OVERVIEW OF LANDSCAPE TECHNICAL SPECIFICATION

This document provides advice on how to ensure the adequate level of landscaping detail is prepared and presented for all forms of development in accordance with Council's current Development Control Plan (DCP). The document provides information on:

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1 INTRODUCTION

The urban forest is a public infrastructure system – it is one component of the complex built environment that includes roads, car parks, and footpaths, above and below ground utilities, buildings and other structures. Urban forest also provides ecosystem services for example by reducing the urban heat island effect, reducing hydrocarbon emissions from unattended vehicles, capturing airborne particle pollution and intercepting storm water. Analyses show total benefits outweigh total costs by a ratio of 1.85. Urban forest is a key element in the functioning of urban ecosystems, that is, the dynamic complex of interactions that occur between humans, other living organisms, natural processes and the built environment.

Urban forest incorporates the totality of vegetation that:

- Occurs within or near an urban area
- Functions as a key element of urban ecosystems
- Provides the urban community with multiple economic, environmental and social benefits.

Although the tree in all its forms is the primary focus of urban forestry, the concept emphasises the collective contribution made by urban vegetation irrespective of its origin, ecosystem type, growth form, location or ownership

Research into the contributions of urban forest reveals significant social, spiritual and psychological benefits for individuals and for communities. These benefits or human services provide an important and compelling reason to cultivate and sustain trees in urban areas.

Green space specifically refers to space that is capable of sustaining trees, vegetation, or a tree canopy and includes:

- Open spaces that are not built over by buildings or pavement
- Paved spaces over which a tree canopy can be established
- Roof spaces that can support roof gardens
- Wall spaces that can support vines, espaliers or other vegetation

2.0 LANDSCAPE PLANS

The type of the development will determine what level of Landscape Plans, i.e Site Analysis Plans or Concept Plans, that are required to be included in a development application.

2.1 LANDSCAPE SITE ANALYSIS PLAN

Preparation of a Landscape Site Analysis is critical in providing a foundation for the various stages of design through investigation of opportunities and constraints for both the site and its context.

The Site Analysis should work to collect, collate and present a range of information for the site setting, and should also consider how the proposed development impacts on the landscape proposal.

Details to be included in a Landscape Site Analysis Plan are outlined in the following Checklist.

Checklist for Landscape Site Analysis Plan

- > A North Point,
- Lot and Deposited Plan number,
- The overall lot size, length and width,
- Scale that is appropriate for all detail to be clear and legible.
- > Surrounding land use
- Existing and proposed underground and above ground utilities including on-site wastewater system areas, and street services where streetscaping is proposed. Proposed utilities including hydrant and substation locations are particularly relevant for streetscaping proposals,
- The movement pattern of the sun in Summer and Winter
- > The prevailing seasonal wind conditions,
- > The location of adjoining development and any windows, doors and private outdoor areas that are visible to or from the site,
- Vehicle access and roads, to and near the site.
- > Pedestrian or cycling pathways adjacent to and near to the site,
- > The height of adjoining development and any shadows cast by the development over the site,
- Any views enjoyed to, and from, the land, including consideration of views into the site and the scenic values associated with the site,
- All trees and vegetation on the site and on adjoining lots, and within the street. Identify the actual canopy width, and heights of trees, and species particularly for local indigenous vegetation. Clarify if any trees are listed on the Significant Tree Register or are a Heritage Tree.
- Any natural drainage lines located within the site.
- The location of trees on site an adjacent to the proposed development are to be drawn to scale.
- ➤ Site topography, is to be identified by contour at spot levels 0.25 metres. A slope analysis should be included, where slopes within the site are steeper than 1 in 10
- > Any existing or proposed structures on the site.
- Fence lines and types are to be identified
- Water bodies, waterways or wetlands.
- > Particular landforms,
- Areas of ecological value or ecological corridors.
- Soil and sub-surface geological conditions, particularly areas of erodible soil, acid sulphate soils, rock outcrops and depths of subsurface rock or other similar conditions that may affect landscaping proposals,
- ➤ Bushfire Asset Protection Zones, to be consistent with Planning for Bushfire Protection 2006, or Version 1: May 2014

subsequent amendments,

- Easements, covenants and/or restrictions on the land,
- Existing and potential noise and/or air quality issues,
- ➤ Heritage Items, whether Natural, Aboriginal or European, within or near the site,
- > Identify existing open space adjoining or opposite the site.
- Proposed areas for construction purposes eg, stockpile areas, temporary driveways and site compounds for control during construction and rehabilitation,
- Existing and Proposed Road Layouts
- Surrounding land uses as well as existing and proposed utilities,
- Vegetation to be removed and retained including notable trees on adjoining properties as well as areas of ecological value and/or ecological corridors,

