

**HOBSONS
BAY CITY
COUNCIL**



HOBSONS BAY LANDSCAPE DESIGN

GUIDELINES

Hobsons Bay Landscape Design Guidelines

The purpose of these guidelines is to assist applicants, property owners, developers, builders, architects and designers in preparing a suitable landscaping response to their development.

Landscaping is often the final element to any development and can be the most vital. Urban landscaping plays a critical role by reducing heat island effects, enhancing biodiversity, protecting ecosystems, reducing stormwater runoff, improving water balance and reducing community stress, as well as contributing to the character of an area.

These guidelines seek to ensure that the landscaping enhances the existing local neighbourhood character, integrates the development with the surrounding environment, improves the site amenity and provides livable outdoor spaces for residents.

Objectives

The objectives of the guidelines are to:

1. improve the quality of the municipality's physical and natural environments
2. ensure that high quality landscape design is provided as part of developments
3. assist in achieving sustainable and environmentally beneficial landscape design outcomes
4. build and improve biodiversity to benefit native species and ecosystems

Applying these guidelines

These guidelines must be applied to all landscaping designs required under a planning permit application. These guidelines are to be read in conjunction with the following Council documents:

- Hobsons Bay Planning Scheme
- Hobsons Bay Neighbourhood Character Study (2019)
- Hobsons Bay Industrial Development Design Guidelines (2008)
- Hobsons Bay Urban Forest Strategy (2020)
- Biodiversity Strategy (2017–22)
- Street Tree Policy (2010)
- Guidelines for Alterations and Additions to Dwellings in Heritage Areas in Hobsons Bay (2006)
- Guidelines for Infill Development in Heritage Areas in Hobsons Bay (2006)
- Hobsons Bay Tree Protection Guidelines (see Appendix 3)
- Nature Strip Landscaping Guidelines

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LANDSCAPE PLAN APPROVAL PROCESS

A landscape plan is a document which details the proposed landscaping of a site and must be submitted and approved prior to the commencement of buildings and works.

The landscape plan shows... the overall footprint of a proposed development including street trees, existing vegetation to be retained, any existing vegetation to be removed, proposed vegetation to be planted and proposed built elements (such as pathways, driveways and courtyards).

Types of planning applications that require a landscape plan

Most types of planning permit applications for the development of land require a landscape plan to be submitted and approved by Council. The only types of applications that do not require a landscape plan are:

alterations and additions to existing dwellings

new or alterations to commercial development where there is no ability to include landscaping

business identification signage

applications for minor works

Timeframe for requiring a landscape plan

Landscape plan upfront - as part of the application

It is always preferable to provide the landscape plan with the planning application at the beginning of the process, even though it is not always a requirement at this stage. This enables Council to assess the landscaping qualities of the proposal in detail, which will assist in Council's assessment of the application. The loss of vegetation and trees without adequate

replacement landscaping is often a concern of objectors, as well as Council. Providing a quality landscape plan upfront may also reduce the possibility of, or breadth of, objections from neighbours.

For some planning applications, a landscape plan and/or arborist report may be required before the proposal is advertised or assessed.

These applications generally are:

- proposals where landscaping is considered critical to the determination of an application (i.e. where areas for landscaping are constrained or critical to the justification of the proposed built form)
- where significant trees are proposed to be removed or the development may have potential impact on existing significant trees (definition of significant trees provided in Section 2: Preparing your Landscape Plan)

Landscape plan as a permit condition - after the issue of a planning permit

For most planning applications, the requirement for a landscape plan will be a condition of a planning permit.

Assessment and approval

Council's officers will assess the submitted landscape plan. The applicant will be notified if any changes to the plan are required.



Landscaping bond procedure

Concurrently with a request for endorsed plans under any permit (or other appropriate time agreed to by the Responsible Authority upon receipt of a written request from the owner or permit applicant), a bank guarantee or monetary bond will be required to be paid to the Council to ensure the satisfactory establishment of landscaping works.

Once landscaping has been completed in accordance with the endorsed landscape plan, Council must be notified with photographs of landscaping and by completing the Landscape Bond Return Request form. Upon receipt of photographs and Landscape Bond Request form, a six-week establishment period will commence, and the bank guarantee or bond will only be returned after an inspection has confirmed the landscaping complies with the plan and has been maintained to our satisfaction.

If the landscaping is unsatisfactory at the first inspection, rectification works will be required. There is no fee for the first inspection, however fees will be charged for subsequent inspections due to unsatisfactory landscaping.

After the establishment period, while the development remains the landscaping must be maintained in accordance with the endorsed landscaping plan to the satisfaction of Council.

Compliance with the landscape plan

Once the plan has been endorsed by Council it forms part of the planning permit. If changes are made to the landscaping at any time, even by future owners or tenants, an application to amend the plans must be made.

As the endorsed landscape plan forms part of the planning permit, you may be subject to enforcement action if you fail to comply with any part of the plan.

Other required approvals

Heritage Overlay

In some instances, for properties covered by the Heritage Overlay, a planning permit is required to remove, destroy or lop a tree. Schedule to Clause 43.01 (Heritage Overlay) of the Hobsons Bay Planning Scheme indicates whether the tree controls apply to a particular Heritage Overlay, in which case a planning permit is required. The citation in the Hobsons Bay Heritage Study for the heritage precinct covered by the [articular Heritage Overlay may identify whether specific trees are contributory elements to the Overlay or heritage precinct. In these cases, an application should be accompanied by report from a suitably qualified heritage arborist.

Environmental Significance Overlay

On sites covered by an Environmental Significance Overlay, a permit may be required to remove, destroy or lop any vegetation, including dead vegetation. Refer to Clause 42.01 of the Hobsons Bay Planning Scheme for further information.

Native Vegetation Removal

Clause 52.17 of the Hobsons Bay Planning Scheme identifies when a planning permit is required to remove native vegetation. In particular, Hobsons Bay is home to some significant native grasslands that will usually require a permit for removal.

Private Tree Removal

If you are proposing to remove a tree on private land that has a diameter of 450 mm or greater at 1.4 metres from ground level, you will require approval to remove the tree under Council's Community Local Law. Further information can be obtained from Council's website www.hobsonsbay.vic.gov.au

This requirement applies to situations where no planning permit is triggered.

If you are unsure about any of these requirements, please contact Council on **9932 1000** to determine if additional approval is required.

PREPARING YOUR LANDSCAPE PLAN

There are several details that should be considered when preparing your landscape.

Pre-application advice

To reduce potential delays in the planning permit process, at the pre-application stage, the landscape plan (and potential impacts on significant trees or other existing trees and vegetation) should be discussed with Council. The processing times for planning applications depends on the adequacy and accuracy of the documentation submitted to Council. The greater the accuracy of the plans, the quicker an application will be assessed.

