PART 7: STREET LANDSCAPING

7.1 INTRODUCTION

This section applies to all proposed road reserve landscape design or works in any part of the Waipa District Council road network, in respect to both existing and proposed roads, including any subdivision or where required as a condition of subdivision consent. This section applies to all public road landscape works.

Approval or rejection or proposed landscape design or works shall be at the sole discretion of Parks and Reserves Team Leader, or nominee.

Street landscaping includes street trees and permanent planting on traffic islands and other sites within the road reserve.

Landscape Plans will be required by Council and must be submitted for approval with the Engineering Plans.

7.2 MINIMUM REQUIREMENTS

7.2.1 Subdivision Form and Landscape Development

Minimum subdivision design requirements are as follows:

- The landscaping of streets shall be carried out as part of the overall landscaping of the subdivision where attention will already have been paid to the preservation and incorporation of land form, existing vegetation (where this is characteristic of the area), topsoil, and features of heritage (including waahi tapu), ecological and geological significance.

- Street landscaping shall enhance and strengthen the existing character and intended future character of neighbourhood areas and unify those areas into an integrated neighbourhood.

- Any landscaping shall provide maximum long-term benefit with minimum ongoing maintenance. It shall not compromise the safe use of the legal road reserve or affect its structural integrity.

- The safety of the site by incorporating CPTED (Crime Prevention Through
- Environmental Design) principles. These principles, as outlined below, form the underlying strategy for the design and use of the environment that supports desired behaviours, enhances the intended functionality and reduces undesired behaviour by placing potential offenders at a disadvantage.

CPTED Principles :

- *Territoriality* – physical design is used to promote a sense of ownership, respect, responsibility and community.

- *Natural Surveillance* – places where all publicly accessible places are overlooked, people can see and be seen.

- *Access Control* – places with well-defined routes, spaces and entrances that
- provide for convenient movement without compromising security.

- *Space Management* – appropriate use of space and well cared for, attractive and vandal resistant facilities and buildings.

- *Activity Support* – places where human activity is appropriate to the location.

Minimum planting provision requirements are:

- planting of street trees generally at an equivalent rate of 1 tree per residential property; groups of trees may be approved where the kerbline and location of services allow for local features;

- planting of all approved traffic islands and traffic control devices necessary for traffic management purposes;

- protection of existing trees or vegetation identified as being of value in the District Plan and/or as a condition of any consent.

Generally, all landscape works must have low long-term maintenance characteristics.

Note: Topsoiling and sowing of grass verges is dealt with under Part 3 (Roadworks) of this Volume.

7.3 MEANS OF COMPLIANCE

7.3.1 Location

Trees and garden plantings shall be located so that they don't compromise the integrity and efficient operation of infrastructural services.

The minimum separation and site distances referred to in Section 3.6.2 of this Manual should be observed for tree planting. These distances are guidelines and may have to be increased depending on the road geometry.

Alternative location and design proposals may be considered, such as provision of trees in a dedicated "non-services" berm, either side of a

footpath. “Curved” footpaths may allow for tree planting in groups, and may help to accentuate road groups and road perception. Strategically placed grouped plantings of trees may be of greater benefit and impact than individual trees placed outside each house. (Refer to Figures 7.1 – 7.3)

Where traffic control devices are required as part of the road works, they shall be planted as traffic island planting (Refer to Figures 7.4 – 7.5).

All proposed and replacement planting in existing or new road reserves shall be as per the RRPS.

7.3.2 Street Trees

Street tree planting is required to be provided by the Developer in all subdivisions incorporating new roads to vest in Council with details of the planting to be supplied at the time of application for engineering plan approval.

Species are to be selected from Figure 7.3.2 below.

