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1.0 INTRODUCTION

Landscaping involves the treatment of an area that combines plants and materials to enhance the visual and climatic aspects of a development site. The integration of well-designed landscape treatments is essential in maintaining and strengthening the green subtropical character of Brisbane City.

The planting details that are provided in this chapter are only a guide. As each site has individual and unique characteristics, these should be considered in the landscaping design. Street landscaping proposals should generally conform to the following documents:

- *Administrative Policy AP154 Street Trees* (Brisbane City Council).
- *Centres Detail Design Manual* (Brisbane City Council).
- *Street Tree Management Plans* (Brisbane City Council).
- *Native Plants of Brisbane Lists* (Joint Council/Greening Australia publication).

Fully detailed landscape drawings should be prepared by a suitably qualified Landscape Architect or Designer, and submitted to Council Delegate for approval.

2.0 DESIGN PRINCIPLES

2.1 PLANTING AREAS

Planting areas (or garden beds) on the verge/footpath, containing small shrubs and groundcovers, will only be approved at feature locations or where the design of the site lends itself to a planting area or landscaped area. High maintenance plants will not be accepted. Small planting areas, typically 2-3 m length x 1.2 m width, are permitted around the trunk of street trees (refer Standard Drawing UMS 513). Approved edge restraints should be constructed flush with the surrounding ground around the perimeter of all planting areas.

2.2 PLANT CHARACTERISTICS

The form, texture and colour of plants play an essential role in creating character and interest within a landscape. Plants with structured geometric shapes are suitable for formal landscapes whereas a more natural landscape can be achieved with the use of plants with looser shapes. The selection of plants should also reflect the purpose/function required, for example, providing shade and the required maintenance characteristics.

2.3 MAINTENANCE ISSUES

Maintenance aspects that would need to be considered would generally include:

- The provision of long life plants rather than short life.
- Species choice should match the planting space available. Adequate space should be provided to allow root growth to proliferate within the space, and not into adjacent surfaces/structures.
- Minimum watering and pruning.
- No interference with existing above and below ground services, signage, street lighting, footpath, kerb and channel, structures, road structure and surface, etc.
- Subsurface drainage from medians and traffic islands discharging to an enclosed pipe system.



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3.0 STREET TREES

3.1 GENERAL

Street trees should provide the following features:

- Significant existing trees should be identified and incorporated into parkland and road reserve planting where possible.
- Avenues of consistent species where possible, allowing for use of individual feature trees at focal points like roundabout, ends of a local access road, medians of main collector road, etc.
- Species chosen should reflect the character and site conditions of the area. The species choice should be appropriate for the available space allowing for future growth including root development.
- Planting techniques should incorporate containment of root growth where necessary. Setback from the kerb should be sufficient to enable safe access and exit from parked vehicles and clear visibility at driveway crossovers and at pedestrian crossings. Consideration should be given to the location of underground services, street lights, and traffic signs. Refer Standard Drawings UMS 511, UMS 512, UMS 513, UMS 514 and UMS 515 for tree planting detail under different conditions.

Currently Developers can either:

- Contribute to the cost of planting and establishing street trees. The amount is calculated by a rate per allotment that provides for one tree per allotment, planted by Council when the development is complete and houses are substantially built.
- Undertake their own tree planting with a 12 month maintenance period. A road reserve landscaping plan showing existing and proposed trees, location of street lights, driveways, services, etc, should be submitted and approved (prior to planting) by Council. The minimum stock size (250 mm pot), quality of plants, planting and after care should conform to Council requirements. Damaged trees should be replaced.

3.2 LOCATIONS

Street trees are usually planted at 2.95 m (applicable to 3.75 m verge width) and 3.27 m (applicable to 4.25 m verge width) from the real property alignment. Also refer Standard Drawings UMS 121, UMS 122, UMS 123 and UMS 124. The location should accommodate the ultimate size and shape of the tree.

Planting should be avoided in the following areas:

- Within 3 m of a power pole (< 110 kV) or pad mounted transformer or driveway or invert crossing or inspection boxes or fire hydrants or water valves.
- Within 5 m from the departure side of a pedestrian crossing.
- Within 7 m of a street light or traffic signals or 110 kV concrete power pole (contact Energex to locate earth cable). Also contact Energex for appropriate planting clearance distances from substations.
- Within 10 m of the departure corner.
- Within 15 m of the approach side of a pedestrian crossing and from the approach corner.
- Within 20 m from the approach to a bus stop and 6 m from the departure side.
- Within the verge where adjoining parkland. In this circumstance, trees should be planted within the park along the real property alignment of the park (also refer to Chapter 8 of Part B of this document).