Further information on the planning process can be found at the Hobsons Bay website:
www.hobsonsbay.vic.gov.au

Integrating landscaping within the design

Landscaping must be a consideration when undertaking the initial design of the development and not as an afterthought. Landscaping is a vital element of any development, and adequate provision for the planting of vegetation to soften development must be considered, including:

- allowing sufficient area to accommodate canopy trees within landscaped areas particularly in relation to the location of underground services and easements that may restrict root balls or be affected by vegetation as it matures,
- locating stormwater infrastructure within proposed hardstand areas and not within landscape areas,
- not locating services such as emergency service hydrants and emergency panels in landscaping areas
- locating garden beds along accessways, driveways and large paving areas, which maintain sight lines for traffic and vehicle movements
- where basements are proposed, allowing sufficient soil depth for the planting of canopy trees
- utilising landscaping as a screening device, particularly in industrial areas

Protection/retention of on-site trees, including significant trees and adjoining trees

A significant tree includes exotic, native and indigenous trees that have special significance. They may have a wide range of environmental, historical, cultural, aesthetic and scientific value compared to a regular tree, and are defined as having one or more of the following characteristics:

- a trunk diameter of at least 450mm measured 1.4m from the ground
- a species or variety of tree that is rare in cultivation, or unusual in Hobsons Bay
- a tree of outstanding aesthetic significance
- a tree that is an outstanding example of the species or variety
- a remnant indigenous specie (native and local to the region)
- any tree associated with aboriginal activities
- a large, healthy tree or collection of trees in a high-profile location
- a tree or trees that commemorate an occasion e.g. Avenue of Honour
- trees that may indicate or provide evidence of a previous use of the land
- trees that provide habitat for native fauna as evidenced by the presence of a nest or a hollow or from a confirmed sighting of native fauna species that is unusual or rare
- Trees on any Council significance register or National Trust Register

Significant trees on private properties must be identified and discussed as part of the pre-application process to ascertain whether these trees are appropriate for retention or removal. Where trees have been identified for retention, the design must respond to large and/or significant trees on the site and on adjoining land to ensure they are not compromised by the development.





Significant trees – though not local to the area, these Norfolk Island Pines along the Altona Foreshore are an important part of the city's history

Planning applications where trees are proposed to be removed or may be affected by the proposal will usually require submission of an arborists report. The arborist report should outline at a minimum:

- health of the tree(s)
- height and diameter at breast height
- reason for proposed retention/removal
- minimum buffer distance for safe retention of tree(s), irrespective of whether the tree is proposed to be removed or retained.
- proposed tree root protection zones and protection systems

As stated earlier, a proposal to remove a tree of heritage significance, needs to be accompanied by a report prepared by an arborist experienced in heritage landscapes. A list of consultants is available at Heritage Victoria.



Council will review the report and determine whether the tree warrants retention or if it can be removed.

Street trees are an important public asset and provide many benefits to the Hobsons Bay community. In terms of character, environmental impact and amenity, the loss of street trees to accommodate vehicle access requirements should be avoided.

Street trees

Council may not agree to allow the removal of a street tree even if a proposed crossover or the design suggests removal of the tree is required. It is therefore critical to determine whether Council will support removal of a street tree early in the process, preferably at pre-application stage. Healthy street trees that contribute to the character of the street will not be allowed to be removed. If the street tree is allowed to be removed, it must be done by the Council at the cost of the owner/applicant. Tree removal decision-making is in line with the Street Tree Policy (2010).

A buffer distance of at least three metres from the edge of the trunk at breast height is preferred for new crossovers, however, can be subject to variation depending on tree type and site constraints. This will ensure that sightlines are not affected, limit damage to tree roots and reduce the likelihood of future damage to the crossover. Differing setbacks may be required depending on the type and size of the tree.

For further details, see Section 6:
Procedure for Protecting Existing Vegetation.



A beautiful treed residential boulevard adds character and provides numerous benefits for people and the environment alike.





Skeleton Creek, Altona Meadows - bounded by residential development with native street trees and indigenous revegetation

On-site stormwater retention systems and infrastructure

Large stormwater grates, associated concrete pads and access points must not be located within landscaping areas. These are more appropriately located within driveways and accessways to maximise the available landscaping area.

Sites in close proximity to creeks and environmentally significant areas

Sites within 100 metres of waterways (Skeleton Creek, Kororoit Creek, Laverton Creek, Stony Creek and Cherry Lake) and other environmentally significant areas such as Newport Lakes, Williamstown Wetlands, coastal parks and grassland communities should use indigenous species in the landscape where possible and ensure plants chosen have no/very low weed potential. For the complete list of environmentally significant areas in Hobsons Bay please refer to the Biodiversity Strategy (2017–22).

A list of indigenous plants is included in Appendix 5: Preferred Plants for the Hobsons Bay Area. Further reference books or websites that can assist with plant selection include:

- Council's Sustainable Gardening in Hobsons Bay
- Plants of Melbourne's Western Plains (Keilor Plains Group 2012)
- Friends of Lower Kororoit Creek:
www.folkc.com.au/Friends-Of-Lower-Kororoit-Creek

DESIGN GUIDELINES

The landscape design needs to keep in mind the impact on existing vegetation, heritage values, the streetscape, and neighbouring properties including open space and nearby significant biodiversity areas.

Details on landscaping requirements associated with residential development are set out in the relevant zone schedule and the Neighbourhood Character Study (2019).

Existing Vegetation

Where appropriate the design should retain existing vegetation, particularly significant indigenous vegetation and large trees. See Section 6: Procedure for Protecting Existing Vegetation for further details.

Residential Development

The Hobsons Bay Planning Scheme dictates minimum garden area requirements for residential development in the General Residential Zone (Clause 32.08-4) and the Neighbourhood Residential Zone (Clause 32.09-4). For apartment development, there are specifications for deep soil areas and canopy trees included at Clause 58.03-5. These requirements must be incorporated within the landscape plan.

The number and density of trees required will vary depending on the nature of the development, land zoning, neighbourhood character, space available for planting, and the mature height and canopy spread (width) of trees to be planted.

Planning applicants should refer to the relevant zone schedule and local planning policies for specific guidance on landscaping requirements for their property. As a general guide, landscaping requirements are likely to be greater in Neighbourhood Residential Zone areas where neighbourhood character is to be preserved, than in Residential Growth Zone areas where neighbourhood character is planned to change.

Neighbourhood Residential Zone

Landscaping to preserve or enhance character

Minimal housing change

Incremental housing change

General Residential Zone

Landscaping to maintain and transition character

Moderate housing change

Substantial housing change

Residential Growth Zone

Landscaping to transition character

Substantial housing change



Fake turf and rock mulch – an example of a residential development with poor provision of biodiversity, green space and water-sensitive landscaping due to the use of synthetic turf and crushed rock in garden beds

Suitable tree species can be planted within easements and are specified in Appendix 5, for additional information please seek the relevant service authority resources.