Figure 7.3.2 - Suggested Street Trees

Botanical Name	Common Name	Size: small <5m medium 5 - 9m large >9m
Acer autumn blaze	Autumn blaze maple	medium
Acer buergerianum	Trident maple	medium
Acer davidii	Davids maple	medium
Acer griseum	Paperbark maple	small
Acer palmatum 'Bloodgood'	Japanese maple Bloodgood	medium
Acer palmatum 'Osakazuki'	Japanese maple Osakazuki	small
Acer palmatum 'Senkaki'	Japanese maple Senkaki	medium
Aesculus carnea briotii	Red horse chestnut	large
Carpinus betulus 'Fastigiate'	Upright hornbeam	medium
Cercis canadensis 'Forest Pansy'	East American Redbud	medium
Cercis siliquastrum	Judas Tree	medium
Cornus controversa	Wedding cake tree	medium
Cornus florida	Flowering dogwood	small
Cornus florida 'Cherokee Chief'	Flowering dogwood Cherokee Chief	small
Cornus florida x c. nuttallii	Cornus Eddies White Wonder	medium
Diospyros kaki	Persimmon	medium
Ginkgo biloba 'Autumn Gold' (male only)	Maidenhair tree	large
Koelreuteria paniculata	Golden rain tree	small
Lagerstromia indica	Crepe myrtle	medium
Liriodendron tulipifera 'Fastigiatum'	Fastigiate tulip tree	large
Magnolia 'Black Tulip'	Magnolia black tulip	small
Magnolia 'Caerhay's Belle'	Magnolia Caerhay's belle	medium
Magnolia 'Koban dori'	Magnolia Koban dori	small
Magnolia 'vulcan'	Magnolia vulcan	small

Botanical Name	Common Name	Size: small <5m medium 5 - 9m large >9m
Magnolia 'Yellow Bird'	Magnolia yellow bird	medium
Malus strathmore	Flowering crabapple	medium
Malus trilobata	Pillar apple	medium
Melia Azadarach	Indian bead tree	medium
Nyssa sinensis	Chinese tupelo	small
Nyssa sylvatica	Tupelo	medium
Pistacia chinensis	Chinese pistachio	large
Prunus cerasifera 'Nigra'	Purple leaf cherry plum	small
Prunus 'Okame'	Flowering cherry Okame	small
Prunus yeodensis 'Awanui'	Flowering cherry Awanui	medium
Pyrus calleryana 'Bradford'	Ornamental pear Bradford	medium
Quercus robur 'fastigata'	Upright oak	large
Sophora tetraptera	Kowhai	small
Sorbus accuparia 'Chinese lace'	Rowan Chinese lace	small
Sorbus accuparia 'Scarlet king'	Rowan scarlet king	medium
Tilia europaea	Common lime	large
Tilia platyphyllos 'Laciniata'	Cut leaf lime	medium
Ulmus carpinifolia 'Variegata'	Smooth variegated elm	medium
Ulmus parvifolia Frontier	Hybrid Chinese elm	medium
Ulmus procera Louis van Houtte	Golden elm	medium
Zelkova serrata 'Green Vase'	Japanese zelkova green vase	large

Installation of street trees shall comply with the Development Manual, Volume 3, Part 7, Section 5 – Street Tree Planting.

The following matters are to be considered for species selection:

- suitability to environmental conditions, e.g. ground moisture, wind
- pest and disease resistance
- non-suckering habit
- longevity
- shading consistent with location
- minimum maintenance requirements
- compliance with Sections 3.6 and 3.14 of this Manual in regard to sight distances
- minimal leaf fall in autumn (which can block catchpits)

7.3.2.1 *Species*

Any new development shall use species selected from the street tree species. Normally only one species should be used for street trees in any one street.

7.3.2.2 *Dedicated Tree Planting Corridor*

A service-free corridor, minimum 1200 mm wide shall be located within the berm as required in Part 3 – Road Works; Table 3.1 of this Volume.

Alternative tree planting areas shall be provided where streets are narrow or such a corridor cannot be provided. Alternative areas are equivalent to 1 m^2 per metre of street length with any one area having a minimum site area of 12 m^2.

Areas protecting existing trees may be accepted as contributing to dedicated tree planting areas.

7.3.2.3 *Location*

Typically, tree planting locations should conform to those shown in Figure 7.1. Normally one tree per property frontage is acceptable. No trees are to be planted within the SISD or RSD visibility splays. Trees planted within the CSD visibility splays must be clear pruned to 2.5m above ground level.

Refer to Volume 2, Part 3, Section 3.6.2 of this Manual for visibility splay specifications.

7.3.3 Traffic Island and Berm Planting

Traffic islands and berms to be planted shall be shown on the Landscape Plans submitted with the Engineering Plans, and must have particular regard for the SISD or RSD visibility splays specified in Volume 2, Part 3, Section 3.6.2 of this Manual.