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- Within 1.5 m of a property service connection (such as roofwater, gas, sewer, water, telecommunications, electricity).
- Narrow verges and medians less than 2.5 m wide.
- Within 450 mm from the kerb and channelling.

The recommended spacing between trees is 7 m for a small crown width, 10 m for a medium crown width, and 15 m for a large crown width.

3.3 SPECIES

This section outlines the tree species that should be considered for any landscaping within the road reserve. The species list is subject revision on an annual basis and should also be used in conjunction with the *Street Tree Master Plan*. For more information regarding the street tree list, contact Council's Vegetation and Pest Services.

Root barriers should not be used as a band-aid to bad species choice or inadequate root zone space. Root barriers deflect roots, and they will not work unless the top side of the deflector is above the surface.

3.3.1 Large Crown Trees

Large crown width spreading canopy trees (centrally planted) are suitable for verges and medians exceeding 7 m width. The minimum unpaved area should be 6 m² (this area can be grated or companion planted) and the available root zone should not be less than 10 m³. The following tree species are acceptable:

<i>Ficus microcarpa var. hillii</i>	Hill's fig
<i>Ficus obliqua</i>	Small-leaved fig
<i>Ficus benjamina</i>	Weeping fig
<i>Delonix regia</i>	Poinciana
<i>Jacaranda mimosaeifolia</i>	Jacaranda

In order to reduce infrastructure maintenance, the location of particular tree species within the development should be carefully considered. For example fig trees should not be planted near buildings or near kerb and channel or constructed footpaths, due to their extensive roots.

3.3.2 Medium Crown Trees

Medium crown width spreading canopy trees (centrally planted) are suitable for 2.5-7 m wide verges. The minimum unpaved area should be 1.5 m² (this area can be grated or companion planted) and the available root zone should not be less than 5 m³. The following tree species are acceptable:

<i>Caesalpineia ferrea</i>	Leopard tree
<i>Waterhousea floribunda</i>	Weeping lilly pillly
<i>Harpullia pendula</i>	Tulipwood
<i>Cassia siamea</i>	Cassod tree
<i>Tabebuia rosea</i>	Pink trumpet tree
<i>Peltophorum pterocarpum</i>	Yellow poinciana
<i>Tamarindus indica</i>	Tamarind
<i>Schotia brachypetala</i>	Kaffir bean
<i>Flindersia schottiana</i>	Bumpy ash



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3.3.3 Upright/ Columnar/ Elliptical Trees

Upright/columnar/elliptical trees with small crown width are suitable for planting within median strips. The following tree species are acceptable:

<i>Lophostemon confertus</i>	Brush box
<i>Melaleuca leucadendra</i>	Weeping paperbark (fine & broad leaf forms)
<i>Melaleuca quinquenervia</i>	Paperbark tea tree
<i>Melaleuca viridiflora</i>	Broad leaved paperbark
<i>Grevillea baileyana</i>	White oak
<i>Flindersia australis</i>	Crow's ash
<i>Casuarina cunninghamiana*</i>	River sheoak
<i>Casuarina glauca*</i>	Swamp sheoak
<i>Mellicope elleryana</i>	Butterfly tree
<i>Pittosporum rhombifolium</i>	Queensland pittosporum
<i>Syzygium luehmannii</i>	Lilly pilly
<i>Syzygium francissii</i>	Water gum

* Median strips only, not verges

3.3.4 Small-Medium Crown Trees

Small-medium crown trees with rounded canopies are suitable for planting within traffic islands and speed control devices, and on verges with overhead power lines. The following tree species are acceptable:

<i>Buckinghamia celsissima</i>	Ivory curl flower
<i>Callistemon salignus</i>	White bottle brush
<i>Callistemon eureka</i>	Pink bottle brush
<i>Cupaniopsis anacardioides</i>	Tuckeroo
<i>Tabebuia palmerii</i>	Pink trumpet tree
<i>Tabebuia argentea</i>	Silver trumpet tree
<i>Tabebuia pallida</i>	Cuban pink trumpet tree
<i>Pongamia pinnata</i>	Native wisteria
<i>Backhousia citriodora</i>	Lemon scented ironwood
<i>Xanthostemon chrysanthus</i>	Golden penda

3.3.5 Upright Feature Trees

Feature trees (centrally planted) are suitable for planting inside roundabouts. The minimum planting space should not be less than 5 m wide. The following tree species are acceptable:

<i>Araucaria cunninghamii</i>	Hoop pine
<i>Araucaria heterophylla</i>	Norfolk Island pine
<i>Grevillia robusta</i>	Silky oak
<i>Brachychiton acerifolius</i>	Flame tree
<i>Agathis robusta</i>	Kauri pine



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4.0 SHRUBS AND GROUNDCOVERS

This section provides an indicative list of shrubs and groundcovers that are acceptable to Council.

