits can be derived from the passive use of landscape elements.

Therefore, the all development applications must provide a written report and drawings which demonstrate that the proposed urban landscape element of all building types with this interface the following;

- A site micro-climate assessment which shows total annual hours of daylight, hours and direction of prevailing winds above 1.5m/s, estimated annual rainfall in mm, average temperature conditions as well as number of hours where “peak conditions” (ie. ,16 and >26 degrees & humidity effects C) occur;
- Documentation showing how landscaping is being proposed to either mitigate the number of hours of “peak” conditions or expand the numbr of “comfortable” hours for people and;
- Schedule showing the proposed species suitability to the documented micro-climate and their contribution to optimising human pedestrian comfort and or building energy efficiency throughout the year.

The report is to be prepared by a suitably qualified individual or company that demonstrates the assessment and optimisation of the urban climate and is prepared in accordance with prevailing practice with time relevant data.

6. Operating Carbon (Energy) Intensity

This section sets out the mandatory controls required to ensure that the operational energy / carbon intensity of the built-form and public realm are minimised throughout its life and that energy efficiency is maximised as far as possible. The table is structured to provide the minimum performance measure that all submissions must demonstrate they achieve or better and the specific standards, methodologies and requirements for preparing the required reports for the assessment process.

BUILT-FORM	Mandatory Controls	Reporting / Submission Requirements
Retail – Base Building	85 kg CO ₂ / m ² GLA / annum and BCA Sec J	<p>Operational energy report prepared in accordance with AS 3598:2000 and ISO 14042, 14043, 14048 & 14049 (the prevailing edition). Showing the total annual energy / carbon estimated requirements by and for all end uses and demonstrating a total operational carbon intensity of equal to or less than the mandatory control requirement.</p> <p>Estimates of energy for HVAC requirements should be demonstrated via thermal simulation software such as TAS; IES or other relevant to the New South Wales market.</p> <p>Estimates for non-HVAC energy consumption should reflect AS 3598:2000 standards.</p> <p>Provide a best-in-class (reflecting the leading tested and efficient technology prevailing at the time) energy metering and integrated monitoring system and strategy and provide a description of its structure within the operational energy report.</p> <p>The report is to be prepared by suitably qualified company or individual and submitted with DA. A signed statement declaring compliance with nominated standards is required.</p>
Retail – Tenant (food)	180 kg CO ₂ / m ² GLA / annum	Requirements as per Retail – Base Building above. Plus BCA if external.
Retail – Tenant (non-food)	100 kg CO ₂ / m ² GLA / annum	Requirements as per – Base Building Above. Plus BCA if external.
Retail – Majors	20% better than BCA Sec J minimum	<p>Report prepared by suitably qualified company or individual demonstrating how the energy using elements of the tenancy fitout achieve the required control.</p> <p>Provide estimate of annual operating energy consumption by source and end-use and demonstrate how this meets or exceeds the minimum requirement.</p>

Office – Base Building	80 kg CO ₂ / m ² NLA / annum and BCA Sec J	As per Retail Base Building above OR alternative to provide a NABERS energy (or prevailing equivalent) certificate for design.
Office – Tenants	n/a	n/a
Residential – Class 1	BASIX compliance	BASIX and ABSA Certificates from suitably qualified / certified assessors.
Residential – Other Classes (common areas)	Provide estimate of annual end-use energy consumption requirement of design and compliance with BCA Sec J	Operational energy report prepared in accordance with AS 3598:2000 and ISO 14042, 14043, 14048 & 14049 (the prevailing edition). Showing the total annual energy / carbon estimated requirements by and for all end uses and demonstrating a total operational carbon intensity of equal to or less than the mandatory control requirement. Estimates for non-HVAC energy consumption should reflect AS 3598:2000 standards. The report is to be prepared by suitably qualified company or individual and submitted with DA. . A signed statement declaring compliance with nominated standards is required.
Residential – Other Classes (occupancy)	Provide energy consumption estimate for light and power in occupied space	As per Residential common area above.

OTHER AREAS	Mandatory Controls	Reporting / Submission Requirements
Public Realm (furniture/signage/street lighting)	LED or best in class (at the upper range of efficiency for its type) efficient lamps for signage. Utilise best in class PIR and PE cells for control to minimise total energy consumption.	Statement of energy efficiency and estimate total annual energy consumption requirements for the design to be provided by suitably qualified company demonstrating how signage design meets or exceeds control.
Landscaping	Landscape lighting to be LED or best in class (at the upper range of efficiency for its type) efficient fittings. Halogen fittings are not to be used. PE sensors must be used.	As per Public Realm above.

Refer to Appendix A for example energy consumption estimate.

7. Embodied Carbon (Energy) Intensity

This section sets out the mandatory controls required to ensure that the embodied carbon intensity of the built-form and public realm are minimised throughout its life and that the use of recycled content or low carbon materials is maximised as far as possible. The table is structured to provide the minimum performance measure that all submissions must demonstrate they achieve or better and the specific standards, methodologies and requirements for preparing the required reports for the assessment process.

BUILT-FORM	Mandatory Controls	Reporting / Submission Requirements
Retail – Base Building	Quantify & report	<p>An embodied carbon report prepared in accordance with ISO 14042, 14043, 14048 & 14049 (the prevailing edition)and showing the total carbon intensity in T CO₂ by building element in absolute and relative terms (i.e T CO₂/m² of leasable space. In addition provide a statement as to any design or material changes made to reduce the total carbon impact and the magnitude of that improvement.</p> <p>Embodied Carbon data should be relevant to Australia and should the source and its date must be clearly stated.</p> <p>The report is to be prepared by suitably qualified company or individual and submitted with DA. . A signed statement declaring compliance with nominated standards is required.</p>
Retail – Majors	Quantify & report	As for Retail Base Building above.
Office – Base Building	Quantify & report	As for Retail Base Building above
Office – Tenants	Quantify & report	As for Retail Base Building above
Residential – Other Classes (common areas)	Quantify & report	As for Retail Base Building above

OTHER AREAS	Mandatory Controls	Reporting / Submission Requirements
Public Realm (furniture/signage)	n/a	
Infrastructure - Roads	Quantify & report	<p>An embodied carbon report prepared in accordance with ISO with ISO 14042, 14043, 14048 & 14049 (the prevailing edition) and showing the total carbon intensity in T CO₂ by element in absolute and relative terms (i.e T CO₂/m of road or other relevant functional unit). In addition provide a statement as to any design or material changes made to reduce the total carbon impact and the magnitude of that improvement.</p> <p>Embodied Carbon data should be relevant to Australia and should the source and its date must be clearly stated.</p> <p>The report is to be prepared by suitably qualified company or individual and submitted with DA. A signed statement declaring compliance with nominated standards is required.</p>
Infrastructure - Stormwater	Quantify & report	As above
Landscaping	Quantify & report	As above

8. Transport Carbon Intensity

This section sets out the mandatory controls required to ensure that the carbon intensity of travel to and from Oran Park is minimised throughout its life and that the communities access to and utilisation of alternatives to single car travel is minimised as far as possible. The table is structured to provide the minimum performance measure that all submissions must demonstrate they achieve or better and the specific standards, methodologies and requirements for preparing the required reports for the assessment process.

BUILT FORM	Mandatory Controls	Reporting / Submission Requirements
Retail – Base Building	Quantify & show initiatives	<p>Provide an estimate of the total carbon emissions in T CO2/annum in total and by mode share for staff and customer travel to and from the centre for primary work and shopping purposes.</p> <p>Emissions to be accounted for using methods consistent with prevailing National Greenhouse Office Workbooks or factors. Mode share to be either demonstrated by survey or from relevant NSW Department of Transport Mode Share Surveys.</p> <p>Report to be prepared by suitable qualified transport or sustainability consultant. The report should also describe measures provided to maximise non private vehicle travel and an estimate of the potential mode shift of each initiative as well as outline how centre management proposes to engage with tenants and staff on alternatives available. Plans of the centre showing;</p> <ul style="list-style-type: none"> - the location and extent of staff parking, - location of bus, taxi and bike parking, - location and access to staff amenities incl lockers and showers, - initiatives to reduce single car travel <p>to be provided.</p>

Retail – Tenant (food)	Management plan#	Statement from the tenant outlining how they will inform staff on the centre travel plan, initiatives and non-car travel options.
Retail – Tenant (non-food)	Management plan#	As per Food Tenants above.
Retail – Majors	Management plan#	As per Food Tenants above.
Office – Base Building	Quantify & show initiatives	As per Retail Base Building – however, quantifying staff travel to and from work trips for T CO2 estimates.
Office – Tenants	Document initiatives	As per Food Tenants above.
Residential – Class 1	n/a	n/a
Residential – Other Classes (common areas)	Document Transport plan & features	Provide a report describing the design features providing for non-car travel options including marked-up plans of bike parking, taxi access and walking links to the site. Demonstrate how this information is to be provided to prospective owners and occupants.
Residential – Other Classes (occupancy)	n/a	n/a
OTHER AREAS		
	Mandatory Controls	Reporting / Submission Requirements
Public Realm (built)	Lighting to be LED or better. Shelters to have shopping trolley parking and cover from rain when within 200m radius of the town centre.	Submit proposed design showing compliance with controls and plan showing location in town centre.

9. Operating Water Intensity

This section sets out the mandatory controls required to ensure that the operational water intensity of Oran Park is minimised throughout its life and maintained at efficient levels over time. The table is structured to provide the minimum performance measure that all submissions must demonstrate they achieve or better and the specific standards, methodologies and requirements for preparing the required reports for the assessment process.

BUILT-FORM	Mandatory Controls	Reporting / Submission Requirements
Retail – Base Building	<1.0 kL/m2 GLA/annum	Operational water consumption estimate report prepared in accordance with AS 3598:2000 and ISO 14042-48. Showing the estimated total annual water requirements by and for all end uses and demonstrating a total operational water intensity of equal to or less than the mandatory control requirement. The method of estimating should be described. A best-in-class water metering systems and strategy is to be provided and a marked up plan showing the majors uses to be metered is to be provided. The proposed approach to monitoring the building to support the ongoing operational performance should also be provided. The report is to be prepared by suitably qualified company or individual and submitted with DA. A signed statement declaring compliance with nominated standards is required.
Retail – Tenant (food)	Mandatory controls## Refer to Appendix C Minimum standards.	Ensure drawings annotate and schedule fittings and fixtures to meet or exceed minimum standards.
Retail – Tenant (non-food)	Mandatory controls## Refer to Appendix C Minimum standards.	As per Food Retail above.
Retail – Majors	Mandatory controls## Refer to Appendix C Minimum standards.	As per Food Retail above.

Office – Base Building	<1.0 kL/m ² NLA/annum	As per Retail Base Building above.
Office – Tenants	Mandatory controls## Refer to Appendix C Minimum standards.	As per Food Retail above.
Residential – Class 1	BASIX compliance	BASIX certificate.
Residential – Other Classes (common areas)	Mandatory controls## Refer to Appendix C Minimum standards.	A best-in-class water metering system and strategy is to be provided and a marked up plan showing the majors uses to be metered is to be provided. A monitoring facility must be provided which enables the building manager to report to the Strata committee water consumption by major uses and by whole floor. The proposed approach to monitoring the building to support the ongoing operational performance should also be provided. The report is to be prepared by suitably qualified company or individual and submitted with DA. A signed statement declaring compliance with nominated standards is required.
Residential – Other Classes (occupancy)	Mandatory controls## Refer to Appendix C Minimum standards.	Provide a schedule showing fitments and their compliance with mandatory controls.

OTHER AREAS	Mandatory Controls	Reporting / Submission Requirements
Public Realm (built)	Mandatory controls## Refer to Appendix C Minimum standards.	Submit proposed design showing compliance with controls and plan showing location of water using elements.
Landscaping	Quantify & report	As for retail base building above.

10. Operating Waste Intensity

This section sets out the mandatory controls required to ensure that the operational waste intensity of Oran Park is minimised throughout its life and maintained at optimum levels over time. The table is structured to provide the minimum performance measure that all submissions must demonstrate they achieve or better and the specific standards, methodologies and requirements for preparing the required reports for the assessment process.

Built-form	Mandatory Controls	Reporting / Submission Requirements
Retail – Base Building	90% recycling during construction AND optimise dock arrangement for operational stages	Provide a construction waste management plan which demonstrates how waste will be separated and contracted to be removed from site through the construction period demonstrating 90% control compliance. Provide an operational waste management plan which shows the location of waste management facilities in docks and an estimate of how the size of these areas will meet the operational needs of the centre. This should be prepared by an appropriate waste management contractor and should state the number of streams resolved with the proposed waste management contractor. An operational statement is to be provided which sets out how waste management plans will be communicated to tenants demonstrating how these will maximise recycling and waste minimisation outcomes including approaches to public place waste recycling and management. This report should be prepared by an appropriately qualified waste management consultant. A signed statement declaring compliance with nominated standards is required.
Retail – Tenant (food)	3 waste stream in tenancy OR 1 bin solution where relevant	Drawings must be submitted which shows the location and size of waste stream containers in the tenancy.
Retail – Tenant (non-food)	3 waste stream in tenancy OR 1 bin solution where relevant	As per Food Retail above.
Retail – Majors	n/a	
Office – Base Building	90% recycling in construction and optimise docks	As per Retail Base Building above.
Office – Tenants	3 waste stream in tenancy OR 1 bin solution where relevant	As per Food Retail above.

Residential – Class 1	n/a	
Residential – Other Classes (common areas)	90% recycle in construction and mandatory controls	<p>Provide an operational waste management plan which shows the location of waste management provisions / rooms and an estimate of how the size of these areas will meet the operational needs of the building. This should be prepared by an appropriate waste management contractor and should state the number of streams resolved as relevant for the location.</p> <p>An operational statement is to be provided which sets out how waste management plans will be communicated to owners/occupants demonstrating how these will maximise recycling and waste minimisation outcomes.</p>
Residential – Other Classes (occupancy)	3 waste stream in kitchen	Provide markup of typical floor plans showing location and size of waste storage.

Aspect	Mandatory Controls	Reporting / Submission Requirements
Public Realm (built)	Best-in-class approach to public place waste management	<p>Provide an operational waste management plan which shows the location of waste stations and an estimate of how these will meet the operational needs of the public area. Estimates should be in such a format as to enable reporting on outcomes during the operations. This should be prepared reflecting best practice (such as Sustainability Victoria Best Practice Guidelines to Public Place Recycling (2007) or similar and by an appropriate waste management consultant.</p> <p>An operational statement is to be provided which sets out how waste management plans will be co-ordinated with other stakeholders to ensure that optimum outcomes are achieved consistently.</p>
Landscaping	Quantify & report	As above

11. Ecology and Environment

This section sets out the mandatory controls required to ensure that the external environment is optimised for maximum ecological productivity as well as environment for human comfort throughout the year. To maximise the potential of landscaping and planting to enhance comfort, provide habitat for endemic species it is important to subject design to analysis to confirm the potential of the resulting urban environment. Internal human comfort is also an important element which can enhance the communities experience within and around the Town Centre. The table is structured to provide the minimum performance measure that all submissions must demonstrate they achieve or better and the specific standards, methodologies and requirements for preparing the required reports for the assessment process.

Built-form	Mandatory Controls	Reporting / Submission Requirements
Retail – Base Building	Demonstrate extent of optimisation against key measures noted in ISO 7730 and AS 36666	<p>a) Internal Environment</p> <p>A thermal and visual comfort report prepared by a suitably qualified consultant describing how the design meets the mandatory control or the extent to which it exceeds it. The report should address as a minimum the following elements;</p> <ul style="list-style-type: none"> - Visual comfort in internal public spaces - Thermal comfort in internal public spaces - Optimisation of outcomes and its balance with the goals of energy and embodied carbon efficiency. <p>Studies should observe the prevailing ISO and Australian Standards in their coverage and methods. A signed statement declaring compliance with nominated standards is required.</p> <p>b) External Ecology</p> <p>A landscaping report to be prepared covering relevant street frontage and or internal environments which shows how the development is optimising an endemic and productive landscaping outcome in balance with the broader public place domain objectives.</p>
Retail – Tenant (food)	n/a	n/a
Retail – Tenant (non-food)	n/a	n/a

Retail – Majors	n/a	n/a
Office – Base Building	Demonstrate extent of optimisation	As per Retail Base Building above (a and b)
Office – Tenants	Demonstrate extent of optimisation	As per Retail Base Building above but for a) ONLY
Residential – Class 1	n/a	n/a
Residential – Other Classes (common areas)	Demonstrate extent of optimisation	Provide relevant BASIX and BCA Sec J compliance statements or how the design exceeds minimum requirements.
Residential – Other Classes (occupancy)	BCA compliance	As per Residential common areas above.

OTHER AREAS	Mandatory Controls	Reporting / Submission Requirements
Public Realm (built)	Demonstrate extent of optimisation	<p>Provide a modelling report which demonstrates how the design optimises human comfort for wind, thermal, sunlight and rain throughout the year.</p> <p>Provide marked up plans to show locations and sensible design for public place recycling stations; dog parking, watering and refuse; bicycle parking; taxi, bus, walking paths and connection ways to areas outside of the town centre.</p>
Landscaping	Demonstrate extent of optimisation	<p>Undertake modelling to confirm that the selected landscaping elements are suited to the resultant micro-climate of the public domain and the operational management plan proposed to maintain and enhance landscaping outcomes for ecological and public benefit over time.</p> <p>Reports should specifically address how the design and planting selections;</p> <ul style="list-style-type: none"> - Mitigate the need for long-term irrigation - Maximise the potential for providing habitat for endemic bird and insect life - Maximise thermal comfort in public places throughout the year.

12. Operational Governance

This section sets out the mandatory controls required to ensure that the sustainability performance achieved in design is smoothly and effectively transferred to entities and individuals responsible for long-term operations and that monitoring of outcomes occurs to optimise the potential for long-term sustainability outcomes and performance.