Species used shall be approved by the Manager Road Corridor.

All shrub and groundcover planting shall comply with the visibility splays specified in Volume 2, Part 3, Section 3.6.2. Within all SSD and RSD visibility splays, planting shall be designed to be no more than 450mm high. In front of low sign boards at intersections, planting shall be designed to be not more than 100mm high or these areas are to be paved to ensure compliance with Volume 2, Part 3, Section 3.14 of this Manual.

In general, traffic islands with an infill area of less than 4 m^2 shall not be planted. The width of the planted area should not be less than 600mm. Tapered or curved areas should be squared off and paved or concreted when the infill width is less than 600mm. Single or isolated islands should generally be larger than 4 m^2 to be considered for planting, whereas islands smaller than 4 m^2 will be considered where they are an integral part of a larger landscaping scheme, or there are traffic engineering reasons for planting.

At roundabout intersections, groundcovers or bedding not exceeding 300 mm height in the Criterion 2 areas and 400 mm height in the Criterion 3 areas although these may vary depending on road grades and levels.

For roundabouts greater than 12 m diameter, it is preferably that 65 percent of the internal area be planted up with approved intersection plant species while ensuring that visibility splays, frangibility requirements and utility services remain uncompromised. The centre of roundabouts greater than 12

m diameter can be planted with taller approved shrub and tree species to aid in slowing traffic and act as a visual nodal reference.

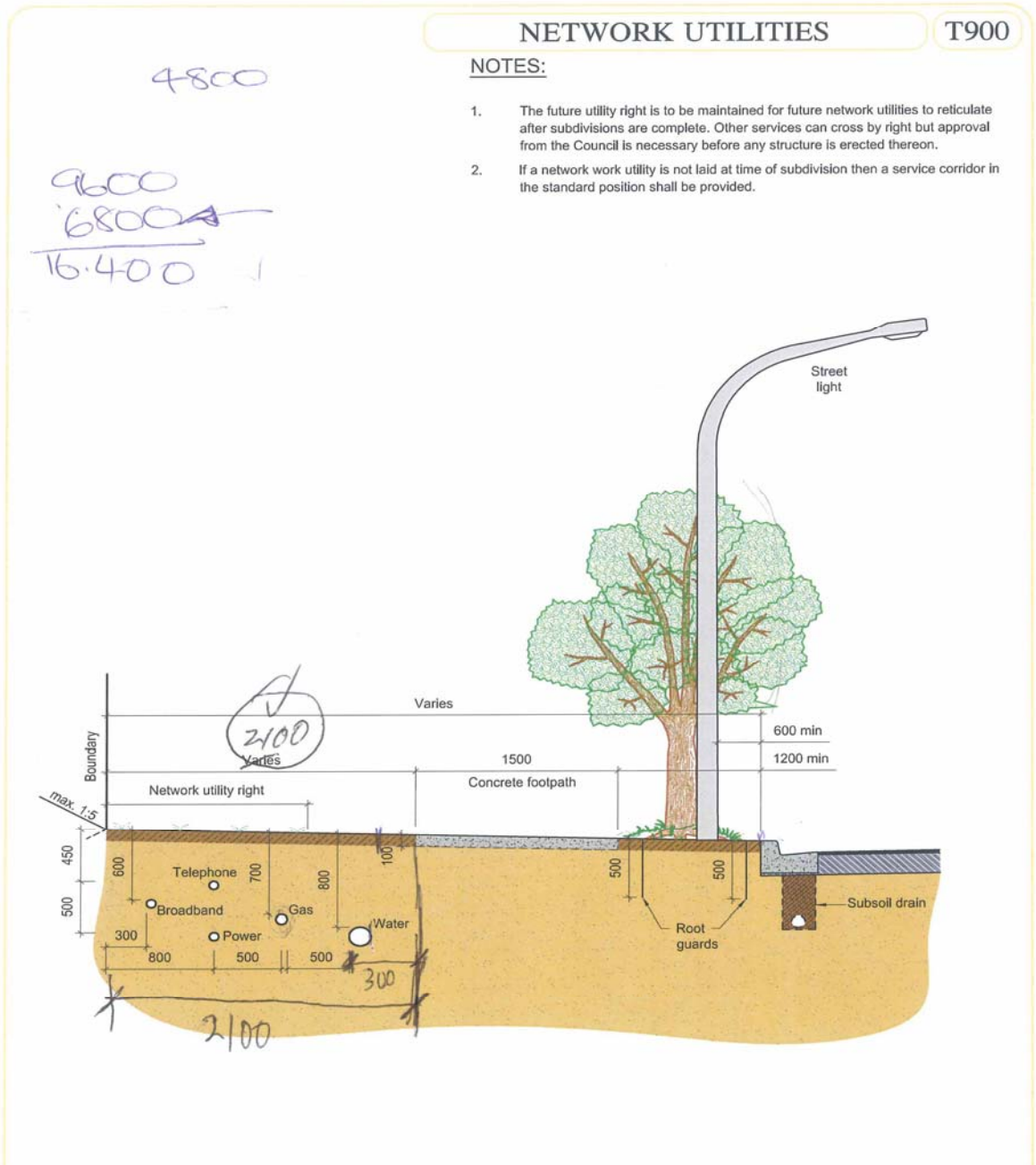
When planting in traffic islands, ensure that mature plants are at the required heights and at centres that will not spread over the back of the kerb and channel into the road lanes, with a minimum setback of 200 mm from the back of kerb. This is especially pertinent in respect to flax species.