4.1 SMALL TREES OR LARGE SHRUBS

<i>Syzygium</i> "Aussie Compact"	Aussie compact
<i>Syzygium</i> "Aussie Boomer"	Aussie boomer
<i>Syzygium</i> "Elite"	Elite
<i>Banksia integrifolia</i>	Coastal banksia
<i>Melaleuca tamariscina</i> var. <i>irbyana</i>	Broombrush
<i>Callistemon polandii</i>	Red bottlebrush
<i>Tristanopsis laurina</i>	Water gum

4.2 SHRUBS WITH SCULPTURAL FORMS

<i>Syzygium</i> "Bush Xmas"	Bush Xmas
<i>Syzygium</i> "Tiny Trev"	Tiny Trev
<i>Doryanthes palmeri</i>	Spear lily
<i>Crinum pedunculatum</i>	Swamp lily
<i>Agave attenuatum</i>	Agave
<i>Dietes grandiflora</i>	Wild iris
<i>Strelitzia reginae</i>	Bird of paradise
<i>Agapanthus africanus</i>	African lily
<i>Cycas revoluta</i>	Japanese sago palm

4.3 GENERAL SHRUBS

<i>Baeckea virgata</i>	Baeckea
<i>Callistemon pachyphyllus</i>	Swamp bottle brush/red, green bottlebrush
<i>Callistemon</i> "Wildfire"	Wildfire bottlebrush
<i>Plumbago capensis</i>	Plumbago (blue or white)
<i>Abelia grandiflora</i>	Glossy abelia
<i>Melastoma affine</i>	Native lasiandra
<i>Melaleuca</i> "Claret Tops"	Claret tops
<i>Cissus antarctica</i>	Native grape

4.4 GROUNDCOVERS

<i>Themeda triandra</i>	Kangaroo grass
<i>Themeda</i> "Mingo"	Kangaroo grass (prostrate blue variety)
<i>Myoporum ellipticum</i>	Myoporum
<i>Lomandra longifolia</i>	Common lomandra
<i>Dianella brevipedunculata</i>	Blue flax lily
<i>Dianella caerulea</i>	Blue flax lily
<i>Alternanthera tricolour</i>	Alternanthera
<i>Nandina domestica</i> "Nana"	Scarlet bamboo
<i>Russellia equisetiformis</i>	Firecracker plant
<i>Juniperus confertus</i>	Juniper or blue pine
<i>Trachyloperum jasminoides</i>	Chinese star jasmine
<i>Liriope</i> "muscari" "Evergreen Giant"	Liriope
<i>Liriope</i> "Stripey White"	Liriope Stripey White
<i>Grevillea poorinda</i> "Royal Mantle"	Grevillea royal mantle
<i>Hibbertia scandens</i>	Snake vine



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5.0 ENTRANCE FEATURES

5.1 GENERAL

Sales marketing features such as waterfalls, fountains, flagpoles, ornate entrance structures, landscaping and the like should not protrude onto any footpath, road reserve or access restriction strip without the written approval of Council.

5.2 PERMANENT LANDSCAPING

Council will only consider permanent entrance features for acceptance within the road reserve or access restriction strip areas provided that:

- They are not just a short term marketing feature but actually add to the long term amenity of all residents of the subdivision.
- They are fairly basic structures confined to the entrance area only. Short lengths of fence and columns, no more than 2 m high, are acceptable. The entrance area is generally defined as the area between the tangent points of the main through road and the entrance road to the subdivision or village within a large subdivision.
- They are constructed of low maintenance materials that can be readily replaced. Standard brick and concrete are acceptable.
- They should be painted with anti-graffiti paint and have mowing strips both sides for ease of maintenance.
- They have structural certification where necessary for construction prior to signing and sealing. If constructed after signing and sealing, structural certification will be required prior to placing the development 'Off Maintenance'.
- They do not affect the public utilities. Written approval of the service authorities may be necessary where the feature affects a substantial width of footpath.
- They do not compromise pedestrian or traffic safety.