BUILT-FORM	Mandatory Controls	Reporting / Submission Requirements
Retail – Base Building	Management & reporting Plan	<p>Provide an operational management plan which sets out how the overall sustainability performance of the centre will be monitored with the view to maintaining it at the design goals over the long-term.</p> <p>The report should also outline how centre management propose to engage tenants, staff, customers and the community on the features and performance of the centre over time.</p> <p>At least one a year on the anniversary of the issue of the certificate of occupancy, submit to Council a performance monitoring report which sets out the actual performance of the centre as against the approved design and targets.</p> <p>The proponent must submit and have agreed, prior to the issuing of Occupancy Certificates, the proposed reporting format.</p> <p>This report should provide a discussion of rectification measures (if relevant) as well as engagement activities and their success with tenants, contractors, customers and the community on the sustainability performance of the centre.</p>
Retail – Tenant (food)	n/a	n/a
Retail – Tenant (non-food)	n/a	n/a
Retail – Majors	Management Plan	
Office – Base Building	Management & reporting Plan	As for Retail Base Building
Office – Tenants	Management & reporting Plan	As for Retail Base Building
Residential – Class 1	n/a	

Residential – Other Classes (common areas)	Mandatory information and controls	As for Retail Base building. In addition, provide a detailed sustainability performance plan for handover to the Building Manager and Strata Manager which clearly sets out the operational energy, water, transport and waste targets and requirements.
Residential – Other Classes (occupancy)	Mandatory information and controls	Provide an example of the sustainability goals, objectives and features of the building and how they should be operated for owners and occupants.

13. Appendix A – DA Submission Checklist

The purpose of this checklist is to enable the assessing officer to identify and check off / confirm that the submission documents identified in the DCP have been provided and that they are of the relevant standard and compliance has been achieved.

Note: For ease of use a separate checklist has been created for each built form type.

RETAIL – BASE BUILDING

Control	Target	Reports and Submissions must provide and comply with:	Document Received	Mandatory Requirement Achieved
Operating Carbon (Energy) Intensity	85 kg CO ₂ /m ² GLA/annum	<ul style="list-style-type: none"> Report in accordance with AS 3598:2000 confirming compliance with Target The energy simulation software used is in accordance with requirements Report is prepared by suitably qualified practitioner A signed statement declaring compliance with nominated standards is required. Energy metering and monitoring is demonstrated as best in class 	<input type="checkbox"/>	<input type="checkbox"/>
Embodied Carbon	Quantify & report	<ul style="list-style-type: none"> Report in accordance with ISO 14042-48 by a suitably qualified practitioner A clear statement of how the design reduces the total carbon impact and the magnitude of that improvement has been achieved A signed statement declaring compliance with nominated standards is required. The total embodied carbon intensity is shown in Tonnes and or by element 	<input type="checkbox"/>	<input type="checkbox"/>
Transport Carbon Intensity	Quantify & show initiatives	<ul style="list-style-type: none"> Report provides an estimate of total T CO₂/annum for transport by mode and in total together with reduction strategies and their estimated impact Plans of the centre to show location of parking, bikes, taxis and buses and location of staff amenities and how these will be communicated Report is prepared by suitably qualified practitioner 	<input type="checkbox"/>	<input type="checkbox"/>
Operating Water	<1.0 kL/m ² GLA/annum	<ul style="list-style-type: none"> Report in accordance with AS 3598:2000 and ISO 14042-48 Method of estimation is described and the total annual water consumption is shown by major end-use in Kilolitres per annum and overall to meet mandatory Target Report is prepared by suitably qualified practitioner A signed statement declaring compliance with nominated standards is required. Water metering and monitoring is demonstrated as being best in class 	<input type="checkbox"/>	<input type="checkbox"/>
Waste	90% recycling in construction and optimise docks	<ul style="list-style-type: none"> Detailed construction waste management plan demonstrating how Target will be achieved Detailed operational waste management plan showing how loading docks have been optimised for maximum waste recycling Operational statement to set out how waste management plans will be communicated to tenants 	<input type="checkbox"/>	<input type="checkbox"/>
Ecology / Environment	Demonstrate extent of optimisation	<ul style="list-style-type: none"> Report showing how the internal environment optimises thermal and visual comfort with passive and active systems – prepared by suitably qualified practitioner A signed statement declaring compliance with nominated standards is required. Report and drawings showing how planting has been selected to; <ul style="list-style-type: none"> Suit micro-climate forced by built-form (sun, wind, rain) and, To enhance thermal comfort in street in a passive manner (shade, water) 	<input type="checkbox"/>	<input type="checkbox"/>
Operational Governance	Management & reporting Plan	<ul style="list-style-type: none"> Operational management plan setting out how the centre’s sustainability performance will be monitored and reported Engagement plan outlining how the centre management will engage with staff, patrons and the community on the features and performance of the centre. Performance reporting structure and commitment clearly identified within the report Timeline showing proposed process to agree reporting template prior to issue of Occupancy Certificate 	<input type="checkbox"/>	<input type="checkbox"/>

Retail – Tenant (food)

Control	Target	Submission reporting needs to confirm:	Document Received	Mandatory Requirement Achieved
Operating Carbon (Energy) Intensity	<180 kg CO2/m2 GLA/annum	<ul style="list-style-type: none"> Report in accordance with AS 3598:2000 confirming compliance with Target The energy simulation software used is in accordance with requirements Report is prepared by suitably qualified practitioner and shows operating carbon intensity by end-use (minimally; lighting, power, cabinet lighting) A signed statement declaring compliance with nominated standards is required. 	<input type="checkbox"/>	<input type="checkbox"/>
Embodied Carbon	n/a		<input type="checkbox"/>	<input type="checkbox"/>
Transport Carbon Intensity	Management Plan	<ul style="list-style-type: none"> Statement from the tenant outlining how they will inform staff on the centre travel plan, initiatives and non-car travel options. 	<input type="checkbox"/>	<input type="checkbox"/>
Operating Water	Mandatory controls	<ul style="list-style-type: none"> Drawings and or specification clearly shows the proposed fittings and fixtures and that they meet or exceed minimum standards. 	<input type="checkbox"/>	<input type="checkbox"/>
Waste	3 waste stream in tenancy	<ul style="list-style-type: none"> Drawings which show the location and size of waste stream containers in the tenancy 	<input type="checkbox"/>	<input type="checkbox"/>
Ecology / Environment	n/a		<input type="checkbox"/>	<input type="checkbox"/>
Operational Governance	n/a		<input type="checkbox"/>	<input type="checkbox"/>

Retail – Tenant (non-food)

Control	Target	Submission reporting needs to confirm:	Document Received	Mandatory Requirement Achieved
Operating Carbon (Energy) Intensity	<100 kg CO2/m2 GLA/annum	<ul style="list-style-type: none"> Report in accordance with AS 3598:2000 confirming compliance with Target The energy simulation software used is in accordance with requirements A signed statement declaring compliance with nominated standards is required. Report is prepared by suitably qualified practitioner and shows operating carbon intensity by end-use (minimally; lighting, power, cabinet lighting) 	<input type="checkbox"/>	<input type="checkbox"/>
Embodied Carbon	n/a		<input type="checkbox"/>	<input type="checkbox"/>
Transport Carbon Intensity	Management Plan	<ul style="list-style-type: none"> Statement from the tenant outlining how they will inform staff on the centre travel plan, initiatives and non-car travel options. 	<input type="checkbox"/>	<input type="checkbox"/>
Operating Water	Mandatory controls	<ul style="list-style-type: none"> Drawings and or specification clearly shows the proposed fittings and fixtures and that they meet or exceed minimum standards. 	<input type="checkbox"/>	<input type="checkbox"/>
Waste	3 waste stream in tenancy	<ul style="list-style-type: none"> Drawings which show the location and size of waste stream containers in the tenancy 	<input type="checkbox"/>	<input type="checkbox"/>
Ecology / Environment	n/a		<input type="checkbox"/>	<input type="checkbox"/>
Operational Governance	n/a		<input type="checkbox"/>	<input type="checkbox"/>

Retail – Majors

Control	Target	Submission reporting needs to confirm:	Document Received	Mandatory Requirement Achieved
Operating Carbon (Energy) Intensity	20% better than BCA	<ul style="list-style-type: none"> Report prepared by suitably qualified company or individual demonstrating how the energy using elements of the tenancy fitout achieve the required control. A signed statement declaring compliance with nominated standards is required. Provide estimate of annual operating energy consumption by source and end-use and demonstrate how this meets or exceeds the minimum requirement. 	<input type="checkbox"/>	<input type="checkbox"/>
Embodied Carbon	Quantify & report	<ul style="list-style-type: none"> Report in accordance with ISO 14042-48 by a suitably qualified practitioner A clear statement of how the design reduces the total carbon impact and the magnitude of that improvement has been achieved The total embodied carbon intensity is shown in Tonnes and or by element 	<input type="checkbox"/>	<input type="checkbox"/>
Transport Carbon Intensity	Management Plan	<ul style="list-style-type: none"> Statement from the tenant outlining how they will inform staff on the centre travel plan, initiatives and non-car travel options. 	<input type="checkbox"/>	<input type="checkbox"/>
Operating Water	Mandatory controls	<ul style="list-style-type: none"> Drawings and or specification clearly shows the proposed fittings and fixtures and that they meet or exceed minimum standards. 	<input type="checkbox"/>	<input type="checkbox"/>
Waste	n/a		<input type="checkbox"/>	<input type="checkbox"/>
Ecology / Environment	n/a		<input type="checkbox"/>	<input type="checkbox"/>
Operational Governance	Management & reporting Plan	<ul style="list-style-type: none"> Operational management plan setting out how the tenancy sustainability performance will be monitored and reported 	<input type="checkbox"/>	<input type="checkbox"/>

Office – Base building

Control	Target	Submission reporting needs to confirm:	Document Received	Mandatory Requirement Achieved
Operating Carbon (Energy) Intensity	85 kg CO ₂ /m ² GLA/annum	<ul style="list-style-type: none"> Report accordance with AS 3598:2000 and Appendix B & shows compliance with Target The energy simulation software used is in accordance with requirements Report is prepared by suitably qualified practitioner and A signed statement declaring compliance with nominated standards is required. Energy metering and monitoring is demonstrated as best in class Alternative to above; provide NABERS certificate for design 	<input type="checkbox"/>	<input type="checkbox"/>
Embodied Carbon	Quantify & report	<ul style="list-style-type: none"> Report in accordance with ISO 14042-48 by a suitably qualified practitioner A signed statement declaring compliance with nominated standards is required. A clear statement of how the design reduces the total carbon impact and the magnitude of that improvement has been achieved The total embodied carbon intensity is shown in Tonnes and or by element 	<input type="checkbox"/>	<input type="checkbox"/>
Transport Carbon Intensity	Quantify & show initiatives	<ul style="list-style-type: none"> Report provides an estimate of total T CO₂/annum for transport by mode and in total together with reduction strategies and their estimated impact Plans of the centre to show location of parking, bikes, taxis and buses and location of staff amenities and how these will be communicated Report is prepared by suitably qualified practitioner 	<input type="checkbox"/>	<input type="checkbox"/>
Operating Water	<1.0 kL/m ² GLA/annum	<ul style="list-style-type: none"> Report in accordance with AS 3598:2000 and ISO 14042-48 Method of estimation is described and the total annual water consumption is shown by major end-use in Kilolitres per annum and overall to meet mandatory Target Report is prepared by suitably qualified practitioner A signed statement declaring compliance with nominated standards is required. Water metering and monitoring is demonstrated as being best in class 	<input type="checkbox"/>	<input type="checkbox"/>
Waste	90% recycling in construction and optimise docks	<ul style="list-style-type: none"> Detailed construction waste management plan demonstrating how Target will be achieved Detailed operational waste management plan showing how loading docks have been optimised for maximum waste recycling Operational statement to set out how waste management plans will be communicated to tenants 	<input type="checkbox"/>	<input type="checkbox"/>
Ecology / Environment	Demonstrate extent of optimisation	<ul style="list-style-type: none"> Report showing how the internal environment optimises thermal and visual comfort with passive and active systems – prepared by suitably qualified practitioner A signed statement declaring compliance with nominated standards is required. Report and drawings showing how planting has been selected to; <ul style="list-style-type: none"> Suit micro-climate forced by built-form (sun, wind, rain) and, To enhance thermal comfort in street in a passive manner (shade, water) 	<input type="checkbox"/>	<input type="checkbox"/>

Operational Governance	Management & reporting Plan	<ul style="list-style-type: none"> Operational management plan setting out how the buildings' sustainability performance will be monitored and reported Engagement plan outlining how property managers will engage with staff, patrons and the community on the features and performance of the building. Performance reporting structure and commitment clearly identified within the report. Timeline showing proposed process to agree reporting template prior to issue of Occupancy Certificate 	<input type="checkbox"/>	<input type="checkbox"/>
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Office – Tenants

Control	Target	Submission reporting needs to confirm:	Document Received	Mandatory Requirement Achieved
Operating Carbon (Energy) Intensity	N/a		<input type="checkbox"/>	<input type="checkbox"/>
Embodied Carbon	Quantify & report	<ul style="list-style-type: none"> Report in accordance with ISO 14042-48 by a suitably qualified practitioner A signed statement declaring compliance with nominated standards is required. A clear statement of how the design reduces the total carbon impact and the magnitude of that improvement has been achieved The total embodied carbon intensity is shown in Tonnes and or by element 	<input type="checkbox"/>	<input type="checkbox"/>
Transport Carbon Intensity	Document initiatives	<ul style="list-style-type: none"> Statement from the tenant outlining how they will inform staff on the centre travel plan, initiatives and non-car travel options. 	<input type="checkbox"/>	<input type="checkbox"/>
Operating Water	Mandatory controls	<ul style="list-style-type: none"> Drawings and or specification clearly shows the proposed fittings and fixtures and that they meet or exceed minimum standards. 	<input type="checkbox"/>	<input type="checkbox"/>
Waste	Food recycling	<ul style="list-style-type: none"> Drawings which show the location and size of waste stream containers in the tenancy 	<input type="checkbox"/>	<input type="checkbox"/>
Ecology / Environment	Demonstrate extent of optimisation	<ul style="list-style-type: none"> n/a 	<input type="checkbox"/>	<input type="checkbox"/>
Operational Governance	Management & reporting Plan	<ul style="list-style-type: none"> Engagement plan outlining how the staff will be engaged on the sustainability performance and features of the tenancy and base building. 	<input type="checkbox"/>	<input type="checkbox"/>

Residential – Class 1

Control	Target	Submission reporting needs to confirm:	Document Received	Mandatory Requirement Achieved
Operating Carbon (Energy) Intensity	BASIX compliance	<ul style="list-style-type: none">BASIX and ABSA Certificates from suitably qualified / certified assessors.	<input type="checkbox"/>	<input type="checkbox"/>
Embodied Carbon	n/a		<input type="checkbox"/>	<input type="checkbox"/>
Transport Carbon Intensity	n/a		<input type="checkbox"/>	<input type="checkbox"/>
Operating Water	BASIX compliance	<ul style="list-style-type: none">BASIX and ABSA Certificates from suitably qualified / certified assessors.	<input type="checkbox"/>	<input type="checkbox"/>
Waste	n/a		<input type="checkbox"/>	<input type="checkbox"/>
Ecology / Environment	n/a		<input type="checkbox"/>	<input type="checkbox"/>
Operational Governance	n/a		<input type="checkbox"/>	<input type="checkbox"/>

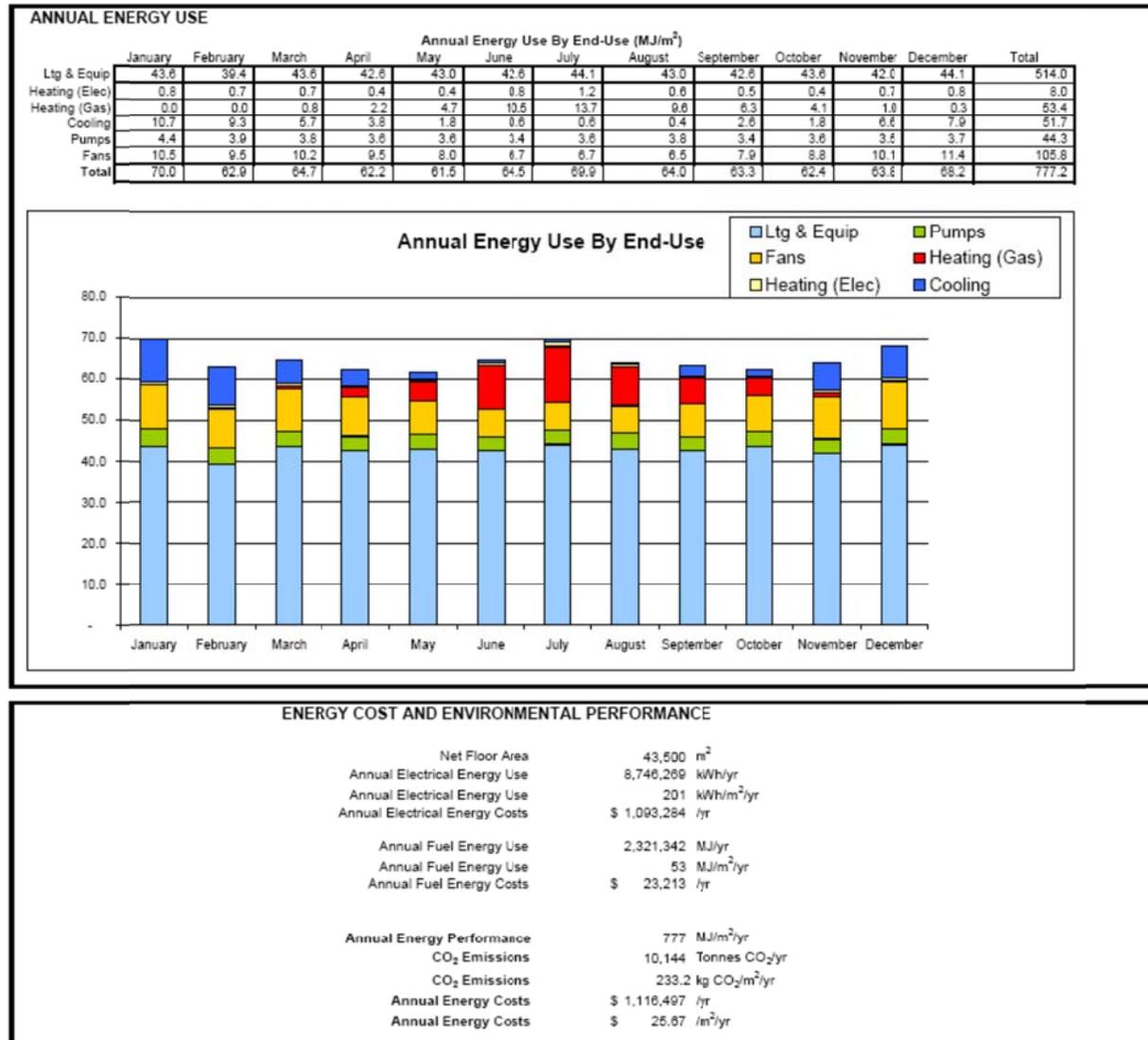
Residential – Other Classes (common areas)