Likewise, plants are to be located at centres so that at maturity they cover as much of the traffic island planter bed area as possible to reduce weed maintenance. Ensure that planting does not impair sightlines to road signs.

7.4 STANDARD AND NON-STANDARD OPTIONS FOR STREET TREE LOCATION

Design of streets may include kerb extensions for intersections and speed controls which allow non-standard tree planting where utilities are not a problem and visibility requirements are designed to incorporate planting as a means of slowing traffic (Refer to Figures 7.1 – 7.5).

Figure 7.1 – TYPICAL UTILITY AND STREET TREE LOCATIONS



NOTE:

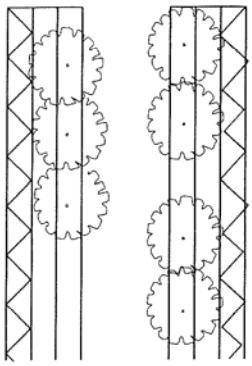
With a full compliment of utilities, the minimum berm width required for street tree planting is 4800 mm.

If these minima cannot be met, Clause 7.3.2.2 applies (i.e. Trees provided in alternative locations).

Figure 7.2 – PLANTING FOR STANDARD AND NON-STANDARD DESIGNS

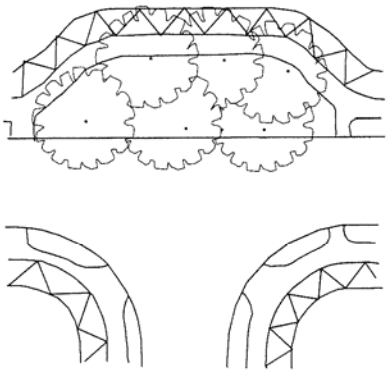
A. STANDARD DESIGN

- carriageway in centre of street reserve



B. RESERVE WITH VARIATION

- at intersection increase in area may allow significant trees which give visual emphasis to the intersection, close views to houses, screening them from headlights