Front and rear open areas should be grassed or planted with groundcovers at a minimum spacing of 4 plants per square metre to create green space.

The planting of deciduous trees for winter sun and summer shade on the northern and western sides of the development is encouraged. For tree planting specifications, please refer to the Neighbourhood Character Study (2019).

Extensive areas of Lilydale topping, river rocks, bark, artificial turf or other similar treatments with minimal landscaping must be avoided. Where such treatments are used in the landscape design, sufficient greening must be incorporated. Use of artificial turf is not preferred as it contributes to the urban heat island affect and does little to provide habitat for wildlife. Where artificial turf is to be used, it must be permeable and occupy a relatively small footprint of the total setback.



Good landscaping in industrial precinct – this boulevard in an industrial area has good landscaping with a mix of green spaces with both evergreen and deciduous trees which provide shade and cooling benefits



Concrete much! – this entire front yard has been sealed with impervious concrete which is not only hard on the eyes, but also increases stormwater runoff, increases urban heat in summer, and is devoid of biodiversity

Industrial Development

The Industrial Development Design Guidelines (2008) nominate landscaping setbacks and design considerations. Trees should be planted at approximately five to six metre spacings to allow enough canopy tree coverage within the development. Suitable tree species can be planted within easements and are specified in Appendix 5, for additional information please seek the relevant service authority resources. Landscaping areas should be grassed or planted with groundcovers at suitable spaces to create a green space whilst avoiding extensive areas of Lilydale topping, river rocks, artificial turf or other similar treatments. As stated above, use of artificial turf contributes to the urban heat island affect and provides poor habitat quality so its use should be avoided.

Permeability

High site permeability is encouraged in all developments. At least 30 to 40 per cent of the total site area should be permeable. Where paving is proposed, permeable paving should be installed. Water runoff should be directed towards garden beds where possible, and practicable.



Green is better – good landscaping in front yard of this residential property, maximising green space with garden beds of mixed plantings, a lawn, and a medium-sized tree



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Acacia implexa, 'Lightwood'



Eucalyptus leucoxylon, 'Eukie Dwarf'



Garden beds

Ideally garden beds should be a minimum of one metre in width to allow enough space for plants to grow, particularly to provide for screening in relation to adjoining buildings and for shade. Refer to the applicable zone schedule for guidance on the minimum width for garden beds, including those along driveways. Selection of plant species should be appropriate to the dimensions of the garden bed.

Plant selection

Plant selection is a very important component of the landscape design. All plants used in the design should be suited to the local environment, contribute to low water use and maintenance, and are resilient to the effects of climate change. The use of indigenous (local native) species and native plants is encouraged whilst identified weeds should be avoided.

Appendix 5 provides a list of preferred plants for Hobsons Bay.

Callistemon viminalis 'Captain Cook'

LANDSCAPE PLAN CHECKLIST

It is recommended that a qualified Landscape Architect or Landscape Designer who has a degree in horticulture and relevant experience should prepare the landscape plan.

The following information is required, as where applicable.

A site plan to an appropriate scale and fully dimensioned showing:

- ☐ the boundaries and dimensions of the site
- ☐ the location and dimensions of any easements
- ☐ the location and type of existing and proposed services on site and adjacent to it
- ☐ the layout of all existing and proposed buildings, including height of neighboring buildings and locations of windows
- ☐ setbacks from all boundaries
- ☐ contour lines
- ☐ fence material and height if applicable
- ☐ identification (including accurate location, species, height and width) of any existing trees and vegetation proposed to be removed and retained. Vegetation to be retained must include strategies for retention in accordance with the requirements of these Guidelines (i.e. barriers and signage during the construction process), including vegetation that may be affected on land adjoining the site
- ☐ location of any proposed or current major services on the site
- ☐ all driveways and provision of car parking
- ☐ accurate location of existing trees located within the nature strip or adjoining public parkland showing height and canopy spread, together with their Structural Root Zone and Tree Protection Zone in accordance with the Hobsons Bay Tree Protection Guidelines
- ☐ location and detail for installation of irrigation systems, if proposed to be installed
- ☐ details of the location and type of all paved and sealed areas
- ☐ relationship to adjoining land, where appropriate

A Landscape Schedule showing:

- ☐ A flora selection and landscape design that is drought tolerant and based on the species selection recommended in this Guidelines
- ☐ all proposed plants and their proposed locations (including botanical name, common name, height and width at maturity).
- ☐ Include canopy trees that are responsive to the site context
- ☐ planting detail for trees being a graphic showing depth of planting hole, staking, and mulching depth (please see Appendix 1)
- ☐ pot/plant size at time of planting with canopy trees at height of at least 1.5m high at the time of planting
- ☐ plant quantities and spacings