Control	Target	Submission reporting needs to confirm:	Document Received	Mandatory Requirement Achieved
Operating Carbon (Energy) Intensity	Full energy model required	<ul style="list-style-type: none"> Report accordance with AS 3598:2000 and shown as per Appendix B The energy simulation software used is in accordance with requirements Report is prepared by suitably qualified practitioner A signed statement declaring compliance with nominated standards is required. The approximate annual operating cost for energy is shown in \$ per annum Energy metering and monitoring is demonstrated as best in class and a statement of the proposed system and how it will assist property managers to maintain long-term performance. 	<input type="checkbox"/>	<input type="checkbox"/>
Embodied Carbon	Quantify & report	<ul style="list-style-type: none"> Report in accordance with ISO 14042-48 by a suitably qualified practitioner A clear statement of how the design reduces the total carbon impact and the magnitude of that improvement has been achieved A signed statement declaring compliance with nominated standards is required. The total embodied carbon intensity is shown in Tonnes and or by element 	<input type="checkbox"/>	<input type="checkbox"/>
Transport Carbon Intensity	Document transport plan & features	<ul style="list-style-type: none"> Provide a report describing the design features providing for non-car travel options including marked-up plans of bike parking, taxi access and walking links to the site. Demonstrate how this information is to be provided to prospective owners and occupants. 	<input type="checkbox"/>	<input type="checkbox"/>
Operating Water	Mandatory controls	<ul style="list-style-type: none"> A best-in-class water metering system showing the majors uses to be metered including per floor of apartments including an estimate of major uses based on the design solution (e.g. landscape watering, central hot water, other relevant) The proposed approach to monitoring the building to support the ongoing operational performance should also be provided. Report is prepared by suitably qualified practitioner 	<input type="checkbox"/>	<input type="checkbox"/>
Waste	90% recycling in construction and optimise docks	<ul style="list-style-type: none"> Detailed construction waste management plan demonstrating how Target will be achieved Drawing showing garbage rooms and how they provide for general, recyclable and green-waste streams Operational statement to set out how waste management plans will be communicated to occupants 	<input type="checkbox"/>	<input type="checkbox"/>
Ecology / Environment	Demonstrate extent of optimisation	<ul style="list-style-type: none"> Provide relevant BASIX and BCA Sec J compliance statements or how the design exceeds minimum requirements. 	<input type="checkbox"/>	<input type="checkbox"/>
Operational Governance	Mandatory information and controls	<ul style="list-style-type: none"> Operational management plan setting out how the design and its features will enable Strata and Building managers to maintain sustainability and operating cost performance with ease and efficiency. Engagement plan outlining how the sustainability performance and features of the building will be communicated to owners, tenants and other occupants. Timeline showing proposed process to agree reporting template prior to issue of Occupancy Certificate 	<input type="checkbox"/>	<input type="checkbox"/>

Residential – Other Classes (occupancy)

Control	Target	Submission reporting needs to confirm:	Document Received	Mandatory Requirement Achieved
Operating Carbon (Energy) Intensity	Estimate of annual energy & GHG intensity	<ul style="list-style-type: none"> Report accordance with AS 3598:2000 and shown as per Appendix B showing estimate of energy, carbon and operating cost for lighting, cooking, domestic hot water and any other appliance or feature provided. The energy simulation software used is in accordance with requirements Report is prepared by suitably qualified practitioner A signed statement declaring compliance with nominated standards is required. The approximate annual operating cost for energy is shown in \$ per annum 	<input type="checkbox"/>	<input type="checkbox"/>
Embodied Carbon	n/a		<input type="checkbox"/>	<input type="checkbox"/>
Transport Carbon Intensity	n/a		<input type="checkbox"/>	<input type="checkbox"/>
Operating Water	Mandatory controls	<ul style="list-style-type: none"> Drawings and or specification clearly shows the proposed fittings and fixtures and that they meet or exceed minimum standards and or BASIX. 	<input type="checkbox"/>	<input type="checkbox"/>
Waste	3 waste stream in kitchen	<ul style="list-style-type: none"> Drawings which show the location and size of waste stream containers in the apartment providing for general, recycling and greenwaste 	<input type="checkbox"/>	<input type="checkbox"/>
Ecology / Environment	BCA Compliance	<ul style="list-style-type: none"> Provide relevant BASIX and BCA Sec J compliance statements or how the design exceeds minimum requirements. 	<input type="checkbox"/>	<input type="checkbox"/>
Operational Governance	n/a	<ul style="list-style-type: none"> Provide an example of the sustainability goals, objectives and features of the building and how they should be operated for owners and occupants including estimates of operating costs. 	<input type="checkbox"/>	<input type="checkbox"/>

14. Appendix B – Example Energy Consumption Table



15. Appendix C – Minimum Water Performance Requirements

This section sets out the mandatory controls required for water fittings for built-form in Oran Park

Fitting	Retail Non-Food	Retail – Food / Cafe / Restaurant	Majors	Office Tenant
Toilet	Less than 4.5L full and 3L half flush	Less than 4.5L full and 3L half flush	Less than 4.5L full and 3L half flush	Less than 4.5L full and 3L half flush
Urinal	Waterless	Waterless	Waterless	Waterless
Hand Basin	2L/min with time control of 7.5 seconds	2L/min with time control of 7.5 seconds	2L/min with time control of 7.5 seconds	2L/min with time control of 7.5 seconds
Medium Use Sink	5L/min	5L/min	5L/min	5L/min
Shower	Max 9L/min	Max 9L/min	Max 9L/min	Max 9L/min
KITCHEN				
Hand wash (low use)	2L/min with time control of 7.5 seconds	2L/min with time control of 7.5 seconds	2L/min with time control of 7.5 seconds	2L/min with time control of 7.5 seconds
Medium use sink tap	5L/min with time control of 7.5 seconds	5L/min with automated actuated control	5L/min with automated actuated control	5L/min with time control of 7.5 seconds
High use sink tap	n/a	Max 8L/min	Max 8L/min	n/a
Pot wash	n/a	Max 10L/min with trigger or auto shutoff valve	Max 10L/min with trigger or auto shutoff valve	n/a
Pre-wash – high pressure	n/a	As above	As above	n/a
Hose Cocks	n/a	n/a	n/a	n/a
Dishwasher	(4 WELS or better)	Max 2.3L/place setting OR (> 4 WELS)	Max 2.3L/place setting OR (> 4 WELS)	Max 2.3L/place setting OR (> 4 WELS)
Woks	n/a	Air-cooled / waterless	Air-cooled / waterless	n/a
Washing Machine	(4 WELS or better)	Max 10.3L per cycle OR >4WELS	Max 10.3L per cycle OR >4WELS	Max 10.3L per cycle OR >4WELS

16. Appendix D – Background Principles

1 Overview

Sustainability – Living Well in the means of One Planet

A Sustainable Community is technically one which lives within its ecological limits. It is estimated that in 2010, the global community of humanity used 1.5 times the Earth's natural resource capacity, providing a stark measure of our challenge to live well within the limits of one planet¹. The ecological footprint is a method of measuring the resources we have available, how much we use and who uses what. It considers the broad basket of supply (the available productive land on earth, forests, fisheries etc) and total human consumption and waste (food, transport, waste, carbon, materials) – the outcome of this assessment establishes the extent to which we are in ecological surplus or deficit. To meet the challenge of one planet, humanity must reduce its footprint by 50% -80% by 2020 if we are to avoid the spectre of the need for two planets.

This challenge is significant and will be achieved only through a broad based approach which addresses all aspects of humanities footprint but also addresses the gap in understanding through information and education to enable choice and self-determination.

Affordability Challenge for Ordinary Australians

A critical challenge for Oran Park is that as a growth corridor area of South-Western Sydney, economic and information resources are scarce. World leadership and radical innovation in the context of green building is beyond the short to medium term means of this location. Thus, resolving an affordable sustainability pathway which is broad based and yet builds resilience and adaptability into the future is essential to balance the needs of current community of stakeholders with those of the medium to long-term future.

A Response for Affordable Sustainability

It is within this global and local context that the Oran Park ESD DCP has been crafted. This DCP when considered in its totality can be defined as leading in urban development terms in Australia. It attempts to balance short-term affordability through incorporating challenging performance measures for well-defined sustainability aspects (e.g. operating carbon intensity); with longer-term requirement for information and reporting designed to inform and educate the residents and the property and construction participants. Choice is only possible with reliable information provided in an intelligible and accessible manner. This DCP is designed to ensure;-

- That quality assessments of a suite of broad based of sustainability measures are completed
- That the results of these assessments are formed into quality information for consumers and other community stakeholders
- That minimum performance measures remain non-prescriptive to provide room for innovation and flexibility for the lowest cost of compliance
- Where performance targets are set they balance challenging compliance with simplicity in delivery to maximise the likely of long-term maintenance
- That the Authorities and community are engaged on the outcomes of development, operations and their actions.

¹ Living Planet Report, 2010 (WWF and Global Footprint Network)

2 Methodology

A number of leading Landcom mixed-use urban planned communities were considered in defining this Sustainability DCP. These communities included The New Rouse Hill and its Town Centre, Prince Henry, Little Bay and Second Pond's Creek.

The successes and learning's of these projects were considered primarily from the perspective of the outcomes delivered for the community (consumers and residents). Chief amongst the learning's are;

- Prescriptive DCP measures were vulnerable to technology change and stifle innovation and adaption
- Mandating embedded utilities technology can radically increase ownership costs to consumers in an inequitable manner
- Mandating leading design ratings does not necessarily translate to owners understanding benefits or having the ability to maintain performance
- Transition from development marketing vision to community embrace and stewardship is dependent on structured tripartite governance arrangement (developer; Council and Community).

3 Summary of Response

With a vision of creating a leading sustainable community with longevity and certainty, these issues have been integrated into the structure of this DCP. Figure 1 shows how the DCP is topped and tailed with strong governance which incorporates structured controls (the DCP and joint management group), mandatory reporting of targets and outcomes achieved (stretching 5 years beyond completion) and community information, education and governance. This governance is centred on a broad base of sustainability attributes across all built-form types for base building and occupancy. Figure 2 shows an example of the selection of performance targets.

The central concept to the structure of this plan is that achieving reasonable progress across all areas will result, greater success in the longer-term than that for a narrow focus on discrete components. In particular the following should be noted;

- Performance targets have been set within current leading (not leadership) bands having particular regard for the staged nature of the project
- Assessment requirements are linked to defined standards to drive consistency
- Mandatory requirements to formulate and transfer assessment outcomes into information designed to educate, engage and empower consumers and users
- Long-term reporting of outcomes against targets is designed to embed a culture and interest in long-term sustainable performance.

Figure 1 – Oran Park DCP Framework

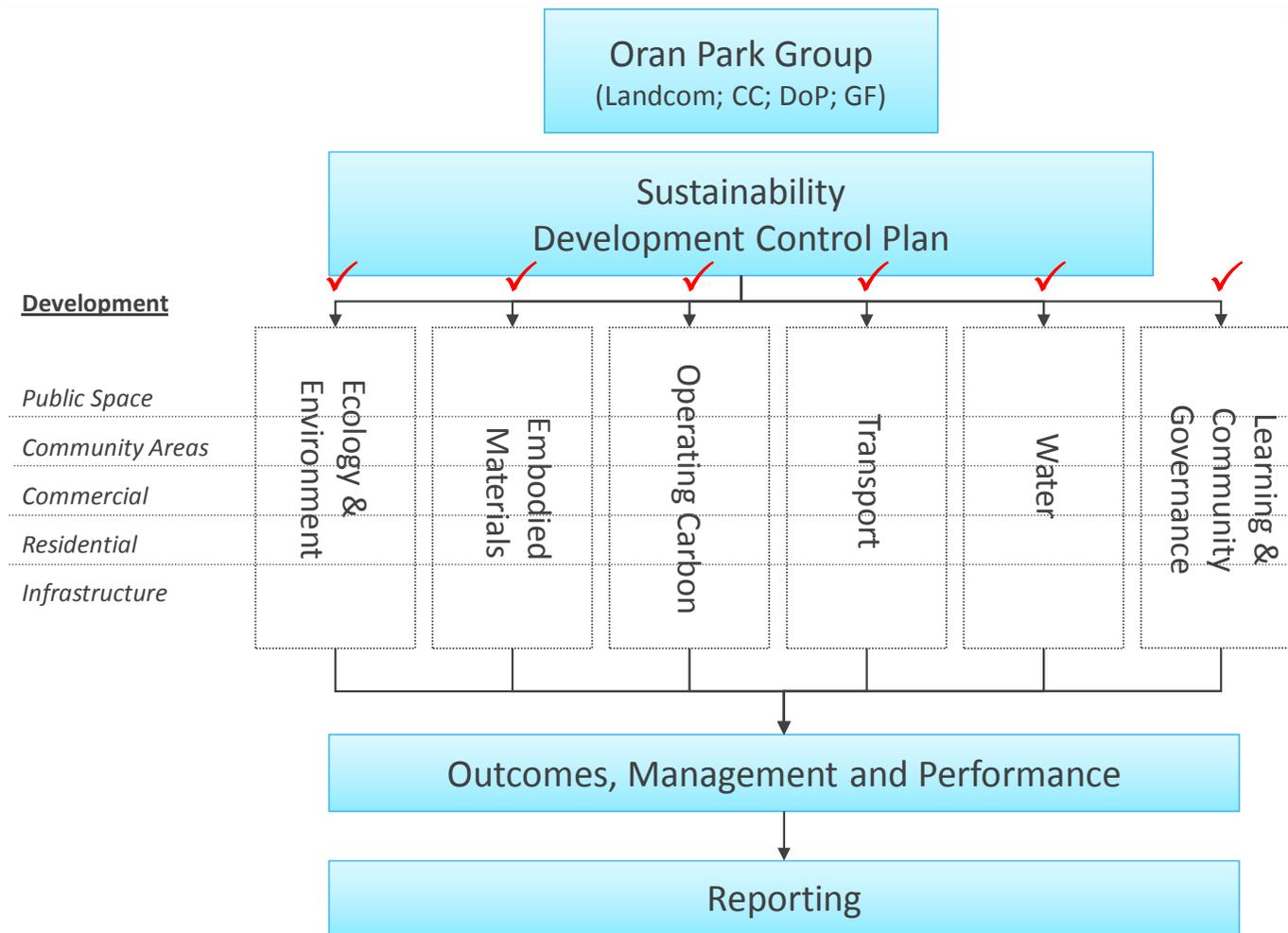
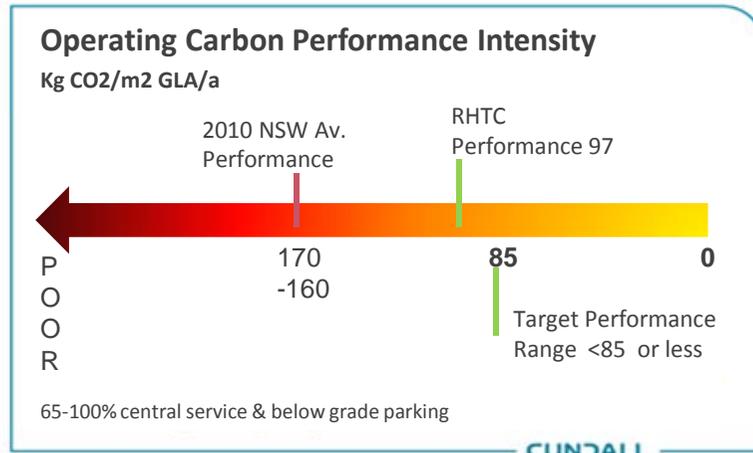
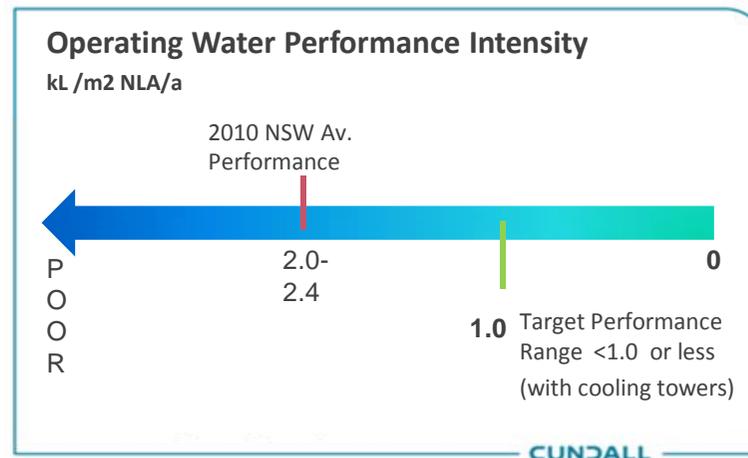
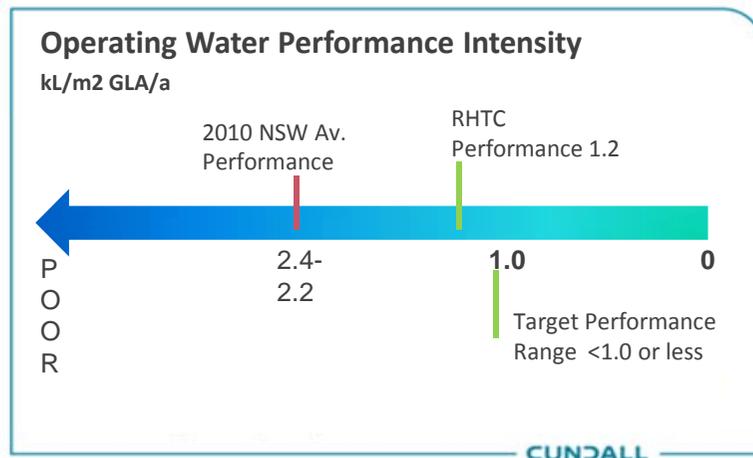
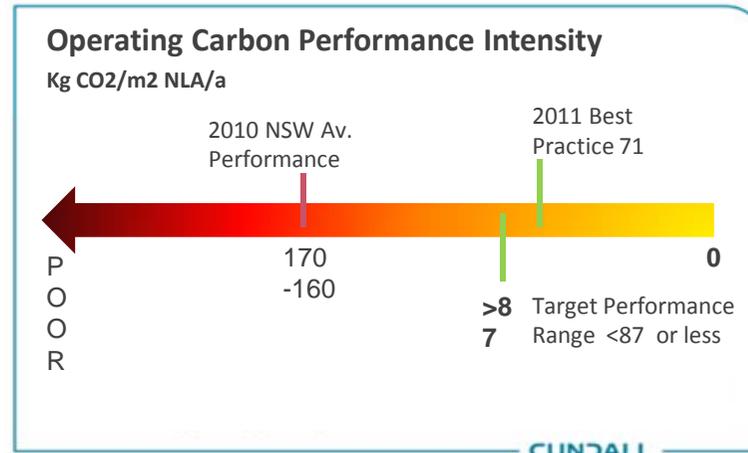


Figure 2 – Oran Park Example Performance Target Setting

Retail Base Building



Office Base Building



4 Recommendation

The proposed Oran Park Sustainability DCP seeks to balance affordability with long-term resilience through a broad based approach to performance aspects, linked to leading governance and reporting requirements. Performance requirements are designed to be ratcheted over time but also flexible enough to ensure that proponents have the ability to find the lowest cost pathways to compliance (or go beyond compliance).

