

Street & Park Tree Management Plan

Appendix

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1.0 DEFINITIONS

For the purposes of this manual and the interpretation of standards and procedures, the following definitions shall apply: The definitions listed below include specialised terms that appear in the text or may be relevant to the Tree Management Plan as well as terms that may have multiple meanings.

Amenity Trees

Trees with recreational, functional, environmental, ecological, social, health or aesthetic value rather than for production purposes.

AQF

The Australian Qualifications Framework is a national framework for education and training qualifications. It provides national recognition of competency based training on endorsed competency standards, assessed in accordance with assessment guidelines.

Arborist

A person who holds the Australian Qualification Framework (AQF) Certificate IV (5) in Horticulture (Arboriculture).

Arboricultural management

Australian Standard means Australian Standard AS 4373 – 2007 – Pruning of Amenity Trees.

Asset

A thing of value, in this instance a council or privately owned construction/ building, object, tree or other vegetation.

AS4373- 2007

Australian Standard® Pruning of Amenity Trees. (AS4373-2007).

Bark

All tissues outside the vascular cambium.

Biological Diversity

Means the variety of life forms, the different plants, animals and microorganisms, the genes they contain and the ecosystem of which they form part.

Branch

A lateral shoot on a main axis such as a trunk or another branch. A branch arising off a trunk is a first order branch. A branch arising off a first order branch is a second order branch and so on. Second and successive orders of branches may be referred to as lateral branches.

Branch bark ridge

Raised or furrowed bark in the branch crotch or junction that indicates where the branch wood and trunk wood meet.

Branch collar

Trunk tissue that forms around the base of a branch between the stem and the branch.

Buffer zone

Relates to vegetation planted for the express purpose of providing protection for identified core habitats and remnant bushland strips.

Bushcare

Bushland restoration work on Council land involving staff and volunteers.

Bushcare Group

A group of volunteers undertaking bush regeneration and/or associated works on Council owned or managed land.

Bushcare Officer

A Council member of staff or a contractor appointed by Council, with appropriate qualifications, to facilitate a Bushcare group. The Bushcare Officer develops and implements the Bushcare program.

Bushland

Land on which there is vegetation which is either a remainder of the natural vegetation of the land or, if altered, is still representative of the structure and/or floristics of the natural vegetation as defined in State Environmental Planning Policy No 19 – Bushland in Urban Areas.

Clearing – Native vegetation

Means any one or more of the following:

- (a) Cutting down, felling, thinning, logging or removing native vegetation
- (b) Killing, destroying, poisoning, ringbarking, uprooting or burning of native vegetation
- (c) Severing, topping or lopping branches, limbs, stems, or trunks of native vegetation
- (d) Substantially damaging or injuring native vegetation in any other way.

Codominant Stems

Stems or trunks of about the same size originating from the same position from the main stem.

Compartmentalisation

Dynamic tree defence process involving protection features that resist the spread of pathogens.

Consultant Arborist

A specialist (Tree survey, assessment and report writing) in the care of trees with relevant qualifications and training. Minimum AQF Level 5 or equivalent.

Council

Means the Penrith City Council (PCC) or any Officer authorised to act on behalf of council.

Council Land

Land either owned by, or under the care, control and management of Penrith City Council.

Council's satisfaction

Documented evidence in the form of photographs, statutory declarations and witness statements supporting the justification for work undertaken.

Crown

Portion of the tree consisting of branches and leaves and any part of the trunk from which branches arise.

Crown Lifting

The removal of the lower branches.

Crown Maintenance

Pruning that does not reduce the volume of the crown and retains the structure and size of the tree.

Crown Modification

Pruning that changes the form and habitat of the tree.

Crown Thinning

The selective removal of branches that does not alter the overall size of the tree.

Culturally significant Trees

Culturally significant tree/s means trees which are significant features of the cultural landscape and which are listed in Council's Register of Significant Trees.

Cut down

Remove, destroy, kill, reduce live canopy.

Dangerous Tree

A tree that has structural defects (i.e., fallen branches, split trunk, advanced decay) that could result in the tree collapsing or falling without warning. An imminent and immediate threat.

Dead tree

A tree with no living vascular tissue. No longer alive, permanent leaf loss / wilting. A tree no longer capable of performing any of the following processes:

- Photosynthesis;
- Take up of water through the root system;
- Hold moisture in its cells;
- Produce new shoots.

Deadwooding

The removal of dead branches.

Deep Soil zone

Natural permeable ground with relatively natural soil

Destroy

Demolish, injure beyond repair, remove, poison, kill, cut down.

Determining authority

Those bodies responsible for issuing approvals.