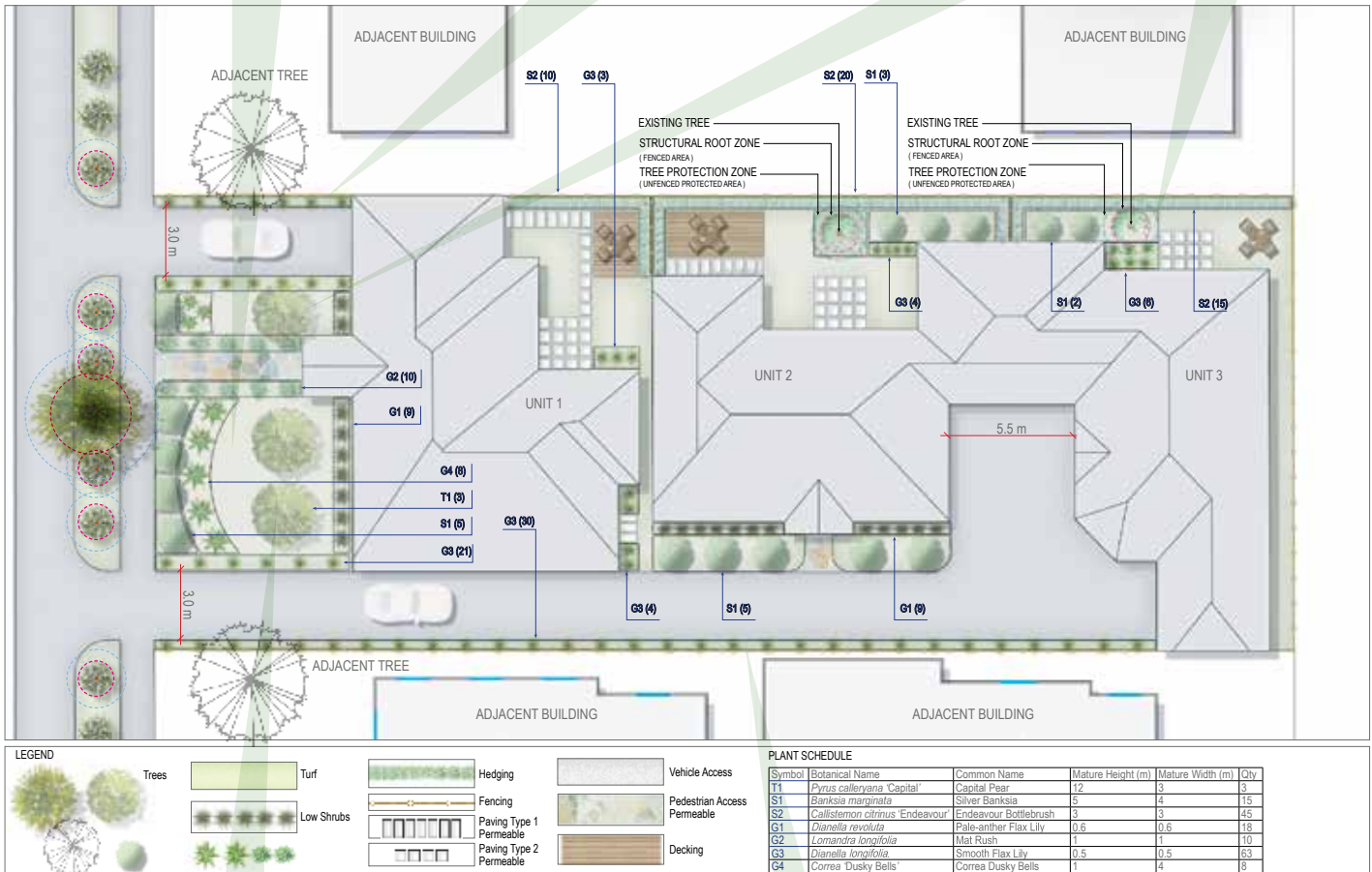
LANDSCAPE PLAN EXAMPLE

Please note, the below is an example of preferred design outcomes and the details do not have to be covered exactly. It is encouraged to employ these and similar design principles to respond to the individual development context.

Lawn used instead of other surface treatments.

Appropriately sized plants to suit space.

Numerous trees used in front and side setbacks.



NORTH
SCALE 1:150 A3


3 UNITS RESIDENTIAL LANDSCAPE PLAN

Use a variety of plant choice to create interest. Avoid only using a single species.

Planted garden beds running along driveway to soften landscape and capture run off water.

PROCEDURE FOR PROTECTING EXISTING VEGETATION

No damage is to occur, both above and below ground, to vegetation identified for retention; including those beyond the site area such as street trees or remnant indigenous vegetation on adjoining land.



The protection of significant trees must be in accordance with the Hobsons Bay Tree Protection Guidelines located at Appendix 3.

Failure to comply with vegetation protection requirements

Failure to comply with planning permit requirements for the retention or protection of existing vegetation may result in formal enforcement action against the owner, occupier, any person who has an interest in the land or any person responsible for undertaking the works. Such enforcement action may include a warning, infringement fine, prosecution in the Magistrates Court or an Enforcement Order from the Victorian Civil and Administrative Tribunal.

PROPOSALS FOR NEW WORKS OR CHANGES TO PUBLIC LAND

This section is applicable to proposals that includes new public open space, roadways and nature strips. The design of these spaces will be undertaken as part of the planning permit assessment process.



Green is better – good landscaping in front yard of this residential property, maximising green space with garden beds of mixed plantings, a lawn, and a medium-sized tree

Bank guarantee prior to construction of landscape

Council may require a bank guarantee or landscape bond, as a condition of the planning permit, prior to construction and planting of the landscaping on public land. The landscape works are to be constructed in accordance with the endorsed landscape plans. The bank guarantee or bond will be returned at the end of the maintenance period (see below) if compliant with the endorsed landscape plan.

Completion

Council must be notified in writing when construction of the landscape is completed. At this time, an initial inspection of the landscaping will occur by Council officers to ensure it complies with the approved landscape plan and the landscaping has been installed satisfactorily. Once the constructed landscape has been inspected and approved by the Council officer, the maintenance period will commence. It is Council's preference that the landscaping occurs once the building works are completed.

Maintenance

Landscaping must be maintained until the bond is refunded. The length of the maintenance period will depend upon the amount and type of landscaping works required.

The landscape will be inspected after the maintenance period for its conformity to the plan and the health of the plants. The landscape bank guarantee or bond will be redeemable after the designated maintenance period, subject to Council officer acceptance in writing of the maintained landscape.

APPENDIX 1

Recommended Planting Guidelines

Site preparation

All areas to be landscaped should be weed-free and clear of building rubble. Existing soil should be used and ameliorated with soil conditioner (composted organic matter) to a depth of 100mm. Soil should not be brought onto the site unless required. Soil pH should be checked and soil decompacted as necessary. Choosing the right plant to grow in the existing soil conditions will provide a more successful landscape.

Soil and waste in drains

All efforts to avoid soil and other deleterious materials entering storm water pits or drains during the landscaping works must be made. Such materials that enter pits shall be removed and disposed off-site (and not by washing down the pipe). Where any building works are to be carried out on any land, it must be done in a way that minimises the risks of storm water pollution, through the contamination of run-off by chemicals, sediments, or gross pollutants in accordance with accepted best practice.

Planting

Where indigenous plants are noted on a plan these should be purchased from specialist growers to ensure that plants of local provenance are used in the landscape to benefit biodiversity. A list of local indigenous plant nurseries is provided at Appendix #. If plants listed on the plans are unavailable contact the responsible Council Officer to amend the plant list. This will require a variation to the planning permit.

All planting should be undertaken by a suitably qualified landscaper/horticulturist to ensure quality work is undertaken.

Ideally, planting should be scheduled to occur between May and October. Your planning permit will have requirements for the installation of landscaping prior to the occupation of the buildings or other specific time which must be complied with. You should consider the timing of your development to ensure your landscaping has an ability to establish correctly.

Before planting, planting stock should be inspected for health. Planting of groundcovers should be at a minimum spacing of 4 plants per square metre. Plant only as deep as the root ball and make the hole at least twice the width of the root ball. Do not "fluff-up" the soil underneath the root ball, as this will cause the plant to sink below the soil surface. Place the existing soil back into the hole (do not use new soil). It is extremely important to water the plant in well immediately after planting to remove air pockets in the soil. Mulch to a depth of 75mm after planting, being careful not to place mulch close to the trunk. See next page for instructions on planting detail.

