



TREE WISE MEN[®]
AUSTRALIA PTY LTD

**Transplantation Method Statement
For
Cabbage Tree Palms, *Livistona australis*
At
41 Warriewood Road
Warriewood NSW
(LEC Case No. 2017/53907)**

Prepared for:

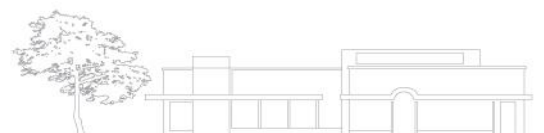
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Ref: 2502(L)TransplantMethod

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26 October 2017

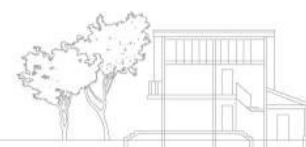


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ATTACHMENTS

- A. Site Photographs
- B. Tree/Site Plan



1. BACKGROUND AND METHODOLOGY

1.1 INTRODUCTION

- 1.1.1 This Transplantation Method Statement (TMS) was prepared for Woolwich Pty Ltd, the Applicant in *LEC Proceedings 2017/53907* for the Subdivision development at 41 Warriewood Road, Warriewood.
- 1.1.2 The development includes rehabilitation and creekline construction works adjacent the southern boundary of the subject site. The creekline works will realign the existing channel of Narrabeen Creek to match the southern boundary.
- 1.1.3 The proposed creekline works are as detailed in the "*Narrabeen Creek Rehabilitation Works*" drawings *Rev C (21.6.17)* prepared by Craig and Rhodes.
- 1.1.4 The existing vegetation in the vicinity of the creekline works are as detailed at *Figure 3* of the *Flora and Fauna Assessment* report dated 26 July, 2017 prepared by Eco Logical.
- 1.1.5 This TMS is for the on-site transplantation of Cabbage Tree Palms, *Livistona australis* only. The actual number and location of Cabbage Tree Palms, *Livistona australis* is unknown as there is currently no Detail Survey in this portion of the site.
- 1.1.6 This TMS is to be used in the event that any Cabbage Tree Palms, *Livistona australis* are located within the footprint of the creekline construction or any associated haul roads, storage areas or other areas requiring earthworks.



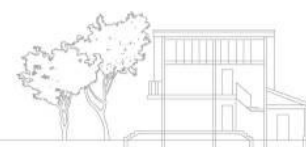
2. TRANSPLANTATION METHOD STATEMENT FOR CABBAGE TREE PALMS

2.1 PRE-TRANSPLANTATION PREPARATION

- 2.1.1 The Schedule of Works for the proposed creekline works should include the transplantation and re-establishment of the Cabbage Tree Palms, *Livistona australis* as detailed below.
- 2.1.2 The palms to be transplanted are to be tagged and surveyed prior to commencement of works. The new locations for each palm are to indicated on the Landscape Plan.
- 2.1.3 Palm transplantation should be a specific item in the preliminary works or demolition section of the Contract.
- 2.1.4 The transplantation is to be undertaken by or with direct supervision of a tree transplant company. Sufficient notice needs to be allowed to engage the professional transplantation company to undertake the works.
- 2.1.5 Soil depth and machinery access constraints in and to the new location should be established during early works. Undertake basic soil nutrient testing to ensure no site-specific nutrient imbalances exist.
- 2.1.6 Soil moisture within the rootball of the palms is to be at near field capacity prior to transplanting. Irrigation of water cart watering may be required to supplement rainfall or ground water levels.
- 2.1.7 All services (e.g. water, electricity, gas) within 3 metre radius of centre of trunk of each palm to be moved are to be disconnected. Certification of disconnection is to be provided prior to excavation or water laser cutting. This 3 metre radius can be varied with approval of transplant contractor.
- 2.1.8 Prior to moving, all dead and older fronds are to be removed to reduce moisture loss. Do not damage or remove the main central fronds. The cutting equipment is to be sterilised between the movement of each palm.
- 2.1.9 An antitranspirant (e.g. Envy®) should be sprayed on the head of the palms to reduce moisture loss.
- 2.1.10 Rootball diameter should be approximately 3 metres and no less than 1.5 metres deep. If adequate ballast cannot be cut, temporary ground anchors will be required. Guying should be avoided.
- 2.1.11 Mark the "north point" on the trunk to allow similar repositioning.