Development

Includes the following:

- (a) The use of land (e.g. festival events, use of park areas and other events) that requires approval.
- (b) The subdivision of land.
- (c) The erection of a building.
- (d) The carrying out of a work.
- (e) The demolition of a building or works.
- (f) Road works.
- (g) The installation of utilities and services.
- (h) Any other act, matter or thing as defined by the relevant legislation.

Diameter at breast height (DBH)

At breast height (DBH) means the diameter of the trunk of a tree measured at breast height (1.4m or 54 inches above ground level).

Directional pruning

Pruning of a branch back to a branch collar of a lateral branch or the main stem.

Drip line / Root plate

The ground area directly under the branches above. See also TPZ.

Dying

Declining health, loss of vigour, irreversible decline.

Endemic

Peculiar to a particular geographic region (in this instance The Penrith city council area)

Environmental Weed

A plant that has the potential to become a nuisance. Environmental weeds usually have the ability to grow and/or spread rapidly and compete with desirable plants. They can overtake an area. Environmental weeds are not listed/ declared noxious weeds.

Epicormic shoots

Shoots produced by buds within the bark of trunks or branches as a result of stress, lopping or increased light.

Exotic

A tree/s that is not locally indigenous.

Exotic Vegetation

Foreign, Not native, introduced from another country

Extension growth

The amount of vegetative growth that a shoot produces during each growing season. With deciduous trees this is usually annual growth and is marked by a circular terminal bud scar. Evergreen trees may show changes in stem diameter or noticeably nodal growth.

Final cut

The final cut in the process of the reduction or removal of a branch. The purpose of this cut is to reduce the risk of micro-organism infection according to the principles of compartmentalisation and to encourage even wound closure.

Flush cut

An incorrect cut that removes or damages the branch collar and or branch bark ridge and which damages the trunk tissue.

Formative pruning

The selective removal of specific branches to enhance form, improve structure or to directionally shape a young or establishing tree.

Habitat

Means an area or areas occupied or periodically or occasionally occupied, by a native species, population or ecological community and includes any biotic or abiotic component.

Habitat Tree

Any tree which is a nectar feeding tree, roost and nest tree or a hollow-bearing tree which is suitable for nesting birds, arboreal marsupials (possums), micro-bats or other animals and insects.

Hazardous

Refer to 'dangerous tree' above. An unavoidable danger or risk, even though often foreseeable. A tree-failure hazard is present when a tree has potential to cause harm to people or property.

Height

The distance measured vertically between the horizontal plane of the lowest point of the base of the tree/s which is immediately above ground level and the horizontal plane of the uppermost point of the tree/s.

Imminent

About to happen soon, within 12 months

Indigenous

A tree/s or other vegetation being of a species that existed in, or on land in the vicinity of, the Penrith Local Government Area (LGA) before European settlement.

Infrastructure

The fundamental facilities and systems serving a country, city, or area, as transportation and communication systems, power plants, and schools. Green Infrastructure is a network providing the "ingredients" for solving urban and climatic challenges by building with nature.

Injury

Damage to a tree and includes:

- a) Lopping and topping;
- b) poisoning, including applying herbicides and other plant toxic chemicals to a tree or spilling (including washing off or directing water contaminated by) oil, petroleum, paint, cement, mortar and the like onto the root zone;
- c) cutting and tearing of branches and roots that is not carried out in accordance with accepted arboricultural practices, does not qualify as 'pruning' (as defined within AS 4373 – 2007 – Pruning of Amenity Trees) or which is done for invalid reasons;
- d) ringbarking, scarring the bark when operating machinery, fixing objects (e.g., signs) by nails, staples or wire, using tree climbing spikes in healthy trees marked for retention (except for access to an injured tree worker) or fastening materials that circle and significantly restrict the normal vascular function of the trunk or branches;
- e) Damaging a tree's root zone by compaction, excavation or asphyxiation (including unauthorised filling or stockpiling of materials);
- f) Under scrubbing, particularly carried out by mechanical tools such as brushcutters and the like.

Joint ownership

Means a tree is considered to be owned by more than one property owner. This is the case where the base of the tree is growing on the boundary of more than one property. All owners must sign applications for work on trees in joint ownership.

Landcare

Bushland restoration work on private land involving volunteers and / or landowners.

Lateral

A branch arising from another branch or stem.

Lopping (Lop)

The cutting of branches or stems between branch unions or at internodes on trees. Usually carried out to achieve a clearance or height reduction without regard for branch collars. Sometimes known as topping, this is an unacceptable pruning practice as it may create hazardous trees.