Details of these entrance features should be shown on the engineering and landscape drawings. Acceptance of these features will be at the discretion of Council and will be specifically mentioned in the plan approval.

5.3 TEMPORARY LANDSCAPING

Temporary landscaping including waterfalls, fountains, non-standard ornate landscaping such as annuals as part of sales and marketing strategy will not be approved within the road reserve (verge or median).

6.0 TRAFFIC ISLANDS

6.1 GENERAL

The general treatment of traffic islands and medians should comprise a mixture of landscaping and hard surface infill. The selection of plants should take into account the following traffic design criteria:

- Sight paths at intersections and speed control devices.
- Tree form, shape and location within the road reserve should not encroach into the space required for a vehicle to pass through a speed control device.

6.2 MEDIANS

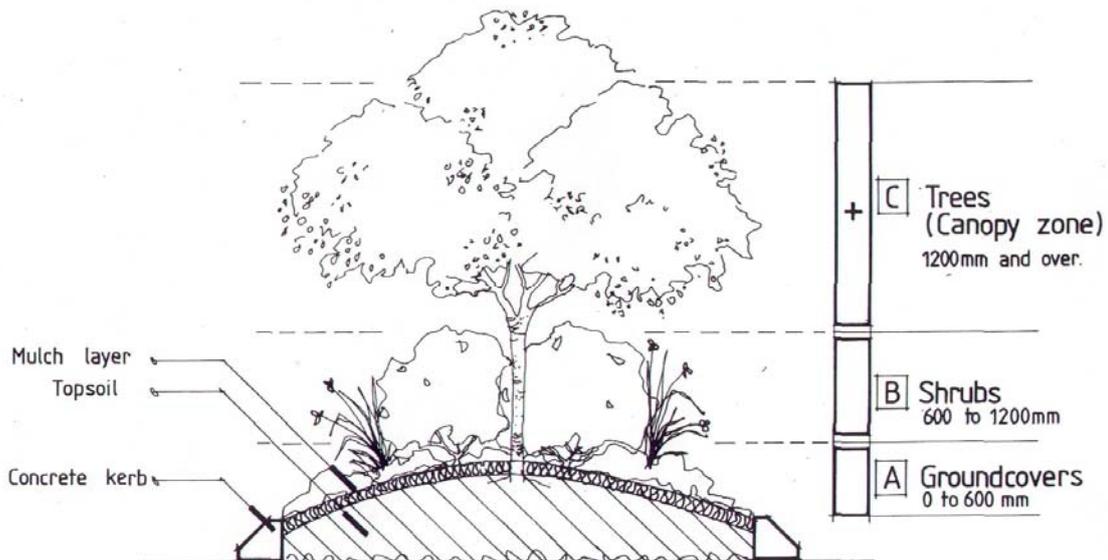
For medians less than 1.5 m in width, landscaping or turfing will generally not be approved. In these areas a concrete infill, usually stencilled or exposed aggregate concrete or concrete pavers is necessary.

Special consideration needs to be given for surfaces steeper than 1V in 3H, areas which are difficult to access for maintenance or which cannot support healthy plants. These situations usually will require a hard treatment.

Medians and islands that will be planted rather than concrete infilled should be designed to accommodate landscape works by providing:

- A median kerb keyed 135 mm into the pavement.
- A 300 mm concrete backing strip behind the kerb.
- Adequate site preparation and soil depths.
- Root barriers where needed.
- Conduit for future tap connection.
- Subsoil drainage discharging to an enclosed pipe system.