The focus on a robust governance arrangement with information to consumers is designed to improve the ability for consumers to embrace the sustainability performance of assets and the community as a whole over the long-term.

Overall the plan is leading in its structure with its broad, flexible approach and sets challenging performance hurdles given the economic and affordability context of the region.

Appendix A

APPENDIX A: Glossary

Note: definitions for terms are also included in the Dictionary contained within the SEPP.

“**Activation zone**” includes verandahs, porches, awnings, shading devices, bay windows, pergolas and the like. A carport is not considered part of the activation zone.

“**Attic**” means a room within the main roof space of a one or two storey building that has a 1.5m minimum wall height at edge of the room, a minimum 30 degree ceiling slope and does not incorporate or access a balcony.

“**Building footprint**” means the area of land measured at finished ground level that is enclosed by the external walls of a building.

“**Gross floor area**” means the sum of the floor area of each storey of a building measured from the internal face of external walls, or from the internal face of walls separating the building from any other building, measured at a height of 1.4 metres above the floor, and includes:

- (a) the area of a mezzanine within the storey, and
- (b) habitable rooms in a basement, and
- (c) any shop, auditorium, cinema, and the like, in a basement or attic, but excludes:
- (d) any area for common vertical circulation, such as lifts and stairs, and
- (e) any basement:
 - (i) storage, and
 - (ii) vehicular access, loading areas, garbage and services, and
- (f) plant rooms, lift towers and other areas used exclusively for mechanical services or ducting, and
- (g) car parking to meet any requirements of the consent authority (including access to that car parking), and
- (h) any space used for the loading or unloading of goods (including access to it), and
- (i) terraces and balconies with outer walls less than 1.4 metres high, and
- (j) voids above a floor at the level of a storey or storey above.

“**Flood Planning Levels (FPLs)**” are the combinations of flood levels (derived from significant historical flood events or floods of specific AEPs) and freeboards selected for floodplain risk management purposes, as determined in management studies and incorporated in management plans. Flood planning area is the area of land below the FPL and thus subject to flood related development controls. The concept of flood planning area generally supersedes the “flood liable land” concept in the 1986 Manual. Flood Prone Land is land susceptible to flooding by the PMF event. Flood Prone Land is synonymous with flood liable land.

“**Habitable room**” means any room or area used for normal domestic activities, including living, dining, family, lounge, bedrooms, study, kitchen, sun room, home entertainment room, alfresco room and play room.

“**Non-habitable**” room spaces of a specialised nature not occupied frequently or for extended periods, including bathrooms, toilets, pantries, walk-in wardrobes, corridors, lobbies, photographic darkrooms and clothes drying rooms.

“**Landscaped area**” means any part of a site, at ground level, that is permeable and consists of soft landscaping, turf or planted areas and the like. It does not include driveways, parking areas, hard paved drying yards or other service areas, swimming pools, tennis courts, undercroft areas, roofed areas (excluding eaves <450mm to fascia board), outdoor rooms, balconies, rooftop gardens, terraces, decks, verandahs and the like.

“**Outdoor room**”, also known as an ‘alfresco room’ is a semi enclosed space (at least 1 side open) located adjacent a living / dining / kitchen area of a dwelling that sits within the main roof line of a dwelling.

“Principal dwelling” means the largest dwelling house on a lot, measured by gross floor area.

“Principal private open space” means the portion of private open space which is conveniently accessible from a living zone of the dwelling, and which receives the required amount of solar access.

“Private open space” means the portion of private land which serves as an extension of the dwelling to provide space for relaxation, dining, entertainment and recreation. It includes an outdoor room.

“Residential net developable area” means the land occupied by development, including internal streets plus half the width of any adjoining access roads that provide vehicular access, but excluding public open space and other non residential land.

“Riparian Corridor” means the core riparian zone and vegetated buffer that together form the Riparian Protection Area identified on the land use zoning maps.

“Site cover” refers to the percentage of the building footprint, including an outdoor room and garage, in relation to site area of an allotment.

“Studio / Fonzie flat” means:

Type 1 Studio: a room or suite of rooms occupied or used, or so constructed or adapted as to be capable of being occupied or used, as either a detached part of the dwelling house on the land, or as a separate domicile on the land, which is located above a garage, car port or the like, but is not intended to, or capable of being separately subdivided from the principal dwelling house on the land.

Type 2 Studio: a room or suite of rooms occupied or used, or so constructed or adapted as to be capable of being occupied or used as a separate dwelling on the land, which is located above a garage, carport or the like, and is intended to, or is capable of being separately strata subdivided from the principal dwelling house on the land.

“SEPP” means State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Amendment No. 1).

Appendix B

APPENDIX B: Part B Development Control Plans

Matters to be addressed in Part B DCPs are listed below. The Special Areas requiring a Part B DCP are shown at Figure B1.

Special area	Matters to be addressed
Oran Park Town Centre	Block layout illustrating built form and land use structure, building form, envelope and siting guidelines, build to lines, vehicular access and parking areas and design treatment. Illustrative design treatment of civic spaces and open space, pedestrian and cycle routes and facilities, mandatory and preferred active frontages, building articulation, corner treatment, roofscapes, architectural expression, preferred palette of materials and colours, signage and advertising controls, landscaping guidelines (ie species). Town Centre streetscape controls (ie cross sections, planting, street furniture, paving materials, lighting), waste management and water cycle management.
Northern Neighbourhood Centre	Block layout illustrating built form and land uses, building form, envelope and siting guidelines, vehicular access and parking areas and design treatment. Illustrative design treatment of civic spaces and open space, pedestrian and cycle routes and facilities, mandatory and preferred active frontages, building articulation, roofscapes, architectural expression, preferred palette of materials and colours, signage and advertising controls, landscaping guidelines (ie species), streetscape controls (ie cross sections, planting, paving materials, street furniture), waste management and water cycle management.
Southern Neighbourhood Centre	Block layout illustrating built form and land uses, building form, envelope and siting guidelines, vehicular access and parking areas and design treatment, illustrative design treatment of civic spaces and open space, pedestrian and cycle routes and facilities, mandatory and preferred active frontages, building articulation, roofscapes, architectural expression, preferred palette of materials and colours, signage and advertising controls, landscaping guidelines (ie species), streetscape controls (ie cross sections, planting, paving materials, street furniture), waste management and water cycle management.
Oran Park Employment Area	Indicative subdivision layout demonstrating how a range of lot sizes will be provided to accommodate a range of land uses, building form and siting guidelines, building articulation, roofscapes, setbacks, preferred palette of materials and colours, signage and advertising controls, landscaping guidelines (ie species), streetscape controls (ie cross sections, planting, street furniture), environmental amenity controls (ie noise, light spill, stormwater, water reuse), controls for residential interface areas, outdoor loading, waste management, storage and parking areas, and special design guidelines to address visual impact of built form from The Northern Road and the East-West Road.
Denbigh Transition Area	Indicative subdivision layout, building platforms, landform, cut and fill guidelines, land stability controls, building materials and colours, landscaping and revegetation details, weed removal, Aboriginal archaeology, bushfire management and APZs and pedestrian routes.
Riparian Protection Areas	Subdivision layout illustrating lot sizes, building platforms, landscaping and revegetation details, management of the riparian corridor (including a Plan of Management), water quality management details, flood management details, bushfire management and APZs, layout of roads, pedestrian and cycle routes.

Special Areas Requiring a Part B DCP

- Precinct boundary
- Denbigh Transition Area
- Land containing a Riparian Protection Area
- Oran Park Northern and Southern Neighbourhood Centres
- Oran Park Town Centre
- Oran Park Employment Area

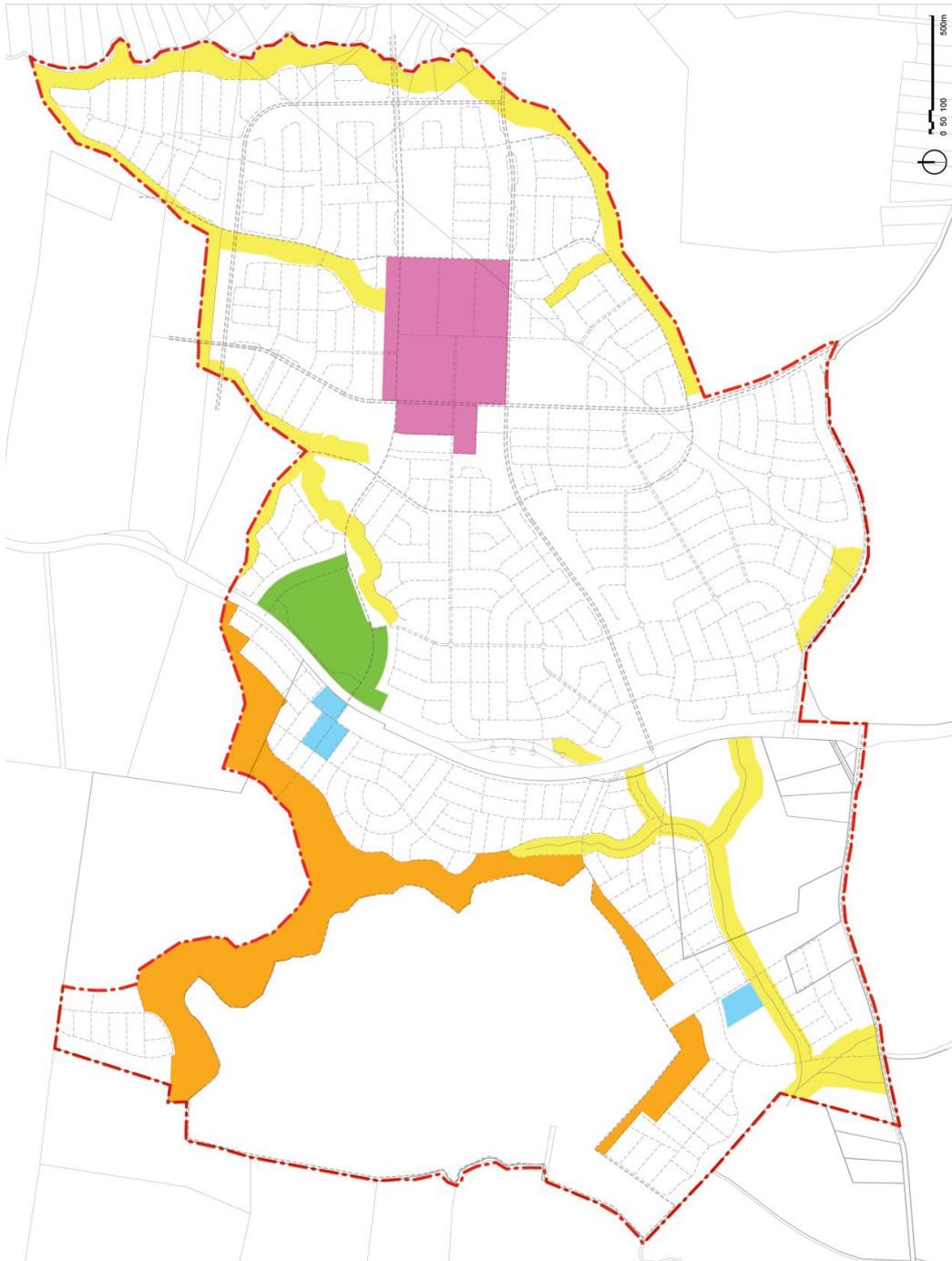


Figure B1 - Special Areas requiring a Part B DCP

Appendix C

APPENDIX C: Exempt and Complying Development

Schedule 1: Exempt Development

Type of activity	Exemptions requirements	Advisory notes
Access Ramps for the Disabled	<ul style="list-style-type: none"> • In compliance with AS 1428.1 and AS 1428.2 • No closer than 500mm from the adjoining property. • Maximum length of ramp 9m. • Does not obstruct or interfere with vehicular access to existing car parking behind the building line. 	
Advertising Signs/ Advertising Structures	<p>General Requirements:</p> <ul style="list-style-type: none"> • Non-moving sign. • Advertising structures over public road to be at least 3m above and 600mm from the outside of the carriageway. • The advertising must relate to the use of the building (except for temporary signs). • Must be located within the boundaries of the property to which they apply, unless in a commercial or retail area. • Must reflect the character and style of the building on which it is located. • The erection of the advertising structure must comply with the requirements of the Building Code of Australia, including section B – Structural Provisions. • The sign must not be detrimental to the character and functioning of the building. • Not erected on an item of environmental heritage, unless replacing an existing sign, that has a lawful approval, with a sign of the same, or lesser size sign and in the same location. • Must not cause offence to the public. 	Covers a display of symbols, messages or other devices for promotion or for conveying information, instruction, directions or the like, whether or not the display includes the erection of a structure, or the carrying out of a work which relates to the use of the building or property.
(a) General Residential Zone	<p>(i) Business identification sign:</p> <ul style="list-style-type: none"> • For an approved home office/business or professional consulting room, only 1 “business identification sign” is permissible. • Maximum size of up to 1200mm long x 600mm high displaying only: <ul style="list-style-type: none"> - Name of occupant - Address and phone number - Types of business • Located wholly within the property boundaries. • Maximum height of a free standing sign above ground level is 2.0m. • Not to be illuminated or flashing. <p>(ii) Public notices:</p> <ul style="list-style-type: none"> - notice for public information displayed by a public authority giving information or direction about services provided. 	

Type of activity	Exemptions requirements	Advisory notes
(b) Neighbourhood Centre and Local Centre Zone	<p>(i) Under awning signs:</p> <ul style="list-style-type: none"> - attached to the underside of an awning (other than the fascia or return end); - non illuminated; - is a maximum of 2.5m in length, 0.5m in height and 0.08m in width; - is erected at a horizontal angle no less than 2.6m to the ground; - is erected at a right angle to the building to which it is attached; - does not project beyond the edge of the awning; - does not extend or project beyond a point 600mm within the vertical projection of the kerb line; - only one sign per premises per street frontage. <p>(ii) Window signs:</p> <ul style="list-style-type: none"> - does not obscure more than 20% of the area of any window; - street level windows only; - only one sign per premises per street frontage. <p>(iii) Fascia signs:</p> <ul style="list-style-type: none"> - attached to the fascia or return of the awning; - does not project above, below, or extend from, the fascia or return end of the awning; - does not extend or project beyond a point 600mm within the vertical projection of the kerb line; - has a maximum area of 3.0m²; - only one sign per premises per street frontage; - non-flashing. <p>(iv) Wall signs:</p> <ul style="list-style-type: none"> - does not extend laterally beyond the wall of the building to which it is attached; - does not project above the top of the wall to which it is attached; - does not cover any window, door or architectural projections; - is securely fixed to the building; - no more than 20% of the visible wall area to be covered by "flush wall sign"; - non illuminated; - only one sign per premises per street frontage (ie. access). <p>(v) Top hamper:</p> <ul style="list-style-type: none"> - attached to the transom of a doorway or display window of a building; - does not extend beyond any building line; - does not extend below the level of the head of the doorway or window above which it is attached; - is not more than 3.7m above the ground; - has a maximum dimensional height of 600mm; - only one sign per premises per street frontage; - has a maximum area of 2.5m²; - non-flashing. <p>(vi) Public notices:</p> <ul style="list-style-type: none"> - notice for public information displayed by a public authority giving information or direction about services provided. 	