Monoculture

One type of plant/species in an area. E.g. all trees in the area are the same species.

Native vegetation

The same meaning as in the Native Vegetation Act 2003 (NV Act), and means any of the following types of indigenous vegetation:

- a) Trees;
- b) Understorey plants;

- c) Groundcovers;
- d) Plants occurring in a wetland
- e) A shrub or shrubs.

Notable

i.e. 'a notable tree'. Significant, Important, a dominant feature, worthy of note.

Noxious weed

A plant that is controlled by state government legislation because of social, environmental or cultural issues. A plant declared noxious under the Noxious Weeds Act 1993.

Owner

Means the owner of the property that the trunk of the tree is growing in.

Penrith City Bushcare

Run by Penrith City Council, the program facilitates volunteers and their involvement in managing natural areas under the care and control of Council.

Person suitably experienced and competent in arboriculture

See Arborist

Preservation

The retention and management of trees.

Project arborist

The person responsible for carrying out the tree assessment, report preparation, consultation with designers, specifying tree protection measures, monitoring and certification. The project arborist will be suitably experienced and competent in arboriculture, having acquired through training, qualification (minimum Australian Qualification Framework (AQF) Level 5, Diploma of Horticulture (Arboriculture)) and/or equivalent experience, the knowledge and skills enabling that person to perform the tasks required by this Standard.

Provenance

An endemic / native plant or seed originating from a specific location or area. (In this instance The Penrith City Council area or immediate surrounds).

Prune or pruning

Cutting branches from a tree/s in a planned and systematic manner that is carried out in accordance with the provisions of Australian Standard AS 4373 - 2007 - Pruning of Amenity Trees, and which consists of the following pruning types:

Crown maintenance* pruning involving:

- a) General pruning
- b) Thinning
- c) Deadwooding
- d) Selective pruning
- e) Formative pruning

*Crown maintenance pruning relates to pruning according to the growth habit of the tree/s

Without reducing the area of the crown, while retaining the structure and size of the tree/s.

Crown modification* pruning involving:

- f) Reduction pruning
- g) Crown lifting
- h) Pollarding
- i) Remedial pruning
- j) Power line clearance

*Crown modification pruning relates to pruning that changes the structural appearance and habit of the tree/s.

Public land

The same meaning as in the Local Government Act 1993.

Qualified arborist

An Australian Qualification Framework level 5 (Diploma) arborist (AQF5). This is the minimum qualification accepted by Council for the purposes of the preparation of an arborist's report involving culturally significant tree/s.

Reactive

An assessment carried out at the request of staff or residents or after an incident.

Reduction pruning

Pruning which reduces the size of the crown either in height or spread. The ends of branches are removed to internal lateral branches or stems.

Remedial (restorative) pruning

Pruning carried out to prolong the useful life expectancy of trees which have lost their natural form and structure through storms, lopping, etc. Usually only used when all other avenues have failed and replacement is difficult, in this type of pruning, the final cut may not necessarily be at the branch collar.

Remnant tree or remnant vegetation

A native tree or any patch of native vegetation which remains in the landscape on the original soil profile, after removal of most or all of the native vegetation in the immediate vicinity.

Remove or removal

To cut down, fell, destroy, kill, take away, uproot or transplant a tree from its place of origin.

Retain

To keep a hold of in position or condition, to maintain.

Ringbark

A form of girdling, involving physical damage to the bark or cambium.

Risk

Is the probability of injury, loss or damage happening to property, a person, organisation or the community measured in terms of consequences and likelihood.

Selective pruning

The removal of identified branches that are causing a specific problem.

Significant tree and Register

Significant trees display cultural, historic, scientific and/or aesthetic value. A tree or trees which are significant features in the City's heritage or cultural landscape and which are listed in Council's Register of Significant Trees. They may be historic, unique, rare, large or have community support for their retention.

Site

The property to which an application to prune or remove trees applies.

Site strategy

A work plan developed between Council and the Bushcare group. The strategy sets out work requirements and how and when to implement the strategy.

Stem

Organ which supports branches, leaves, flowers and fruit: may also be referred to as the trunk.

Structural root zone (SRZ)

The area around the base of a tree required for the tree's stability in the ground. The woody root growth and soil cohesion in this area are necessary to hold the tree upright. The SRZ is nominally circular with the trunk at its centre and is expressed by its radius in metres.

This zone considers a tree's structural stability only, not the root zone required for a tree's vigour and long-term viability, which will usually be a much larger area.

Sucker

Adventitious shoots developing from a plant's roots or from below the union in grafted plants.

Survival Rate

The ability of a plant to thrive in the location it has been planted given regular maintenance.