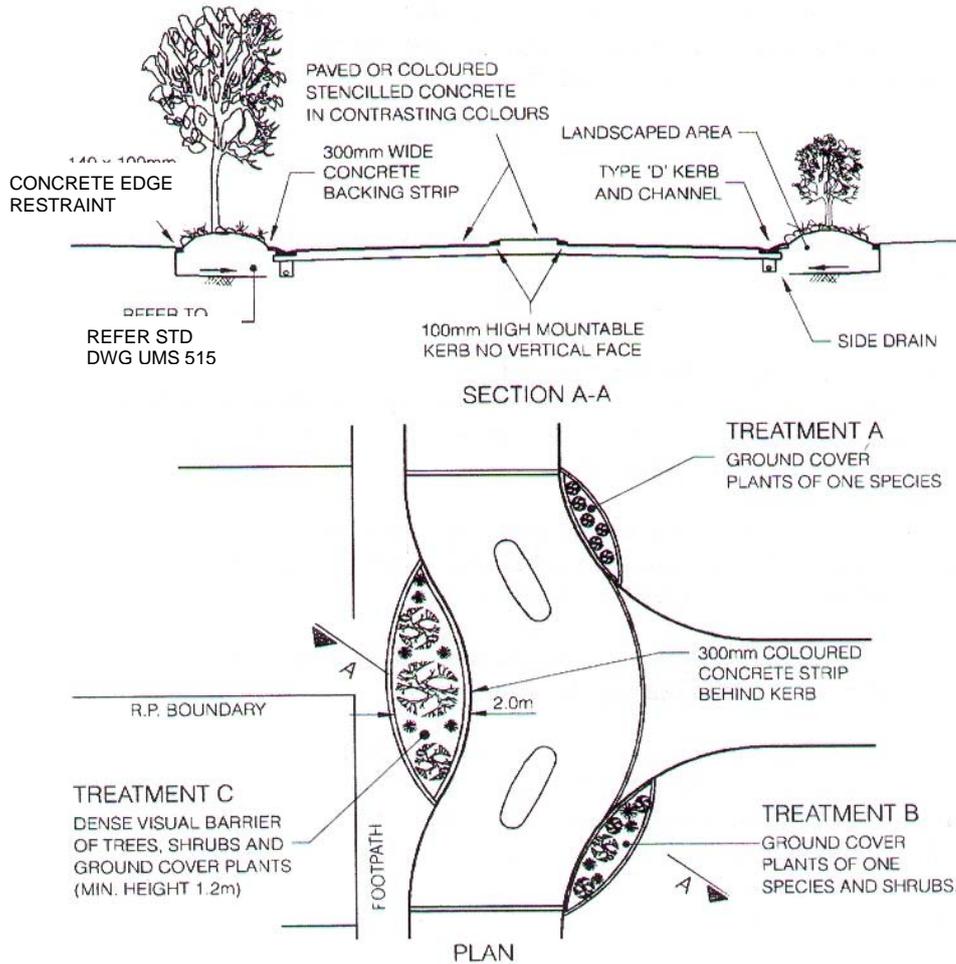
Figure B4.1 shows a planting zone diagram for medians and roundabouts.



**FIGURE B4.1
PLANTING ZONE DIAGRAM AT MEDIANS AND ROUNDABOUTS**

6.3 SPEED CONTROL DEVICES

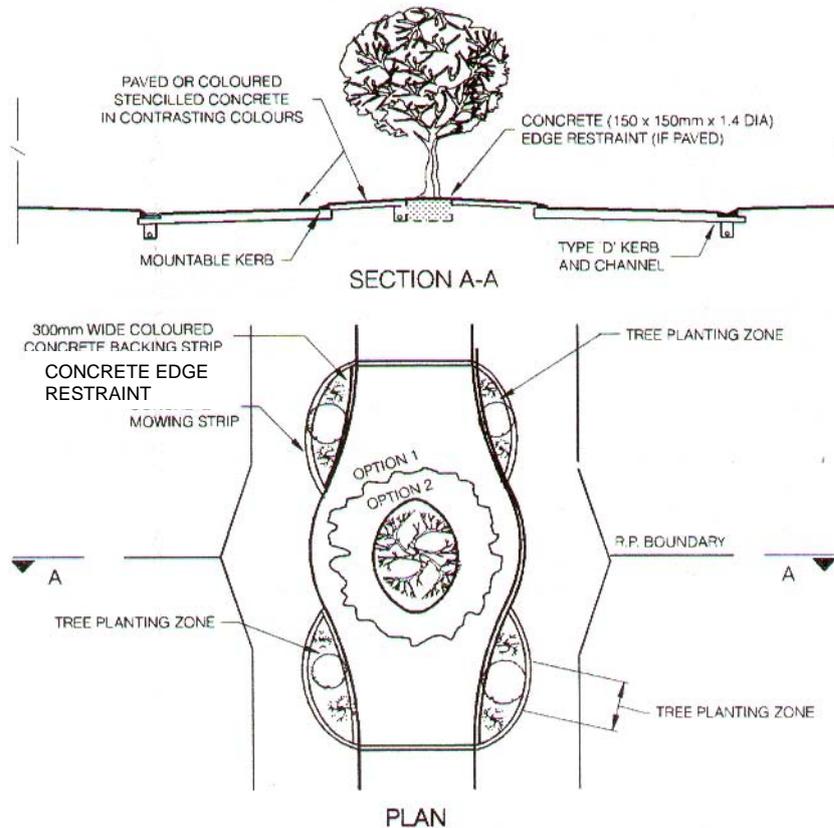
Council's preference is that landscaping at speed control devices is designed using Figures B4.2, B4.3, B4.4, B4.5 and B4.6 as a guide. Landscaping treatments should also satisfy the traffic engineering requirements.



