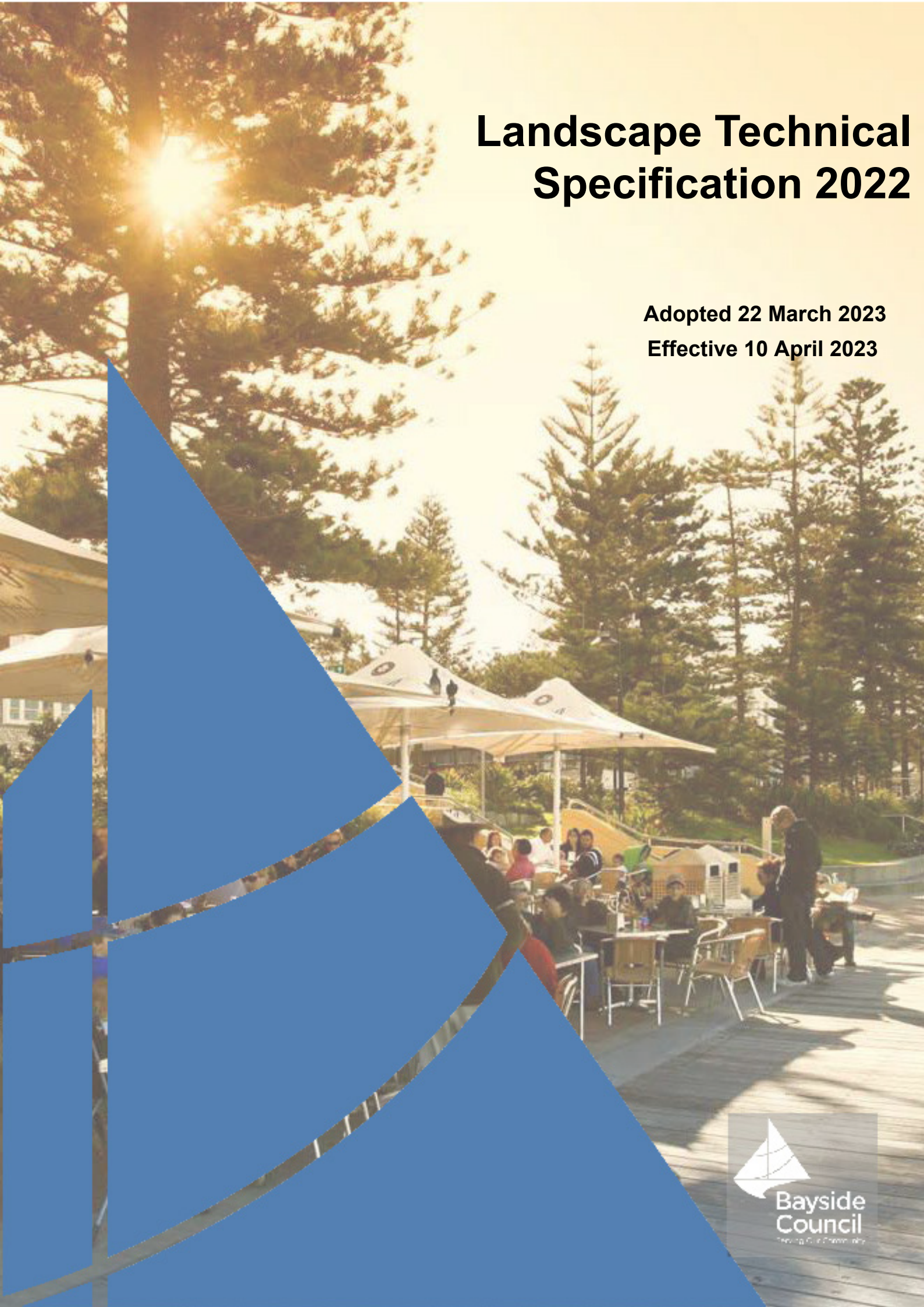
# Landscape Technical Specification 2022

**Adopted 22 March 2023**

**Effective 10 April 2023**



Bayside Council

# CONTENT

# 1. INTRODUCTION

## 1.1. Overview

Council's landscape vision for the city is 'to continually improve the quality of the landscape in terms of ecological sustainability, conservation of biological diversity, habitat, visual quality, fit for purpose and amenity for people.' The *Bayside Development Control Plan (DCP) 2022* contains general principles for landscape planning and design, including the objectives and controls for landscape space, biodiversity and tree preservation.

The Bayside Landscape Technical Specification (BLTS) has been developed to provide further detailed guidance in relation to the DCP Landscape requirements including particular design considerations. It specifies Council requirements for landscape design and assists residents, developers and designers who are undertaking development in understanding Council's objectives of functional, efficient, sustainable and high quality landscape spaces to deliver the best landscape outcome for each site. This document should be read in conjunction with the DCP, any relevant public domain controls and environmental planning instruments.

## 1.2. Application of This Specification

The BLTS applies to all new developments, alterations and additions on private land and Voluntary Planning Agreement (VPA) work on public domain within Bayside Council Local Government Area (LGA) unless a specific precinct masterplan applies.

This document is a resource developed for residents and developers who to submit landscape documentation with a development application. Bayside Council officers will use this technical specification as a reference when assessing development applications. It is important that applicants address the requirements of this document, as this will lead to a more effective review and assessment of the development applications.

# 2. LANDSCAPE REQUIREMENT

## 2.1. Site Planning

Site planning is the process of analysing existing conditions and arranging built and unbuilt elements on a site to accommodate a chosen function, program and design outcome. Landscape Design must be considered during the initial site planning and feasibility phase of the design process to ensure integration with the proposed developments.

Well planned landscape spaces can help contribute to the overall functionality, safety, security and visual appearance of development.

### 2.1.1. Tree removal approval

With increasing urbanisation and the development construction process, the protection of trees is an important objective for Bayside Council. Consideration must be given to existing trees early during site planning to incorporate existing trees into a development and ensure that the health of trees to be retained is not compromised by the proposed construction work. Council expects the retention of healthy and/or functional trees and requires that development proposals be designed to minimize tree removal or impact on existing trees.

When assessing whether existing trees should be retained, Council will consider various factors such as location, amenity (visual, environmental), function, health, form and structure, useful life, wildlife habitat, visual and heritage significance of the tree as well as impact on the development if retained and whether alternative site layouts need to be considered (Refer To *AS 4970-2009: Protection of trees on development sites* for further information).

It is the developer's responsibility to ensure that new buildings or structures are located to achieve the required distances from existing trees as per an arborist assessment. Council will generally not permit the removal of healthy trees nor the pruning of tree canopies to accommodate a new building or the increase in height of a building. Council will only approve removal of a tree if the tree is in poor or declining condition, is hazardous or has a minimal safe useful life expectancy or if it can be shown that it is not possible to provide an alternative layout or design to allow retention of the tree as it would render the development economically unviable.

Council may require an independent arborist's report prior to the determination of a development application.

Where council grants consent for the removal of an existing tree on land identified on the *Bayside LEP Biodiversity Map* the replacement of the tree(s) on the subject land or off site is required at the ratios outlined in Council's Tree Offset Policy.

### 2.1.2. Tree protection on construction site

Protective measures both before and during construction are required of all existing trees to be

retained on a development site. A site management plan is required to show all existing trees to be retained and identify the location of tree protection fence.

Civil and in particular stormwater management designs must account for existing trees to be retained on any site to ensure protection of the root system. Sub-surface storage tanks, infiltration trenches, sediment fencing, dish drains and stormwater pits and pipes are not permitted within the drip-line of any existing tree or within approved tree protection zone.

At site establishment, and prior to any works commencing including demolition, trees are to be physically protected with a tree protection fence located under the drip-line (see figure 1).

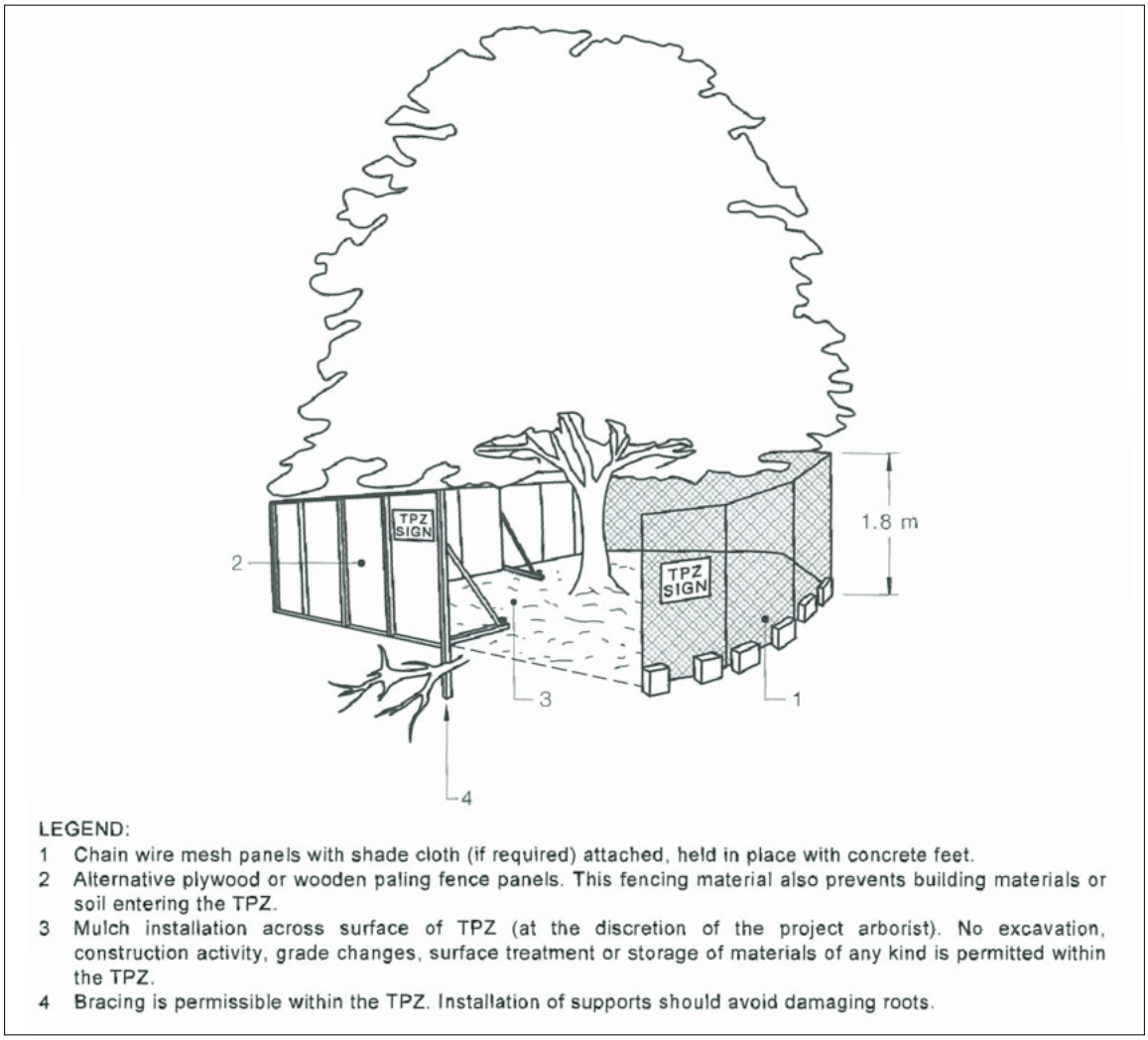



*Figure 1. Tree protection zone (TPZ) and tree protection fence (Source from AS 4709 Protection of trees on construction sites)*