The Act

Means the Environmental Planning and Assessment Act 1979, The Local Government Act 1993 or as described.

Topping/Top

Cutting away part or the entire tree canopy, leaving a trunk and stubbed main branches. Reducing the height of a tree through the practice of lopping.

Tree Surgeon

Similar to an Arborist. Usually a practicing tree worker.

Trade arborist

A tradesperson who holds the Australian Qualification Framework (AQF) Certificate III in Horticulture (Arboriculture) or other national or international qualification considered equivalent by Council.

Tree or trees

Long lived woody perennial plant greater than (or usually greater than) 4m in height with one or relatively few main stems or trunks.

A perennial plant with at least one self-supporting woody or fibrous stem, being of any species whether indigenous, exotic or introduced which:

- a) Is four (4) metres or more in height; and/or

- b) Is four (4) metres or more in canopy width, and/or
- c) has a trunk diameter of one (1) metre or more measured at one (1) metre above ground level (or its equivalent in the case of multi-trunked trees); or
- d) Is a palm tree (except *Syagrus romanzoffianum* - Cocos palm), cycad or tree fern of any species growing within the City of Randwick, irrespective of its size, or
- e) Is any tree on public land of any size, or
- f) Is any tree in bushland of any size.

Tree Protection Zone (TPZ)

A specified area above and below ground and at a given distance from the trunk set aside for the protection of a tree's roots and crown to provide for the viability and stability of a tree to be retained where it is potentially subject to damage by development.

Tree worker

A tradesperson who holds the Australian Qualification Framework (AQF) Certificate II in Horticulture (Arboriculture) or other national or international qualification considered equivalent by Council has demonstrated competence in pruning according to AS4373-2007.

Trunk

The single main stem of the tree, as distinguished from the branches and roots.

Undesirable species

Plants that are listed in Schedule 1 of Council's Tree Preservation Order 2005 which are deemed undesirable due to their location or as having characteristics which may lead to poisoning, weed infestation, brittle and dangerous wood, excessive spread of roots or bushland invasion.

Urban Forest

In its *2003 Urban Forest Policy* the NSW Local Government Association defines urban forest as "the totality of trees and shrubs on all public and private land in and around urban areas, including bushland, parkland, garden and street trees, and is measured as a canopy cover percentage of the total area" (Local Government Association of NSW, 2003).

It is a primary component of the urban ecosystem. Trees in the city are part of the Urban Forest.

Vigour

Ability of a tree to sustain its life processes. The term 'vigour' in this document is synonymous with commonly used terms such as 'health' and 'vitality'.

Visual Tree Assessment (VTA)

A biomechanically based system introduced by Claus Mattheck which uses the reactive nature of tree growth to evaluate the condition of trees.

Volunteering

Volunteering is the practice of people working on behalf of others without being motivated by financial or material gain.

Water-shoot

A sprig or shoot from the root or stock of a tree. An erect, strong growing or epicormic shoot developing from near the base of a shrub or tree, but distinct from 'sucker'.

Width

The distance measured horizontally (in metres) between the two (2) widest points of a tree's canopy.

Wildlife

Corridors are vegetative corridors that link habitat which is suitable for animals (fauna) to travel along in relative safety.

Work

Any physical activity in relation to land that is specified by the determining authority.

Wound

An opening that is created when the bark is cut, removed or injured. NOTE: Pruning a live branch always creates a wound, even when the cut is properly made.

2.0 TREE PLANTING SPECIFICATION

KEY NOTES:

The Contractor to verify the location of all services prior to commencement of works.
DIAL 1100 BEFORE YOU DIG;

Contractor must seek approval from PCC Landscape Architect at the following hold points prior to proceeding:

- Plant material and root pruning prior to planting (carry out root pruning as directed by PCC Tree Officer);
- Pit excavation prior to planting and back-filling;
- Soil Type A and excavated site soil for use in Soil Type B mix prior to backfilling.

Plant Material:

All plant material to be approved by PCC Landscape Architect prior to purchase.

Refer to Key Notes on Drawing LDt 01 Sheet 1 of 2 for notes specific to tree planting.

Ground cover planting (150mm pots):

- Do not plant in unsuitable weather conditions such as extremes of heat, cold, wind or rain;
- Before planting treat all plants with Seasol or an equivalent Australian produced seaweed extract from Durvillea Potatorum. All plants in their pots are to be immersed into a tub deep enough to fully saturate each plant. The tub is to contain Seasol at manufacturers recommended rates and method.
- Thoroughly water the planting area prior to watering. Keep the area and plants moist during planting;
- Excavate planting holes 1.5 times deeper and 2 times wider than plant container;
- Roughen the sides and base of the planting hole to a further 150mm to prevent confinement of root growth;
- When the hole appears to be the correct size, and not before, remove plant from the container with minimal disturbance to the root system and place in its final position, backfill with topsoil, Terracottem and fertilizer as specified;
- Lightly tamp backfill mix and thoroughly water plant to eliminate air pockets. Ensure top of root ball is level with soil surface and centred in the planting hole;

- Water the plants immediately after planting.