Type of activity	Exemptions requirements	Advisory notes
(c) Industrial Zone	<p>(i) Wall signs:</p> <ul style="list-style-type: none"> - only one wall sign is permitted per occupancy; - is located on the façade of the unit with which that occupancy is associated; - the size and dimensions of such signage shall have regard to existing signage on other units in the same complex with a view to achieving a visually consistent treatment, but shall not exceed maximum dimensions of 2m x 1.2m; - does not extend laterally beyond the wall of the building to which it is attached; - does not project above the top of the wall to which it is attached; - does not cover any window, door or architectural projections; - is securely fixed to the building; - non-flashing. <p>(ii) Identification signs:</p> <p><u>Single Occupier Building</u></p> <ul style="list-style-type: none"> - only one identification panel per property; - has maximum dimensions of 0.5m x 1.5m; - has a maximum height from ground of 1.5m; - does not project over a public place; - only one sign per premises; - is securely fixed and stable; - non-flashing. <p><u>Factory Units</u></p> <ul style="list-style-type: none"> - directory boards are to be comprised of not more than 1 panel per factory; - each panel is to be of uniform size, colour and dimensions but not exceeding 0.2m² per panel; - sign serves only to identify the number of the unit and the name of the respective occupant; - is located on or behind the building line setback adjacent to the entrance to the site; - is securely fixed and stable; - non-flashing. <p><u>Sex Services Premises</u></p> <ul style="list-style-type: none"> - only one unobtrusive sign per premises; - a maximum area of 1.5m²; - the sign wording must be limited to a trade name of the business operated and the address of the premises. No other characters, depictions, pictures or drawings are to be displayed on the sign; - the content, illumination, size, shape, and location of the sign must not interfere with the amenity of the neighbourhood; - located entirely within the property boundaries. 	
(d) Special Uses, Environmental Conservation and Environmental Living Zones	<p>(i) Identification signs:</p> <ul style="list-style-type: none"> - sign serves only to identify the premises or land on which the sign is situated, the name of the occupier, the activity carried out thereon and directions to access the site; - maximum area up to 3.5m². <p>(ii) Public notices:</p> <ul style="list-style-type: none"> - notice for public information displayed by a public authority giving information or direction about services provided. 	
Aerials, Antennae, Microwave Antennae not including satellite dishes – dealt with as separate provision below	<ul style="list-style-type: none"> • For domestic use only. • One per dwelling. • Structurally adequate construction. • Maximum height 2m above roof. 	No encroachment over property boundaries.

Type of activity	Exemptions requirements	Advisory notes
Air Conditioning Units for Dwellings attached to external walls or ground mounted	<ul style="list-style-type: none"> • Located a minimum of 3m from any property boundary. • Located behind the building line to any street frontage. • Building work must not reduce the structural integrity of the section of the building affected by the installation of the unit. • Any opening created by the installation is to be adequately weatherproofed. • Noise level not to exceed 5dB(A) above background noise level measured at the property boundary during the hours 7.00am to 10.00pm and no exceedence of noise level above the background noise level during the hours 10.00pm to 7.00am. 	<p>All air conditioners installed must be provided with a label clearly showing the maximum 'Sound Power Level'. Council may serve a Notice on the occupier of any premises to abate noise nuisance. The air conditioning unit should not significantly impact on adjoining properties.</p>
Ancillary Development except where specified	<ul style="list-style-type: none"> • Is supplementary to a use permitted by development consent or to a lawful existing use. • Must reflect the character and style of the building and surrounding neighbourhood. • Is erected at least 1m from each boundary of the lot and extends no more than 3m above natural ground level. • Any structure or impermeable surface that covers less than 25m² in area. • The development does not require any excavation of more than 500mm below the ground level. • It does not involve handling, storing, or using hazardous chemicals or materials other than on a domestic scale and no chemicals or pollutants are released into the environment. • Are made of non-combustible materials if located in a fire protection zone or an asset protection zone identified in a bushfire risk management plan. 	
Aviaries – an enclosure in which birds are kept for domestic purposes other than pigeons and poultry	<ul style="list-style-type: none"> • Maximum area 10m². • Maximum height 2.4m above natural ground level. • Concrete floor. • Non-reflective material. • Located in rear yard and no closer than 900mm from any dwelling or an adjoining property. • Structurally adequate construction. 	<p>Council can control and regulate the number and type of birds kept. Construction is to restrict access to vermin. In cleaning the aviary, wastewater should be contained within the property.</p>
Awnings, Canopies, Storm Blinds attached to a dwelling	<ul style="list-style-type: none"> • Maximum area 15m². • Maximum height of awning 2.7m and not enclosed. • Located behind the building line to any street frontage. • Located at least 900mm from any property boundary. • Non-combustible material. • Awnings other than cantilever type to be connected to existing stormwater system and not discharged to the ground. • Protected from termites in accordance with AS3660.1. 	<p>The awning should be securely bolted at its supports and fixed rigidly at its base. The roof cladding should be securely fixed to roof beams or rafters and be of non-reflective material.</p>
Barbecues	<ul style="list-style-type: none"> • Located in rear yard and no closer than 900mm from any adjoining property boundary. • Maximum height 2.1m. • Maximum area of base 4m². • Maximum area of barbecue plate 1.5m². 	<p>Structure must be at least 1.2m away from a pool safety fence measured in accordance with cl. 2.3 AS1926-1986.</p>

Type of activity	Exemptions requirements	Advisory notes
Bridges and Staircases installed in Public Parks and Recreation Spaces	<ul style="list-style-type: none"> Bridges to a maximum span of 5m and construction by or for Council. Designed, fabricated and installed in accordance with the BCA (Section B) and AS 4100 (for steel structures) and AS 1720 (for timber structures) and AS 3600 for concrete structures. Australian National Parks and Wildlife Service Walking Track Management Manual Standards must be complied with. 	Approval will be required for structures within 40m of designated creek or watercourse under Rivers & Foreshores Act.
Cabanas/Gazebos and Greenhouses	<ul style="list-style-type: none"> Located in rear yard and no closer than 900mm from any adjoining property boundary. Maximum area 10m². Maximum height 2.4m. Structurally adequate construction in accordance with the Building Code of Australia. Non-reflective surface finishes. 	The structures should be securely bolted at its supports and fixed rigidly at its base. The roof cladding should be securely fixed to roof beams or rafters and be of non-reflective material.
Children's Play Equipment	<ul style="list-style-type: none"> Located in rear yard and no closer than 900 from any adjoining property boundary. Maximum height 2.4m. Maximum ground coverage 20m². Not located within swimming pool areas or closer than 1.2m to pool safety fences. 	Structure must be at least 1.2m away from a pool safety fence measured in accordance with cl.2.3 AS1926-1986.
Clothes Hoists/Lines	<ul style="list-style-type: none"> Located in rear yard and no closer than 900 from any adjoining property boundary. Installed to manufacturer's specifications. 	
Cubby Houses at ground level	<ul style="list-style-type: none"> Located in rear yard and no closer than 900 from any adjoining property boundary. Not located within swimming pool areas or closer than 1.2m to pool safety fences. Maximum height 2.1m measured from natural ground level. Maximum gross floor area of 10m². Hand rails and balustrades required if the floor or stairway is more than 1m above natural ground level. One only on each property. Not as addition to an existing item. Other than masonry construction. Safety glass to any glass doors conforming to AS2208-1978. Installed in accordance with manufacturer's instructions and comply with the relevant Australian Standards (AS1924, 2155 and DR94007-DR94010). Structurally adequate construction on a uniformly stable foundation. 	Structure must be at least 1.2m away from a pool safety fence measured in accordance with cl.2.3 AS1926-1986.
Decks unroofed and attached to a dwelling or within a pool area	<ul style="list-style-type: none"> Located behind the building line to any street frontage. Located at least 3m from any property boundary. Timber only above foundations. Deck to be unroofed. Maximum height 1m above natural ground level to top of deck. Effective height of pool safety fence is not reduced. Minimum of 300mm clearance from safety fences if located within a pool area. Balustrade height not to exceed 1.2m above top of deck. Maximum ground coverage 10m². Compliance with AS1684 or NSW Timber Framing Code. Protected from termites in accordance with AS3660.1. 	Roofing of decks requires development consent.

Type of activity	Exemptions requirements	Advisory notes
Demolition of Exempt Development	<ul style="list-style-type: none"> Item to be demolished shall conform strictly to the standard for categories of development listed in this schedule. Demolition does not involve the removal of asbestos unless the applicant's approval is obtained from WorkCover Authority. Care should be taken in work involving the removal of lead paint to avoid lead contamination The Authority's "Guidelines for Practices involving Asbestos Cement" should also be referred to for any work involving asbestos cement. Compliance with AS2601-1991. Covering an area of not more than 25m². 	<p>All demolition work be carried out in a manner consistent with the <i>Construction and Demolition Waste Action Plan 1998</i>.</p> <p>Contact EPA Pollution Line 131555 for a copy. For further details please contact Work Cover Authority.</p>
Driveways, Paths and Paved Areas	<ul style="list-style-type: none"> Located within the boundaries of the site. Does not cross public property. Constructed on natural or filled ground. Constructed of reinforced concrete or of pavers on a concrete base with a non-slip finish. Maximum gradient of 1:6 (16%). Does not redirect stormwater onto adjoining properties. Site coverage of paved area not to exceed 50% of private open space. 	
Fences (other than fences covered by the Swimming Pools Act 1992)	<ul style="list-style-type: none"> All fences are to be constructed so that they do not prevent the natural flow of stormwater drainage/run off. Structurally adequate construction. Are made of non-combustible materials if located in fire protection zone or an asset protection zone identified in a bushfire risk management plan. Fencing should be considerate of wildlife when positioned near open space and natural vegetated areas or in rural areas. No barbed wire fencing is to be used in residential areas. 	<p>These requirements do not set aside the provisions of the Dividing Fences Act 1991</p>
Boundary fences i) Side fences (between the building line and street or any other public place) and front fences. ii) Side fences (between the building line and the rear boundary) and rear boundary fences. iii) Corner allotments (secondary frontages). (iv) Masonry or Brick (v) Security	<ul style="list-style-type: none"> Maximum height 1m if constructed of timber, metal or lightweight materials, open or ornamental type, provided such fences comply with covenants on the land. Maximum height 1.8m if constructed of timber, metal or lightweight materials. Maximum height of 1.8m, if constructed of timber, metal or lightweight materials for no more than one-third of the length of the secondary road frontage. Maximum height of 600mm. Structurally adequate for the intended purpose and to comply with AS3700, AS1170 and the Building Code of Australia. Chain wire type fences around Council owned compounds and depots 	<p>You are advised to talk to your neighbour at an early stage and consult the Dividing Fences Act.</p> <p>Council does not adjudicate in matters of dispute on boundary fencing. Footings for the fence are to be located on the natural ground.</p> <p>Materials suitable for minimising graffiti, particularly along side and rear boundaries where it is visible from a public place is encouraged (eg. timber instead of colourbond).</p>

Type of activity	Exemptions requirements	Advisory notes
Fish Ponds	<ul style="list-style-type: none"> • Located in the rear yard and no closer than 900mm from any adjoining boundary. • Maximum surface area of 2m². • Is not capable of being filled with water to a depth of 300mm or more, including freeboard. • Designed and constructed so as not to prevent the natural flow of stormwater drainage/ runoff. • No higher than 300mm above natural ground level. 	A pond that is capable of being filled with water to a depth of 300mm or more is required to comply with the provisions of the Swimming Pools Act 1992 requiring the provision of swimming pool (child proof) fencing. Such development is not exempt development.
Flagpoles	<ul style="list-style-type: none"> • Maximum height 6m above existing ground level. • Located at least 7m from any property boundary. • Only one for each property. • Installed in accordance to manufacturer's specifications. • Must be structurally adequate. 	Care should be taken to minimise noise from the flapping of flag ropes or like equipment. Flag flying protocol must be adhered to.
Garden Sheds	<ul style="list-style-type: none"> • Located in rear yard and no closer than 900mm from any adjoining property boundary or 5m in rural zone. • Maximum height 2.4m measured from natural ground level. • Maximum gross floor area of 10m². • One only on each property. • Not as addition to an existing item. • Other than masonry construction. • Safety glass to any glass doors conforming to AS2208-1978. • Non-reflective material. • Not visible from a public road. • Installed in accordance with manufacturer's instructions and comply with the relevant Australian Standards (AS1924, 2155 and DR94007-DR94010). • Structurally adequate construction on a uniformly stable foundation. • Must not be built over easements for overland stormwater flow paths or within electrical easements. • Does not direct stormwater onto adjoining properties. 	Consideration should be given to the impact upon adjoining properties.
Goal Posts, Sight Screens and Similar Ancillary Sporting Structures on Sporting or Playing Fields for Use in the Playing/ Performance of Sporting Events excluding grandstands, dressing sheds and other structures	<ul style="list-style-type: none"> • Construction by or for Council. • Installed in accordance with relevant SAA standards and/or Building Code of Australia. • Located in public parks or recreation areas. 	Any of these items erected on private land require prior approval of Council. Exemptions specifically exclude buildings which accommodate people.
Hoardings	<ul style="list-style-type: none"> • Not to encroach onto the footpath, public thoroughfare or adjoining property. • Erected in accordance with WorkCover Authority requirements. • Shall be dismantled upon completion of all construction works. • Must be structurally adequate. • Maximum height of 2.1m above natural ground level. 	
Hot Water Systems (including Solar Water Heaters and Solar Panels)	<ul style="list-style-type: none"> • Installed to manufacturers specifications and requirements. • Installed by a licensed tradesperson. • Associated building work must not reduce the structural integrity of the building or involve structural alterations. • Any opening created by the installation to be adequately weatherproofed. • Must not protrude above the ridge height. 	

Type of activity	Exemptions requirements	Advisory notes
Home Based Child Care	<ul style="list-style-type: none"> Allows for not more than 7 children under the age of 12 years' comprising 5 preschool and 2 school aged children, at one time (the number of children includes children related to the carer and cared for by the carer). Carers must be licensed by DOCS. 	
Home Office	<ul style="list-style-type: none"> To be carried out in a dwelling-house or in a dwelling in a residential flat building by the permanent residents of the dwelling-house or dwelling. <p>Does not involve:</p> <ul style="list-style-type: none"> The registration of the building under the Factories, Shops and Industries Act 1962. The employment of persons other than the permanent residents. Interference with the amenity of the neighbourhood by reason of the emission of noise, vibration, smell, fumes, smoke, vapour, steam, soot, ash, dust, waste, water, waste products or grit, oil or otherwise, machinery from equipment and associated processes. The display of goods, whether in a window or otherwise. The exhibition of any notice, advertisement or sign (other than a notice, sign or advertisement exhibited on the dwelling-house or dwelling to indicate the name and occupation only of the resident). The sale of items (whether goods or materials) or the exposure or offer for sale of items, by retail. The visitation of clients/customers to dwelling-house or dwelling. 	Refer to "Advertising Signs" above for details of "exempt" home office signage.
Letter Boxes	<ul style="list-style-type: none"> Maximum height of 1.2m above existing ground level. Appropriate numbering for each box. Structurally stable with adequate footings. Located wholly within the property. To comply with the requirements and specifications of Australia Post. 	
Minor Internal Alterations to: i) Residential dwellings excluding heritage buildings)	<ul style="list-style-type: none"> Non-structural work only such as: <ul style="list-style-type: none"> replacement of doors, walls, ceiling or floor linings, or deteriorated frame members with equivalent or improved quality materials; renovations of bathrooms, kitchens, inclusion of built-in fixtures such as vanities, cupboards and wardrobes. Applies only to alterations or renovations to previously completed buildings. Work not to include changes to the configuration of rooms whether by removal of existing walls, partitions or by other means. Work not to cause reduced window arrangements for light and ventilation needs, reduce doorways for egress purposes or involve enclosure of open areas. Work to comply with the Building Code of Australia. 	The alteration must not affect the structural strength and stability of the building. For example, external walls are often strengthened and stabilised by internal walls that resist loads such as wind forces. The removal of internal walls without considering overall strength and stability may result in failure of external walls.
ii) Non-residential premises (excluding food premises)	<ul style="list-style-type: none"> Non-structural work only such as shelving, displays, benches and partitions, that do not provide structural support to any part of the building. Floor area not to exceed 200m². Work must not compromise fire safety or affect accessibility to a fire exit. Works shall not change the configuration of rooms whether by removal of walls or other means of structural support. 	You are advised to consult a structural engineer, architect or building surveyor before commencing alterations to ensure you comply with the Building Code of Australia and that works will not affect the structural adequacy and stability of the building.

Type of activity	Exemptions requirements	Advisory notes
Park and Street Furniture, Seats, Bins, Picnic Tables, Minor Shelters, Bus Shelters excluding advertising	<ul style="list-style-type: none"> • Construction by or for Council. • Designed, fabricated and installed in accordance with relevant SAA standards and/or Building Code of Australia. • Located on land under control of Council. • Non-reflective finishes. • Line of site of vehicular traffic is not to be compromised. 	
Pergola (open)	<ul style="list-style-type: none"> • Located behind the building line to any street frontage. • Maximum area 20m². • Maximum height 2.4m. • Maintain required boundary setbacks with a minimum of 900mm from any boundary. • Where required use non-combustible materials. • Structurally adequate construction. • Does not have a roof. • Protected from termites in accordance with AS3660.1. 	Roofed or enclosed pergolas require approval.
Playground Equipment on Land Classified as Community Land	<ul style="list-style-type: none"> • Construction by or for Council. • Designed, fabricated and installed in accordance with AS1924, AS2155 and DR94007 - DR94010. 	"Community land" is a classification under the LG Act 1993.
Privacy Screens	<ul style="list-style-type: none"> • Maximum height 2.4m above natural ground level. • Maximum total length 10m per lot. • Must be installed in rear yard. • Construction of translucent materials or lattice, and excluding shadecloth. • Structurally adequate construction. • Not to be attached to or reduce the fire resistance of any structure. 	Must be freestanding and not attached to the boundary fence without the consent of the adjoining owner. Caution should be taken with installing a privacy fence near swimming pool fencing.
Public Meeting in a Class 9b Building , eg. school, community hall, church, theatre and gymnasium	<ul style="list-style-type: none"> • Approval has already been granted by Council for the use of the building for the purpose of a class 9b building. 	
Recladding of Roofs or Walls - Council may specify if exemption does not apply to heritage buildings. See demolition provision as a guide	<ul style="list-style-type: none"> • Replace existing materials with similar materials. • Recladding must not involve structural alterations. • Non-reflective materials to be used. 	The Work Cover Authority has advised that care should be taken in work involving the removal of lead paint contamination. The Authority's "Guidelines for Practices involving Asbestos Cement" should be referred to for any work involving asbestos cement.
Retaining Walls	<ul style="list-style-type: none"> • Maximum height 500mm. • Masonry walls to comply with: AS3700 - Masonry Code AS3600 - Concrete Structures AS1170 - Loading Code • Timber walls to comply with: AS1720 - Timber Structures AS1170 - Loading Code • Not to be erected within 500mm of a property boundary. • Not to be erected within a subsurface electrical easement or a drainage easement. • All retaining walls are to be constructed so that they do not prevent the natural flow of stormwater drainage/run off. 	Consideration should be given to the impact upon adjoining properties.