The fence is to remain in place until practical completion of all construction work. For trees where fencing under the drip-line is not possible, tree trunks and lower branches are to be protected with carpet underlay or similar and lengths of timber secured by wire. Notices are to be posted on the protective fencing indicating that it is a tree protection area and a notice placed in the site manager’s office with contact details for the Arborist.

- The tree protection zone (TPZ) is to be mulch covered to a depth of 100mm at all time and regularly watered. Any exposed tree roots shall be protected by hessian and a layer of mulch.
- There is to be no activity within the fenced TPZ. Site sheds, stockpiles, storage, cleaning of tools, parking of vehicle and machinery shall be located remotely from all protected trees.
- Natural ground levels shall be maintained within TPZ. Retaining walls or changes in level are not permitted near existing trees.
- Where a masonry boundary fence may impact or conflict with tree roots, a pier and beam or bridged footing will be required. Strip or trench footings will not be permitted.
- Trenching for underground services is generally not permitted nor overhead electrical service wires.
- Where building work or trenching is unavoidable within the fenced tree protection zone work shall be undertaken manually and supervised by an Arborist.
- Areas of new paving should be kept away from tree protection zones to prevent root compaction and loss of aeration and water penetration to tree roots, as well as minimise later pavement damage.

*Refer To AS 4970-2009: Protection of trees on development sites* for further information and Part 2.3 Tree Preservation and Vegetation Management of the *Bayside DCP 2022* for further Council requirements.

### 2.1.3. Exempt tree works

The following tree removal or pruning works do not require Council approval:

- Trees that meet criteria under *SEPP (Exempt & Complying Development Codes) 2008* (Clause 3.6A and Clause 3A.7);
- Removal of noxious weed species/exempt species in the Bayside Local Government Area under the *Noxious Weeds Act 1993* (as listed in Part 4.4);
- Pruning near domestic power or telecommunications lines to maintain line distance clearance where the work is a maximum distance clearance of 500mm of branches up to 50mm diameter at the nearest branch collar (Branch collar is the point of attachment to another branch/trunk). Work must be carried out by an experienced Arborist or Tree Surgeon AQF Level 5 in accordance with *AS 4373-2007: Pruning of amenity trees*;
- Minor pruning work at a maximum distance clearance of 2 metres measured from the surface of the structural component (wall/ roof) of the building's edge and of branches up to 50mm in diameter at the nearest branch collar. (Branch collar is the point of attachment to another branch/trunk for branches overhanging the roof only);
- Tree works authorised under the *Electricity Supply Act 1995* or the *Roads Act 1993*;
- Emergency work carried out by Council, State Emergency Services, Fire Services or a public authority;
- Removal or pruning works undertaken by Council or a contractor acting on behalf of Council on Council owned or controlled land; and
- Where Council is satisfied the tree is dying or dead or poses a risk to human health or safety.

### 2.1.4. Earthworks

Earth mounds and embankments shall be set-out and constructed in accordance with approved landscape and/or civil plans and constructed to ensure minimal slumping and post-construction settling.

General earthworks:

- All imported fill to be certified clean fill, re-use of existing site soil (unless contaminated) is preferable;
- Fill layers to be 100-150mm thick and compacted to at least 90% of the dry density ratio of the surrounding soil, as specified by *AS1289.0-2000: Methods of soil testing* for Engineering Purposes, to minimise slumping and further compaction/settling post-construction;
- Ensure a gradual, rounded finished profile at corners and intersections of planes unless retaining walls or edging are incorporated;
- There should be a minimum 500mm wide shoulder between surrounding levels and commencement of grading;
- Grade to ensure water is directed away from buildings and there are no low points that would result in ponding of stormwater.

Earthwork for landscaped area:

- Maximum grade 1 in 4 for turfed area (however, council prefers 1 in 6 for safest operation) and maximum grade 1 in 3 for planted embankments;
- A settling period is required prior to turfing / plantings for imported soil area;
- Imported soil for landscape areas is not to be compacted;
- Refer to 2.2.4 Soil improvement and fertilisers for other soil preparation requirements.

Embankments are to be stabilized where necessary to prevent erosion or soil movement by using approved bank stabilisation techniques such as erosion control matting, fibrous matting, rock stabilisation, edges and retaining walls. The use of seeding is unacceptable.

A Dial-Before-You-Dig enquiry is to be undertaken prior to any excavation or digging to prevent damage to Council infrastructure or underground services/utilities.

### 2.1.5. Stormwater management and water sensitive urban design

Water management is the responsible treatment of on-site storm water and runoff generated across a site. It aims to minimise stormwater runoff, reduce the impact on local water systems, increase natural infiltration and reduce water consumption through landscape design.

In relation to landscape practices, Council requires the following:

- Reduced amounts or expanses of impervious pavements and surfaces
- Permeable pavements are to be used where possible. E.g. decks, pebbles, spaced pavers, specialised permeable pavers.
- Directing runoff to garden beds rather than to the street or stormwater systems through grading of paved areas
- Harvesting roof rainwater in tanks for irrigation re-use
- Minimising underground drainage by using bio-swales, wetlands, infiltration trenches or subsoil collection for stormwater disposal and re-use; and
- Optimising deep soil zones for stormwater and runoff water infiltration, thereby irrigating planted areas and recharging the groundwater aquifer.
- Water Sensitive Urban Design (WSUD) is required to be incorporated in all larger scale developments and may include such elements as bio-swales and rain gardens. (Refer to Part 3.8 Stormwater of the *Bayside DCP 2022*).

## 2.2. Work in Development Site

### 2.2.1. Retaining walls

(I) Material and finish

- Treated pine or hardwood sleeper retaining walls are only suitable for detached residential dwellings and are generally not permissible in industrial and commercial sites or where visible from the street or where there are other visual considerations from adjacent properties.
- For all other development, retaining walls must be suitably designed and adequately constructed using masonry, blocks or concrete with suitable robust render or a decorative finish (e.g. natural stone or other approved masonry products).

(II) Safe Structures

- Retaining walls must comply with relevant standards.

  Masonry walls must comply with:
  *AS 3700-2018: Masonry code*,
  *AS 3600-2018: Concrete structures*,
  *AS 1170-2007: Structural design actions Set*.

  Timber walls must comply with:
  *AS 1720.1-2010: Timber structures*
  *AS 1170-2007: Structural design actions Set*.

- Large retaining walls greater than 600mm in height are required to be designed by a qualified structural engineer and indicated in the landscape documentation.

- Council requires construction details for all retaining walls proposed as part of a development. This shall include full structural drawings indicating layouts, sections and details of all structural and other associated components. These design and construction details shall form part of the Development Application.

### 2.2.2. Front fence and gate

Fences form the boundary of the property and are the interface between public and private space. Fence design should respond to the context of the built form, the street and neighbouring properties. Along with the design of the front yard, the front fence can complement and enhance the appearance of a property. Fence design must comply with the *Bayside DCP 2022* and other statutory requirements.

Front fence requirements apply to boundary fences that face the public domain. New front fences must be:

- Complementary in style and materials to the character of the area of the property and give

consideration to heritage significance where applicable. Consider how different materials can allow for privacy and screening for the property while maintaining a clear line of sight between the private area and the footpath.
- A consistent height with neighbouring fences and the slope of the street

For corner lots, The maximum height of a fence along a road is:
- 1.2m along a road other than a classified road
- 1.5m along a classified road
- 1.8m where at least 30% transparent along a classified road

### 2.2.3. Pavement

Paver selection shall be specified in the landscape documentation, including sectional construction details, and included in the Schedule of Finishes. Unit pavers or tiles are the preferred finish in large scale residential and commercial developments. A limited amount of concrete paving may be incorporated however large expanses or lengths of concrete should be alleviated through the use of paver banding/headers, cobbles and the like particularly to delineate pedestrian zones, entries, transition zones or other special use areas. The use of contrasting finishes to break up large areas of concrete is also applicable to industrial developments. Paving and tiling shall comply with the following Australian Standard for slip resistance:
- *AS 4663-2013: Slip resistance measurement of existing pedestrian surfaces*, and
- *AS 4586-2013: Slip resistance classification of new pedestrian surface materials.*

Asphalt or bituminous pavements are generally not permitted except for vehicular loading, manoeuvring and parking areas in industrial and commercial developments. However the external at-grade parking areas can be paved in a contrasting finish to enhance the appearance of these areas.

Stencilled/stamped concrete is permitted only in the private driveways of detached residential dwellings due to its propensity for surface wear through continued use. Requirements are that there are no services or utilities underneath the area to be paved, the surface be sealed (and regular re-sealing) and that a header course be included along edges.

Pre-cast concrete stepping stones in utility areas shall have a joint of no more than 50mm, backfilled with gravel, if used for foot traffic.