C. RESERVE WIDTH VARIATION

- increase in area may protect significant trees or remnant bush

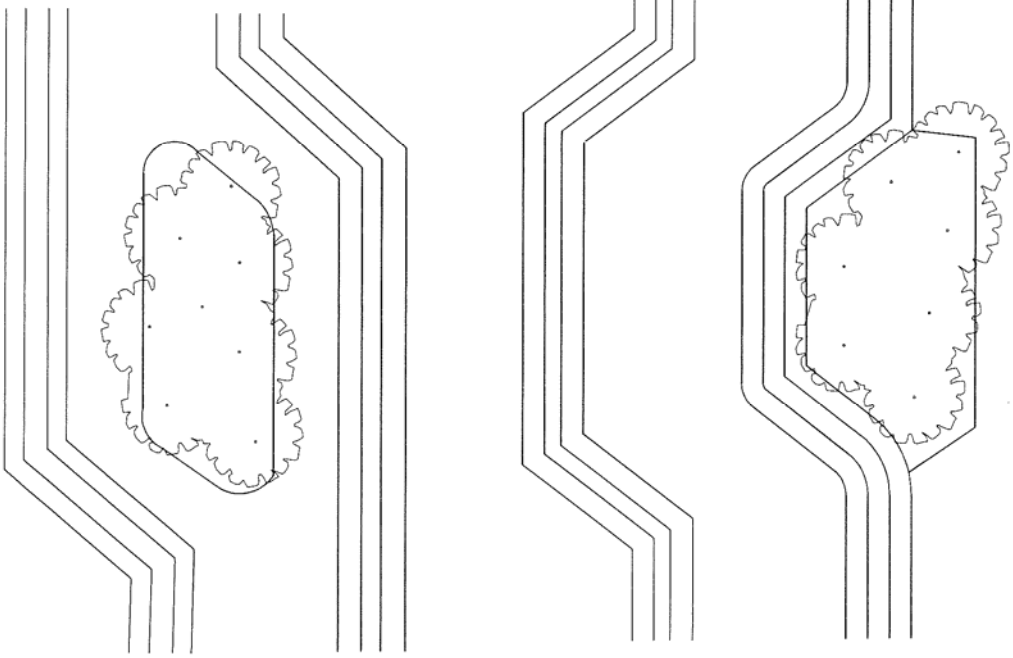


Figure 7.3 – PLANTING FOR NON-STANDARD ROAD DESIGN

A. FOOTPATH, CARRIAGEWAY AND RESERVE VARIATION

- for speed restriction, parking provision and more intimate street scale. Small radius curve at street entry and narrowed area act as speed control devices

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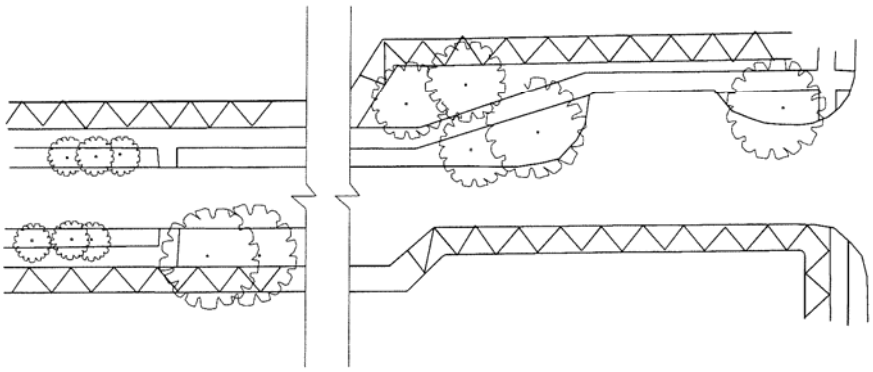


B. FOOTPATH AND CARRIAGEWAY VARIATION

- to discourage high speeds and vary the driver's experience of streetscape in an informal manner. Boundary planting links with private planting service strip can be located relative to boundary lines or footpath. Location adjacent to boundary extends the useable lawn-garden area. Location adjacent to outside edge of footpath provides pedestrian buffer zone