Type of activity	Exemptions requirements	Advisory notes
<p>Satellite Dishes</p> <p>i) Residential</p>	<p><u>Ground Mounted</u></p> <ul style="list-style-type: none"> • Maximum 1.5m diameter. • Maximum 1.8m height above natural ground level. • Only one installation per dwelling. • Situated behind the building line. • Situated at least 900mm from any property boundary. • Structurally adequate construction. <p><u>Roof Mounted</u></p> <ul style="list-style-type: none"> • Maximum 600mm diameter. • Located below the ridge of the dwelling and out of view from the street. • Suitably coloured to blend in with the building. • Only one installation per dwelling. • Structurally adequate construction. 	
<p>ii) Non-residential</p>	<p><u>Ground Mounted</u></p> <ul style="list-style-type: none"> • Maximum 2m diameter. • Maximum 1.8m height above natural ground level. • Only one installation per premises. • Situated out of view from the street. • Situated at least 900mm from any property boundary. • Structurally adequate construction. • Not situated in any required car parking space, loading bay or service area. <p><u>Roof Mounted</u></p> <ul style="list-style-type: none"> • Maximum 1.5m diameter. • Located out of view from the street. • Suitably coloured to blend in with the building. • Only one installation per premise. • To be located a minimum of 900mm from any property boundary. • Structurally adequate construction. 	
<p>Skylight Roof Windows – non opening including solar tube or similar type installations</p>	<ul style="list-style-type: none"> • Maximum area of skylight not to exceed 1.5m². • Located not less than 900mm from a property boundary and not less than 900mm from a wall separating attached dwellings. • Associated building work must not reduce the structural integrity of the building or involve structural alterations. • Any opening created by the installation to be adequately weatherproofed. • Installation to manufacturer’s instructions. 	
<p>Street Signs – comprising name plates, directional signs and advance traffic warning signs</p>	<ul style="list-style-type: none"> • Construction by or for Council. • Must be structurally sound. • To be designed, fabricated and installed in accordance with relevant SAA standards and RTA guidelines. 	
<p>Sunblinds attached to a building</p>	<ul style="list-style-type: none"> • Located only immediately above a window or door. • Must be located wholly within the property and behind the building line to any frontage. • Non-reflective surface finishes. • Not to reduce uncovered “principle private open space” to below the minimum area. • No signage or advertising to be displayed. 	<p>The sunblind should be securely attached to the building.</p>

Type of activity	Exemptions requirements	Advisory notes
Temporary Signs (a) Real Estate Signs	<ul style="list-style-type: none"> • Must not be illuminated. • Must be located wholly within the property being sold, leased or auctioned. • Must not exceed a height of 1.8m to the top of the sign measured from ground level and no returns exceeding 180mm. • Must be removed within 10 days of completion of same (exchange of contracts)/letting of the property. • Only permitted for a maximum period of 42 days. • Signs related to sale, lease or auction of a property for: <ul style="list-style-type: none"> (i) Residential Properties: <ul style="list-style-type: none"> - have a maximum area up to 2.5m²; - a limit of 1 sign per agent, per property. (ii) Non-residential Properties: <ul style="list-style-type: none"> - have a maximum size up to 2.5 x 1.8m; - limit of 1 sign per agent, per property. 	The word "property", in the case of strata development for the purpose of this schedule, refers to the whole of the land comprising the lots and common property, but does not refer to individual lots in a strata scheme.
(b) Development Site Signs	<ul style="list-style-type: none"> • For larger developments which may take 1-2 years to complete. Does not include sale, lease or auction signs. • Have a maximum area of up to 10m². • Only permitted for a maximum period of 1 year. • Must be located wholly within the property. 	
(c) Fabric Signs	<ul style="list-style-type: none"> • The display of short term fabric signs advertising special community events or activities to be limited to 28 days immediately prior to the event and shall be removed within 2 days of the conclusion of the event. • Maximum size up to 4m x 1.5m. • Any banner erected on private property or property of another State or Federal Authority must have the consent of the property owner. 	
(d) Community Signs	<ul style="list-style-type: none"> • Signs shall not be displayed for more than 4 weeks. • For any one event a maximum of 6 signs per organisation may advertise an event within the Camden area. • The content of such advertising shall be limited to event or activity details only (ie. no sponsorship identification). • No signs must exceed an area of 4m². • Banners must not interfere with vehicle or pedestrian safety. • Banners can be tied to trees but not nailed. • Any banner erected on private property or property of another State or Federal Authority must have the consent of the property owner. 	
(e) Sporting Venue Signs	<ul style="list-style-type: none"> • The display of temporary sponsorship banners shall be permitted within the boundary of the playing field on the day of the activity only. 	
(f) Safety House and Neighbourhood Watch Signs	<ul style="list-style-type: none"> • Standard signs only. • If attached to poles owned by Integral Energy, their consent must be obtained. 	
(g) Sponsorship Advertising	<ul style="list-style-type: none"> • Only for a club, community group, sporting group or similar organisations where the advertising sign or structure is for a special event or specific function/ activity is sponsored by an organisation external to the club. • Advertising space must be in keeping with the theme and character of the sign to a maximum of 20% of its total area. • At all times the sponsorship must be secondary to the main purpose of the advertising. 	

Type of activity	Exemptions requirements	Advisory notes
<p>Temporary Structures and Temporary Buildings:</p> <ul style="list-style-type: none"> • Builders shed • Portable toilets • Scaffolds • Marquees • Mini (stages) platform • Waste storage container (placed in public place) 	<ul style="list-style-type: none"> • Builders sheds, scaffolds and portable toilets are only to be associated with approved or certified building works and must be removed on completion of associated development or within six (6) months of placement, whichever is less. • Maximum height of the scaffold is to accommodate a two-storey development. • Located wholly within the property boundaries. • Mini stages are not to be in place for more than 1 week and are to have a maximum floor area of 12m². • Marquees are not to be in place for more than 1 week and are to have a maximum floor area of 25m². • The building must not be used for residential purposes or for the storage of or handling of inflammable materials. • Does not involve a building designed for residential purposes, alterations or additions to an existing building or a building more than 1 storey in height. • The waste storage container is in association with exempt development or works approved by Council. • Limit of one container to be placed in a public place. • A maximum period of 14 days from the date of placement of the container to the date of removal. • Waste containers are to be located and designed strictly in accordance with the guidelines of the Roads and Traffic Authority. • The container is to be of a light colour, have reflectors and should clearly display the name and address of the owner/proprietor. • The supplier of the waste container must ensure that there is a minimum \$10 million public liability/risk insurance cover for the placement of the waste container in a public place. • A minimum width of 1.5m wide strip shall be provided to enable safe pedestrian access. • Containers must not restrict access to services. For example, gas, water, electrical or phone. • Are setback a minimum of 3m from boundaries adjoining road reserves and 1m from every other lot boundary. 	
<p>Use of Land and Building (change of use):</p> <p>i) A Shop to Another Shop (not including new food shops)</p> <p>ii) An Office / Commercial Premises to Another Office / Commercial Premises</p>	<ul style="list-style-type: none"> • The new use is consistent with the classification of the building under the Building Code of Australia and replaces a former use being carried out in accordance with a development consent, and to be used for the purposes of: <ul style="list-style-type: none"> (a) a shop of a particular kind, (b) an office or commercial premises, (c) any of the specified uses, (d) the commercial premises is a premise in which there is : <ul style="list-style-type: none"> - no restricted publications as defined in the Indecent Articles and Classified Publications Act 1975 are shown, exhibited, displayed, sold or otherwise rendered accessible or available to the public, - no business to which s10 of that Act applies is conducted, - no business is conducted where an object of which is the display or exhibition of the article, within the meaning of the Act, that is primarily concerned with sexual behaviour, but is not printed matter. 	

Type of activity	Exemptions requirements	Advisory notes
iii) From an Industrial Use to Another Industrial Use	<p>(e) the current industrial use is lawfully approved and the building lawfully constructed to be used of the purposes of an industry where:</p> <ul style="list-style-type: none"> - it is not actually or potentially a hazardous or offensive industry, - it does not involve the handling, preparation or storage or food or sale or consumption, - it is not prohibited by any provision in an environmental planning instrument applying to the land, and - not more than 200m² of floor space is changed in use. <ul style="list-style-type: none"> • Written notice of the change of use is supplied to the Council seven (7) days prior to commencing works or beginning operations, including copies of approvals from any other approval body (such as the Trade Waste Authority). • The curtilage of the shop / premises is not used for storage or display purposes. • The shop / premises is not open outside the existing approved hours of operation. • All conditions that have previously been imposed on the use of the building or the use of the land that relate to: <ul style="list-style-type: none"> - the maintenance of landscaping, - the parking of vehicles, - the provision of space for the loading and unloading of goods or vehicles - environmental protection are adhered to. • The building or unit has a maximum area of 100m². • There is adequate space available for loading and unloading on the site. • There is no extension of hours outside the existing hours of operation, and not outside the hours of 6.00am to 6.00pm. • The use will not create any greater, different or additional potential hazard to the environment or the occupants of the building. • The use will not compromise the amenity of the locality in any greater, different or additional way, than the existing use. • The use will not require the upgrade of any fire safety, health, environmental or other standards. • The new use does not involve handling, storing or using hazardous chemicals or materials otherwise than on a domestic scale. 	
Water Tanks at/or Above Ground Level	<ul style="list-style-type: none"> • Maximum storage capacity of 10,000 litres. • Must comply with the requirements of clause 16 of SEPP 4. 	This exemption does not apply to tanks below ground or on land that requires excavation.

Type of activity	Exemptions requirements	Advisory notes
Windows, Glazed Areas and External Doors	<ul style="list-style-type: none"> • Replacement in residential premises with materials that comply with: <ul style="list-style-type: none"> a) AS1288 - Glass in buildings – Selection and Installation; and b) AS 2208 - Safety Glazing Materials for Use in Buildings (Human Impact Consideration) • No reduction in the area provided for light and ventilation is permitted and structural support members cannot be removed. • For commercial and industrial premises the reflectivity index shall not exceed 20%. 	<p>You are advised to consult a structural engineer, architect or building surveyor before commencing alterations to ensure compliance with the BCA and that works will not affect the structural stability of the building and to ensure the appropriate quality of glass and glazing is used for the window or doorway concerned especially as to whether safety glass is required and installed. The Work Cover Authority has advised that:</p> <ul style="list-style-type: none"> - Care should be taken in work involving the removal of lead contamination; - The Authority's "Guidelines for Practices Involving Asbestos Cement" should be referred to for any work involving asbestos cement.

Schedule 2: Complying Development

Development Type	Standards
Bed and Breakfast Accommodation	<ul style="list-style-type: none"> • The premises is lawfully approved for the purpose of a dwelling-house. • The establishment is operated solely by the permanent residents of the dwelling and does not employ persons not permanently residing on the site. • A maximum of 6 guests with the total number of occupants of the house not to exceed 12. • A minimum of 2 bathrooms. • On-site car parking to be provided (behind the building line in residential zones) on the basis of 1 space per guest room with such spaces sited so as to maintain the amenity and character of the locality and comply with Council's Development Control Plan • A smoke detector system that complies with AS3786-1993 – Smoke Alarms and AS3000-1991 – Electrical Installation for Buildings, Structures and Premises (the SAA wiring rules) is in the dwelling. • A fire extinguisher and fire blanket are in the kitchen. • Approval has been obtained from the owner's corporation, or the community, precinct or neighbourhood association, where a dwelling is subject to the Strata Schemes Management Act 1996 or the Community Land Management Act 1989. • Each guest bedroom is provided with space and facilities for occupants to store clothes and travel gear. • Each guest bedroom is provided with natural light and either natural or mechanical ventilation. • Flooring in guest bedrooms is able to be easily cleaned. • No key release deadlocks are fitted to guest bedrooms or exit doors. • Guest bedrooms are insulated from all noise generating sources in accordance with BCA requirements. • Only one external sign is provided on or behind the building line having a maximum area of 0.72m². • No food preparation in guest rooms. • A kitchen used for the preparation of guest's food shall satisfy the following requirements: <ul style="list-style-type: none"> - preparation benches are finished in a material that is durable, smooth and impervious to moisture and able to be easily cleaned. Floors and walls would need to satisfy the same requirements; - the wall above the kitchen sink and preparation benches shall be tiled to a minimum height of 450mm.
Change of Building Use From a Shop to an Office	<ul style="list-style-type: none"> • The external facade of the building shall not be altered. For example, there shall be no increases in window, door, wall and roof sizes. • No increase in the total floor area of the building. • Not to involve the carrying out of any alterations other than those exempted by this Plan. • No more than 200m² of net floor area. • The new use must replace a previous use already approved in a development consent. • All conditions that have previously been imposed on the use of the building or the use of the land that relate to: <ul style="list-style-type: none"> - the maintenance of landscaping; - the parking of vehicles; - the provision of space for the loading and unloading of goods and vehicles; and - environmental protection; are adhered to. • An Occupation Certificate and Fire Safety Certificate are issued prior to use of the building.

Development Type	Standards
<p>Detached Dwellings in Residential Zones</p> <p>Including:</p> <ul style="list-style-type: none"> • Erection of a detached dwelling • Alterations and additions to existing detached dwellings. • Carports and garages associated with an existing or proposed detached dwelling <p>Not including:</p> <ul style="list-style-type: none"> • Dual Occupancies; or • Studios 	<p>General:</p> <ul style="list-style-type: none"> • Minimum lot size: 450m² • Minimum lot width: 15m • Has a direct connection to a Sydney Water Sewer. • Complies with the deemed to satisfy provisions of the Building Code of Australia. • In areas proclaimed Mine Subsidence Districts, development proposals can only be of clad or veneer; proposals of full masonry construction require consent. <p>Architectural Design and Streetscape:</p> <ul style="list-style-type: none"> • The primary street facade must incorporate at least two of the following design features <ul style="list-style-type: none"> – entry feature or portico; – awnings or other features over windows; – balcony or window box treatment to any first floor element; – recessing or projecting architectural elements; – a variation in scale to adjoining properties; – open verandah; – mixture of building materials; – bay windows or similar features; – or verandahs, pergolas or similar features above garage doors. • The secondary street facade for a house on a corner lot must incorporate two of the following design features: <ul style="list-style-type: none"> – verandah; – gable; – vertical architectural elements to reduce the horizontal emphasis of the facade; – entry feature or portico; – balcony/window boxes or similar elements; or – landscaping/fencing compatible with the status of the surrounding streetscape. • Eaves are to provide sun shading and protect windows and doors. Eaves should have a minimum of 450mm overhang (measured to be fascia board) and be provided to a minimum of 70% of the dwelling. Alternative solutions to eaves are permitted so long as they provide appropriate sun shading to windows and are compatible with the building in terms of design, scale, materials and colour. • Proposed dwelling colours, materials and finishes are to be from a predominantly neutral palette of colours. Bright and highly reflective colours are to be avoided, except for architectural features. Multi-coloured roof tiles are not permitted. • Any additions to a dwelling, which are visible from a public place, shall have external finishes and a colour scheme which are compatible to those of the existing dwelling. • Complex roof forms should be avoided. The pitch of hipped and gable roof forms on the main dwelling house should be between 22.5 degrees and 34 degrees. Skillion roofs, roofs hidden from view by parapet walls, roofs on detached garages, studios and ancillary buildings on the allotment are excluded from this control. • Porticos and entry features are to be limited to one storey in height. • All main entries to dwellings are to be to the front / primary street only and not to side streets. <p>Front Setbacks:</p> <p><i>Lots 15m-20m wide:</i></p> <ul style="list-style-type: none"> • 4.5m to building facade line, upper and lower floor • 3.5m to articulation zone • 5.5m to garage line and 1m behind the building facade line <p><i>Lots >20m wide:</i></p> <ul style="list-style-type: none"> • 4.5m to building facade line, ground floor • 6m to building facade line upper floor • 3.5m to articulation zone • 5.5m to garage line and 1m behind the building facade line, extra 1m setback for a third garage

Development Type	Standards
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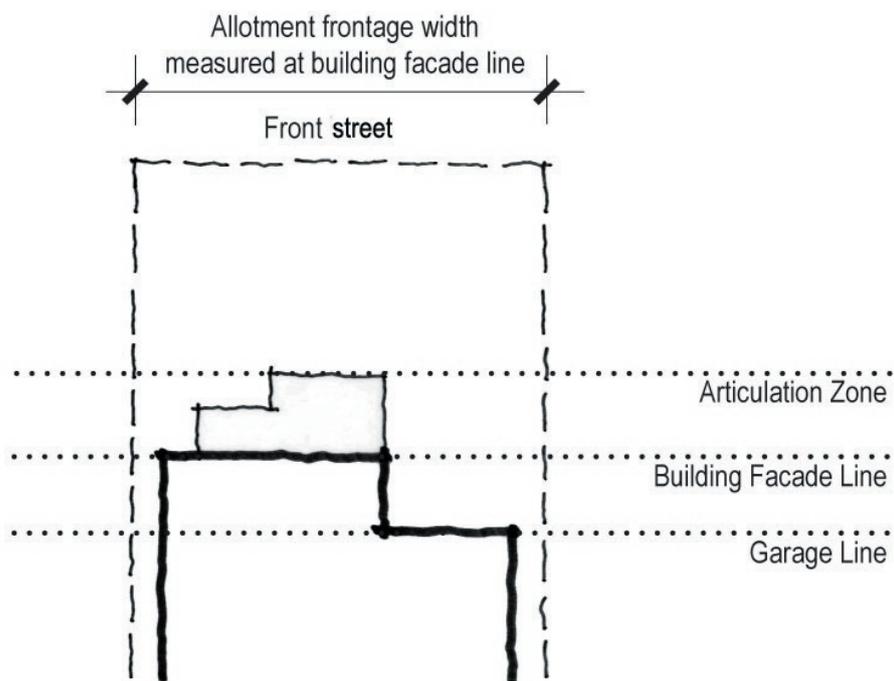


Figure C1 - Setback terms

- Elements permitted in the articulation zone include the following:
 - entry feature or portico;
 - awnings or other features over windows;
 - eaves and sun shading;
 - balcony or window box treatment to any first floor element;
 - recessing or projecting architectural elements;
 - open verandahs;
 - bay windows or similar features or
 - verandahs, pergolas or similar features above garage doors.