Confined planting areas

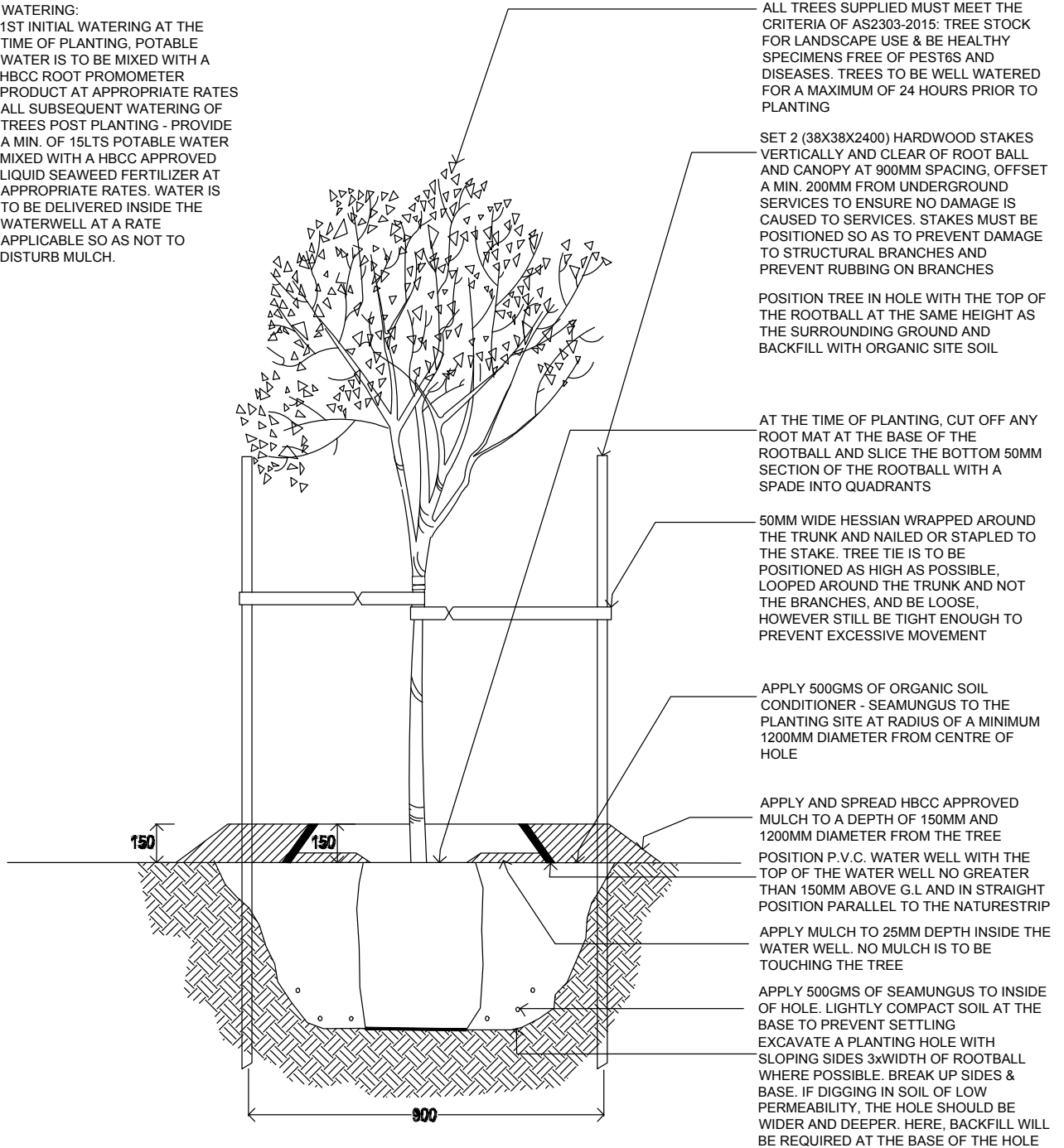
e.g. planter boxes, rooftop gardens

Provide as large a container/root space as possible and consider ideal plant species for situations. As plants will be growing in a confined area and can easily be stressed through water shortage sustainable methods of watering/irrigation will be required. Also, plants are easily overwatered so it is equally important to provide adequate drainage. When using a tub or planter box a planting mix with high mineral content and mostly made up of soil is important and ensure the planter box has a weep hole.

Recommended tree planting detail

TREE WATERING:

- 1ST INITIAL WATERING AT THE TIME OF PLANTING. POTABLE WATER IS TO BE MIXED WITH A HBCC ROOT PROMOMETER PRODUCT AT APPROPRIATE RATES
- ALL SUBSEQUENT WATERING OF TREES POST PLANTING - PROVIDE A MIN. OF 15LTS POTABLE WATER MIXED WITH A HBCC APPROVED LIQUID SEAWEED FERTILIZER AT APPROPRIATE RATES. WATER IS TO BE DELIVERED INSIDE THE WATERWELL AT A RATE APPLICABLE SO AS NOT TO DISTURB MULCH.





A drip irrigation system is the most efficient way to water your landscape

Watering

Water is essential in maintaining newly planted landscaping and all plants should be watered as soon as they are planted. Landscapes should be watered over a minimum of twelve months. A drip irrigation system is the most efficient way to water your landscape but must be fitted with a rain sensor and be on a timer. Even in the cooler months there may be limited rainfall so watering of plants may be required.

Installation of a water tank or use of a grey water system are excellent ways to provide water to your landscape. Please check the Melbourne Water Website at www.melbournewater.com.au to check current water restrictions.

Reinstatement

Where existing ground surfaces, particularly nature strips, are not affected by the works, restore them to the condition existing at the commencement of the contract.

APPENDIX 2

Building biodiversity and Environmentally Sustainable Landscape Design into Development

Council is committed to a biodiverse and environmentally sustainable city. It encourages innovative landscape solutions to conserve water and energy, reduce waste, and promote biodiversity in all landscape designs. Below are several initiatives you may wish to incorporate within your landscaping design.