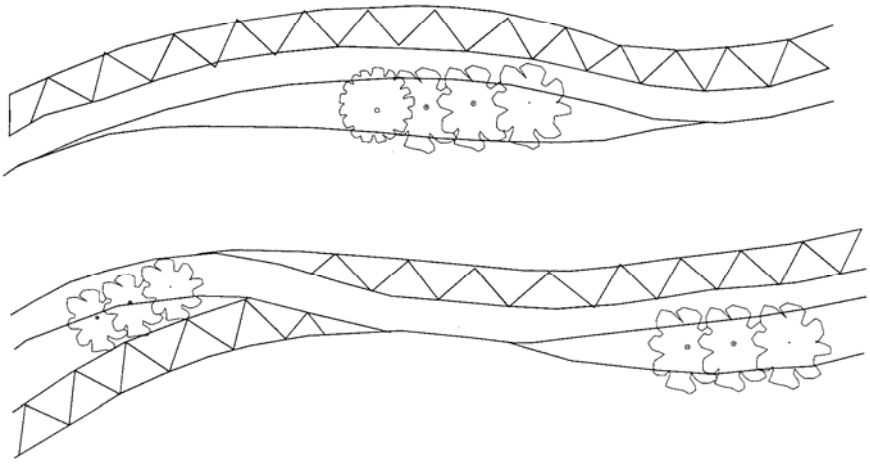
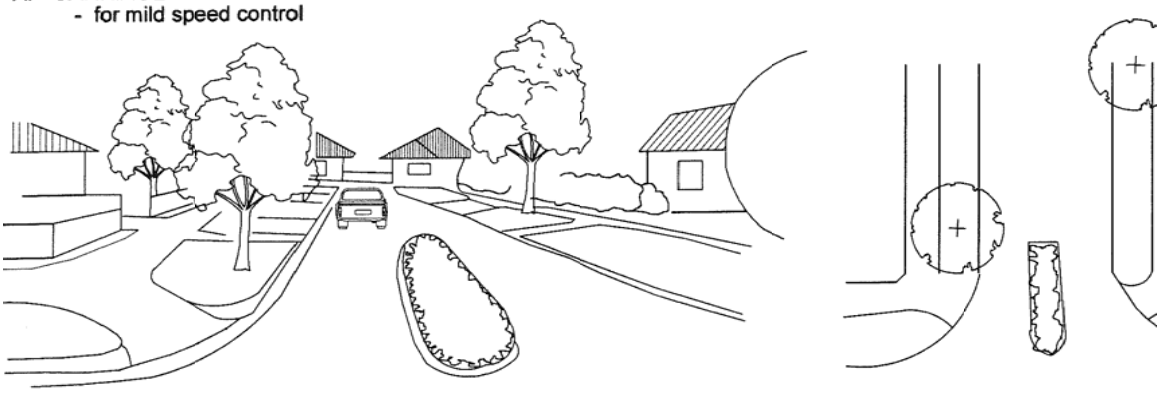
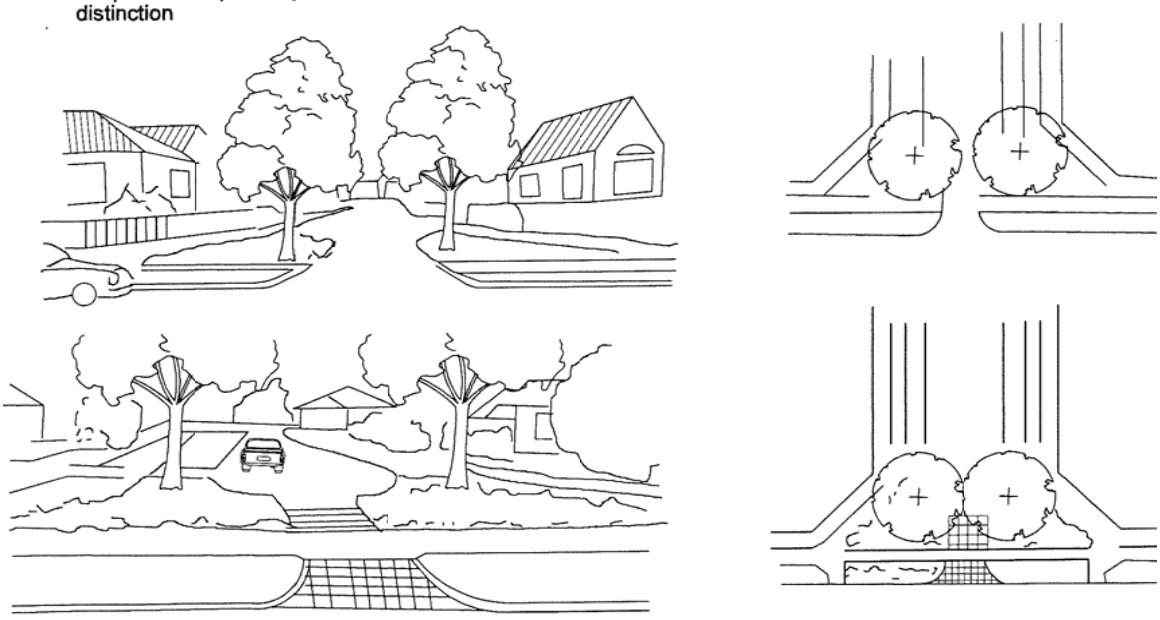


Figure 7.4 – PLANTING FOR INTERSECTION TRAFFIC CONTROL DEVICES.