Side and Rear Setbacks:

- Projections permitted into side and rear setback areas include eaves, sun hoods, gutters, down pipes flues, light fittings and electricity or gas meters, rainwater tanks and hot water units.
- Side Setback Ground Floor – Side A: 0.9m, Side B: 0.9m
- Side setback Upper Floor – Side A: 0.9m, Side B: 1.5m
- ** See **Figure C2** for location of additional setback based on lot orientation
- The location of additional side setbacks is to be determined with regard to dwelling design, allotment orientation, adjoining dwellings, landscape features and topography. **Figure C2** contains the preferred locations of setbacks based on lot orientation.

Development Type	Standards
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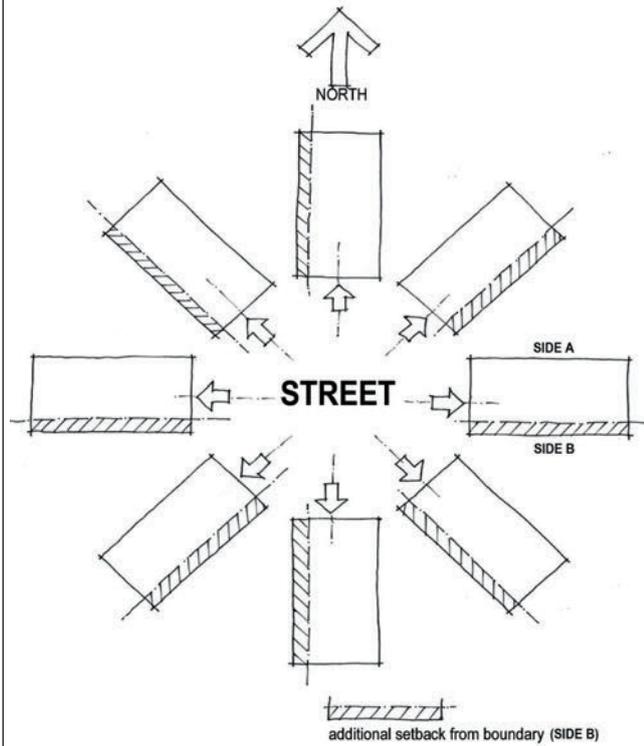


Figure C2 – Upper Level Setback Location Principles

Rear Setback:

- 4m, except for garages

Corner lots:

- Secondary street setback is 3m
- Splays on corner lots to be designed in accordance with **Figure C3**.

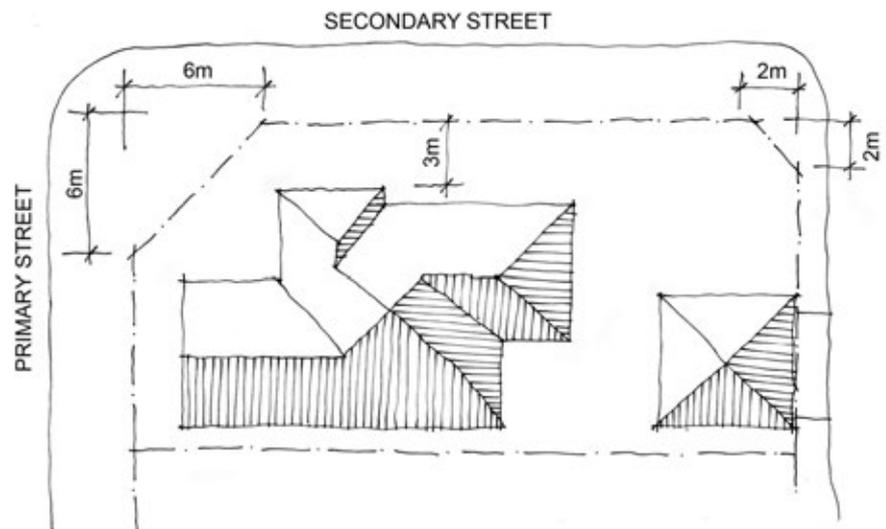


Figure C3 – Splays on corner lots

Zero Lot Line:

- Not permitted, except for garages facing a laneway/

Development Type	Standards
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Building Height and Form:

- Maximum two storeys except for those dwellings that are sited adjacent to noise attenuation barriers or on a battle – axe lot (except where the lot has direct access to open space) which shall be single storey.
- Lowest habitable floor is to be a maximum of 1m above natural ground level.
- The maximum distance between the natural ground level and the underside of the eaves is not more than 3.6m for a single storey house and 7.0m for a two storey house.
- The maximum distance between the natural ground level and the ridgeline of the roof shall be 8.5m.
- No basement areas are permitted.
- Two storey wall lengths shall not exceed 30% of the length of the adjacent side boundary where the setback to that boundary is less than 4.0m.

Private Open Space:

- Private open space for each dwelling at ground level is to contain a “principal private open space” (PPOS) area adjacent to a living room with a minimum area of 24m², a minimum dimension of 4m and being not steeper than 1:10 gradient. On steeper sites PPOS is to be terraced to provide useable space.
- 50% of the area of the PPOS should receive at least 3 hours of sunlight between 9am and 3pm at the winter solstice (21 June).
- Private open space shall be a minimum of 20% of the area of the allotment.
- Land less than 2.5m in width does not qualify as private open space.
- “Alfresco rooms” or “Outdoor rooms” and the like may be included in the calculation of Private Open Space.
- Private open space is to be located behind the building facade line.
- The location of PPOS is to be determined with regard to dwelling design, allotment orientation, adjoining dwellings, landscape features and topography. **Figure C4** contains the preferred locations of PPOS based on lot orientation.

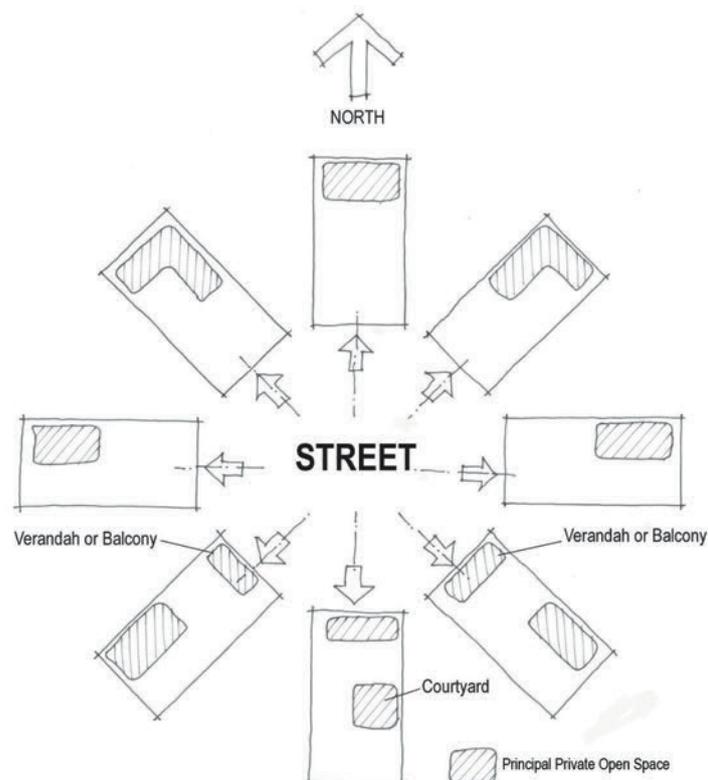


Figure C4 – Principal Private Open Space Location Principles

Development Type	Standards
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Site Cover and Landscape Area:

- A landscape area (see definition) at ground level shall be provided for each dwelling.
- The minimum landscaped area is 30% of the allotment area.
- The maximum site cover is 50% of the allotment area for the ground floor and 30% for the upper floor.
- Subsoil drains are to be installed around the perimeter of residences and connected to the stormwater system to prevent accumulation of water and concentration of salts.

Garages, Site Access and Parking:

Garages

- Garages are to have minimum clear internal dimensions of 3m width x 5.5m length for a single garage or 5.6m width x 5.5m length for a double garage.
- Carports and garages facing public streets are to be no more than 50% of the building façade width.
- External access is to be provided for vehicles and/or people to backyards, either through the garage or a path/driveway.
- Detached garages are not to exceed an area of 40m², be located behind the rear wall of the house and to have a setback of 900mm from boundaries, except for garages facing a laneway.
- On allotments >20m wide where triple garages are permitted the third garage is to be set back an additional 1m from the garage line.
- The location of driveways is to be determined with regard to dwelling design and orientation, street gully pits and tree bays and is to maximise the available on-street parking.
- **Figure C5** provides the preferred garage location based on the allotments orientation.

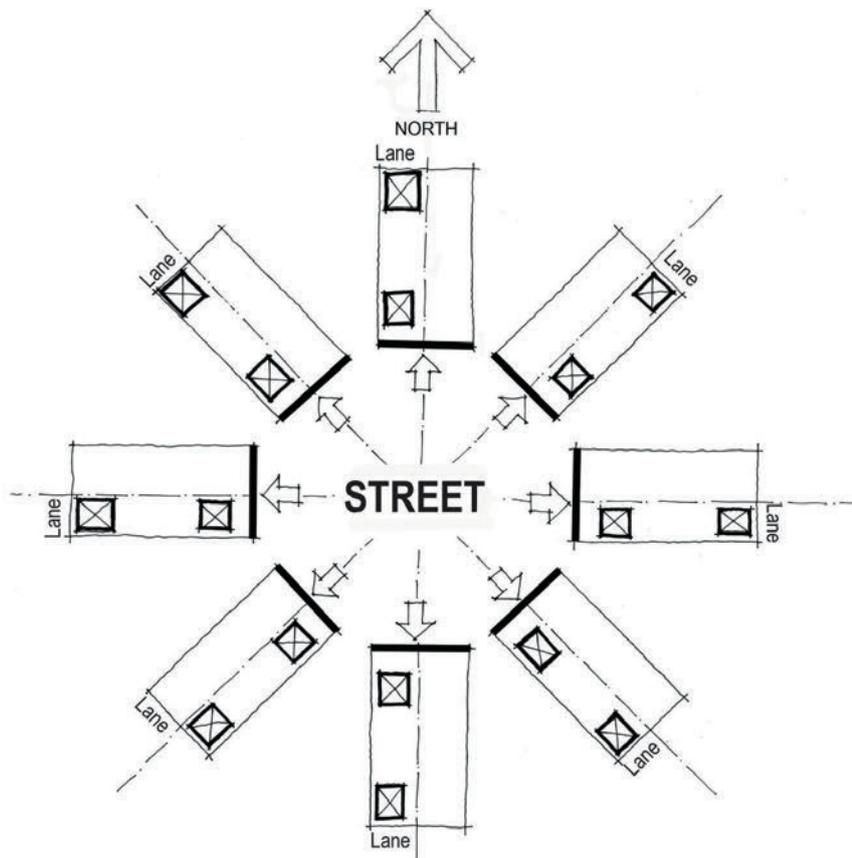


Figure C5 – Garage Location Principles

Development Type	Standards
	<p>Site Access:</p> <ul style="list-style-type: none"> • Driveways are to be a minimum of 1.0m clear of all drainage structures on the kerb and gutter and existing public utility infrastructure. • Driveways are to be a minimum of 1.5m clear of street trees • On corner lots driveways are to be a minimum of 6m from the point of intersection of the two property boundaries. • Driveways are to be in accordance with AS2890. • Footpath crossings are subject to an application to Council to undertake a Public Road Activity. <p>Car Parking:</p> <ul style="list-style-type: none"> • Two bedroom dwellings are to have a minimum of 1 garage space. • Three or more bedroom dwellings are to have a minimum of 2 garage spaces. <p>Fencing:</p> <ul style="list-style-type: none"> • Front fencing shall be a maximum of 1m high. Separate application is to be made for fences higher than 1m and for courtyard walls. • Side and rear fencing are to be a maximum of 1.8m high. • On corner lots fencing is not to exceed 1.8m high for more than one third of the secondary road frontage. • Side fences higher than 1m are not to extend past the Building Facade line or Garage building line. • Retaining walls, where cut is proposed on the boundary of a lot, are to be constructed with side fence posts integrated with its construction (relevant construction details required with retaining wall approval). Otherwise retaining wall must be located a minimum of 450mm from the side or rear boundary of the lot containing the cut. <p>Cut and Fill:</p> <ul style="list-style-type: none"> • The maximum fill permitted on a building platform is 500mm. • The maximum cut permitted on a building platform is 500mm. • Excavation or filling for the building platform not to exceed 2m beyond edge of building. • Maximum width between retaining walls is 500mm. <p>Visual Privacy:</p> <ul style="list-style-type: none"> • Living areas may be located on the first floor subject to all windows facing the street frontage. • Windows in a habitable room that is within 9m of, and allow an outlook to, a window of a habitable room in the neighbour's house shall: <ul style="list-style-type: none"> (a) be offset from the edge of one window to the nearest edge of the other by a distance of at least 0.5m, or (b) have sill heights of at least 1.7m above floor level, or (c) have fixed obscure glazing in any part of the window below 1.7m above floor level. <p>Floor to Ceiling Heights:</p> <ul style="list-style-type: none"> • 2.7m minimum for all ground floor habitable rooms. • 2.4m minimum for all upper floors and all non-habitable rooms • 1.5m minimum wall height at edge of room with a 30 degree minimum ceiling slope. <p>Awnings, Canopies and Storm Blinds:</p> <ul style="list-style-type: none"> • Additions comprising awnings, canopies and storm blinds attached to a dwelling house to a maximum area of 30m². <p>Energy Efficiency:</p> <ul style="list-style-type: none"> • A BASIX certificate within the meaning of the <i>Environmental Planning and Assessment Act Regulation 2000</i> shall be submitted with this application. <p>Drainage:</p> <ul style="list-style-type: none"> • Roofwater is to be collected by roof gutters and connected to a stormwater disposal system. • The areas surrounding any structure shall be graded to divert surface water to a public system (eg. Street) and clear of the proposed structures and adjoining premises. Where the water falls to the rear of the property, it shall be collected and drained via a gravity system to a Council stormwater line. • Appropriate measures shall be taken to collect and dispose of any stormwater, in a manner which does not adversely effect any adjoining property, ie. to a drainage structure or easement under the control of the Council.

Development Type	Standards
	<p>Tree Preservation:</p> <ul style="list-style-type: none"> Any proposed dwelling is to be situated outside of the drip line of any existing tree having a height greater than 3.5m other than where separate approval has already been obtained from Council for removal of the tree. No excavations will take place within 5m of any existing tree having a height greater than 3.5m other than where separate approval has already been obtained from Council for removal of the tree. <p>Sedimentation and Soil Erosion:</p> <ul style="list-style-type: none"> Adequate measures shall be installed on-site to minimise the processes of soil erosion and maintain water quality. The measures shall be in accordance with the Council's Sedimentation and Erosion Control Policy. <p>Salinity: The following construction inclusions shall be incorporated in the building design to reduce/prevent any detrimental affect to the building from accumulative salt deposits;</p> <ul style="list-style-type: none"> provide a damp proof barrier with high impact resistance to under slab in accordance with the NSW provisions of part 3.2.2.6 of the Building Code of Australia, concrete strength to bored piers, floor slabs and strip footings shall be a minimum of 32mpa and vibrated, and adequately cured, drainage shall be provided to the building perimeter including subsoil drainage to prevent water pondage or soil water logging in the building vicinity, and adequately cured, external finished ground level including paving should not be higher than the base of the first course of brick work or the brick work and mortar below damp proof course should be exposure rated, <p>Damp proof course material must be carried through to the face of any applied finishes. Retaining walls should be built of salinity resistant materials.</p>
<p>Minor Boundary Adjustments</p>	<ul style="list-style-type: none"> The adjustment will not result in any building/structures contravening the deemed-to-satisfy provisions of the Building Code of Australia, eg. egress, fire rating, fire fighting facilities. The adjustment will not create any additional allotments. The adjustment will not result in any building contravening the conditions of any development consent applying to the site. The adjustment will not result in any variation to the minimum lot size, setbacks or maximum site coverage requirements appropriate to the zone and nature of development as specified in any part of this Plan applying to the site. There is no need to create an 88B instrument, eg. extend any easement to the physical or legal access to the lot. No requirement is created to alter infrastructure, such as services or drainage on to the lot i.e., no public utilities are needed to be extended or amplified if existing lots are serviced. Must comply with the requirements of the Conveyancing Act. Will not straddle any easement. Maximum variation of 5% of lot area.