NOTES

1. Concrete colours, unit paving and planting scheme should be complementary.
2. The above planting is a guide only. Planting should be chosen on hardiness, suitability of soil type, microenvironment and landscape character.
3. Treatments for verge planting
 - Treatment A. Maximum height limit of 0.6 m including mounding. Single species with flowers.
 - Treatment B. Maximum height of 0.6 m including mounding. Two shrub species and groundcover.
 - Treatment C. No height limit but the tree canopy should be clear of vehicles.

FIGURE B4.2
TYPICAL LANDSCAPING TREATMENTS FOR
DEFLECTED T-INTERSECTION SPEED CONTROL DEVICES



OPTIONS FOR CENTRE ISLAND PLANTING

OPTION 1

Feature tree wide canopy on clear trunk and ground cover
 Eg Large and Medium Crown Tree (refer Sections 2.3.1 and 2.3.2)

OPTION 2

Upright/Columnar/Elliptical Tree (refer Sections 2.3.3 and 2.3.5) with narrow canopy branching to ground
 or Small- Medium Crown Trees with wider canopy (refer Section 2.3.4)

OPTIONS FOR SIDE PLANTING

OPTION A

Columnar tree above 2 m (3 no.)
 – refer Section 2.3.3

OPTION B

Small tree (3 no.) – refer
 Section 3.1, and Groundcovers
 at 0.3 m centres (refer
 Section 3.4)

OPTION C

Shrub with sculptural form (1
 no.) – refer Section 3.2, at
 0.6 m centres, and Small to
 Medium shrubs (2 no.) – refer
 Section 3.3.

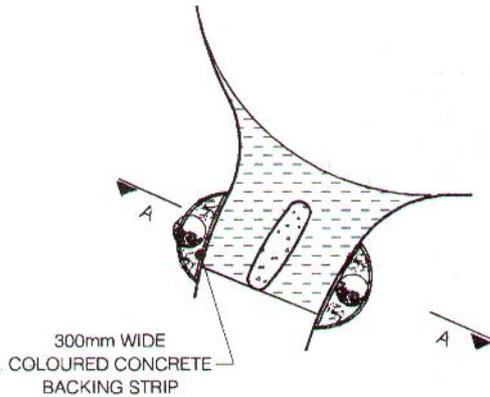
FIGURE B4.3
TYPICAL LANDSCAPE DESIGN CONCEPTS FOR
CENTRAL ISLAND SPEED CONTROL DEVICE

SUGGESTED PLANTING SCHEDULE

Shrubs: refer Sections 3.1 to 3.3
Groundcovers: refer Section 3.4
Trees: refer Section 2.3.3

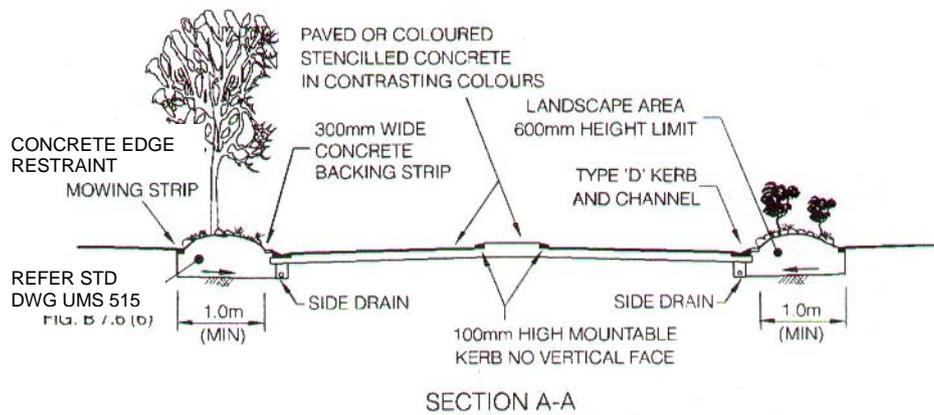
OPTIONS FOR VERGE PLANTING

(RHS side of Section A-A)
Option A: Height limit of 0.6 m maximum including mounting. A single species with flowers.
Option B: Height limit of 0.6 m maximum including mounting. Two shrub species and a groundcover.
(LHS side of Section A-A)
No height limit but the tree canopy should be clear of vehicles.