Materials:

SOIL TYPE A: Benedict's Sand & Gravel premium 'Organic Garden Mix - BS133'

(Ph.: 9986 3500) or equivalent & tested to AS4419.

SOIL TYPE B: 50% (max) excavated site soil & 50% fine washed sand with less than 1% organic matter by weight and tested to AS4419. If insufficient quantities of excavated site soil are available fine washed sand equivalent to Benedict's fine washed sand may be used in its place.

FERTILIZER:

At time of planting -

TREE PITS: Incorporate Sierrablen Flora 8-9 month controlled release fertilizer 21 + 1.8 + 9 + TE (or equal approved) as supplied by Scott's Horticultural Solutions into Soil Mix Type A at rates recommended by Manufacturer (ph.: 1800 789 338; www.scottsaustralia.com.au;

MASS PLANTED AREAS: Incorporate Agriform planting tablets 20 + 4.3 + 4.1 + TE (or equal approved) as supplied by Scott's Horticultural Solutions into Soil Mix Type A at rates recommended by Manufacturer (ph.: 1800 789 338; www.scottsaustralia.com.au;

Terracottem - Incorporate into Soil Mix Type A at rates specified by supplier:
Terracottem Australasia Pty Ltd

Ph.: 0247514200

STAKES: 50 X 50 X 1800mm hardwood stakes (3 no. per tree) driven securely into the subgrade and clear of the root ball;

TIES: 50mm Hessian webbing stapled to outside of stakes approximately two thirds height of stake above ground level.

NOTE: STAKE FOR PROTECTION - NOT SUPPORT. REFER STAKING DETAIL.

Maintenance:

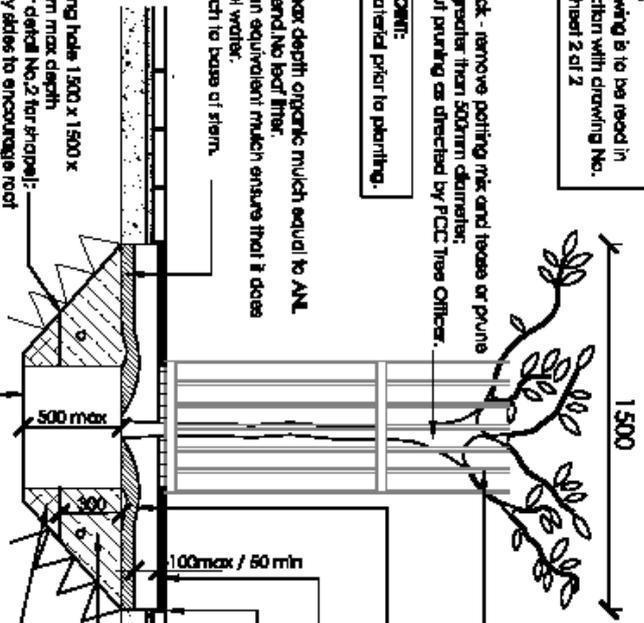
- Plant establishment Period - 13 weeks. Replace failed and vandalised plants with the same until the end of the 13 week maintenance period;
- Regularly remove by hand rubbish and weed growth throughout planted areas throughout the course of the works and for the duration of the planting establishment period.

NOTE:
The drawing is to be read in conjunction with drawing No. LDI 01 Sheet 2 of 2

Tree stock - remove potting mix and topsoil or prune root if greater than 500mm diameter.
Carry out pruning as directed by PCC Tree Officer.

HOLD POINT:
Plant material prior to planting.

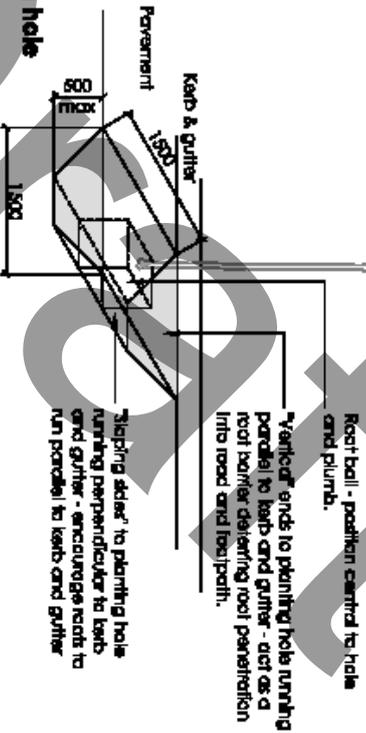
Stomach max depth organic mulch equal to ANL Forest Blend No leaf litter.
If using an equivalent mulch ensure that it does not reject water.
Dish mulch to base of stem.