Industrial and commercial developments may be required to use concrete interlocking pavers in parking and vehicular use areas.

Permeable pavements are encouraged as part of an overall Water Sensitive Urban Design (WSUD) approach for the re-use of surface stormwater and runoff on a development site. Permeable pavements allow water and air exchange to plant roots and the soil, reduce the amount of runoff entering the stormwater system, provide visual and textural relief to paved areas and allow natural infiltration of stormwater in large areas of paving.

Permeable paving may help to protect large, established trees where their root systems are extensive and some paving is unavoidable.

Suitable permeable pavements include:
- Crushed granite and gravels; and

- Resin bound aggregates (usually tree pit applications only)
- Pre-fabricated permeable paving units (laid over the recommended aggregate).

A small amount of cement in loose mixtures (3-5%) aids compaction and stability while allowing water infiltration. All loose surfaces shall be suitably graded, retained at edges and drained to prevent loose surface materials entering the stormwater system or spilling onto other pavements or garden beds during heavy rainfall.

### 2.2.4. Soil Improvement and Fertilisers

#### (I) Soil Improvement

Soil used for landscape should comply with
*AS 4419-2018: Soils for landscaping and garden use*, and
*AS 4454-2012: Composts, soil conditioners & mulches*.

A soil test conducted by the Sydney Environmental & Soil Laboratory or approved equal shall be prepared for all commercial, industrial and multi-unit residential sites. Tests shall be taken in several areas where planting is proposed. Site soil shall be given a pH test prior to modifying to ensure conditions are appropriate for planting as stated above. Landscape contractors shall implement the recommendations of the soil test.

General requirements:

- Aerate compacted soils and correct the pH of soils affected by construction activities or prior land uses.
- Remove builder's debris, concrete, cement and other deleterious matter from areas to be landscaped prior to planting.
- Where possible all site topsoil is to be stockpiled for re-use on site. The removal of site topsoil is to be carried out only following the approval of Council.
- Site top soil may be improved using a proprietary compost mix. Recycled and organic composts and soil conditioners are recommended.
- Imported soils for landscaped areas shall be in accordance with *AS4419-2018: Soils for landscaping and garden use*. Recycled soils and garden mixes are recommended.
- When growing locally native species it is recommended the natural soil be unaltered or improved with suitable additives only.

#### (II) Fertilisers

The use of fertilisers are to be minimised to reduce nutrient loadings on the stormwater system. Most natives do not require fertiliser. Organic fertilisers are recommended. Water retention additives are recommended to enhance the water holding properties of the soil during plant establishment.

#### (III) Contaminated soil

Prior to proposing any work on land that classified as soil contaminated, the applicants must engage a specialist to prepare the Contaminated Soil Assessment and follow the methods suggested by the specialist.

## 2.2.5. Deep soil area

Deep soil zones are areas within a development of natural ground with no obstructions above or below and relatively natural soil profiles (see figure 2). Deep soil zones help promote healthy growth of large trees, protect existing mature trees and allow infiltration of rain water into the water table to reduce storm water runoff.

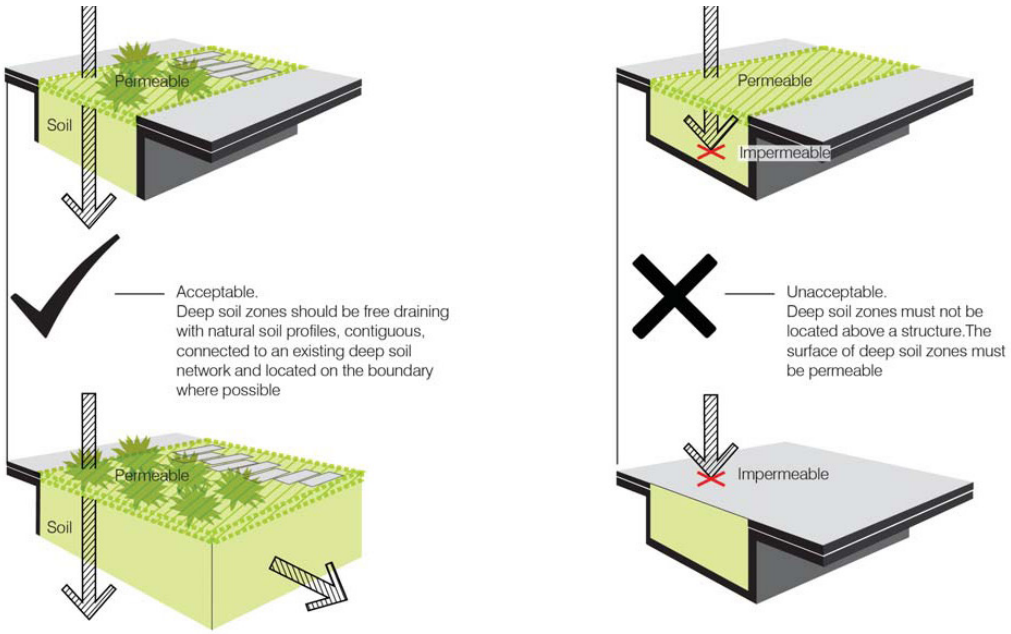



*Figure 2. Description of acceptable deep soil arrangements (Source: City of Sydney Landscape Code Volume 2)*

New development applications should demonstrate that appropriately sized and located deep soil areas are proposed within the development. Deep soil zones exclude areas on structures, pools and non-permeable paved areas. Where possible, deep soil zones should be consolidated, contiguous and connected to other deep soil systems. They should be located so that large trees provide useful shade and amenity to achieve privacy between facing units in courtyards, or to mitigate the scale of high density development.

Methods and considerations for the provision of deep soil zones within a development include:

- Designing car parking so it does not cover the whole site, providing zones for deep soil and where possible containing underground car parking beneath the building footprint
- Locating deep soil in areas connected to existing deep soil systems such as on site boundaries or within setbacks
- Utilising permeable paving materials where paving is required in deep soil zones
- Utilising deep soil areas to retain existing trees and planting new large trees to support the urban tree canopy, biodiversity and urban wildlife linkages.

Council encourages new designs to include deep soil areas in the setback treatment of the development to create an attractive visual outlook and to improve the environmental impact of developments. The minimum width for planter beds in all developments is 1 metre, except where otherwise stipulated in boundary setbacks for each development type.

## 2.2.6. Planting in deep soil

Sufficient trees and landscaped areas are to be incorporated into a planting design. Plant selection shall:

- Be appropriate and suitable for the landscape design intent;
- Suit the soils and micro climatic conditions on the site i.e. shade, exposure, irrigation etc.
- Be site responsive - enhance and embellish open spaces, setbacks and pedestrian areas, provide screening and shade where needed, alleviate large car park and paving expanses, subdue buildings and so on.

| PLANTING TYPE | MINIMUM POT SIZE |
|---|---|
| Trees in development site<br>(As entry statements) | 100L - 400L |
| Trees in development site<br>(Front setback) | 100L at least 2.2 metres in height and with a calliper of 40mm at 300mm above ground level |
| Trees in development site<br>(Behind building line) | 45L |
| Shrubs/hedge required for screening or feature specimens | 300mm |
| Shrubs | 200mm |
| NOTE:<br>1: Larger pot size might required for privacy, amenity or to replace trees removed.<br>2: For street trees refer to Public Domain 2.3.3: Street tree and planting | |

Mass planted areas of native grasses or indigenous species may include tube stock.
Supply plants to the quality and standards recommended in *Specifying Trees - A guide to assessment of tree quality* by Ross Clark. Ensure plant material is hardened off and ready for planting.

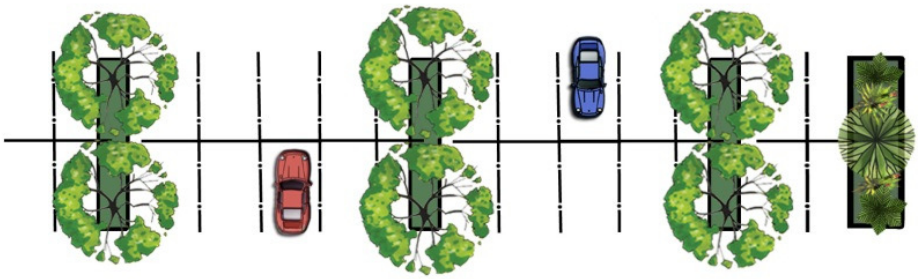
Recommended planting densities/ratios per square metre for shrubs and groundcovers are provided in the table below. Native or decorative grasses in virocells or tubes should be spaced according to the recommendations of the supplier.

| Recommended Plant Centres/ Spacing (mm) | Number of Plants per Square Metre (rounded) |
|---|---|
| 100 | 100 |
| 150 | 45 |
| 200 | 25 |
| 250 | 16 |
| 300 | 11 |
| 350 | 8 |
| 400 | 6 |
| 500 | 4 |
| 750 | 2 |
| 1000 | 1 |

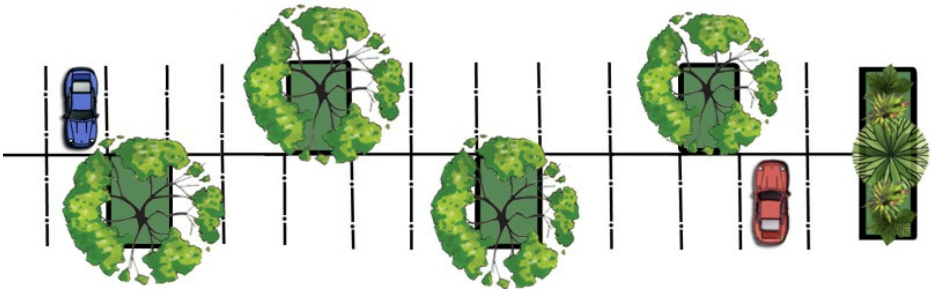
Trees should be planted densely whilst ensuring the mature canopies are not overcrowded. Use the features and form of individual species to reduce the scale, height and bulk of buildings and for screening and softening of buildings and other site elements.