Measures for biodiversity:

- Use native indigenous plants (plants that are local to the area)
- Plant a combination of native plants that flower at different times of the year to attract diverse species
- Plant a combination of plants of different shapes and sizes to create complex habitats and food sources
- Use water-sensitive design in your landscape design

Measures for energy conservation include:

- selection of plants and planting patterns that contribute to the solar efficiency of the building, and minimise urban heat island effect
- limited use of concrete (extremely high user of energy in the production of the raw ingredient)
- plants and other materials should be selected to reduce the resources required for establishment/ construction, management, and ongoing maintenance
- provide an area for air drying of clothes
- avoidance of lighting connected to mains electricity

Measures for waste reduction include:

- design for and implementation of composting and mulching to return nutrients to the soil
- disposal on site where possible, such as if a tree is removed, use the mulched-up tree as the mulch, or reuse soil from one part of the site in another part of the site
- recycling of materials, including using wood from demolished buildings
- allocation of space for recycling/mulching systems



Water sensitive landscaping creating a natural environment

Water sensitive design

Water sensitive designs provide an excellent opportunity to reduce water usage and improve the viability of the landscape. This can be achieved through employing some of the following methods:

- creating rain gardens – see: www.melbournewater.com.au/content/library/publications/fact_sheets/drainage/how_to_build_a_raingarden.pdf
- use of sub ground irrigation ('leaky hose' placed under mulch) or drip irrigators and water timers, with rain sensor*
- water tanks collecting runoff from roofs and structures for use on the landscape
- grouping plants with similar water requirements
- choice of low water use plants to reduce water use
- design of paths, driveways and other paved areas to direct water into garden beds use of permeable paving (pavers on a bed of sand)
- mulching beds with organic matter to a depth of 75mm. It is important not to place mulch up against the stems of plants as this can cause the plant to rot. Mulch should taper towards plants as shown in the attached detail
- creating ecosystems through planting trees and shrubs within the landscape to reduce the effects of wind and increase habitat opportunities
- limit use of turf areas, and where turf is used establish warm season-growing turf species, such as Kikuyu, Couch and Buffalo species. There are many varieties now available including fine leaf and salt tolerant varieties. There are also native grasses available, such as Weeping Grass (*Microlaena stipoides*), and native groundcover species such as Kidney Weed (*Dichondra repens*) that can be used as turf replacements

*Check Melbourne Water's website for current water restrictions:
www.melbournewater.com.au/content/water_conservation/water_restrictions/water_restrictions.asp



Sulphur-crested Cockatoo feasting on banksia cones - our wildlife love native gardens

Sustainable materials

A key ingredient in the development of gardens is the use of sustainable materials. This can reduce the need to bring in materials, limiting transport costs, and also reduce the use of rare timbers, such as Teak. Please consider the following:

- ensure materials required are accurately estimated to avoid waste
- construct landscape elements to standard dimensions to reduce waste
- look at the materials already on site and consider ways to re-use them imaginatively
- choose materials that involve minimal industrial refinement and processing
- source recycled materials wherever possible rather than newly processed products
- if possible, use products from your local region such as local rocks, gravels. Enquire with your retailer about their source

- use of materials produced from renewable and sustainable resources, such as use of recycled timbers, or plantation grown timbers
- use of local soil, preferably from onsite rather than importing soil. Scrape the topsoil from the site before works begin, store it on site, and keep free from contamination of rubbish and weeds so that soil can be reused for landscaping.

Biodiversity and Habitat values

Biodiversity provides numerous benefits for the health and wellbeing of humans, animals and ecosystems. The protection, enhancement and creation of natural habitats must be considered as part of the overall landscape design, particularly if the development is close to natural areas, such as creeks or parks. Indigenous (local to the area) native plant species should be used and species can be species chosen to favour particular fauna.

Principles of creating habitats for biodiversity include choosing plants of a range of heights and types that provide flowers at different times of the year, management of your pets and minimising use of pesticides. Planting Sweet Bursaria (*Bursaria spinosa*) to encourage butterflies, or prickly shrubs such as Hedge Wattle (*Acacia paradoxa*) for encouraging small birds, are examples of plants that can contribute to biodiversity.

Productive landscapes

Providing space for fruit/nut trees and vegetable gardens is encouraged in any landscape design, especially for residential areas. A key to the success of productive gardens is providing adequate sunlight and water. Ideally, these gardens should be located in the rear secluded private open space.

Urban Heat Island Effect

Green landscaping can greatly assist in minimising the urban heat island effect by providing cooling to the building, property and local area. It also reduces summer peak temperatures both indoors and outdoors. Some strategies include:

- Minimising the use of hard surfaces and materials with high heat retention capacity (such as concrete, aggregates) and incorporating green spaces, such as lawns, garden beds, trees, green walls, green facades and green roofs into the design
- Choosing light colours for hard surfaces such as driveways and paving
- Including canopy trees in all developments
- For medium to large developments, provide space allocation for sustainable transport modes such as bicycle parking and electric vehicle infrastructure

Built Environment Sustainability Scorecard (BESS)

The Built Environment Sustainability Scorecard (BESS) assesses energy and water efficiency, thermal comfort, and overall environmental sustainability performance of your new building or alteration. It was created to assist builders and developers to demonstrate that they meet sustainability information requirements as part of planning permit applications.

BESS can also be used by any member of the community to assess the design of their home and find ways to make it more sustainable.

BESS supports the 'Sustainable Design Assessment in the Planning Process' framework and the Environmentally Sustainable Design (ESD) Local Planning Policies. BESS assesses projects against a benchmark in nine environmental categories.

In many Victorian councils, planning permit applicants are asked to submit information about how the proposed development addresses sustainability, either as:

Sustainable Design Assessment (SDA),
for small scale developments, or

Sustainability Management Plan (SMP),
for large scale developments

A BESS report can be used to support these submissions.

APPENDIX 3

Tree Protection Guidelines

1

What is a Tree Protection Zone (TPZ)?

A Tree Protection Zone (TPZ) is the principal means of protecting trees on development sites or adjacent by using a barrier to protect the tree root and crown area. The TPZ should be calculated and identified before construction or site works start to ensure the tree remains safe and healthy.

Tree Protection Zones are an industry-wide practice and are developed in accordance with the *Australian Standard – Protection of Trees on development sites (AS 4970-2009)*.

2

Why do I need a TPZ?

Trees provide valuable environmental and social benefits to our urban environments. Inadequate development design, planning and supervision can have severe impacts on the long-term survival and protection of trees well after construction is completed.

3

Determining the TPZ

The radius of the TPZ is calculated for each tree by multiplying its calliper or Diameter at Breast Height (DBH) at 1.4m above ground (Figure 1) by 12.

Figure 2 indicates the calculated TPZ of this specific street tree.



Figure 1



Figure 2

4

How do I install and manage my TPZ?

Temporary fencing must be installed around the Council tree for the period of construction. A minimum of four temporary fence panels must be installed, two panels must be a minimum width of 2.4m and the other two must be minimum of 1.2m wide. Ideally all panels are to be 2.4m wide but nature strip widths will impact applicable size. The height should be no less than 1.5m. 'Tree Protection Zone' signage must be attached to the TPZ fence (Figure 3).

There are occasions when it is not possible to retain the optimum TPZ due to nearby infrastructure such as roads and footpaths. In this instance, the maximum TPZ possible must be implemented.

No stockpiling of building materials, debris, soil, fuel, oil, or chemicals is permitted within the TPZ. Soil levels must not be altered within the allocated TPZ.