Planting hole 1500 x 500mm max depth
[Refer detail No.2 for slope]
Slightly slope to encourage root penetration.
Ensure bases of hole is compacted so that trees does not sink after planting

HOLD POINT:
Fill excavated & scaffold, prior to planting and backfilling

DETAIL 1 - Typical Section
Scale 1:20



Road ball - position centred to hole and plumb.

"Vertical" ends to planting hole running parallel to kerb and gutter - act as a root barrier diverting root penetration into road and footpath.

"Slipping skirt" to planting hole running perpendicular to kerb and gutter - encourage roots to run parallel to kerb and gutter

DETAIL 2 - Isometric of planting hole
Scale 1:50

Supply & install Tree Guard as specified.
Attach to tree girths as per Manufacturers instructions.

Create 'haem' around root ball to encourage water to drain towards and penetrate into the root zone.
DO NOT PLACE SOIL OVER TOP OF ROOT BALL.

1500 x 1500mm cast aluminium tree girths as specified. Initial per Manufacturers instructions.

ENSURE FLUSH TRANSITION BETWEEN PAVEDS & TREE GRAVE

[Refer Engineers drawings for pavement construction]

HOLD POINT:
Soil mixes prior to backfilling.



PENRITH CITY COUNCIL
Leading Our Community

DESIGN APPROVED	DESIGNED	DATE
KS / MA	VP	February 2010
APPROVED FOR CONSTRUCTION	DRAWN	SCALE
CONSTRUCTION	VP	1:20 / 1:50 @ A3
KS / MA	CHECKED	
KS / MA		

PROJECT TITLE: Penrith CBD 40km/hr ZONES
SHEET TITLE: 7SLTR/4SLTR TREE PLANTING IN PAVED AREAS
(APPLIES TO THRESHOLD NUMBERS: 2, 8, 10, 11 & 12)

PENRITH CITY COUNCIL

Penrith CBD 40km/hr ZONES
7SLTR/4SLTR TREE PLANTING IN PAVED AREAS
(APPLIES TO THRESHOLD NUMBERS: 2, 8, 10, 11 & 12)

FILE NO.	SHEET NO.
X	1 of 2
REVISION	
C	
PLAN NO.	
LDI 01	

KEY NOTES:

Contractor to verify the location of all services prior to commencement of work. SHALL 11880 APPROX FROM BOUND.

- Contractor must seek approval from PCC Landscape Architect at the following lead points prior to commencing:
 - Plant material and root planting prior to planting (Refer outline 50mm PCC Tree Officer regarding root planting methods);
 - Fill excavated prior to planting and backfilling;
 - Soil Type A and excavated site and / this material used for use in Soil Type B mix prior to backfilling.

Material Schedule:

- All plant material to be approved by PCC Landscape Architect prior to purchase and fit to be:
 - Tree to species & size (Refer Plant Schedule - Draw No:LDI 01 Sheet 2 of 2), within no plant species schedule;
 - Healthy, of good form, not soft or tattered, free from disease and insect pests;
 - With large, robust root systems that are well root banded;
 - FREE AGE TO HAVE A MAXIMUM ROOT BALL DEPTH OF 500mm;
 - Tree are to have a single heading shoot and confirm to Not Spec Guide (October 2009) Practising Landscape Trees - A guide to Assessing tree quality.

Planting:

- Do not plant in undesirable weather conditions eg. extreme heat, cold, wind or rain;
- Plant all plants with 'second or an equivalent' Australian produced sawwood cuttings from Durville plantation prior to planting;
- Thoroughly water planting area prior to planting. Keep the area and plants moist during planting;
- Excavate planting hole minimum 3 times wider than root ball of the plant (up to a max of 1500 x 1500mm) and equal to depth of soil ball. Slopes of planting hole to be per Detail 2 in paved areas.
- Ensure bases of planting hole is firm;
- Keep excavated site and to one side for use in Soil Type B (DO NOT include any clay subsoil in the excavated site soil);
- Place all excavated material clay with gypsum at 200g/m²;
- Place tree centrally in the hole ensuring it sits on level and plumb and back fill to within 50mm of top of root ball using Soil Type B;
- Using Soil Type A backfill the hole to level with the top of the root ball;
- Water immediately after planting - to aid establishment water the root ball, not the ground around the tree.