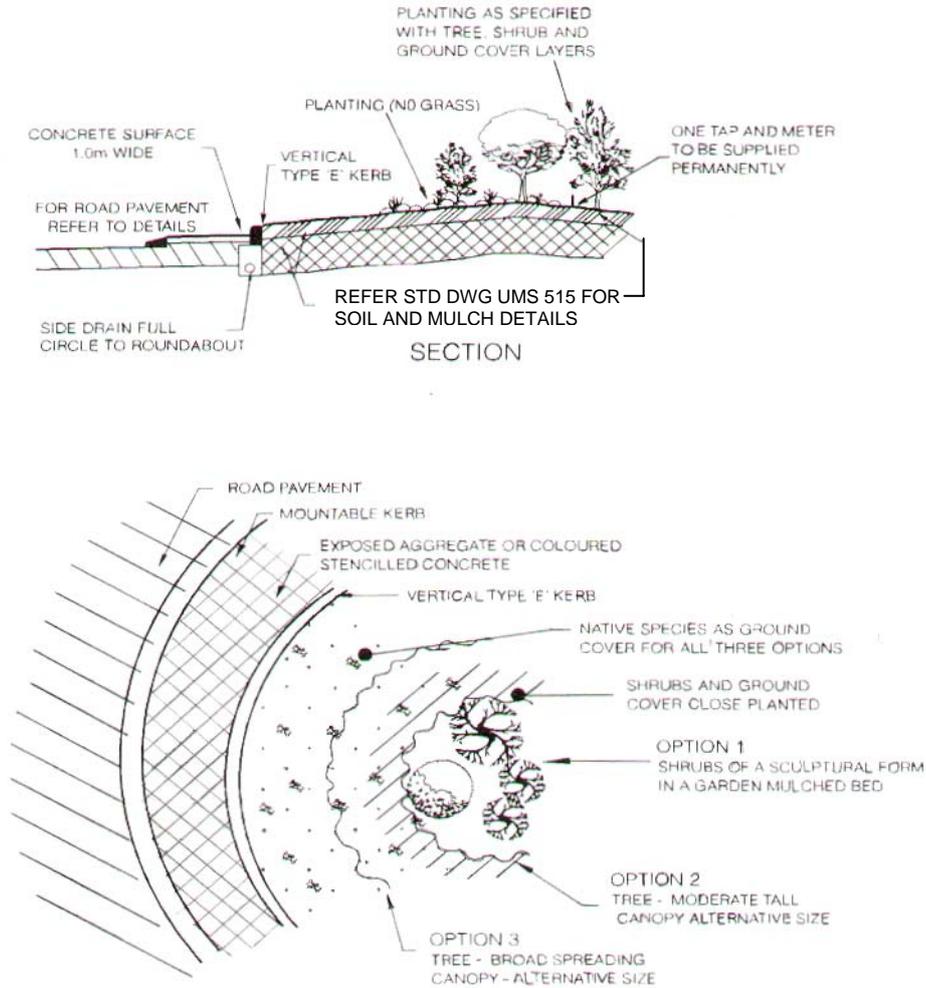


NOTES

1. Concrete colour, unit paving and planting scheme should be designed to be complementary.
2. The above planting is a guide only. Planting should be chosen on height and spread requirements, hardiness, suitability of soil type, microenvironment and landscape character.