A. CARRIAGEWAY VARIATION - SPLITTER ISLAND
- for mild speed control



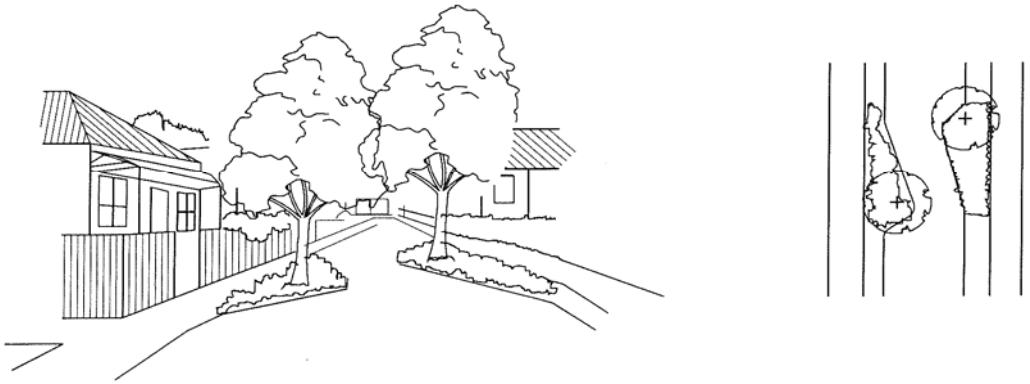
B. CARRIAGEWAY VARIATION - THRESHOLDS
- Narrowing the entrance to a street, incorporating planting for reinforcement signifies a more pedestrian-orientated enviroment. Introduction of paving materials or incorporation of footpaths to improve speed control further reinforces the 'traffic route' vs 'residential zone' distinction



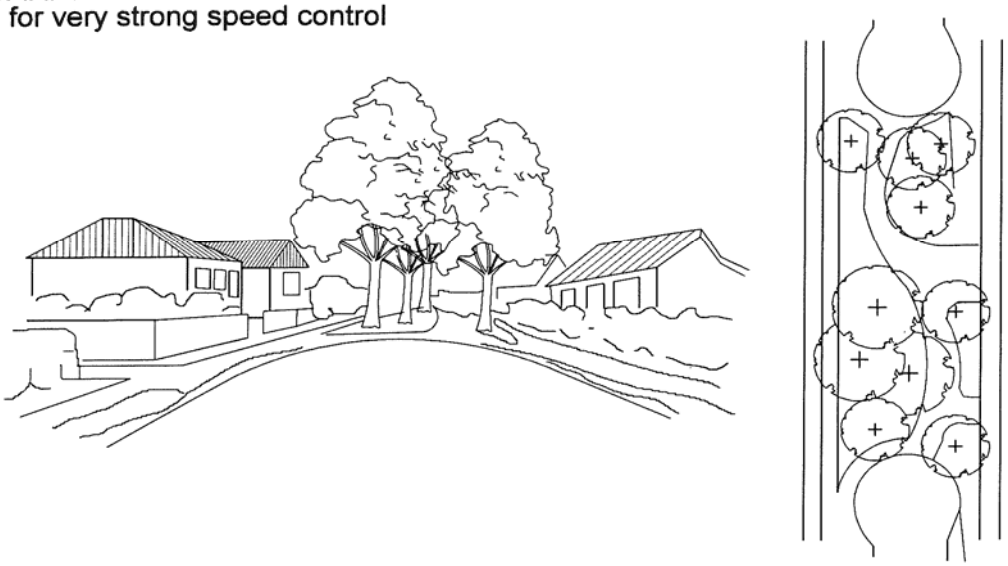
C. CARRIAGEWAY VARIATION - CHANGE OF ALIGNMENT AT INTERSECTION
- for mild speed control

Figure 7.5 – PLANTING FOR TRAFFIC CALMING DEVICES

A. CARRIAGEWAY VARIATION - ONE LANED ANGLED SLOW POINT
- for strong speed control



B. CARRIAGEWAY VARIATION - MEANDERING RESTRAINT ZONE
- for very strong speed control



C. CARRIAGEWAY VARIATION - TWO LANED ANGLED SLOW POINT
- for moderate speed control