Any required pruning shall only be conducted by a Council Arborist. A request must be made through Council.

A tree shall not be used to attach temporary service wires, nails, screws or any other fixing device or as a winch support or anchorage. Care is to be taken to ensure that no damage is caused to tree trunks, roots exceeding 150mm and structural branches.



5

Can I work in the TPZ?

Any excavation within the TPZ is strictly prohibited, unless approved by Council. Any tree roots found greater than 150mm in diameter within the TPZ must not be disturbed unless approval is provided by a Council Arborist.

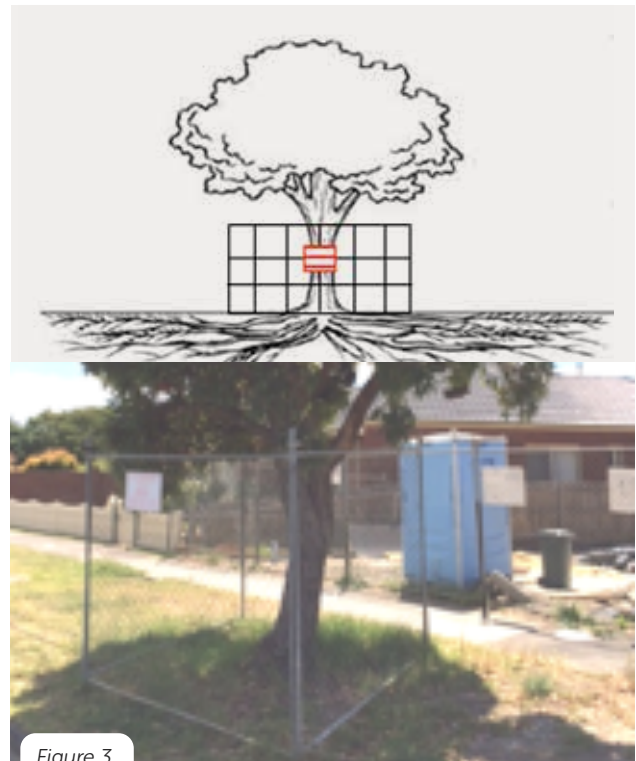


Figure 3

APPENDIX 4

Weed List – Plants to Avoid*

Botanical Name Common Name

<i>Acacia karroo</i>	Karoo Thorn
<i>Acacia decurrens</i>	Early Black Wattle
<i>Acacia longifolia</i>	Sallow Wattle
<i>Ailanthus altissima</i>	Tree of Heaven
<i>Allium triquetrum</i>	Angled Onion
<i>Anagallis arvensis</i>	Pimpernel
<i>Anredera cordifolia</i>	Madeira Vine
<i>Araujia sericifera</i>	Moth Plant
<i>Artemisia vertoliorum</i>	Chinese Wormwood
<i>Arundo donax</i>	Giant Reed
<i>Calicotome spinosa</i>	Spiny Broom
<i>Chamaecytisus palmensis</i>	Tree Lucerne
<i>Chrysanthemoides monilifera</i>	Boneseed
<i>Conium maculatum</i>	Hemlock
<i>Coprosma repens</i>	Mirror Bush
<i>Cortaderia selloana</i>	Pampas Grass
<i>Cotoneaster spp.</i>	Cotoneaster
<i>Crataegus monogyna</i>	Hawthorn
<i>Crocosmia x crocosmiiflora</i>	Montbretia
<i>Cynaria cardunculus</i>	Artichoke Thistle
<i>Cytisus scoparius</i>	English Broom
<i>Delairea odorata</i>	Cape Ivy
<i>Genista linifolia</i>	Flax-leaf Broom
<i>Genista monspessulana</i>	Montpellier Broom
<i>Hedera helix</i>	Ivy

Botanical Name Common Name

<i>Ilex aquifolium</i>	Holly
<i>Ipomoea indica</i>	Blue morning Glory
<i>Ligustrum spp.</i>	Privet
<i>Lysium ferocissimum</i>	Boxthorn
<i>Myrsiphyllum asparagoides</i>	Bridal Creeper
<i>Nasella neesiana</i>	Chilean Needle Grass
<i>Nasella trichotoma</i>	Serrated Tussock
<i>Nassella tenuissima</i>	Mexican Feather Grass
<i>Opuntia monacantha</i>	Drooping Prickly-pear
<i>Opuntia stricta</i>	Erect Prickly-pear
<i>Oxalis pes-caprae</i>	Sour sob
<i>Parietaria judacia</i>	Asthma Weed
<i>Passiflora mollissima</i>	Banana Passionfruit
<i>Pennisetum spp.</i>	Fountain Grass, Feather Top, Swamp Foxtail Grass
<i>Pittosporum undulatum</i>	Sweet Pittosporum
<i>Pyracantha angustifolia</i>	Firethorn
<i>Ranunculus repens</i>	Creeping Buttercup
<i>Rhamnus alaternus</i>	Italian Buckthorn
<i>Rubus fruticosus spp. agg.</i>	Blackberry
<i>Tradescantia albiflora</i>	Wandering Jew
<i>Trifolium spp.</i>	Clover
<i>Ulex europaeus</i>	Gorse
<i>Vinca major</i>	Blue Periwinkle
<i>Watsonia meriana cv. bulbiflora</i>	Bulbil Watsonia

*Note that a full list of weeds can be found at: agriculture.vic.gov.au/agriculture/pests-diseases-and-weeds/weeds

APPENDIX 5

Preferred Plants for the Hobsons Bay Area

CANOPY TREES

Botanical name	Common name	Height (m)	Width (m)	Evergreen/ Deciduous	Comments
<i>Acacia implexa</i>	Lightwood	10	8	E	Small native tree, suitable for easements
<i>Acacia maidenii</i>	Maidens Wattle	15	10	E	Small native tree, suitable for easements
<i>Allocasuarina littoralis</i>	Black Sheoak	10	4	E	Small native tree, suitable for easements
<i>Angophora costata</i>	Smooth-barked Apple	20	12	E	Large clean trunked native tree
<i>Banksia integrifolia</i>	Coastal Banksia	15	6	E	Small-medium native tree, suitable for easements
<i>Corymbia maculata</i>	Spotted Gum	30	10	E	Large clean trunked native tree
<i>Eucalyptus leucoxylon</i> 'Eukie Dwarf'	Dwarf Yellow Gum	10	4	E	Small native tree, suitable for easements
<i>Eucalyptus leucoxylon</i> ssp <i>leucoxylon</i>	Yellow Gum	25	10	E	Large native tree
<i>Eucalyptus leucoxylon</i> ssp <i>megalocarpa</i>	Red Flowering Yellow Gum ssp 'Rosea'	15	7	E	Medium native tree
<i>Melia azederach</i>	White Cedar	10	8	D	Small deciduous native tree
<i>Tristanopsis laurina</i>	Kanooka Gum	8	6	E	Small native tree, suitable for easements
<i>Lophostemon confertus</i>	Brush Box	15	10	E	Large native tree
<i>Ulmus parvifolia</i>	Chinese Elm	12	12	D	Medium deciduous tree