2.2 LANDSCAPE CONCEPT PLAN

Landscape Concept Plans should be provided in the form of a drawing or series of drawings. These drawings document the preliminary site planning alternatives and landscape design concept for the site. The Concept Plans should reflect opportunities and constraints identified in the Site Analysis. The Concept Plan should clearly express the design intent and ideas. The checklist bellows indicates the issues to be addressed in a Landscape Concept Plan.

Checklist for Landscape Concept Plan

All items contained in Checklist for Landscape Site Analysis Plan should be included.

- Proposed road layouts, bus stops, slip lanes, taxi areas and street parking that may impact on landscape proposals,
- Proposed and existing lot boundaries,
- Proposed finished levels and extent of cut/fill eg contours or spot levels
- Indicative cross sections through the site showing existing and final landform
- Proposed open space & uses eg passive or recreation, informal areas
- > Planting theme, with proposed planting locations, arboreal screens
- Street tree themes.
- Buffer planting,
- Proposed retaining walls, fences with indicative height, material, including privacy screens,
- Proposed surface treatments (turf, paving, planted areas, water elements) courtyard walls
- Trees to be removed and retained (see the Port Stephens Council Tree DCP for addition information for when an arborist report is required)
- Tree protection area on and off site
- Development constraints such as PSC Koala habitat maps, SEPP 14 Wetlands, Biodiversity Corridors, and other environmental values, to inform planting schemes
- Any pre-existing Landscape Master plan approved by Council
- > Indicative location of proposed recreation facilities and/or infrastructure,
- Drainage and open space corridors and links to open spaces,
- Existing and proposed structures and important openings (windows, doors)
- Bushfire hazard zones and fire trails if relevant, to be consistent with Planning for Bushfire Protection 2006, or subsequent amendments,
- Pedestrian and cyclist linkages.
- Signage theme and location,
- Lighting,
- Awnings and overhead structures affecting proposals.
- Locations of key services such as waste collection areas, hydrants and substations.

3.0 LANDSCAPE REPORTS

3.1 LANDSCAPE COMPLIANCE REPORT

At practical completion and prior to issue of the occupation certificate, a landscape consultant may be required to inspect the site and submit a report to council providing written certification that the landscape works comply with the Landscape documentation approved by Council.

The certification is to outline any minor defects which must be rectified and any specific landscape maintenance requirements during the maintenance period.

Include the Consultant's details.

3.2 LANDSCAPE RECTIFICATION REPORT

The landscape consultant may also be required to carry out an inspection 8 weeks after practical completion to ensure that any necessary rectification works are carried out in accordance with the Landscape Compliance Report, and that an appropriate level of landscape maintenance is being carried out.

Submit a report to council providing written certification of compliance.

Include the Consultant's details.

3.3 LANDSCAPE MAINTENANCE REPORTS

The landscape consultant may be required to inspect the site and submit a report to Council at 26 weeks and 52 weeks to assess the maintenance of the landscape works and recommend remedial work required.

4.0 LANDSCAPE STANDARDS FOR COMMERCIAL DEVELOPMENT

4.1 OBJECTIVES

- > To encourage sensitive and creative landscape design in commercial precincts which is appropriate to the local conditions and contributes to the streetscape and area as a whole.
- > To retain significant landscape and architectural features and integrate them into a landscape design.
- To improve the aesthetics of commercial areas, especially major commercial road corridors, through landscape works and co-ordination of architectural and signage elements.
- > To reduce hydrocarbon emission by providing shading of untendered vehicles.
- Intercept storm water to reduce storm water run off
- Microclimate regulation through shading and provide wind breaks
- Reduce air borne pollution by reducing the heat island effect