Materials:

- SOIL TYPE A: Specially Sourced & Gravel Premium Organic Garden Mix - 55113V (1st-9th 5.2009) or equivalent & tested to AS4419;
- SOIL TYPE B: 20% (volume) of soil A, 80% fine washed sand with less than 1% organic matter by weight and tested to AS4419. If available, quantities of excavated site soil can substitute from the washed sand equivalent to Beneficial fine washed sand may be used in its place.
- NOTE: Beneficial: Fine line sand, Over-42, black-pine wood as supplied by the Purphy Foundry
- Phone: 02 95923462 www.purphyfoundry.com.au; email per.manufacturers@pcc.nsw.gov.au
- NOTE: GRAVEL: 1500 x 1.500mm cast aluminium tree girths GOV S&B supplied by the Purphy Foundry
- Phone: 02 95923462 www.purphyfoundry.com.au; email per.manufacturers@pcc.nsw.gov.au

Maintenance:

- Plant establishment period - 12 weeks. Replaces faded and varnished plants with the same until the end of the 12 week maintenance period;
- Regularly remove by hand rubbish and weed growth throughout planted areas throughout the course of the works and for the duration of the planting establishment period.

5.0 Street trees and Driveways

Procedure for Removal of street trees to install driveways or other development.

A resident /property owner may propose the removal of a street or park tree to construct a driveway or otherwise develop a property.

The removal of street trees is undesirable but may be the most appropriate means to undertake the work. Generally all other options should be considered other than tree removal. A driveway crossover application is required to be submitted and approved in conjunction with approval to remove a street tree.

Consideration will be given to a request to allow the removal of a street tree using the following criteria;

- The health and condition of the tree,
- Alternatives to removal,
- The effect on the streetscape,
- If the tree is notable /significant,
- The size and age of the tree,
- Existing driveways,
- The number of existing trees in the area.

All trees on Council property are considered an asset. If approved a fee will be imposed and the procedure must be followed.

Procedure

- Owner /resident requests, in writing, the removal of the tree/s,
- Tree/s are assessed by Council officer,
- Applicant advised of the determination of assessment,
- If approved a letter will be sent to the applicant advising them of the process.
- The owner /applicant pays the required fee (in accordance with Council's fees and charges),
- Council's driveway engineer is notified, crossover application can be approved,
- The applicant then carries out the work including the replacement planting,
- Council is notified of completion.

Refusal

If the trees are deemed worthy of retention and the request is refused the owner and Council's driveway engineer are notified. Any fees paid are refunded.

Notes on Procedure

- The work must be carried out by an authorised contractor.
- The Parks Department has a list of contractors who are authorised by Council to carry out work on street trees in the Penrith City Council area.
- Should you wish to use a contractor other than those authorised a copy of the contractors WH&S Management System must include Safe Work Method Statements for the type of work. In addition a copy of the contractors Certificate of Currency for Public Liability Insurance, minimum of \$10 million, will be required.
- The tree may need to be poisoned prior to removal/grinding to prevent root sucking/regrowth,
- The stump of the tree is removed by grinding.
- Council must be notified at least 48 hours prior to removal of the tree with the contractor's details and date of work.
- Replacement tree species must be in accordance with the Council approved species list and specifications.

6.0 Tree Species Commonly Used or Recommended for Street Plantings

Botanical Name	Common Name	Height Metres	Width Metres	Description	Tolerates	Sensitive To
<i>Banksia integrifolia</i>	Coast Banksia	8 - 10	3 - 8	Evergreen Australian native, dark green silver – backed leaves.	Most soil types, salt spray, wind resistant.	Lime
<i>Bauhinia variegata</i>	Butterfly Tree	5 - 8	5 - 8	Small tree with twin lobed leaves and purplish fragrant flowers, semi deciduous, warm positions.		Frost
<i>Bauhinia variegata</i> 'Alba'	Butterfly Tree	5 - 8	5 - 8	Small tree with twin lobed leaves and white fragrant flowers, semi deciduous, warm positions.		Frost
<i>Buckinghamia celsissima</i>	Ivory Curl Flower	4 - 10	1.5 - 8	Evergreen Australian native, creamy white long flower heads. Performs best in warm frost - free areas, may be slow growing.	A variety of soil types	Heavy frosts
<i>Callistemon salignus</i>	Willow Bottlebrush	4 - 10	2 - 7	Evergreen Australian native, white bottlebrush flowers, good small street tree,	Drought, heavy frost	
<i>Callistemon viminalis</i> 'Dawson River'	Weeping Bottlebrush	5 - 10	3 - 5	Evergreen Australian native, crimson brush flowers, weeping habit, hardy.	Most soils	
<i>Callistemon viminalis</i> 'Kings Park Special'	Weeping Bottlebrush	5 - 6	3 - 5	Evergreen Australian native, bright crimson brush flowers, weeping habit, hardy.	Most soils	
<i>Cupaniopsis anacardioides</i>	Tuckeroo	6 - 8	4 - 8	Evergreen Australian native, short spreading habit.	Sandy soils.	