### 2.2.7. Landscaping in ground car parks

- Landscaping, including broad canopy trees will be used to effectively and adequately screen and soften parking areas, vehicle circulation areas and ancillary and utility areas and enhance shading, ameliorate the effects of micro-climate and provide glare reduction.
- Landscaped areas will be planted densely using layered plantings of trees, feature plants and groundcovers while meeting Crime Prevention Through Environmental Design (CPTED) principles.
- Internal landscaping must allow for pedestrian visibility of traffic, maintaining open sightlines. This can be achieved utilising clear trunked trees and low level shrub plantings.
- All car parking spaces adjoining planter beds or trees shall be designed so that overhang of cars does not damage landscaped areas.
- The car park design must comply with *AS/NZS 1428.4.1-2009: Design for access and mobility*.
- Figure 3, 4 and 5 Indicates acceptable car park arrangements with respect to planting.
- Planter beds must be of an adequate dimension to cater for tree roots and future tree growth and to provide adequate moisture penetration and aeration of the root zone. (Figure 6 indicates an unacceptable layout).
- Planting areas and selection of plant species must be designed with consideration of sub-surface utilities and lighting when mature.
- Selection of trees must consider the potential for excessive fruit or leaf drop and large root systems. High maintenance species are not encouraged as removal of trees at a later date should be avoided.
- Tree root barriers are encouraged for certain tree species.



Option a

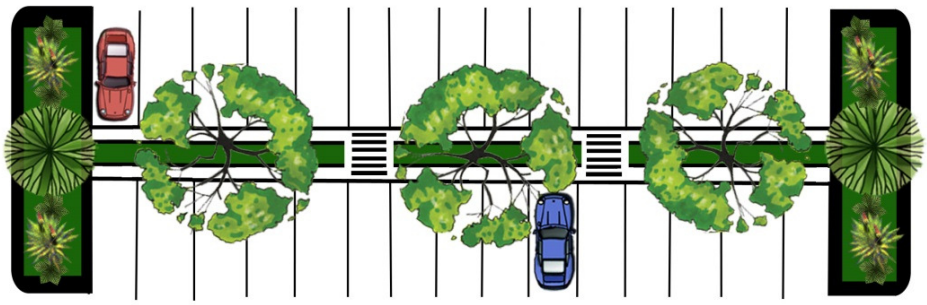


Option b

Note: Option a is a more formal layout with the island length and width of 2 car spaces. Option b is less formal due to the random placement of planted islands.

Alternative landscape layouts are permitted if space does not permit either option.

*Figure 3. Preferred car park landscaping layout*



Option c

Note: A central dividing planter bed and return at end of parking bay. Minimum 1.5 metres wide planted with shrubs and trees at the rate of 1 tree every 5 car spaces.

*Figure 4. Preferred car park landscaping layout*

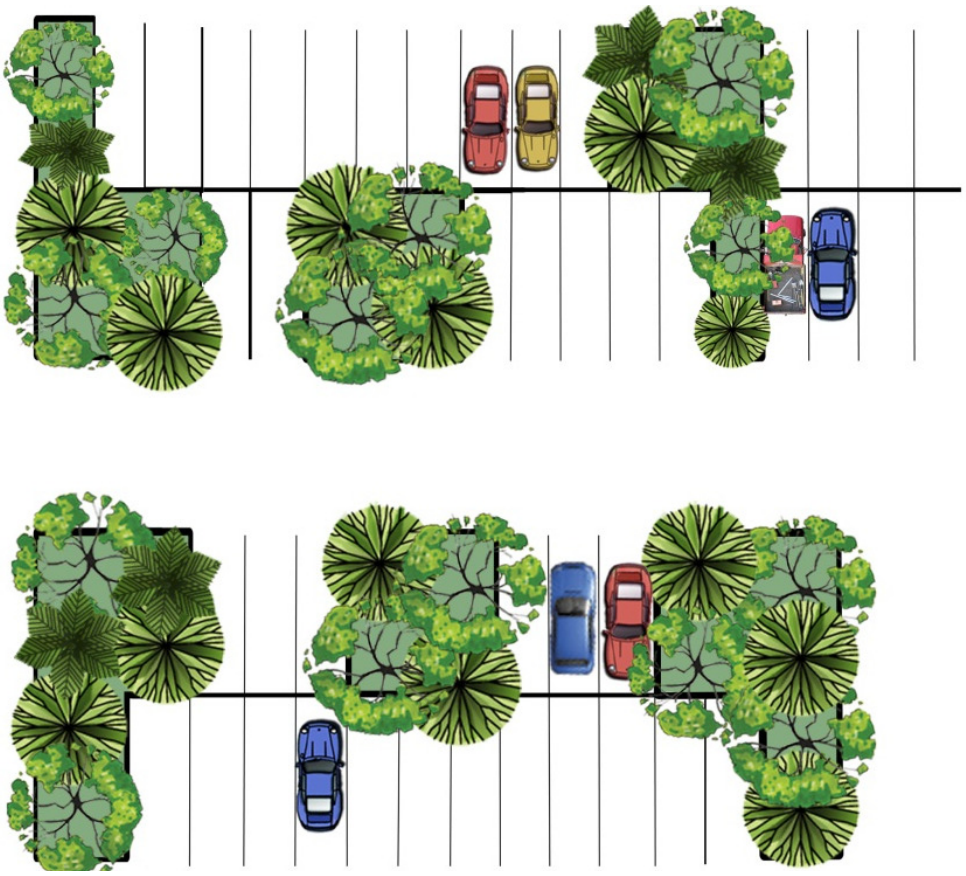


*Figure 5. An informal alternative car park landscaping layout*

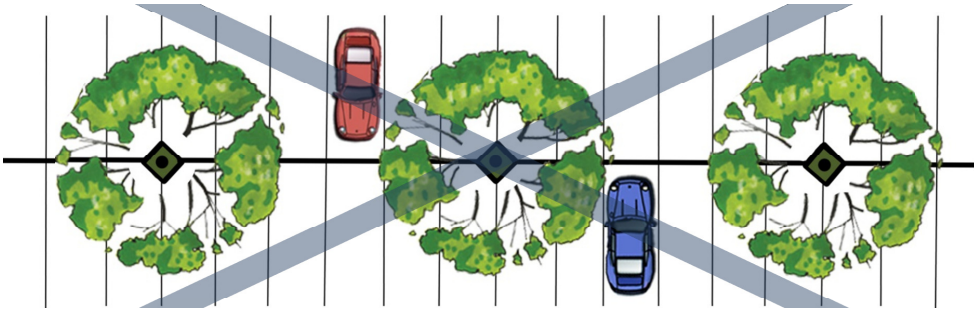


*Figure 6. Non-permissible car park landscaping layout*

## 2.2.8. Landscapes on structures

When space becomes constrained, podium landscape, green roofs and walls are an efficient way to insulate the building from heat and noise, create habitat to provide social benefits, support urban ecology and add beauty to a building. Developments should ensure the creation of quality usable social podiums and rooftop spaces for residents of medium and high density residential developments that support thriving sustainable plantings.

All green roofs and living green walls are to be designed by a landscape architect or landscape consultant specialising and experienced in this type of landscape design. This is to ensure the landscape areas are suitably constructed to be integrated with the building and supportive of plant life, to incorporate appropriate plant selection, to ensure useful and site responsive design and to ensure the long term survival of the landscaping.

(I) Structural Safety

Appropriate structural design of green roofs, green walls, raised planters and rooftop gardens in accordance with the *SEPP 65 Apartment Design Guide* (4P-Planting on Structures, objectives 4P-1, 4P-2 and 4P-3 )

Elevated planter boxes and landscaped areas on suspended slabs are to be designed by structural engineers to determine appropriate design for weight loadings and drainage.

This table provides a general guide to the saturated weights of green roofs compared to other materials. A qualified structural engineer must assess the design and weight of any green roof design.

| Material | Depth | Approximate weight |
|---|---|---|
| Soil | 100mm | 120 kg / $m^2$ |
| Soil | 500mm | 600 kg / $m^2$ |
| Gravel | 100mm | 150-180 kg / $m^2$ |
| Pavers | 45-50mm | 70-150 kg / $m^2$ |

(II) Stormwater and drainage

All paved and planted areas on slab are to be waterproofed and drained effectively and linked to the stormwater drainage system of the development.

- The base of the planter on slab must be screeded to drain all parts to a piped internal drainage outlet connected to the stormwater system.
- Planters on slab are to be fully waterproofed and sealed internally. All sealed finishes are to be sound and installed to manufacturer's directions.
- Drainage cells must be applied to the base and sides of the planter. Apply filter fabric to the base and sides prior to backfilling with an imported lightweight soil suitable for planter boxes and that is compliant with: *AS 4419-2018: Soils for landscaping and garden use* and *AS 3743-2003: Potting mixes*.
- Turf areas require a min. 5% cross fall.

- Internal drainage within the structure is required and is to be designed by a hydraulics engineer. External drainage weep holes are not permitted.

(III) Planting on slab

Where landscaping is provided on elevated areas over concrete slabs the landscape design must include adequate medium and large canopy trees to provide suitable privacy screening and softening of the built form.

Trees grown in these situations are subject to a broad range of environmental stresses that affect their health, vigour and ultimate size and survival. Where planting is to be carried out on a suspended concrete slab (roof gardens, balconies, over car parks) there must be sufficient soil depth and volume.

Landscape sectional details are required to ensure the planter bed/box are designed in accordance with the soil depth requirement below:

| PLANTING TYPE | MINIMUM SOIL REQUIREMENTS |
|---|---|
| Large canopy trees (8-10 metres in height) | Min. soil depth 1300mm,<br>planter dimensions 10 x 10 metres |
| Medium canopy trees (5-8 metre in height) | min. soil depth 1000mm,<br>planter dimensions 6 x 6 metres; |
| Small trees (3-4 metre in height) | Min. soil depth 800mm,<br>planter dimensions 4 x 4 metres; |
| Shrubs - min. soil depth 500mm | Min. soil depth 500mm |
| Groundcovers | Min. soil depth 300- 450mm |
| Lawns | Min. soil depth 300mm. |

Provide a decorative exterior finish to co-ordinate with building finishes and indicate in the landscape documentation.

