

TYPICAL LANDSCAPE SPECIFICATIONS

SPEC - 01 (Version D) TREE PLANTING SPECIFICATION

Prepared by City Design | City Projects | Lake Macquarie City Council

All landscape works within the Public Domain shall be coordinated with Council's nominated Project Manager during the construction period.

Lake Macquarie City Council - Project Management:

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CONTRACTOR REQUIREMENTS

All planting work shall be undertaken or supervised by a Contractor with a current NSW Dept. of Fair Trading endorsed license in the following class-Structural Landscaping.

SUBMISSIONS

The Contractor must submit the following documents to Council's nominated Project Manager prior to execution of the planting works:

- Contractor's licences in accordance with Planting Contractor Requirements above;
- Dispatch Tree Stock Inspection Checklists in accordance with AS2303-2015 Appendix C- **Example A** confirming trees conform to the requirements of the standard;
- Documentation (Soil laboratory test results or soil supplier's hatch certificates) confirming that **all** soil proposed for use complies with the soil specification criteria below;

or

A statement from a qualified agronomist or horticulturalist certifying proposed non-conforming soils are fit for purpose.

- Manufacturer's warranty and maintenance information for all proprietary products.

INSPECTIONS

Inspections must be carried out by Council's nominated Project Manager at the following points unless otherwise indicated by the Conditions of Consent:

- Installation of any tree protection measures in accordance with AS4970-(current version) implemented at areas identified for retention/exclusion;
- Set out of tree pits complete, prior to excavation;
- Tree pits excavated with and prepared with regard to Councils Street Tree planting detail and specifications;
- Trees delivered to site and ready for planting. Note: If desired, arrangements may be made to inspect trees prior to delivery to assist in avoiding rejection due to poor quality (NB inspection will still be required on site prior to installation);
- Commencement of tree planting;
- Completion of street tree planting and other landscaping/planting, including installation of any guards/grates, and mulch in accordance with the approved plans.

EXISTING SERVICES

It is the responsibility of the Contractor undertaking the work to locate all underground services prior to the commencement of works.

Locations of all services should be established and marked on site. (Note, the Council approved plans and specifications drawings MAY NOT indicate the extent and depth of existing services.)

Establish the location of existing site subsoil drainage and mark on site. Contact Council's nominated Project Manager immediately if no subsoil drainage network can be found.

DO NOT excavate by machine within 1 m of existing underground services without prior approval or identification of service location.

TREE PROTECTION

Protect trees to be retained in accordance with AS4970 'Protection of Trees on Development Sites'.

- Tree Protection Zones (TPZ) are to be established around trees identified to be retained in accordance with Australian Standard AS4970;
- A 1.8 metre high chain mesh fence is to be erected around each TPZ prior to works commencing and must remain intact until construction is completed;
- Fences around Tree Protection Zones must be sign posted to warn of its purpose;
- TPZs are to be mulched to a minimum depth of 100mm using organic mulch;
- Any excavation within the vicinity of an identified TPZ is to be carried out by hand, with all care taken not to damage tree roots. If tree roots greater than 30mm are found during works that need to be severed, they are to be cut with a saw (not tipped);
- A suitably qualified Project Arborist (AOF Level 5) is to be in attendance to supervise tree works on site during critical stages of construction, particularly when excavations are carried out within the identified TPZ of trees nominated for retention;
- Any minor pruning of trees must be carried out in accordance with Australian Standard AS 4373-2007 - Pruning of Amenity Trees, by a suitably qualified Arborist;
- Harmful Materials - storage of materials, building waste, excavated spoil, cement or any harmful materials are not permitted within TPZs.

TREE PIT EXCAVATION

Excavate pits to the extents and depths shown on the approved landscape plans.

Where unexpected ground conditions are met (ie. Rock, high water table, contaminated material) contact Council's Project Officer immediately.

SUB-GRADE CULTIVATION

Location: to all pits where sub-soil cultivation is noted on approved planning details.

Remove rocks > 100mm diameter from base of excavated pits.

Apply gypsum at the manufacturer's specified rates to clay subgrades. Chisel, disc plough or use an excavator with a tyre attachment to loosen subgrade and mix the gypsum to 200mm deep to incorporate.

Harrow to break up clods but do not smooth (leave the surface rough to accept topsoil)

DRAINAGE

Establish the location of existing site subsoil drainage and mark on site. Contact Council's nominated Project Manager immediately if no subsoil drainage network can be found.

Install drainage layer or trench as shown on the approved drawings.

Connect tree pit drainage to the site subsoil system as shown on approved drawings.

