

- 3.1.3. On each visit, the consulting arborist shall check the soil moisture and manually check the irrigation system, when installed.
- 3.1.4. Soil moisture levels should be checked by physical touch or with a tensiometer.

3.2. Soil amelioration

- 3.2.1. An arborist may apply an application of rooting hormones, humic acids, soil micro-flora and mycorrhizae in accordance with the manufacturer's instructions.
- 3.2.2. Chemical fertilizers are to be used only after representative soil testing and based on the soil scientist's recommendations.

3.3. Mulching

- 3.3.1. The fenced area should be mulched with seed-free mulch to a depth of at least 50mm.

3.4. Weed Control

- 3.4.1. Weed control shall be by hand pulling, wiping or spraying with a glyphosate-based herbicide. Material likely to be root grafted to trees to be retained shall be removed manually.
- 3.4.2. Weed control shall not be performed by mechanical cultivation or by scraping or back burning.

3.5. Crown cleaning

- 3.5.1. Crown cleaning (AS4373-1996, Pruning of Amenity Trees) shall be performed in accordance with the standard, by an arborist and in compliance with the appropriate occupational health and safety regulations. All branches down to 50mm in size shall be inspected and appropriately treated.
- 3.5.2. Any concerns about health or safety that are observed by the arborist on the site will be reported in writing within seven days to the superintendent/principal/client and/or head contractor.
- 3.5.3. The use of spurs on live trees and internodal cutting is strictly prohibited.

3.6. Tree Removal and Stump Grinding

- 3.6.1. Remove trees in a controlled or sectional felling to avoid any damage to the trees to be retained.
- 3.6.2. All shrubs, under-scrub and woody weeds that are to be removed shall be removed by hand as per 3.4 above.
- 3.6.3. No tree shall be removed unless it has been marked with a horizontal white and yellow/orange line around the trunk.

4. Fences:

- 4.1. The Tree Protection Zone should be enclosed, as detailed in section 8.0 of the PTOCS standards, should be completed prior to any work commencing, including demolition and land clearing by earth moving machinery. The fence may be erected after tree maintenance activities.
- 4.2. The fence surrounding the Tree Protection Zone must be a rigid fence not less than 1.8m high.

5. Signs:

- 5.1. At least every 25 metres attached to all tree protection fence there shall be a sign, a minimum of 600mm x 600mm, bearing the following phrase in red letters on white background, at least 50mm in height:

“TREE PROTECTION ZONE - KEEP OUT”

- 5.2. On the same sign above or on a different sign, attached adjacent, and in red lettering on white background not less than 25mm in height is to be the following:

“PROHIBITED ACTIVITIES”

Followed by the list below in black letters not less than 15mm in height.

- a) Entry of machinery or people.
- b) Storage of building materials.
- c) Parking of any kind.
- d) Erection or placement of site facilities.
- e) Removal or stockpiling of soil or site debris.
- f) Disposal of liquid waste including paint and concrete wash.
- g) Excavation or trenching of any kind (including irrigation or electrical connections).
- h) Attaching any signs or any other objects to the tree.
- i) Placing of waste disposal or skip bins.
- j) Pruning and removal of branches, except by a qualified Arborist.

- 5.3. In letters not less than 25mm in height on the above sign should be the name of the supervising Arborist or arboricultural company or other appropriate contact and a contact phone number.

6. Root Cutting

- 6.1. All roots greater than 50mm in diameter that are required to be removed shall be cleanly cut and kept moist at all times and shall not be left exposed to the air for more than 10 to 15 minutes.

7. Maintenance Reports:

- 7.1. Weekly inspections and monthly reports should be made until the end of construction.
- 7.2. A consulting Arborist should be on site during any excavation work within the Critical Root Zone and will report on that work in the monthly report.
- 7.3. A site log shall be maintained and include the date of each inspection, the person who performed the inspection, the items inspected or tested, the maintenance activities performed, any repairs undertaken or required to be undertaken, and any substantial breaches or non-conformances.
- 7.4. The arborist performing the inspection should sign the entries in the logbook
- 7.5. The log shall be maintained on site or, alternatively, copies of the log entries for the month shall be submitted each month with the monthly report.
- 7.6. All maintenance shall continue for the three months after completion of construction