(IV) Green walls

Green walls are either free standing or part of a building that is partially or completely covered with vegetation. The wall may incorporate soil and/or inorganic material as the growing medium.

There are two main types of green walls: green façades and living walls. Green façades are made up of climbing plants either growing directly on a wall or on specially designed supporting structures. The plant’s shoot system grows up the side of the building while being rooted in the ground. With a living wall, modular panels are affixed to the wall and geotextiles, irrigation and a growing medium combine to support a dense network of plants.

(V) Irrigation and maintenance schedule

Fully automatic irrigation systems are required due to limited soil depths and the free draining nature of on-slab planters. The irrigation design must be submitted for approval. The irrigation drawings and specification are to be signed for approval by a person holding a Diploma of Irrigation, or with equivalent experience.

The irrigation design must include devices and techniques that contribute to efficient water use include but are not limited to the list below and use of stored rainwater or grey water from the development is encouraged.

- Automatic controllers incorporating multiple start times, rain delay programming, and ET (evapotranspiration) programming
- Automatic shut-off devices such as rain and moisture sensors
- Low volume irrigation delivery through systems such as drippers, bubblers and micro-jets
- Pressure regulating devices
- High efficiency nozzles
- Deficit watering programs that irrigate to achieve 80% field capacity when available water reaches 40-45% of field capacity
- Stationing of sprinkler systems to match the hydro-zones of the site.

A maintenance schedule is required to ensure the long term viability of these elements (this needs to detail support for green walls and roofs if required).

Other resources include:
*North Sydney Council Green Roof and Wall Resource Manual*
*City of Sydney Green Roofs and Walls facts*

## 2.2.9. On-site Stormwater Detention (OSD)

Sub-surface concrete stormwater tanks and infiltration trenches are not to be located in areas to be landscaped, including the boundary setbacks of a development.
Where this is unavoidable due to drainage invert levels they are to be located underneath driveway/vehicle circulation areas to maximise the area available for deep soil tree planting and landscaping on the site.

On-site Stormwater Detention (OSD) or infiltration trenches shall not be located under the canopy drip-line of existing trees or within tree protection zone (TPZ).

Above-ground rainwater tanks shall are not be located within the front setback of a property or visible from the public domain.

Refer to Council's *Stormwater Management Technical Guidelines*.

### 2.2.10. Services / Utilities Items

Electrical kiosk or substation shall be located in an unobtrusive location away from vehicle and pedestrian entrances to the property and preferably toward a side boundary and/or setback off the street boundary to enable screening (planting or structures) and maintenance of streetscape amenity. The location of and screening treatment surrounding the utility must be approved by Council's Landscape Architect prior to installation.

Fire booster valve assemblies shall be housed within the external face of the building structure, otherwise screened from view from public domain such as located near side boundaries, behind boundary walls, within an enclosure or screened by landscaping.

Letter Boxes:

- Letterboxes should be located at the front of the property next to the entry gate, and provide adequate security. Letterboxes and locks must meet Australia Post requirements.
- Letterboxes must clearly display the property number.
- Letterboxes can be integrated into front fences to minimise visual clutter.

## 2.3. Work in Public Domain

Developers may be required to upgrade the public domain areas fronting/adjoining the development under the development application (DA) consent conditions or under a Voluntary Planning Agreement (VPA). Public domain works encompasses civil, drainage, landscape, undergrounding of power & communication cables, street lighting, traffic devices, traffic signs and line marking plus water sensitive urban works.

Applicants are required to lodge “Public Domain Frontage Works” application and provide the required supporting documentation, specification and design packages. Council Public Domain & Referrals Team assess these applications and review the design packages referencing relevant DA Consent Conditions and based on applicable Master Plans, Town Centre Plans plus all relevant standards and specifications.

The public domain design packages must be properly coordinated between the Civil, Electrical and Landscape Consultants to avoid conflict between landscape planting and under or above ground services and installations. Locations of planting, underground services and above ground installations must be consistent across all design packages.

Public Domain works shall be implemented in accordance with relevant Council plans, standards and specification and based on the approved public domain design packages. No work to be undertaken within the public domain until Council Frontage Works Permit is issued.

Suitably qualified and experienced landscape contractors shall be engaged to undertake all public domain landscaping work and shall be provided with a copy of both the approved landscape drawings and the conditions of approval to satisfactorily construct the landscape to Council requirements.

### 2.3.1. Driveway crossovers

In order to retain a uniform and visually cohesive streetscape, Council requires driveway crossovers (between site boundary and kerb) to be constructed in plain concrete unless the site is located in the catchment of a precinct master plan.

To preserve street trees and streetscape, driveway crossovers in residential areas shall be limited to one (1) crossover per allotment. All crossovers are to retain existing street trees and are to be located accordingly. Council prohibits vehicle crossings within 3m of the canopy of a street tree.

Driveways crossovers shall be designed to minimise the loss of on-street parking wherever possible. Where driveways are provided to dual occupancies, they are encouraged to utilise shared access way.

If relocation and reconstruction of existing crossovers are required to suit the development, the provision of new crossovers must include removal of redundant crossovers and reinstatement of kerb, gutter and footpath pavement to Bayside Council standards.

### 2.3.2. Footpaths

New or replacement of existing footpaths are to be undertaken in accordance with relevant Council specifications. Landscape plans must show the paving material, paving set-out, including paving pattern, pram ramps and coordination of junctions with the adjacent footpath.

A level and gradient plan maybe required, where improvements to gradients are necessary for accessibility in accordance with relevant standards. The plan is to illustrate the changes to existing levels, driveway crossovers, and building entries proposed. The cross-fall from the property boundary to top of kerb must be between 2.5% and 3.5%.

If existing levels and gradients do not comply with relevant standards, reconstruction will be required, however minor variations from the standards due to latent site conditions (e.g. steep sites) may be considered. Localised adjustment of longitudinal grades and cross-falls to suit building entries is not permitted in the public domain and, if required, must occur within the property line.

Where undergrounding of electrical cables is required under the DA Consent, the alignment of the footpath can be varied to avoid conflict with above ground electrical pillars and installations. Footpaths must be free of any obstructions.

### 2.3.3. Street trees and planting

Council requires developers to provide street tree planting or street landscaping as a contribution to the streetscape and public domain as a component of the development to soften the development and alleviate or subdue its impact upon the streetscape.

Street landscaping shall be designed alongside site landscaping to ensure integration of the development into the streetscape, taking into consideration existing planting in the street. Landscaping and street tree species shall be in accordance with Council's Street Tree Master Plan which nominates particular suitable species of tree for each street in the LGA.

Street trees or street landscaping are to be included in the landscape documentation for approval by Council. Developers are required to make good/replace the grass on the nature strip post construction.

Plants supplied shall be healthy and vigorous, free of pest and disease, free from injuries or defects. Trees provided shall conform to *NATSPEC* guide and in accordance with council's street tree masterplan.

| **POT SIZE OF PLANTS SUPPLY** | |
|---|---|
| **Planting type** | **Minimum pot size** |
| Street tree at classified road | 200L at least 3.5 metres in height and with a calliper of 60mm at 300mm above ground level with a clear trunk height of 1.5 meters |
| Street tree at local road | 75-200L |
| Replacement street tree | 75L-200L or larger if space permits |
| Shrubs/hedge enquired for screening | 300mm |
| Shrubs | 200mm |
| Note: Street trees are to be single trunk and with a strong leader and without any structural defects or damage. Trees are to be sourced from a reputable supplier that grows trees to the NATSPEC guidelines. | |

A root irrigation system is also required to facilitate water reaching the root ball. This shall be a circular ag. pipe type system with outlet above mulch level. A water retention additive is to be incorporated into the backfill mixture to assist soil moisture retention.

The tree pit mulch shall conform to *AS 4454-2012 | Composts, Mulches & Oil Conditioners* and be free of deleterious extraneous matter such as soil, weeds, wood slivers, stones. Mulch shall be in all tree pits to a depth of 100mm, when plants are installed, clear of all plant stems, and rake to an even surface flush with the surrounding finished levels.

New street trees in urbanised areas, where footpaths or roads are highly trafficable, shall be supplemented with the installation of structural support soils (SSS). The extent of SSS shall target to achieve an area of 35m² around the nominated tree pit, and this may be varied

depending on the surrounding assets.

Street trees installed in tree pits in paved footpaths in a high traffic area will require a finish like resin bound porous aggregate or similar and the surface level of the pit is to be flush with the adjacent pavement.

Two hold point inspections are required: The applicant is required to obtain a Council inspection of new trees prior to planting to ensure plant stock is suitable and post planting prior to the maintenance period commencing. Inspections can be arranged with Council's Landscape Architect with two weeks notice in advanced.

### 2.3.4. Tree guards and stakes

Tree guard/stake shall be constructed for each tree to identify it as new planting and protect it from casual and accidental interference. This staking is not to support the tree, as the new trees should be self-supporting upon supply from the nursery. More permanent guards may be warranted in very high use or vandal prone areas.

Tree guards shall be constructed with four (4) posts 2100mm long, 100mm$^2$ dressed all round seasonal hardwood timber upright. Posts shall be 1500 above ground with 2 levels of rails measuring 100x50 mm DAS seasonal hardwood. One rail at 300 mm above ground, and the top rail at 150mm under top of posts. (Refer to Standard Detail on Council website)

Tree stakes shall be constructed with three stakes (3) of 50 x 50 x 2500mm of durable hardwood, straight, free from knots or twists, pointed at one end. Provide ties fixed securely to the stakes, 50mm hessian webbing installed around the stakes and stem in a figure of eight pattern and stapled to the stakes. (Refer to technical drawing on Bayside council's website)

Street trees planted within town centre paved footpaths may require tree guards and grates, or tree guards and permeable tree surround in accordance with relevant Master Plans, Town Centre Plans or to match existing themes.

Other inclusions may also be required such as structural cell or structural soils.

### 2.3.5. Root barrier

Strip polyethylene tree root barriers (rigid ultra durable high density polyethylene (HDPE)) is recommended for trees planted adjacent to or within paved areas to reduce the likelihood of pavements lifting or buckling with certain tree species.