STRUCTURAL CELLS

Material: Recycled plastic rigid skeletal interlocking structures

Loading capacity for footpaths: must be suitable to support a pavement designed to carry light traffic (maintenance uses, delivery vans etc.).

Loading capacity for car parks and roadways: must be suitable to support a pavement designed to carry commercial vehicle traffic.

Installation: Install in accordance with approved project plans and manufacturer's specifications.

ROOT BARRIER

Material: Root barriers shall be manufactured from 100% recycled HDPE.

Minimum barrier thickness: 1mm

Depth: as shown on approved drawings.

Installation: Install in accordance with approved project plans and manufacturer's specifications. Overlap and seal joints in accordance with manufacturer's specifications.

TREES

Material: Trees shall be of the species, sizes and quantities as shown on the approved drawings. Discrepancies within the planting schedule and the drawing should be referred to Council's Project Officer for clarification.

Trees ordered and delivered to site must meet the requirements contained within AS2303- Part 2, Part 3 and Part 4.

Dispatch Tree Stock Inspection Checklists shall be provided to Councils nominated Project Officers (refer to **SUBMISSIONS**)

Supply: Trees are to be transported to site in a covered ventilated vehicle to reduce the effect of wind damage, 'transpiration and stress.

Storage: If trees are to be stored on site prior to planting, ensure trees are protected from winds and construction site activities. Water each tree thoroughly once a day for everyday it is stored on site.

Placement: Position trees as shown on the approved landscape drawings.

Prior to placing tree in the pit, tamp the soil under the root ball to prevent slumping. If required, mound soil prior to tamping to ensure the top of root ball will be 100mm below Finished Surface Levels.

Thoroughly water trees prior to placing in pits.

Tree Substitutions: All proposed substitutions require written consent from LMCC.

SOIL

Backfill tree pits with soils specified below.

General tree pit planting and mass planting:

- Equal to AS4419-(current version) 'Soil blend' with max 5% organic matter content;
 - Texture to AS4419-(current version) Table 11 Sandy Loam.
- This soil provides a well-drained medium with low organic matter suitable for backfilling below 300mm depth from the surface.
- Incorporate composted soil conditioners (to AS4454) into the top 300mm of the soil profile. (Refer to FERTILISERS below)

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E	2016-03	Revised contract details for LMCC nominated Project Manager. Plant Establishment period extended to match standard conditions of consent.	A4	WORK TO FIGURED DIMENSIONS - DO NOT SCALE. DO NOT RELY ON THESE STANDARD DRAWINGS AS THE EQUIVALENT OF, OR SUBSTITUTE FOR, PROJECT-SPECIFIC DESIGN & ASSESSMENT BY A QUALIFIED PROFESSIONAL.	
D	2016-01	Update for consistency with standard details, streetscape			
C	2016-12	Revised subsoils and Australian standards	A4		
B	2013-11	Revised subsoils and Australian standards	A4		
VERSION	DATE	COMMENTS	PAPER SIZE		

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Filler soil for use within Structural Cells:

Property	Unit	
<u>Physical</u>		
Texture	n/a	Loamy Sand to Sandy loam
Organic matter	% dry mass	<5
Permeability	mm/hr	>50
Wetability	mm/hr	>5
Dispersibility in water	(AS4419)	1 or 2 category
Visible contaminants		
>2mm	%w/w	<0.5

<u>Chemical</u>		
pH in water	pH units	5.4-6.8
pH in CaCl ₂	pH units	5.2-6.5
Electrical conductivity (1:5)	dS/m	<0.5
Phosphorous - P tolerant	mg/kg	30-80
Phosphorous- P sensitive	mg/kg	<25
Sodium	%CEC	<7
Potassium	%CEC	3-10
Calcium	%CEC	60-80
Magnesium	%CEC	15-25
Aluminium	%CEC	<5
Ca:Mg ratio	ratio	3:9
Iron	mg/kg	100-400
Manganese	mg/kg	25-100
Zinc	mg/kg	5-30
Copper	mg/kg	1-15
Boron	mg/kg	0.5-5
Nitrate	mg/kg	>20

*based on specification F1 in Soils for Landscape Development (Leake S and Heege, E.)

Soil Source: Soils may be imported, from site stockpiles or created from a mix of imported soils, stockpiled site soil and composted soil conditioners (conditioners to conform to AS4454).

Soil properties: Soils must be free of unwanted material and un-composted vegetative material.

Soil Substitutions: Soils that do not conform to the above specifications may be proposed for use provided a statement from a qualified landscape agronomist confirming the proposed soil is fit for purpose is submitted to Council's Project Officer for acceptance (refer to **Submissions**)

FERTILISERS

Depth: Incorporate additives by hand to a depth of 300mm.