Development Type	Standards
<p>Swimming Pools and/or Spas</p>	<ul style="list-style-type: none"> • Ancillary to a dwelling for private use only and on lots over 450m². • The land has a direct connection to a Sydney Water Sewer or an unsewered allotment has an area of 5,000m² or greater. <p><u>The Swimming Pool Act 1992</u></p> <ul style="list-style-type: none"> • All aspects of the swimming pool isolation fencing shall comply with the Swimming Pool Act 1992 and Regulations and AS 1926 – 1986 “<i>Fences and Gates for Private Swimming Pools</i>”. <p><u>Siting</u></p> <ul style="list-style-type: none"> • The structure is not between the dwelling and the front property boundary. • The waterline of the pool must be a minimum of 1.5m from a side or rear boundary or located no closer than 5.0m from a side or rear boundary on lots 2000m² or greater. • All coping or decking around the structure is no more than 500mm above the existing ground level. • Above ground pools are to be no more than 1.2m above natural ground level with no attached decking. • Must not be located within a septic disposal area. • Shall not be located within 6.0m of the rear property boundary, on lots between 350²m and 900m², unless the structure is the only structure within 6.0m of the rear property boundary. <p><u>Pool/Spa Design</u></p> <ul style="list-style-type: none"> • The swimming pool isolation fencing and ancillary items shall be installed in accordance with the provisions of AS1926 – 1986 “<i>Fences and Gates for Private Swimming Pools</i>”. • Location of fencing for private swimming pools shall comply with the requirements of the Swimming Pools Act 1992. • The installation and construction of the pool complies, where relevant, with: <ul style="list-style-type: none"> - AS/NZS 1838:1994 – Swimming Pools – remoulded fibre-reinforced plastics – Design and Fabrication, and AS/NZS 1839:1994 – Swimming Pools – pre-moulded fibre-reinforced plastics – installation, or - AS2783-1992 – Use of reinforced concrete for small swimming pools. • The pool shall not be used for commercial purposes. <p><u>Noise</u></p> <ul style="list-style-type: none"> • Noise level of any filtration equipment or pumps not to exceed 5dB(A) above background noise level measured at the property boundary during the hours 7.00am to 10.00pm and no exceedance of noise level above the background noise level during the hours 10.00pm to 7.00am. <p><u>Site Cover, Landscaped Area and Private Open Space</u></p> <ul style="list-style-type: none"> • All requirements for site cover, landscaped area, and private open space are to be achieved. <p><u>Drainage and Wastewater</u></p> <ul style="list-style-type: none"> • The areas surrounding the pool structure shall be graded to divert surface and splash water to a surface water collection point connected to a stormwater drainage system and clear of the proposed structures and adjoining premises. • All swimming pool wastewater must be disposed of to the sewers of Sydney Water. <p><u>Cut and Fill</u></p> <ul style="list-style-type: none"> • The maximum cut and fill at coping level permitted for the construction of a pool is 500mm (not pool shell excavation). • The maximum cut/fill permitted on the whole of a building platform is 500mm. <p><u>BASIX</u></p> <ul style="list-style-type: none"> • A BASIX certificate within the meaning of the Environmental Planning and Assessment Act Regulation 2000 shall be submitted with this application where applicable. <p><u>Sediment and Soil Erosion</u></p> <ul style="list-style-type: none"> • Adequate measures shall be installed on-site to minimise the processes of soil erosion and maintain water quality. The measures shall be in accordance with Council’s Sedimentation and Erosion Policy. <p><u>Tree Preservation</u></p> <ul style="list-style-type: none"> • Any proposed pool or spa is to be situated outside of the drip line of any existing tree having a height greater than 3.5m other than where separate approval has been obtained from Council for removal of the tree. • No excavations will take place within 5m of any existing tree having a height greater than 3.5m other than where separate approval has already been obtained from Council for removal of the tree.

Schedule 3: Complying Development Certificate Conditions

The following list of conditions contain the General Conditions' applicable to all Complying Developments and also 'Supplementary Conditions' The Supplementary Conditions are relevant to specific development categories and must be added to the general conditions depending on the development category.

General Conditions for all Categories of Complying Developments

Prior to Work Commencing

1. At least two days before any site works, building or demolition begins, the applicant must:
 - (a) forward Notice of Commencement of Work and Appointment of Principal Certifying Authority (Form 7 of the EP&A Regulations available from your principal certifier) to the Council, and
 - (b) inform the adjoining owners in writing that work will commence.
2. Before any site works, building or demolition begins, the applicant must:
 - (a) Notify the Council in writing of the name, address, phone number and licence number of the builder;
 - (b) Pay to Council relevant fees in accordance with its current fees and charges;
 - (c) Erect a sign at the front of the property clearly showing:
 - the name of the owner, builder, builder's licence number, site address and consent number,
 - a statement that unauthorised entry to the work site is prohibited,
 - the name of the person in charge of the work site and a telephone number at which that person can be contacted outside working hours;

Note: This requirement does not apply to building works carried out inside of an existing building or on premises that are occupied continuously, both during and outside work hours, while the work is being carried out.

- (d) Erect at the front of the property the standard Council sign indicating the approved hours of operation;
- (e) Provide on-site toilet facilities at the rate of one toilet for every 20 persons or part of 20 persons employed at the site;
- (f) If an excavation associated with the development extends below the level of the base of the footings of a building or a structure on an adjoining allotment of land (including a public road and any other public place):
 - preserve and protect the building from damage, and
 - if necessary, underpin and support the building in an approved manner, and
 - at least seven (7) days before excavating below the level of the base of the footings of a building or a structure on an adjoining allotment of land, give notice of intention to do so to the owner of the adjoining allotment of land and furnish particulars to the owner of the building being erected or demolished;

Note: The owner of the adjoining allotment of land is not liable for any part of the cost of work carried out for the purposes of this clause, whether carried out on the allotment of land being excavated or on the adjoining allotment of land. In this clause, allotment of land includes a public road and any other public place.

- (g) Erect a hoarding or fence between the work site and any public place, if the work involved is likely to cause pedestrian or vehicular traffic in a public place to be obstructed or rendered inconvenient, or involves the enclosure of a public place;
- (h) If necessary, a hoarding is to be erected, sufficient to prevent any substance from, or in connection with, the work falling into the public place;
- (i) The work site must be kept lit between sunset and sunrise if it is likely to be hazardous to persons in the public place;
- (j) Follow any other conditions prescribed by the Regulation;

- (k) Provide protection for Council footpaving, kerbing and guttering. Wooden mats must also be provided at all entrances where the site fronts paved footpaths.

This item does not impose a requirement on an applicant if it is complied with by the builder.

Site Management

3. Run-off and erosion controls must be implemented to prevent soil erosion, water pollution or the discharge of loose sediment on the surrounding land, as follows:
 - divert uncontaminated run-off around cleared or disturbed areas, and
 - erect a silt fence to prevent debris escaping into the drainage systems or waterways, and
 - prevent tracking of sediments by vehicles onto roads, and
 - stockpile topsoil, excavated material, construction and landscaping supplies and debris within the site.
4. Removal or disturbance of topsoil must be confined to within 3m of the proposed building and within the confines of the property.
5. All soil erosion measures required to be put in place prior to the commencement of construction works are to be maintained during the entire construction period until disturbed areas are restored by turfing, paving or revegetation. On-the-spot fines may be issued where maintenance of measures is inadequate.
6. To reduce nuisance to the surrounding properties, the site shall be kept clean and tidy during the construction period. Builder's refuse disposal and storage facilities are to be provided on the development site for the duration of construction works with all rubbish being removed from the site upon completion of the project.
7. All excavations and backfilling associated with the erection of a building must be executed safely and in accordance with appropriate professional standards.
8. All excavations associated with the erection or demolition of a building must be properly guarded and protected to prevent them from being dangerous to life or property.

Hours of Work

9. For the purpose of preserving the amenity of neighbouring occupations, building work including the delivery of materials to and from the site is to be restricted to the following hours:
 - (a) 7.00am and 6.00pm, Mondays to Fridays (inclusive);
 - (b) 7.00am to 4.00pm, Saturdays;
 - (c) prohibited on Sundays and Public Holidays.

Drainage

10. The land surrounding any structure must be graded to divert surface water to the street or public system, or natural water course and must be clear of existing and proposed structures and adjoining premises.
11. Where the water falls to the rear of the property, it must be collected and piped via a gravity system directly to a Council stormwater system or natural water course.

Roadworks

12. The applicant is to arrange with the relevant public utility authority for the alteration or removal of any affected services in connection with the development. Any such work must be carried out at the applicant's expense.
13. The applicant is to submit to Council an application for a road opening permit when the drainage connection into Council's system is within the road reserve. In this regard the applicant shall pay to Council a road opening fee in accordance with the Council's current fees and charges.

Additional road opening permits and fees may be necessary where there are connections to public utility services (eg. telephone, electricity, sewer, water or gas) required within the road reserve.

Compliance with Building Code of Australia

14. All building work must comply with the deemed-to-satisfy provisions of the BCA.
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Inspections During Construction

15. The building works are to be inspected during construction, by the Council (where Council is the principal certifying authority) or by an accredited certifier and documentary evidence of compliance with the relevant terms of the approval/standards of construction detailed in the BCA, is to be obtained prior to proceeding to the subsequent stages of construction, encompassing not less than the following key stages:

- sediment and erosion control, site works and site set out, before building starts,
- PRIOR to concreting of pier holes,
- all trenches and steel reinforcement PRIOR to pouring of concrete,
- framework, when complete, PRIOR to the fixing of floor, wall, ceiling and roof finishes,
- wet areas, after the placement of damp proof and flashing courses,
- stormwater and drainage lines and pits PRIOR to backfilling,
- completion of all works and PRIOR to occupation/use of the structure.

Copies of the above stated documentary evidence are to be submitted to the principal certifying authority upon completion of each specified stage of construction and prior to occupation of the building.

In addition, the person carrying out the inspection is required to ensure that adequate provisions are made for the following measures during every stage of construction, to ensure compliance with the approval and documentary evidence of compliance is to be provided to the satisfaction of the principal certifying authority:

- sediment control measures,
- public safety,
- fences or hoardings.

16. The applicant must notify either the Council (where Council is the principal certifying authority) or an accredited certifier in advance (at least 48 hours in writing or 24 hours by phone) to inspect the building works.

Survey Certificate

17. The following survey certificates must be given to the principal certifying authority, at the following stages, where 1% AEP flood level is within 3.0m (horizontally) of the property boundary:
- on completion of floor slab framework before concrete is poured, detailing the location of the structure to the boundaries, and
 - at completion of the lowest floor, confirming that levels are in accordance with the complying development certificate (which levels must relate to the datum shown on the complying development certificate).

Safety

18. Fire safety measures must be included.

Site Access

19. Driveways are to be a minimum of 0.5m clear of all drainage structures on the kerb and gutter and are not to interfere with the existing public utility infrastructure, including Council drainage structures, unless prior approval is obtained from the relevant authority.
20. Finished street levels shall not be assumed. The owner or builder must make application to Council's Works Division for street levels.
21. Driveways are to be located a minimum of 6m from the intersection of property boundaries.
22. Driveways are to be constructed in accordance with any relevant requirements of AS 2890.1 Second Edition 1993, with appropriate transition zones.
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Removal of Temporary Buildings

23. Builder's sheds, scaffolds and portable toilets must be removed on completion of associated development or within six (6) months of placement, whichever is less.

Payment of Fees

24. The evidence of the relevant payments shall be included in the submission of the complying development certificate to Council:
- Road opening fee
 - Long Service Levy
 - Microfilm and storage fees
 - Gutter and footpath crossing fees (work done privately).

Occupation Certificate

25. An occupation certificate is to be obtained prior to the occupation of a new building or addition.

Supplementary Conditions Involving Residential Development

Prior to Work Commencing

26. Building work that involves residential building work (within the meaning of the Home Building Act 1989) must not be carried out unless the principal certifying authority for the development to which the work relates:

- (a) in the case of work to be done by a licensee under that Act:
 - (i) has been informed in writing of the licensee's name and contractor licence number, or
 - (ii) is satisfied that the licensee has complied with the requirements of Part 6 of that Act, or
- (b) in the case of work to be done by any other person:
 - (i) has been informed in writing of the person's name and owner-builder permit number, or
 - (ii) has been given a declaration, signed by the owner of the land, that states that the reasonable market cost of the labour and materials involved in the work is less than the amount prescribed for the purposes of the definition of owner-builder work in section 29 of that Act,

and is given appropriate information and declarations under paragraphs (a) and (b) whenever arrangements for the doing of the work are changed in such a manner as to render out of date any information or declaration previously given under either of those paragraphs.

A certificate purporting to be issued by an approved insurer under Part 6 of the Home Building Act 1989 that states that a person is the holder of an insurance policy issued for the purposes of that Part is, for the purposes of this condition, sufficient evidence that the person has complied with the requirements of that Part.

Fire Safety

27. An automatic fire detection alarm system is to be installed in every dwelling and must comply with the requirements of Part 3.7.2.2 of the BCA – Housing Provisions.

Note: A smoke detector system complying with AS 3786 and connected to the mains electrical power with standby power (battery backup) located outside the entrance to each bedroom and in any storey.

28. The applicant is required to provide certification to the principal certifying authority prior to the issue of an occupation certificate that the fire detection and alarm system:
- (a) has obtained the relevant standards mark approval and complies with AS 3786;
 - (b) has mains electrical wiring and standby power source;
 - (c) protects every bedroom or group of bedrooms from the remainder of the building; and
 - (d) protects every storey of the building.
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Supplementary Conditions Involving the Use Of Commercial Premises

29. No signs or goods are to be displayed or trading of any description is to be carried out on the public road, public footpath, service land, customer and/or employee parking area, the driveways or pedestrian walkways outside or in the immediate vicinity of the premises.
30. Business is to be conducted and patrons are to be controlled at all times so that no interference occurs to the amenity of the adjoining occupations.
31. Emission of sound from the premises shall be controlled at all times so as not to unreasonably impact upon nearby owners/occupants. If an intruder alarm is installed on the premises it shall be fitted with a timing device in accordance with the requirements of the Protection of the Environment Operations Act, 1997.

Refuse and Trade Waste

32. Refuse and trade waste material shall be stored in an area outside the building and suitably screened and is to be removed from the premises at regular intervals.
33. All medical waste is to be safely stored within the building until removed at regular intervals by a medical waste transporter holding a current licence to transport medical waste as issued by the Environmental Protection Authority. All used sharps are to be stored in purpose designed containers to prevent needle stick injury.

Food Premises

34. Premises used in the manufacture, preparation, storage, packaging or cartage of food shall be maintained in their "as approved" form in compliance with the Food Act 1989 and Regulations thereunder, and Council's Code for Food Premises.

Supplementary Conditions Involving Domestic Swimming Pools

Inspection of Works – Swimming Pool

35. The building works are to be inspected during construction, by the Council or by an accredited certifier and documentary evidence of compliance with the relevant terms of the approval/standards of construction detailed in the BCA, is to be obtained prior to proceeding to the subsequent stages of construction, encompassing not less than the following key stages:
 - (a) the pool excavation with steel in position prior to the spraying of concrete;
 - (b) the excavation prior to the pool being placed in position;
 - (c) bond beam prior to placement of concrete;
 - (d) the pool safety fencing prior to filling the pool with water;
 - (e) the pool and associated works prior to use.

Copies of the above stated documentary evidence are to be submitted to the principal certifying authority upon completion of each specified stage of construction and prior to occupation of the building.

In addition, the person carrying out the inspection is required to ensure that adequate provisions are made for the following measures during every stage of construction, to ensure compliance with the approval and documentary evidence of compliance is to be provided to the satisfaction of the principal certifying authority:

- (a) sediment control measures
 - (b) public safety
 - (c) fences or hoardings.
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36. To provide for the safety of small children, the Swimming Pool Act 1992, requires that the owner of premises must ensure that the swimming pool is at all times surrounded by a child-resistant barrier that:
- (a) separates the swimming pool from any residential building situated on the premises and from any place (whether public or private) adjoining the premises; and
 - (b) is designated, constructed, installed and maintained in accordance with the standard prescribed by the regulations.

The fence must be a minimum 1.2m high and fitted with a self-closing and self-locking device prior to filling the pool with water. The fence must swing outwards.

37. Pump Sound Insulation - For the prevention of noise nuisances approved means of sound insulation must be provided to the swimming pool filtration pump.

The noise emission from the pool pump when measured 1.0m from a neighbours dwelling must not exceed 5dB(A) above the background noise level.

Supplementary Conditions Involving Minor Boundary Adjustments

38. The applicant must obtain a section 73 compliance certificate under the Sydney Water Act 1994 from Sydney Water. The Certificate must be obtained to satisfy the Principal Certifying Authority prior to the release of the Plan of Subdivision.

Appendix D

APPENDIX D: Complying Lot Provisions

The objective of the Complying Lot Provisions is to identify at subdivision stage lots that comply with the locational requirements for Complying Development so that the process for a complying dwelling is simplified.

A Development Application for subdivision proposing residential lots shall be accompanied by a subdivision plan that identifies those lots that comply with the locational requirements for complying development (complying lots). The locational requirements for complying development are listed in the checklist below. The development application shall be accompanied by a completed checklist and a list of the lot numbers of the complying lots.

Before granting consent to the subdivision application, the consent authority shall be satisfied that the lots marked on the subdivision plan are complying lots. The development consent for subdivision shall include the plan that marks the complying lots. A Section 88B instrument for the subdivision shall include a note identifying the complying lots.

*Note 1: An accredited certifier considering a complying development application for a dwelling on a complying lot need only refer to Schedule 2 of **Appendix C** which applies to the building and design requirements for a complying dwelling.*

Note 2: Complying development may be achieved on a lot that is not identified as a Complying Lot if the restrictions on the lot (such as a drainage easement) are not affected by the proposed complying development.

Complying Lot Checklist

Part A: To be a complying lot a “yes” is required for the following:	Yes	No
Is the land zoned Residential R1 or R3?		
Is the lot 450m ² or greater with a width (measured at the building facade line) of 15m or greater?		
Is the lot above the 1% AEP flood level?		
Does the lot have a slope of less than 1:6?		
Is the lot at least 40m away from the top of bank of a natural watercourse?		
If required, has or will the lot be remediated to be made suitable for the use?		
Have all conditions of any development consent applying to the land been complied with?		
Are all of the above ticked “yes”?		
Part B: To be complying lot a “no” is required for the following:	Yes	No
Are there restrictions on the land (eg a S88B and/or S88E instrument; drainage easement)?		
Is the lot within or directly adjacent to an identified Aboriginal Conservation Area?		
Does the lot contain a Riparian Protection Area?		
Does the lot contain a heritage item under the SEPP or under an order to which the Heritage Act applies?		
Does the lot contain a tree or bushland?		
Is the lot identified on a National Parks and Wildlife Register?		
Is the lot within 500m of a sewage treatment plant?		
Is the lot within an identified odour buffer to a poultry farm?		
Are all of the above ticked “no”?		