The barrier should be laid 900mm deep in 6 metre lengths (minimum) either side of the tree trunk or around the perimeter of the planting hole for pits trees in paved areas. The top edge of the barrier shall finish approx. 20mm below the soil or adjoining surfaces. Where necessary cut the barrier to fit around underground services, seal to prevent root penetration in accordance with manufacturer's recommendations.

Root directors are only suitable for trees in tree pits in paved areas and should have vertical ribs on the inside, be installed not less than 450mm deep and joints sealed to prevent root penetration in accordance with manufacturer's recommendations. Allow a 100mm column of aggregate between the tree planting hole and reverse of barrier.

### 2.3.6. Garden edging

- Edging around garden beds is to be installed to limit the movement of soil and mulch to adjoining surfaces.
- Trees in grassed areas are to be surrounded by a timber edge at least 1.2 metres from the tree trunk to keep grass clear from tree trunks.
- All hard edges on curves shall be laid in a smoothly curving form and constructed from formed or extruded concrete, masonry, galvanised steel or approved equivalent. PVC edging is not acceptable.
- Logs (e.g. Koppers or similar) are unsuitable in the public domain.

### 2.3.7. Street furnitures

Embellishment of landscapes and open spaces with furniture is encouraged in medium and high density residential and commercial developments to embellish, add character, functionality and usage of landscaped open spaces.

In the public domain, furniture selection shall be to Council's specification and form part of the development approval or Voluntary Planning Agreement. All landscape furniture must be located and detailed in the landscape documentation.

Council's Landscape furniture selection includes seating, litter bins, bollards, bicycle racks, drinking fountains, pedestrian/area lighting, shelters and the like.

To obtain an up to date list of council's preferred selections, please contact council's Public Domain Team as the list is subject to change.

### 2.3.8. Public Art

Public art provision can improve the amenity of public spaces near and within private developments, including the look, feel and the perception that these spaces are cared for and safe. Where this opportunity arises, Council can work in partnership with artists, and other agencies to support the commissioning of public art, or to integrate artistic work into the design of major infrastructure projects.

Public art can play a role in reflecting the identity of the local area and celebrating its history, culture and innovations. It can deliver a range of benefits to the community including visual and cultural enrichment of individual developments and the public domain, transformation of the urban fabric, meaning to places making them memorable and gives the community access to, appreciation and enjoyment of art promoting a range of educational, environmental, and social messages.

Public art can be integrated into private developments, community facilities, parks and public domain improvements. The provision of high quality public art with relevance to the context of the site, consideration of public safety, access and durability is promoted.

As part of the development approval process, Council may require developers to engage appropriate experienced artists and install appropriate public artworks in private developments or the public domain where that artwork could provide a positive contribution to the community and the streetscape.

Council has developed *Bayside Public Art Policy* which identifies the acceptable themes and application. Developers are required to follow the policy when design, construct and install the artwork.

### 2.3.9. Amenity lighting

Pedestrian safety lighting is a Council requirement of medium and high density residential and commercial developments and Council may require a lighting design to be submitted as part of the Development Application.

Light Design should be prepared by an electrical engineer in accordance with Australian Standards including *AS 4282-1997: Control of the obtrusive effects of outdoor lighting* and *AS 1158-2010: Lighting for roads and public spaces set* with consideration for high standard energy efficiency**.**

Lighting shall allow for adequate and continuous illumination of pathways, access ways and open spaces in a development at night and to ensure consistency of lighting between public and private open space. Landscape lighting in garden beds may also be utilised in a development but is in addition to the pedestrian lighting requirement.

Lights shall be designed and located so as not to cause adverse impacts on the amenity or nuisance to surround residents, motorists or adjoining residents through light spill.

The position and selection of light poles in the public domain must meet minimum Ausgrid standards.

All light fittings and standards to be achieved in public domain shall be in accordance with Council's requirements and preferred selection (list available from Council's Public Domain Team upon request).

### 2.3.10. Signage

Bayside Council has developed a standard wayfinding signage applicable to Town Centres. Developers are required to follow the standard signage design types if signage is to be installed in the public domain. Refer to *Bayside Council Wayfinding Signage – 711718* for the signage suite and its application.

## 2.3.11. Completion and handover

(I) Completion

Completion of approved public domain works, including the following steps:

| **Defects rectification** |
| --- |
| Upon completion of the public domain works, Council Officers will undertake an inspection to identify any defects that need to be rectified. Defects may include incorrect location of elements, unsatisfactory construction techniques or finishes, or any other non-compliances with the approved plans and specifications. All items will be confirmed in writing and must be rectified directly.<br><br>Upon satisfactory resolution of any outstanding items or defects, Council Officers will undertake a final inspection to determine completion. |
| **Preparation and submission of certified Works-as-Executed documentation** |
| Requirements for works-as-executed documentation will be outlined in the public domain frontage works approval. (including those arising from a Development Application, or Planning Agreement but will typically include:<br>• Work-as-executed (as-built) plans<br>• Supplier/installation certificates<br>• Supplier/installation warranties<br>• Supplier/installation manuals<br>• Inspection records/certificates<br>• Test records/certificates<br>• Non-conformance reports and rectification records<br>• Defect reports and rectification records<br>• Maintenance schedule<br>The specification for Works-As-Executed Records are contained in the Bayside Council Work-As-Executed Records Manual. Particular attention is drawn to the preparation and submission of work-as-executed (as-built) drawings. As-built drawings of the completed works must:<br>• be prepared on the basis of a survey by a registered surveyor;<br>• be presented as overlaid on the approved construction drawings; and<br>• be submitted in CAD (dwg) and PDF format. |
| **Obtaining a Certificate of Completion by City to allow the issue of an occupation certificate by a Private Certifying Authority or Council.** |
| A Certificate of Completion will only be issued by the Council once the works are considered satisfactory and all required works-as-executed documentation has been submitted to, and been accepted by the Council. |

(II) Defects liability period

All Public Domain Works shall be subject to a contractual defects liability period. The contractual

defects liability period is to be included in the contractual arrangements established by the Developer with the Principal Contractor for the construction of the Public Domain Works. Any time after final sign off, but before the expiry of the defects liability period, Council may identify a defect and instruct the defect be addressed. The duration of the defects liability is as specified by:

- The relevant Planning Agreement (PA); or
- The relevant conditions of consent.

The contractor shall record all information on defects raised during the contractual defects liability period into a defects register, including make good and further additional testing. All defects raised during the contractual defects liability period need to be made good and signed off by Council's Public Domain Team prior to the refund of security deposits and/or bonds. Council will not refund security deposits and/or bonds until it is satisfied that the contractor has made good in accordance with the contractual specification.

### (III) Handover

At the end of liability period, all public domain work and contributed asset will be handed over to council for future maintenance. Whilst a Contributed Asset is received by Council at no cost, the asset imposes a substantial ongoing financial obligation on Council to operate and maintain the asset, ensure mitigation of work health and safety hazards, financially account for the asset, and, in most circumstances, replace/rehabilitate the asset when the asset reaches its end of useful life.

Developer contributed assets shall be measured and recognised as per the procedures illustrated in *Bayside Council Public Domain Works by Developers*.

Developers are required to fill contribution asset form before the handover process.

Council will refund deposit / bond at the end of handover process.

## 2.4. Development Adjacent To Open Space

Bayside has a wide range of developed and natural open space areas, ranging from sporting fields and constructed wetlands, to remnant bushland and coastal areas. Council is committed to maintain and increase species diversity and indigenous plant cover in these areas. New developments bordering open space must provide a positive contribution to the open space areas and not cause any adverse environmental or visual impacts.

Objectives

- To ensure that new developments have a positive visual and environmental impact on adjoining open space
- To minimise adverse impacts on open space during construction
- To assist in developing a sympathetic and harmonious interface between private development and public open space
- To protect, in particular, bushland and wetland areas through sensitive landscape treatments and installation of appropriate environmental controls in surrounding areas

Design Requirements

(I) Planting

In sites adjacent to bushland / wetland all dominant species are to be indigenous to the local area. A small amount of accent planting of exotic species may occur using groundcovers and shrubs. All non indigenous plants are to be non-invasive and unlikely to establish in the adjoining open space either by seed or vegetative reproduction.

(II) Access & Storage of Materials

Construction access to sites through open space areas or storage of materials in adjoining open space is strictly prohibited.

(III) Site Topsoil

Where possible all site topsoil is to be stockpiled for re-use on site. The removal of site topsoil is to be carried out only following the approval of Council. Site top soil may be improved using a proprietary compost mix.

(IV) Disposal of Run-Off Water

All stormwater is to be disposed of in accordance with Council's Technical Specification - Stormwater. No stormwater is to be discharged directly onto adjoining open space without the prior written approval of Council. Where approval is granted Council will specify the manner and construction techniques for dispersal.

(V) Sites Adjacent to Bushland

Work on sites adjacent to bushland must complying with *State Environment Planning Policy No. 19 (SEPP 19)* - Bushland in Urban Areas. Development in these areas requires specific considerations to maintain the overall integrity of the precinct and minimise external influences which may be detrimental to the long term quality of bushland areas.

## 2.5. Maintenance

To ensure landscape works are adequately established, effective long-term maintenance practices and quality landscape outcomes; , Council requires:

(I) As part of the DA landscape documentation, a maintenance schedule is to be submitted for council approval. This Schedule must include the following information:

- Shrub pruning/trimming (frequency, plant requirements)
- Tree maintenance (fertilising, mulching, special tree requirements) and adjustment of tree stakes and ties
- Mulching, weeding and soil improvement (frequency, materials)
- Watering and irrigation (checks, adjustments)
- Fertilising (Fertilisers specified are to be organic, to reduce the accumulation of chemical nutrients in soils and waterways.)
- Pest control (types, rate, frequency)
- Replacement of dead or stolen plants, mulch replacement, and so on
- Maintenance of hard landscape elements (paving, edges, walls, pergolas, seats, planter box walls, etc)
- Planter boxes/roof gardens/green wall (specialised maintenance requirements ).
- Any maintenance requirements specific to the site must be included.

(II) All soft landscape areas are to be maintained for a minimum period of 52 weeks in accordance with the approved Maintenance Schedule.