4.2 REQUIREMENTS

- > A Landscape Concept Plan is to be submitted.
- Rear setback area is to be a deep soil landscape planting area for all business zones if the site adjoins a residential zone. If the site does not adjoin a residential development or zone the landscape are will be assessment on its merit
- > The front, side and rear building line setback (unless a Nil set is provided) is to be landscaped if visible from a public place
- > Tree and landscape planting should be of a scale and extent that reflects the scale of proposed buildings and pavement areas
- Street trees should be planted in the footpath, verge or in the parking lane and be consistent with Port Stephens Council Tree Technical Specifications
- Landscape planting design must be integrated to the car park design. A minimum of 30% shading over imperious surfaces must be attained over a 15 year period
- A minimum of 10% of the ground level of the site should be landscaped in Zone B2 Local Centre and Zone B3 Commercial Core.
- > The perimeter of open storage areas to be landscaped as necessary to provide screening from public view
- Deep soil landscape planting is to be provided on site where possible
- ldentify the urban design theme for the center/area and use paving, planting, street furniture, lighting and other fixtures to reflect this.

Species Selection

Use trees to:

- reinforce or improve local character and existing plantings
- > frame major entry points and intersections
- define the edge to a commercial precinct
- balance and reduce the effect of buildings, carparks and signage
- Provide scale within the built environment
- Use planting to screen service and storage areas and locate these areas to reduce impact.

5 LANDSCAPE STANDARDS FOR INDUSTRIAL SUBDIVISION

5.1 OBJECTIVES

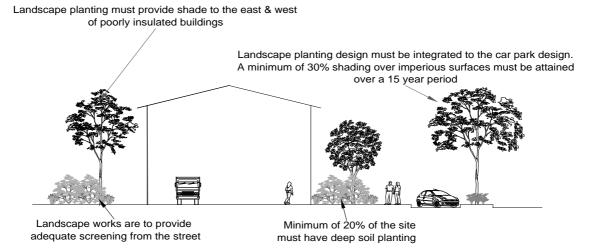
- > To improve the amenity of Industrial developments.
- To minimise visual impact and noise pollution on nearby residential areas, road/transport corridors.
- Provide amenity areas for staff and patrons
- > To use land efficiently and minimise disturbance to the local environment.
- To ensure a buffer between natural areas eq. wetlands, bushland, and industrial development.
- To integrate existing landscape features or architecture into the proposed development.
- Reduce energy consumption thru Microclimate regulation
- Reduce air borne pollution by reducing the heat island effect
- Intercept storm water to reduce storm water run off

5.2 REQUIREMENTS

- > A Landscape Concept Plan is to be submitted for all Industrial developments
- Minimum of 20% of the site must have deep soil planting.
- Planting areas less than 1.5m in width will not be included in the calculation of total landscape area
- On corner lots or sites with dual frontages, landscaping is to be provided on both frontages
- All areas within setbacks are to be landscaped except for approved driveway crossings, and pedestrian entries at the boundary
- Landscape planting design must be integrated to the car park design. A minimum of 30% shading over imperious surfaces must be attained over a 15 year period
- ➤ Landscape works are to provide adequate screening from the street.
- Landscape planting must provide shade to the east & west of poorly insulated buildings
- > Design public access points to address signage, planting and entranceway to the site.
- Screen storage areas to alleviate dust nuisance.
- Landscape design is to retain and protect remnant trees where possible

Species Selection

- Landscape treatments are to be effective in screening outdoor storage and staff parking
- Reducing scale of large buildings
- > To provide shading of poorly insulated buildings.
- > Street trees are to be provided which reflect the landscape identity of the area and stands of existing healthy trees to be retained wherever possible
- Where possible, link landscaped areas with constrains identified within the Landscape Site Analysis Plan.
- Preserve significant site vegetation and landscape features by including them in the landscape design