**FIGURE B4.4
TYPICAL LANDSCAPING OPTIONS FOR
ALTERED T SPEED CONTROL DEVICE**

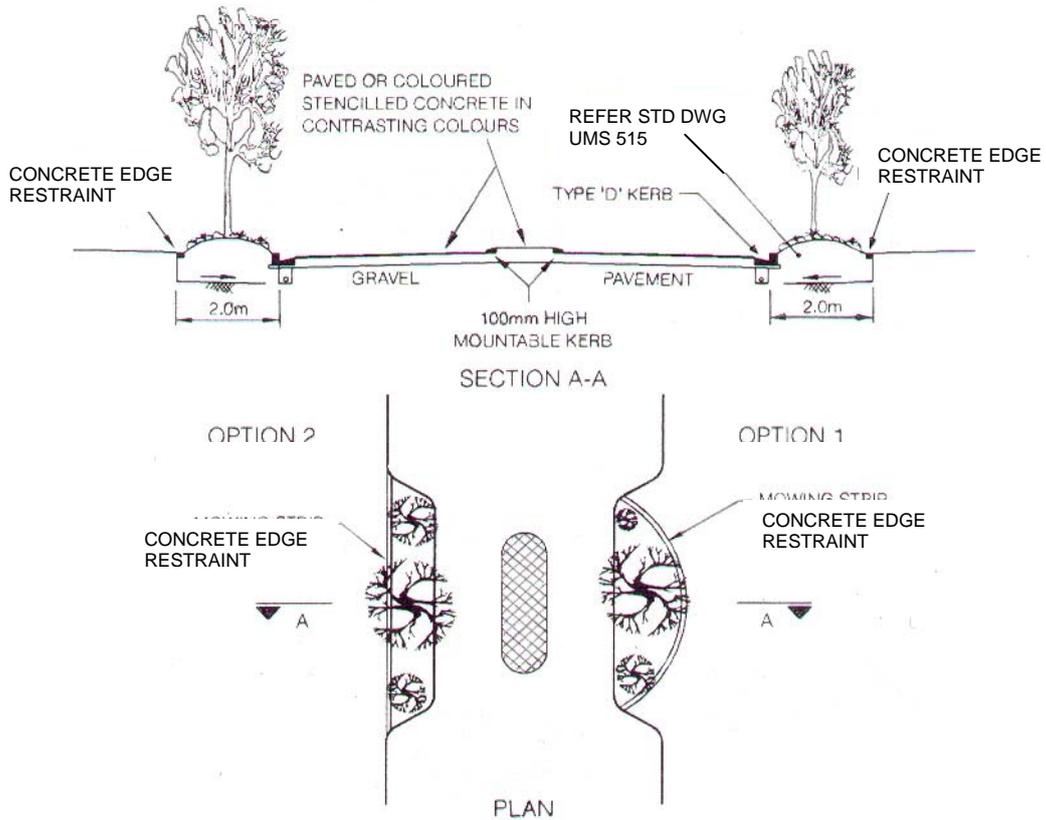


PART PLAN OF ROUNDABOUT

NOTES

1. The above planting is a guide only. Planting should be chosen on height and spread requirements, hardiness, suitability of soil type, microenvironment and landscape character.
2. The size of the canopy tree should be proportional to the size of the roundabout.
3. Side drain to discharge to gully, manhole, etc.

**FIGURE B4.5
TYPICAL PLANTING DESIGN FOR
LOCAL STREET ROUNDABOUT**



CANOPY TREES
Refer Section 2.3.2

GENERAL SHRUBS
Refer Section 3.3

GROUNDCOVERS
Refer Section 3.4

NOTES

1. The above planting is a guide only. Planting should be chosen on height and spread requirements, hardiness, suitability of soil type, microenvironment and landscape character.

**FIGURE B4.6
TYPICAL LANDSCAPE DETAIL FOR SPEED CONTROL DEVICE
IN NEIGHBOURHOOD ACCESS ROAD (BUS ROUTE)**



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7.0 STREET FURNITURE

Any street furniture incorporated into landscaping is normally limited to low maintenance retaining walls, boulders and handrails and is only acceptable in special circumstances. Council will not approve high maintenance structures such as archways, flagpoles, statues, planting pots, street lamps, seating benches, etc, unless prior approval from Council has been obtained.

8.0 BATTERS

Batters < 1V in 4H

These batters can be easily mown and therefore grass cover with sparsely planted trees is usually satisfactory, depending on the purpose of the area.

Batters > 1V in 4H

These batters are not easily mown and therefore alternative easily maintained landscaping is required. Again the purpose of the area will dictate the requirements. Generally these batters will need to be densely planted, mulched and with a suitable edging. For very steep batters a combination of retaining walls and planting will generally be required. Surface drainage should be redirected away from steep batters to prevent erosion and destabilisation of the batter. Where batters may be subject to erosion, turf hydromulch or other approved treatments should be provided.

9.0 IRRIGATION

Automatic watering systems should not be installed on a permanent basis. Attention should be paid to the requirements of Council in regard to automatic watering systems should they be necessary. If installed the watering system should be removed before the estate is accepted 'Off Maintenance'. During the 'On Maintenance' period a gradual decrease in watering needs should occur so that the plants will be conditioned to drier conditions prior to the 'Off Maintenance' period.