(III) Council encourage landscape architects to carefully design the selection of materials to reduce maintenance requirements. (e.g. The use of indigenous plants, mulched areas, grouping plants with similar water needs, garden edging, gravel and groundcover plants instead of grass all reduce future maintenance.)

(IV) The provision for watering of mass planted areas other than podium and rooftop gardens should not be reliant on irrigation or hand watering, in line with the growing awareness of the need to conserve water. Regular watering should be carried out only as necessary to enable establishment of plants. However, podium and rooftop plantings and lawn over concrete slabs require a fully automatic irrigation system owing to limited soil depths.

# 3. PLANTS LISTS

## Suitable Species for Open Space

| Botanical Name | Common Name | Native / Exotic | Evergreen / Deciduous | Maximum Height | Maximum Spread |
|---|---|---|---|---|---|
| *Agathis robusta* | *Kauri Pine* | *N* | *E* | *18m* | *12m* |
| *Angophora costata* | *Sydney Red Gum* | *N* | *E* | *15m* | *12m* |
| *Angophora floribunda* | *Rough Barked Apple* | *N* | *E* | *18m* | *15m* |
| *Angophora hispida* | *Dwarf Apple* | *N* | *E* | *6-8m* | *4-6m* |
| *Araucaria columnaris* | *Cook Pine* | *N* | *E* | *60m* | *6m* |
| *Araucaria cunninghamii* | *Hoop Pine* | *N* | *E* | *60m* | *10m* |
| *Araucaria heterophylla* | *Norfolk Island Pine* | *N* | *E* | *60m* | *15m* |
| *Araucaria araucana* | *Monkey Puzzle* | *E* | *E* | *20m* | *12m* |
| *Banksia integrifolia* | *Coast Banksia* | *N* | *E* | *7-10m* | *5-7m* |
| *Banksia serrata* | *Old Man Banksia* | *N* | *E* | *6-10m* | *4-5m* |
| *Brachychiton acerifolis* | *Illawarra Flame Tree* | *N* | *E* | *15m* | *10m* |
| *Callistemon salignus* | *Pink Tipped Bottlebrush* | *N* | *E* | *7-9m* | *4-6m* |
| *Corymbia eximia* | *Yellow Bloodwood* | *N* | *E* | *25m* | *8m* |
| *Corymbia gummifera* | *Red Bloodwood* | *N* | *E* | *35m* | *8m* |
| *Corymbia maculata* | *Spotted Gum* | *N* | *E* | *60m* | *10m* |
| *Eucalyptus botryoides* | *Bangaly* | *N* | *E* | *40m* | *12m* |
| *Eucalyptus crebra* | *Narrow leaf Ironbark* | *N* | *E* | *18m* | *12m* |
| *Eucalyptus haemastoma* | *Scribbly Gum* | *N* | *E* | *25m* | *15m* |
| *Eucalyptus microcorys* | *Tallow Wood* | *N* | *E* | *25m* | *15m* |
| *Eucalyptus punctata* | *Grey Gum* | *N* | *E* | *35m* | *15m* |
| *Eucalyptus robusta* | *Swamp Mahogany* | *N* | *E* | *25m* | *10m* |

| Botanical Name | Common Name | Native / Exotic | Evergreen / Deciduous | Maximum Height | Maximum Spread |
|---|---|---|---|---|---|
| *Eucalyptus sideroxylon* | *Mugga Ironbark* | *N* | *E* | *25m* | *15m* |
| *Ficus microcarpa* | *Hills Fig* | *N* | *E* | *40m* | *40m* |
| *Ficus macrophylla* | *Moreton Bay Fig* | *N* | *E* | *50m* | *50m* |
| *Ficus rubiginosa* | *Port Jackson Fig* | *N* | *E* | *30m* | *30m* |
| *Flindersia australis* | *Teak Tree* | *N* | *E* | *20m* | *20m* |
| *Glochidion ferdinandi* | *Cheese Tree* | *N* | *E* | *25m* | *10m* |
| *Grevillea robusta* | *Silky Oak* | *N* | *E* | *30m* | *10m* |
| *Harpullia pendula* | *Tulipwood* | *N* | *E* | *20m* | *5m* |
| *Hibiscus tiliaceus 'Rubra'* | *Coast Cottonwood* | *N* | *E* | *6-9m* | *5-6m* |
| *Lophostemon confertus* | *Brush Box* | *N* | *E* | *30m* | *10m* |
| *Tristaniopsis laurina* | *Water Gum* | *N* | *E* | *7-14m* | *5-8m* |
| *Parrotia persica* | *Persian Ironwood* | *E* | *D* | *7-10m* | *5-8m* |
| *Lagerstroemia indica* | *Crepe Myrtle* | *E* | *D* | *8-10m* | *6m* |
| *Acer palmatum* | *Japanese Maple* | *E* | *D* | *4-6m* | *3m* |
| *Callistemon viminalis* | *Weeping Bottlebrush* | *N* | *E* | *6-10m* | *5-8m* |
| *Ceratopetalum gummiferum* | *NSW Xmas Bush* | *N* | *E* | *5-7m* | *3-5m* |
| *Elaeocarpus reticulatus* | *Blueberry Ash* | *N* | *E* | *7-10m* | *3-5m* |
| *Hymenosporum flavum* | *Native Frangipani* | *N* | *E* | *7-9m* | *3-5m* |
| *Koelreuteria paniculata* | *Golden Rain Tree* | *E* | *D* | *7-10m* | *7-9m* |
| *Magnolia grandiflora 'Little Gem'* | *Little Gem Bull Bay Magnolia* | *E* | *E* | *15m* | *10m* |
| *Syzygium australe* | *Scrub Cherry* | *N* | *E* | *5-8m* | *4-6m* |
| *Backhousia citriodora* | *Lemon Scented Myrtle* | *N* | *E* | *6-9m* | *3-5m* |
| *Gordonia axillaris* | *Fried Egg Tree* | *E* | *E* | *5-8m* | *4-8m* |
| *Corymbia ficifolia* | *Flowering Gum* | *N* | *E* | *7-9m* | *5m* |

| Botanical Name | Common Name | Native / Exotic | Evergreen / Deciduous | Maximum Height | Maximum Spread |
|---|---|---|---|---|---|
| *Grevillea baileyana* | *Brown Silky Oak* | *N* | *E* | *6-10m* | *3-5m* |
| *Acmena smithii var. minor* | *Small-leaved Lilly Pilly* | *N* | *E* | *5-8m* | *3-4m* |
| *Buckinghamia celsissima* | *Ivory Curl Flower* | *N* | *E* | *6-10m* | *4-6m* |
| *Dais cotinifolia* | *Pompom Tree* | *E* | *E* | *3-6m* | *3-5m* |
| *Magnolia x soulangiana* | *Saucer Magnolia* | *E* | *D* | *5-8m* | *5m* |
| *Backhousia myrtifolia* | *Grey Myrtle* | *N* | *E* | *4-7m* | *3-4m* |
| *Geijera parviflora* | *Wilga or Native Willow* | *N* | *E* | *10m* | *8m* |
| *Meleleuca quinquenervia* | *Broad Leaved Paper Bark* | *N* | *E* | *15m* | *8m* |
| *Melaleuca leucadendra* | *Weeping Paperbark* | *N* | *E* | *15m* | *8m* |
| *Melaleuca viridiflora* | *Weeping Red-flowering Paperbark* | *N* | *E* | *8-10m* | *3-4m* |
| *Podocarpus elatus* | *Illawarra Plum* | *N* | *E* | *15m* | *12m* |
| *Pyrus calleryana* | *Callery Pear* | *E* | *D* | *10m* | *3m* |
| *Pyrus ussuriensis* | *Manchurian Pear* | *E* | *D* | *10m* | *5m* |
| *Quercus palustris* | *Pin Oak* | *E* | *D* | *15m* | *10m* |
| *Quercus robur* | *English Oak* | *E* | *D* | *11m* | *11m* |
| *Syzygium jambos* | *Malabar Plum* | *N* | *E* | *15m* | *8m* |
| *Syzygium smithii* | *Lillypilly* | *N* | *E* | *30m* | *6m* |
| *Waterhousea floribunda* | *Weeping Lilly Pilly* | *N* | *E* | *30m* | *10m* |
| *Zelkkova serrata* | *Zelkova* | *E* | *D* | *12m* | *8m* |

# Suitable Species for Area Beneath Powerlines

| Botanical Name | Common Name | Native / Exotic | Evergreen / Deciduous | Maximum Height | Maximum Spread |
|---|---|---|---|---|---|
| *Angophora hispida* | Dwarf Apple | N | E | 6-8m | 4-6m |
| *Banksia serrata* | Old Man Banksia | N | E | 6-10m | 4-5m |
| *Callistemon salignus* | Pink Tipped Bottlebrush | N | E | 7-9m | 4-6m |

| Botanical Name | Common Name | Native / Exotic | Evergreen / Deciduous | Maximum Height | Maximum Spread |
|---|---|---|---|---|---|
| *Hibiscus tiliaceus 'Rubra'* | Coast Cottonwood | N | E | 6-9m | 5-6m |
| *Tristaniopsis laurina* | Water Gum | N | E | 7-14m | 5-8m |
| *Banksia integrifolia* | Coast Banksia | N | E | 7-10m | 5-7m |
| *Lagerstroemia indica* | Crepe Myrtle | E | D | 8-10m | 6m |
| *Callistemon viminalis* | Weeping Bottlebrush | N | E | 6-10m | 5-8m |
| *Ceratopetalum gummiferum* | NSW Xmas Bush | N | E | 5-7m | 3-5m |
| *Elaeocarpus reticulatus* | Blueberry Ash | N | E | 7-10m | 3-5m |
| *Hymenosporum flavum* | Native Frangipani | N | E | 7-9m | 3-5m |
| *Magnolia grandiflora 'Little Gem'* | Little Gem Bull Bay Magnolia | E | E | 5-6m | 3m |
| *Syzygium australe* | Scrub Cherry | N | E | 5-8m | 4-6m |
| *Backhousia citriodora* | Lemon Scented Myrtle | N | E | 6-9m | 3-5m |
| *Gordonia axillaris* | Fried Egg Tree | E | E | 5-8m | 4-8m |
| *Corymbia ficifolia* | Flowering Gum | N | E | 7-9m | 5m |
| *Grevillea baileyana* | Brown Silky Oak | N | E | 6-10m | 3-5m |
| *Acmena smithii var. minor* | Small-leaved Lilly Pilly | N | E | 5-8m | 3-4m |
| *Buckinghamia celsissima* | Ivory Curl Flower | N | E | 6-10m | 4-6m |
| *Backhousia myrtifolia* | Grey Myrtle | N | E | 4-7m | 3-4m |
| *Geijera parviflora* | Wilga or Native Willow | N | E | 10m | 8m |

# 4. GLOSSARY / DEFINITION

***Arborist*** refers to a qualified and experienced practitioner with a minimum AQF (Australian Qualifications Framework) 5 (refer to Arboriculture Australia website).