6.0 LANDSCAPE STANDARDS FOR MULTI DWELLING

6.1 OBJECTIVES

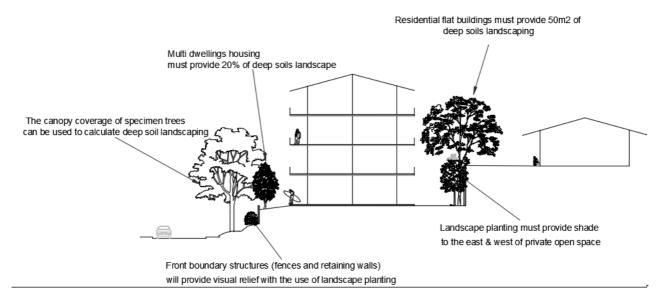
- To improve the amenity of the local area thru the screen and shading of the built environment.
- To integrate existing landscape features or architecture into the proposed development.
- Reduce energy consumption thru Microclimate regulation
- Reduce air borne pollution by reducing the heat island effect
- Intercept storm water to reduce storm water run off

6.2 REQUIREMENTS

- > Landscape Concept plan is required for all Multi Dwelling developments
- > Multi-dwelling housing must provide 20% of deep soils landscape
- Multi-dwelling housing must provide 50m2 of deep soils plants
- Landscape works are to provide adequate screening from the street and adjacent neighbors
- On corner lots or sites with dual frontages, landscaping is to be provided on both frontages
- > Front boundary structures (fences and retaining walls) should provide visual relief with the use of landscape planting

Species Selection

- Landscape treatments are to be effective in screening outdoor storage and parking, reducing scale of large buildings and providing shade for car parking and poorly insulated buildings.
- > Street trees are to be provided which reflect the landscape identity of the area and stands of existing healthy trees to be retained wherever possible



7.0 LANDSCAPE STANDARDS FOR DUAL OCCUPANCY

7.1 OBJECTIVES

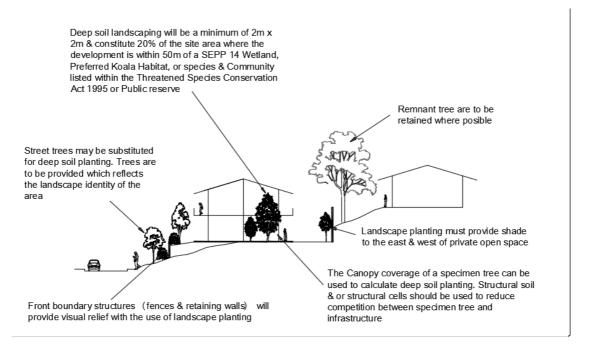
- > To retain the aesthetic amenity of the area
- Reduce energy consumption thru Microclimate regulation
- Reduce air borne pollution by reducing the heat island effect
- Intercept storm water to reduce storm water run off

7.2 REQUIREMENTS

- Landscape Concept plan is required for all Dual Occupancy developments, demonstrating:
 - A minimum of 40% of the site area must be soft landscaped; or
 - Deep soil planting will be a minimum of 2m x 2m and constitute 20% of the site area where a development is within 50m of a SEPP 14 Wetland, Preferred Koala Habitat, species & communities listed within the Threatened Species Conservation Act 1995 or public reserve; or
 - Provide street tree(s) which reflect the landscape identity of the area and stands of existing healthy trees to be retained wherever possible
- On corner lots or sites with dual frontages, landscaping is to be provided on both frontages
- Landscape planting must provide shade to the east & west of private open space
- Landscape planting above the retaining wall is it clearly defined property boundary
- Front boundary structures (fences and retaining walls) will provide visual relief with the use of landscape planting
- The canopy coverage of specimen trees can be used to calculate deep soil landscaping. Structural soil & or structural cells should be used to reduce competition between specimen tree and infrastructure.

Species Selection.

- > Tree planting guidelines located within tree technical specifications and the planting guidelines located in Appendix A
- Shrub species located in Appendix B BASIX
- > Landscape treatments are to be effective in screening outdoor storage and parking, reducing scale of large buildings and providing shade for car parking and poorly insulated buildings.
- > Street trees are to be provided which reflect the landscape identity of the area and stands of existing healthy trees to be retained wherever possible
- > 80% of the tree and shrub species will be Australian Natives



8.0 LANDSCAPE STANDARDS FOR SINGLE DWELLINGS

8.1 OBJECTIVES

- To create and enhance vegetation links between natural areas
- To ensure a buffer between natural areas eg. wetlands, bushland, and urban development.
- To reduce weed potential to environmental sensitive areas.
- Reduce energy consumption through Microclimate regulation
- Reduce air borne pollution by reducing the heat island effect
- Intercept storm water to reduce storm water run off

8.2 REQUIREMENTS

➤ A Landscape Concept plan is required only for additions, alterations and new single developments where the development is within 50m of a SEPP 14 Wetland, Preferred Koala Habitat, or species and communities listed within the Threatened Species Conservation Act 1995; or when the slope of the land is greater than 18 degrees.