8. Non-Conformance Reports:

- 8.1. The following are non-conformances that need to be managed when they occur.
 - 8.1.1. The removal or relocation closer to the tree of all or part of any protective fence prior to landscaping.
 - 8.1.2. The performing of any activity noted as prohibited on protection zone signage
 - 8.1.3. The failure to maintain adequate soil moisture or the failure in the operation of the irrigation system.
 - 8.1.4. Mechanical damage to the trunk, stems, branches, or retained roots.
 - 8.1.5. The sudden and abnormal or premature shedding or decline of the tree.
 - 8.2. **Substantial breaches and non-conformances:**
 - 8.2.1. Any breach or non-conformance of the tree protection zone, by any party, shall be notified in writing within 2 working days of it being first observed.
 - 8.2.2. Notification of any non-conformance should be made in writing to the site foreperson, the consent authority and any independent certifier.
-

Appendix 5:

Protection of Trees on Construction Sites

Establishing a Tree Protection Zone

Good Work



Photo 1: The fence should be rigid and hard to move.



Photo 3: The TPZ is mulched where appropriate and weed free.



Photo 5: The purpose of the fence is to isolate the tree from the works and to protect the roots.

Poor Work



Photo 2: This style of fence is too easily damaged and collapses when hit.



Photo 4: Put the fence where it should be! The TPZ is not for storage.



Photo 6: Woven fences seldom work particularly when space is limited.

Protecting the Roots

Good Work



Photo 7: Like an egg tree roots are delicate and easily damaged.

Poor Work



Photo 8: A single movement of a truck can cause significant damage to the absorbing roots.



Photo 9: The load-sharing surfaces should be designed to take the load that will travel over it.



Photo 10: Without appropriate protection, the soil is compacted and roots are broken and damaged.



Photo 11: The goal is to ensure that there is minimal impact on the roots that are being protected.



Photo 12: Keep equipment away from the tree by using appropriate tree protection.

Trunk Protection

Good Work



Photo 13: TrunkGuard is designed to absorb impact just like a bicycle helmet.

Poor Work

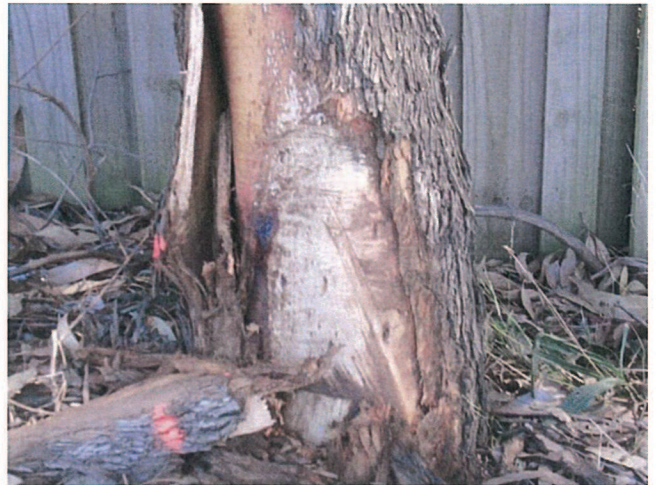


Photo 14: Trunk damage is usually irreparable and frequently causes long-term problems!



Photo 15: It is flexible for a better fit and is attached using screws to avoid even light impact.



Photo 16: Even the installation of a poorly designed system can injure a tree!



Photo 17: Able to withstand and absorb moderate construction impact - not that this should happen!

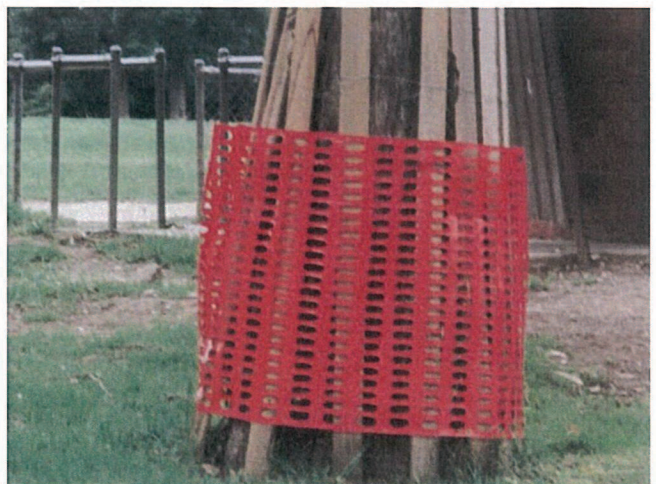


Photo 18: This serves little purpose at all! It does not protect the roots or the trunk of the tree.