LARGE SHRUBS

Botanical name	Common name	Height (m)	Width (m)	Evergreen/ Deciduous	Comments
<i>Bursaria spinosa</i>	Sweet Bursaria	5	4	E	Indigenous screening shrub
<i>Callistemon viminalis</i> 'Captain Cook'	Weeping Bottlebrush	2	2	E	Native screening shrub
<i>Callistemon citrinus</i> 'Endeavour'	Endeavour Bottlebrush	3	3	E	Native screening shrub
<i>Pittosporum</i> 'Silver Sheen'	Silver Sheen Pittosporum	4	3	E	Screening shrub

SMALL TO MEDIUM SHRUBS

Botanical name	Common name	Height (m)	Width (m)	Evergreen/ Deciduous	Comments
<i>Correa alba</i>	Coastal Correa	1.5	2	E	Medium drought tolerant shrub
<i>Correa glabra</i>	Rock Correa	1.8	2	E	Medium drought tolerant shrub
<i>Grevillea</i> 'Robin Gordon'	Red Flowering Grevillea	1.5	1.5	E	Medium native shrub
<i>Westringia fruticosa</i>	Native Rosemary	2	3	E	Medium drought tolerant native shrub

GROUNDCOVERS AND LOW GROWING PLANTS

Botanical name	Common name	Height (m)	Width (m)	Evergreen/ Deciduous	Comments
<i>Coprosma kirkii</i> cultivars	Coprosma	0.6	1	E	Groundcover shrub
<i>Correa 'Dusky Bells'</i>	Correa Dusky Bells	1	4	E	Small native shrub
<i>Dianella species</i>	Flax Lily	0.5	0.5	E	Small clumping groundcover
<i>Lomandra longifolia</i>	Matt Rush	0.8	0.7	E	Upright tufting native perennial
<i>Rhaphiolepis indica</i> 'Ballerina' or ' Apple Blossom'	Indian Hawthorn	1	1	E	Small shrub
<i>Phormium cultivars</i>	New Zealand Flax	1.5	1.5	E	Upright tufting perennial plants

CANOPY TREES

Botanical name	Common name	Height (m)	Width (m)	Evergreen/ Deciduous	Comments
<i>Acacia implexa</i>	Lightwood	10	8	E	Small-medium sized native tree, suitable for easements
<i>Acer freemanni</i>	Red Maple	13	10	D	Medium canopy autumn colour
<i>Allocasuarina verticillata</i>	Drooping Sheoak	15	8	E	Medium sized native tree
<i>Banksia integrifolia</i>	Coastal Banksia	15	6	E	Small-medium sized native tree, suitable for easements
<i>Callitris glaucophylla</i>	White Cypress Pine	10	4	E	Small-medium sized native columnar conifer, suitable for easements
<i>Corymbia ficifolia</i>	Red-flowering Gum 'Snowflake' or 'Wildfire'	15	12	E	Small native tree
<i>Eucalyptus leucoxylon</i> 'Eukie Dwarf'	Dwarf Yellow Gum	10	4	E	Small native tree, suitable for easements
<i>Lagerstroemia indica</i> cultivars	Crepe Myrtle	6	7	D	Small hardy deciduous trees, suitable for easements
<i>Lophostemon confertus</i>	Brush Box	15	10	E	Large evergreen
<i>Malus ioensis</i> grafted form	Iowa Crab Apple	6	4	D	Small Tree, suitable for easements
<i>Melia azederach</i> 'Elite'	White Cedar	10	8	D	Small deciduous native tree, suitable for easements
<i>Pyrus calleryana</i> 'Capital'	Capital Pear	12	3	D	Small columnar deciduous tree
<i>Pyrus calleryana</i> 'Chanticleer'	Chanticleer Pear	10	8	D	Small rounded deciduous tree
<i>Tristaniopsis laurina</i>	Kanooka Gum	8	6	E	Small native tree, suitable for easements
<i>Ulmus parvifolia</i>	Chinese Elm	12	8	D	Medium tree

LARGE SHRUBS

Botanical name	Common name	Height (m)	Width (m)	Evergreen/ Deciduous	Comments
<i>Banksia marginata</i>	Silver Banksia	5	4	E	Good indigenous screening plant
<i>Bursaria spinosa</i>	Sweet Bursaria	5	4	E	Good indigenous screening plant
<i>Callistemon viminalis</i> 'Captain Cook'	Weeping Bottlebrush	2	2	E	Good native screening plant
<i>Callistemon citrinus</i> 'Endeavour'	Endeavour Bottlebrush	3	3	E	Good native screening plant
<i>Pittosporum</i> 'Silver Sheen'	Silver Sheen <i>Pittosporum</i>	4	3	E	Good screening plant

SMALL TO MEDIUM SHRUBS

Botanical name	Common name	Height (m)	Width (m)	Evergreen/ Deciduous	Comments
<i>Coleonema pulcrum</i> 'Aurea'	Golden Diosma	0.8	1	E	Small drought tolerant plant
<i>Correa alba</i>	Coastal Correa	1.5	2	E	Medium drought tolerant plant
<i>Correa glabra</i>	Rock Correa	1.8	2	E	Medium drought tolerant plant
<i>Hebe</i> 'Inspiration'	Veronica	0.7	0.7	E	Small drought tolerant plant
<i>Lavandula species</i>	Lavender	1	1.5	E	Small drought tolerant plants
<i>Rosmarinus officinalis</i>	Rosemary	1.8	1.5	E	Small drought tolerant plant
<i>Westringia fruticosa</i>	Native Rosemary	2	3	E	Medium drought tolerant native

GROUNDCOVERS AND LOW GROWING PLANTS

Botanical name	Common name	Height (m)	Width (m)	Evergreen/ Deciduous	Comments
<i>Ajuga reptans</i>	Blue Bugle	0.2	0.4	E	Small groundcover plant
<i>Correa 'Dusky Bells'</i>	Correa Dusky Bells	1	4	E	Reliable small native shrub
<i>Dianella species</i>	Flax Lily	0.5	0.5	E	Small clumping groundcover plant
<i>Lomandra longifolia</i>	Matt Rush	0.8	0.7	E	Upright tufting native perennial
<i>Phormium cultivars</i>	New Zealand Flax	1.5	1.5	E	Upright tufting perennial plants
<i>Rosmarinus officinalis 'Prostratus'</i>	Prostrate Rosemary	0.6	0.9	E	Low growing groundcover

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