In these situations:

- Turf areas will be confined to inner protection areas identified in the bush fire report.
- Landscape plan will identify trees to remain within the outer protection area identified in the bush fire report. Remnant trees to remain will enhance the environment constraints of the site
- Landscape planting will enhance the environment constraints of the site

Species Selection

- Tree planting guidelines located within tree technical specifications and the planting guidelines located in Appendix A
- Shrub species located in Appendix B BASIX
- > 80% of the tree and shrub species will be Australian Natives

APPENDIX A - PLANTING GUIDELINES

Planting is to reflect local area species and respond to site conditions.

Plant selection and planting design shall:

- Give preference to local indigenous species and preference plant material of local provenance;
- Exclude indigenous species that have the potential to invade local bushland, reduce bushland biodiversity and successfully compete to the detriment of local vegetation communities (eg. by freely seeding, runner, shading, or be carried by watercourse into bushland);
- Use, suitable native species selected from the species listed in a flora and fauna assessment that has been prepared to accompany a development proposal;
- Maximise potential for healthy and vigorous plant growth by responding to specific site conditions (eg. wind, soil types, solar-exposure, drainage, microclimate etc),
- Respond to cultural requirements (eg. non-local species may appropriate for some heritage applications) however, known environmental weeds should be avoided (refer to http://www.portstephens.nsw.gov.au for a list of known environmental weeds);
- Respond to aesthetic and amenity issues (eg.visual impact when fully mature, scenic assessment issues, shading, appropriateness to landscape setting, screening, overshadowing, dust control, solar access, drainage issues, etc);
- Reduce future maintenance (eg. plant dense understoreys, weed barrier species and multistoreys to shade and compete out weeds, provide adequate mulch and natural drainage to optimise plant health, etc);
- Select plants with relevance to water-sensitive urban design principles (eg. trees to maximise uptake of excess water, drought-tolerant species to minimise reliance on watering);
- Reduce turfed areas and replace with mulched garden beds, native ground covers and/or native grasses, to lower maintenance requirements, reduce use of fossil fuels for mowing, increase on-site harvesting of water, nutrients and sediments, and reduce reliance on soil additives such as fertilisers and herbicides;
- Provide foraging sources and habitat for native fauna where appropriate (eg. multistoreys, nectar, nut and fruit sources, trees overhanging water bodies, etc);
- Avoid species which produce fruit and attract Queensland fruit fly (owners or custodians of the land on which the plant is growing have a legal obligation to treat this pest or remove the tree).
- Protect the Foreshore by limiting mowed turfed areas. These are to be restricted to a
 height of 300mm within 2m of the astronomical high tide mark. Only native grasses
 Zoysia spp or Sporobolus virginicus are to be used in the littoral zone

APPENDIX B - NATIVE SPECIES

Table 1 - Local Native Species Suitable for BASIX

PORT STEPHENS COUNCIL BASIX SHRUB LIST													
	Common Name		Soil Type		Landscape Use				Plant Characteristic				
Botanical Name		Clay	Sand	Shading	Screen	Salt Tolerant	Bird Attracting	Flowers	interesting	height	Width	Life Cycle	
Acacia longifolia sophorae										1	2	S	
Acacia binervia	Coastal Myall									5	5	S	
Acacia myrtifolia										0.5	0.5		
Acacia suaveolens	Scented wattle									1	2	S	
Acacia terminalis	Sun Shine Wattle									2	2	S	
Acacia ulicifolia	Prickly Moses									1	1	S	
Allocasuarina distyla										3	2		
Banksia spinulosa var collina	Hair Pin Banksia									1.5	2		
Banksia oblongifolia										1.5	1.5		
Bossia rhombiofolia	Showy Parrot Pea									1	0.5		
Carpobrutus glaucescens	Pig Face									0.3	5		
Callistemon pachyphyllus	Wallum Bottle Brush									1.5	2		
Callistemon citrinus	Crimson Bottle Brush									2	2		
Davisia mimosoides	Wattle Davisia									3	2		
Dillwynia retorta	Eggs & bacon									1.5	1		
Doryanthus excelsa	Gymea Lilly									1.5	1.5		
Lambertia formosa	Mountain Devil		П							1.5	1		