Application rate: To manufacturer's recommended application rates.

Type: A well-sorted vegetative material, free of weed and grass growth complying with the *AS4454 Composts, soil conditioners and mulches* requirements for mature compost suitable for the plant species scheduled.

MULCH

Quality: free of weeds and pathogens. Free from polymers which do not degrade, such as plastics, rubber and coatings

Type: A chipped timber mulch complying with the *AS4454 Composts, soil conditioners and mulches* requirements for coarse mulch and composted mulch suitable for the plant species scheduled.

Mulch Installation to Trees: Install immediately after planting to prevent erosion, loss of soil moisture and weed seed germination.

Rake mulch to an even surface level with surrounding surfaces. Ensure mulch is kept clear of tree stems.

Mulch Installation to Mass Planting: Spread the mulch layer over all mass planting beds and individual plantings.

Depth: 50-75mm

MASS PLANTING TO STREET TREES

Material: Plants shall be of the species, sizes and quantities as shown on the drawing. Discrepancies between the planting schedule and the approved drawings should be referred to Council's Project Officer for clarification.

Plants shall be vigorous, well established, of good form, not soft or forced, free from disease and insect pests.

Plants shall have large healthy root systems and not root bound.

Substitutions: All proposed substitutions require written consent from LMCC.

Supply: Plants are to be transported to site in a covered ventilated vehicle to reduce the effect of wind damage, transpiration and stress.

Storage: If plants are to be stored on site prior to planting, ensure they are protected from winds and construction site activities. Water plants thoroughly once a day for everyday they are stored in site.

Preparation and planting: Before Mass planting begins thoroughly water the plants. Prepare the soil in accordance with approved landscape plans. Excavate a hole large enough for each plant and water the holes thoroughly.

Plants shall be set plumb with the top of the root ball slightly below the level of the surrounding ground. Water plants again immediately after planting.

TURF TO STREET TREES

Type: as scheduled on approved landscape plans.

Supply: Deliver to the site within 24 hours of being cut and lay within a further 12 hours. Prevent turf from drying out.

Preparation and laying: Prepare the soil in accordance with the approved landscape plans. Lay turf on a moist surface. Lay along the contours with close butted joints so turf is flush or 10mm below adjoining finished surfaces.

As soon as practicable after laying roll with a roller, watering as necessary to keep soil moist.

Protect newly turfed areas against traffic until established.

PLANT ESTABLISHMENT

The planting establishment period shall be 104 weeks unless conditioned otherwise under the Conditions of Consent.

During the plant establishment period, landscape Contractor shall undertake the following:

Recurrent work: Throughout the planting establishment period carry out maintenance work including: watering, weeding, rubbish removal fertilising, pest and disease control, replanting and keeping the site neat and tidy.

Drainage: Ensure drainage is operational, advise Council's Project Officer if drainage is not functional or under-performing.

Replacements: Replace failed plants or plants damaged during the course of site works. Report any vandalism or theft to Council's Project Officer immediately.

Mulched Surfaces: Maintain the surface in a clean and tidy condition and reinstate the mulch as necessary.

Turf Areas: Regular watering, weeding, fertilising and any other activities required to ensure good establishment of the turf. Last mowing shall not be less than seven days before the end of the maintenance period.

Lift and replace failed turf.

Lightly top dress to correct any unevenness.

Rectifications: Undertake all rectification works identified in the Landscape Compliance and Rectification reports prepared in accordance with the *LMCC Landscape Design Guidelines*.

Watering: The Contractor shall assume there is no site water available other than that which is provided as part of the works. The Contractor shall be responsible for supplying water and/or paying for water for the duration of the works.

Make available all necessary equipment to carry out hand and sprinkler watering as required.

Water at times of day to minimise water evaporation loss. Do not water during the hottest period of Summer days.

Water restrictions: Coordinate the water supply and confirm the watering regime against federal and state government legislation and restrictions at the time.

END of SPEC-01

E	2019-03	Keyed contact details for LMCC nominated Project Manager. Then Establishment period extended to match standard conditions of consent.	A4	WORK TO FIGURED DIMENSIONS - DO NOT SCALE. DO NOT RELY ON THESE STANDARD DRAWINGS AS THE EQUIVALENT OF, OR SUBSTITUTE FOR, PROJECT-SPECIFIC DESIGN & ASSESSMENT BY A QUALIFIED PROFESSIONAL.		
D	2016-01	Update for consistency with standard details, streetscape technical guidelines and Australian standards	A4			
C	2016-12	Technical guidelines re: consistency with Landscape Guidelines and Standard Detail	A4			
B	2013-11	Final Draft for review, Amended by CQ PM/JAC.	A4			
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