***Deep soil zones*** are areas of natural or existing ground with the natural soil profile retained within a development to promote the healthy growth of large canopy trees, to protect existing trees and to enhance the natural infiltration of stormwater and runoff to the ground water table. Deep soil zone do not include landscape areas or planters located over building podium or basement car parks and do not include planter boxes regardless of soil depth. Deep soil zones do not contain stormwater detention tanks, rainwater tanks or infiltration trenches, driveways, car parks (at grade or basements) or large areas of paving, they are green landscaped areas. Minimum dimension for deep soil zone is 1 meter.

***Green roof*** means a roof system designed to promote the growth of various forms of vegetation on the top of buildings. Differing from a roof garden, a green roof can also support various forms of renewable energy and water collection technology to assist in supplying power and water to the occupants of the building.

***Horticulturalist*** is a person eligible for membership of the Australian Institute of Horticulture.

***Indigenous species*** are those that originate naturally in a region. These plant species occurring at a place within its historically known natural range and forming part of the natural biological diversity of a place (NSW Multi-Unit Residential Design Code 2002).

***Landscape Architect*** is a person eligible for Associate membership of the Australian Institute of Landscape Architects (AILA).

***Landscaped area*** includes all of the parts of a site used for growing plants, grasses and trees, but does not include any building, structure or hard paved area. This refers to soft landscaping only.

***LGA*** refers to Local Government Area.

***Private open space*** refers to an open area of land or building attached to a building intended for the exclusive use of occupants of the building for private outdoor living activities.

***Public art*** is a permanent or temporary work of art created by a professional artist through formal commissioning process that has been created and implemented with the intention of being staged or visible within, or part of a public space provided by both the public and private sector. Public Art may be an object that provides practical functionality in addition to its substantive role as a work of art. It can take varied physical and virtual forms and can adopt many forms and approaches from community cultural development, place-making projects, stand-alone artworks, art “built in” conceptual contribution by artists to the design of public spaces and facilities, or art integrated with landscape or urban design. It can reflect a diverse range of styles and practices from traditional to contemporary art, and utilise a range of mediums. ***Temporary Public Art*** is a public artwork intended to be in place for a defined period of not more than 6 months.

***Public domain*** refers to areas of the Council in which access to and use of is available for any member of the public. The public domain typically includes parks, plazas, footpaths and streets.

***WSUD*** refers to Water Sensitive Urban Design, which means the integration of urban planning with the management, protection and conservation of the urban water cycle so as to ensure urban water management is sensitive to natural hydrological and ecological processes. It may include practices such as storm water reuse, use of bioretention swales and detention ponds.

# 5. LANDSCAPE DOCUMENTATION DA CHECK LIST

# Landscape Documentation DA Checklist

| **Property Details** | | | **DA Number** |
|---|---|---|---|
| Unit/shop/suite | Street No & Street | Suburb | Post Code |
| | | | |

**Council requires that a Landscape Plan MUST be prepared by a qualified Landscape Architect*** (*University Degree or equivalent in Landscape Architecture) **for all developments except where exempted by Bayside DCP 2022: Schedule 3: Landscape Plan Requirements.**

This checklist must be completed for the applicant by the qualified landscape architect who designed the landscape proposals for this development and submitted with the Landscape Documentation that accompanies the Development Application.

**Qualified Landscape Architect's Details**

| Ms/Mr/Other (please state) | | Family Name | | Given Name | |
|---|---|---|---|---|---|
| No. | Street | | Suburb | | Postcode |
| Company Name (if applicable) | | | | | |
| Mailing Address (if different) | | | | | |
| Tel (Work/Mobile) | | | Tel 2 (Work/Mobile) | | |
| Fax | | | Email | | |

| **Landscape Documentation DA Checklist** | | **Yes** | **No** | Office Use |
|---|---|---|---|---|
| **Qualification Requirements** | | | | |
| 1 | Are you a qualified Landscape Architect? (University Degree or equivalent in Landscape Architecture).<br><br>Detail of your qualification(s):<br><br>Year of professional practice: | ☐ | ☐ | ☐ |

**Privacy Statement**
The personal information provided on this form (including your name and other details) will be handled in accordance with the *Privacy and Personal Information Protection Act 1998* and may be available to the public under various legislation. Refer also to the Privacy Statement on Council's website

**Eastgardens Customer Service Centre**
152 Bunnerong Road
Eastgardens NSW 2036, Australia
ABN 80 690 785 443 Branch 004
DX 4108 Maroubra Junction

**Rockdale Customer Service Centre**
444-446 Princes Highway
Rockdale NSW 2216, Australia
ABN 80 690 785 443 Branch 003
DX 25308 Rockdale

**T 1300 581 299**
**F** 02 9562 1777
**E** council@bayside.nsw.gov.au
**W** www.bayside.nsw.gov.au
**Postal address:** PO Box 21
Rockdale NSW 2216

| **Landscape Documentation DA Checklist** | | **Yes** | **No** | **NA** | Office Use |
|---|---|---|---|---|---|
| **Council Principles, Objectives and Controls (Bayside DCP 2022) & if a Residential Flat Building – SEPP 65.**<br>Do the Landscape proposals address the **Objectives** and comply with the **Controls** outlined in: | | | | | |
| 1 | Bayside DCP 2022, 3.7.1 Landscaping? | ☐ | ☐ | ☐ | ☐ |
| 2 | Minimum area of private open space for each dwelling type? | ☐ | ☐ | ☐ | ☐ |
| 3 | Communal Open Space? | ☐ | ☐ | ☐ | ☐ |
| 4 | Bayside Landscape Technical Specification? | ☐ | ☐ | ☐ | ☐ |
| 5 | Meet the recommendations, Objectives and Design guidance of the SEPP 65 Apartment Design Guide (if applicable), including addressing the following Design Quality Principles? Principle 4 – Sustainability; Principle 5- Landscape; Principle 6 – Amenity and Principal 7 - Safety? | ☐ | ☐ | ☐ | ☐ |
| **Plans and Documentation** minimum requirements | | | | | |
| 1 | **Have Landscape Plans and other documentation been submitted showing the following:** | **Yes** | **No** | **NA** | Office Use |
| | ▪ Shaded diagram to scale graphically demonstrating deep soil landscaping area and provide calculation of the area and percentage of the total site area. (Refer to Part 3. Glossary for definition) | ☐ | ☐ | ☐ | ☐ |
| | ▪ Shaded diagram to scale graphically demonstrating landscape treatment on slab and provide calculation of the area and percentage of the total site area. | ☐ | ☐ | ☐ | ☐ |
| | ▪ North point (true north) and scale (ratio and bar scale), Plan number, Drawing Issue number and date. Drawings to be on scale, 1:100 or 1:200 | ☐ | ☐ | ☐ | ☐ |
| | ▪ The building footprint of the proposal and indication of basement/s, and overhanging structures with dotted line. | ☐ | ☐ | ☐ | ☐ |
| | ▪ Include pedestrian, vehicle and service access, security features and access points. | ☐ | ☐ | ☐ | ☐ |
| | ▪ Proposed surface treatments e.g. turf, planting, edging, gravel, paving, paths, driveways | ☐ | ☐ | ☐ | ☐ |
| | ▪ Location of stormwater elements, including pipes and pits, rainwater tank, any OSD, infiltration trenches etc. | ☐ | ☐ | ☐ | ☐ |
| | ▪ Finished surface levels, - both existing (survey levels) and proposed RLs internal and external areas, Top of walls of planter boxes, embankments and grades | | | | |
| | ▪ Location of letter boxes, drying areas and garbage receptacles. | ☐ | ☐ | ☐ | ☐ |
| | ▪ Details of public open space, communal open space and private open space (including fences, pergolas, walls, planters and water features) | ☐ | ☐ | ☐ | ☐ |
| | ▪ Proposed fences and retaining walls (show heights and material) and any existing fences and retaining walls to be retained | ☐ | ☐ | ☐ | ☐ |
| | ▪ If there are planting area proposed on slab. The landscape plan must include adequate information (e.g. slab level & finish level or sections) to demonstrate there are sufficient soil depth for the specified plant species | | | | |
| | ▪ Construction details (including sections) and written landscape specifications | ☐ | ☐ | ☐ | ☐ |
| | ▪ Proposed trees to be removed shown dotted, and trees to be retained, both on site and any affected trees on adjoining properties within 5m of proposed works, or nature strip<br>▪ All trees are to be numbered and, where relevant, the numbers are to coincide with the arborist's report | ☐ | ☐ | ☐ | ☐ |

| | | | | | |
|---|---|---|---|---|---|
| | ▪ Planting layout including Plant Schedule with species, common names, pot size, expected height and width at maturity, and planting details | ☐ | ☐ | ☐ | ☐ |
| **2** | ▪ Water management and irrigation concept design | ☐ | ☐ | ☐ | ☐ |
| | ▪ Maintenance Schedule | | | | |
| | ▪ Site lighting (concept plan with specifications) | ☐ | ☐ | ☐ | ☐ |
| 3 | Have all plans and documents been provided on a USB in accordance with Council's File Naming Convention? | ☐ | ☐ | ☐ | ☐ |

**Please Note**

- The personal information required on this form may be available for public access under various legislation.
- I declare that all the information given is true and correct.

| | |
|---|---|
| **Landscape Architect's signature** | **Date** |
| **Registered Landscape Architect Number** | **RLA No:** |