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Coastal Tea Tree									3	3	
Lemon Scented Tea Tree									3	3	
Burrawang									2	2	
Noddy myrtle									4	2	
Purple paper bark									1	1	
Rise Flower									1.5	1	S
Rough Pittosporum									1	1	
Elderberry panax									0.5	0.5	
Hairy bush pea									1	1	
Native rosmary									2	2	
Grass Tree									2		
cramblers											
Hawkesbury daisy											
Purple coral pea											
Dusky coral pea											
Wonga vine											
Viola											
old man beard											
Grasses / Tufted Plants											
Mat Rush											
Paroo Lilly											
Kangaroo Grass											
Wallaby Grass											
	Coastal Tea Tree Lemon Scented Tea Tree Burrawang Noddy myrtle Purple paper bark Rise Flower Rough Pittosporum Elderberry panax Hairy bush pea Native rosmary Grass Tree cramblers Hawkesbury daisy Purple coral pea Dusky coral pea Wonga vine Viola old man beard Plants Mat Rush Paroo Lilly Kangaroo Grass	Coastal Tea Tree Lemon Scented Tea Tree Burrawang Noddy myrtle Purple paper bark Rise Flower Rough Pittosporum Elderberry panax Hairy bush pea Native rosmary Grass Tree cramblers Hawkesbury daisy Purple coral pea Dusky coral pea Wonga vine Viola old man beard Plants Mat Rush Paroo Lilly Kangaroo Grass	Coastal Tea Tree Lemon Scented Tea Tree Burrawang Noddy myrtle Purple paper bark Rise Flower Rough Pittosporum Elderberry panax Hairy bush pea Native rosmary Grass Tree Cramblers Hawkesbury daisy Purple coral pea Dusky coral pea Wonga vine Viola old man beard Plants Mat Rush Paroo Lilly Kangaroo Grass	Coastal Tea Tree Lemon Scented Tea Tree Burrawang Noddy myrtle Purple paper bark Rise Flower Rough Pittosporum Elderberry panax Hairy bush pea Native rosmary Grass Tree Cramblers Hawkesbury daisy Purple coral pea Dusky coral pea Wonga vine Viola old man beard Plants Mat Rush Paroo Lilly Kangaroo Grass	Coastal Tea Tree Lemon Scented Tea Tree Burrawang Noddy myrtle Purple paper bark Rise Flower Rough Pittosporum Elderberry panax Hairy bush pea Native rosmary Grass Tree Cramblers Hawkesbury daisy Purple coral pea Dusky coral pea Wonga vine Viola old man beard Plants Mat Rush Paroo Lilly Kangaroo Grass	Coastal Tea Tree Lemon Scented Tea Tree Burrawang Noddy myrtle Purple paper bark Rise Flower Rough Pittosporum Elderberry panax Hairy bush pea Native rosmary Grass Tree Cramblers Hawkesbury daisy Purple coral pea Dusky coral pea Wonga vine Viola old man beard Plants Mat Rush Paroo Lilly Kangaroo Grass	Coastal Tea Tree Lemon Scented Tea Tree Burrawang Noddy myrtle Purple paper bark Rise Flower Rough Pittosporum Elderberry panax Hairy bush pea Native rosmary Grass Tree Cramblers Hawkesbury daisy Purple coral pea Dusky coral pea Wonga vine Viola old man beard Plants Mat Rush Paroo Lilly Kangaroo Grass	Coastal Tea Tree Lemon Scented Tea Tree Burrawang Noddy myrtle Purple paper bark Rise Flower Rough Pittosporum Elderberry panax Hairy bush pea Native rosmary Grass Tree Cramblers Hawkesbury daisy Purple coral pea Dusky coral pea Wonga vine Viola Old man beard Plants Mat Rush Paroo Lilly Kangaroo Grass	Coastal Tea Tree	Coastal Tea Tree	Lemon Scented Tea Tree

S for Life Cycle indicates a Short Lifecycle