Botanical Name	Common Name	Height Metres	Width Metres	Description	Tolerates	Sensitive To
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	8 - 10	3 - 4	Upright habit, suitable for narrow streets. Pink or white flowers followed by small bright blue berries.	Light frost	
<i>Fraxinus griffithi</i>	Evergreen Ash	8 - 12	5 - 10	Small tree, evergreen with compact habit. Copes well with pollution.		
<i>Koelreutaria paniculata</i>	Golden Rain Tree	8 - 10	6 - 10	Deciduous, single trunk with broadly conical crown. Hardy, tolerant of a wide range of climates and soils, bright yellow flowers followed by inflated fruit capsules.	Drought, alkaline soils	
<i>Largerstroemia indica</i>	Crepe Myrtle	6 - 8	5 - 6	Small deciduous tree, summer flowering, shades of pink and mauve as well as white, beautiful bark.	Most soils, paved areas.	
<i>Melaleuca linariifolia</i>	Snow in Summer	6 - 8	4 - 6	Dense foliage, masses of white fluffy bottlebrush flowers in summer, very hardy, small tree, not to be planted near water service pipes.	Wet soils	
<i>Pittosporum rhombifolium</i>	Queensland Pittosporum	10 - 15	6 - 8	Evergreen Australian native, retains showy bunches of orange berries.		
<i>Tristaniaopsis laurina</i>	Water Gum	8 - 12	6 - 8	Evergreen Australian Native prefers soils with free drainage.	A variety of soils	
<i>Waterhouea floribunda & vars.</i>	Weeping Lilly Pilly	8 - 15	3 - 12	Evergreen Australian native, small – medium tree depending on soil type,	Light frost	

7.0 TREE SPECIES RECOMMENDED NOT TO PLANT

Botanical Name	Common Name	Reason
<i>Casuarina & Allocasuarina species</i>	She - oak	Mass of fibrous roots, damage to drains and sewers, woody capsules.
<i>Cinnamomom camphora</i>	Camphor Laurel	Major damage to drains and sewers
<i>Corymbia citriodora</i>	Lemon Scented Gum	Large Eucalypt with long, lateral branches that are prone to sudden failure.
<i>Erithrina species</i>	Coral Trees	Major damage to drains and sewers
<i>Eucalyptus globulus</i>	Maidens Gum	Large tree
<i>Eucalyptus microcorys</i>	Tallowwood	Extensive woody root system, but can be used effectively as an avenue planting on wide verges free from below and above ground services.
<i>Eucalyptus nicholi</i>	New England Peppermint	Short useful life span in Sydney region.
<i>Eucalyptus species</i>	Eucalyptus	Most Eucalypts cannot be used for urban street plantings due to their size, however, there are applications for their use; ie mass plantings on wide verges, set back from roadways and services..
<i>Ficus species</i>	Figs	Major damage to drains and sewers but can be used as avenue plantings on wide verges free from below and above ground services.
<i>Gleditsia triacanthos</i>	Honey Locust	Long, sharp woody thorns on trunk and branches, classed as a weed species.
<i>Lagunaria patersonii</i>	Norfolk Island Hibiscus or Cow Itch Tree	Seed capsule contain fine, sharp hairs that cause extreme skin irritation.
<i>Liquidambar styraciflua</i>	Liquidambar	Woody roots close to soil surface, spiky capsules (trip hazard), prone to limb failures in high winds.
<i>Melaleuca species</i>	Paperbarks	Major damage to drains and sewers. Can be used
<i>Melia azederach</i>	White Cedar	Deciduous, berry drop, White Cedar moth caterpillar.
<i>Platanus species</i>	Plane Tree	Large wide crowned deciduous, overused, hardy in most situations, best in parks and wide avenues, pollen can cause allergic reactions.
<i>Populus species</i>	Poplars	Major damage to drains and sewers
<i>Robinia pseudoacacia</i>	False Acacia	Has been used for street tree plantings, suckers prolifically if roots are disturbed, woody spines.