2.2 EXCAVATION AND ROOTBALL PRESERVATION

- 2.2.1 The transplantation must be undertaken as quickly as possible and preferably during mild weather. Do not allow the rootball to dry out or to be fractured during the lifting. The rootball of each palm is to be cut out with the use of a high pressure water laser or specialised machine cutting tools. Any roots damaged from the water laser or machine must be cut cleanly with secateurs prior to replanting.



- 2.2.2 Larger, taller palms may require particular rootball preparation (steel framing) to allow for lifting. Smaller palms (less than 10m tall) can be lifted, craned from the trunk with specialised slings to prevent damage.

2.3 PREPARATION OF NEW SITE

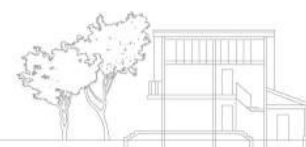
- 2.3.1 Certification of disconnected services prior to excavation of new site shall be provided.
- 2.3.2 The soil depth in the new locations must be determined prior to lifting. If insufficient soil depth is available an alternative location will need to be found or soil mounding may need to be constructed.
- 2.3.3 Excavation of the new site to be carried out with an excavator or similar with allowance made for backfilling. New palm locations are to be as close as possible to existing.
- 2.3.4 If waterlogging is observed in the new planting pit, specific subsoil drainage must be installed, prior to lifting. Even short periods of waterlogging will cause palm death.
- 2.3.5 If working in clay soils ensure planting pit sides are not glazed or compacted by the machine bucket to ensure post-transplant root breakout.

2.4 LIFTING AND RELOCATION

- 2.4.1 If possible relocate to final positions rather than store off site or in a temporary holding nursery.
- 2.4.2 A mobile crane or excavator will be required to lift and move the palms. Specialised slings are to be used to avoid trunk damage. The rootball must be cut and the palms propped/stabilised prior to lifting load being applied.
- 2.4.3 All possible care must be taken not to damage the trunks during preparation or lifting, as trunk wounding will persist for the life of the palm.

2.5 OFF SITE TRANSPORT AND STORAGE

- 2.5.1 If off-site storage is required, the transport and storage methods outlined below should be followed.
- 2.5.2 Use the same slinging/lifting procedures as previously mentioned. Cover during transport to avoid wind damage. Load with head towards rear of vehicle.
- 2.5.3 Provide water, soil and environmental conditions similar to existing site conditions. Do not store in either exposed or completely enclosed locations.
- 2.5.4 Allow for new root development during storage period. This new root material should be retained for relocation back to site.
- 2.5.5 In the storage yard the palms should be orientated with the same "north point" as in original location.



2.6 PLANTING IN NEW SITE

- 2.6.1 Remove all trunk protection and lifting slings. The palms should be planted at or above the existing ground level: do not bury the trunk.
- 2.6.2 The palms should be orientated with the same "north point" as in original location.

2.7 BACKFILLING AND COMPLETION

- 2.7.1 Backfill with site soil. Ensure no soil profile inversion occurs especially if clay subsoils exist.
- 2.7.2 Well drained imported soil mix can be used to supplement site soil. All imported soil to comply with *AS4419-1998*. Do not bury organic matter, mulch or compost (>20% in backfilling mix) in the base of the planting pit.
- 2.7.3 Heavy watering and application of soil wetting agent, fungicide treatment and root growth stimulant to backfill as directed by the transplant contractor. Soil saturation is required at planting to allow adhesion to surrounding soil and to expel large pockets of air. Ensure planting pit is free draining.
- 2.7.4 No permanent guying or earth anchoring should be required given the weight of the root mass in comparison with the crown weight and wind loading. If particular palms require anchoring or steel rootball frames to left insitu, the locations of these materials is to be indicated on the Landscape Plan.

2.8 POST-TRANSPLANTATION CARE AND DURATION

- 2.8.1 Light compaction of the backfill soil and temporary guying (1-2 weeks) will generally adequately support the palms.
- 2.8.2 The palms should be maintained under a specific watering program for a minimum of three (3) months from transplanting
- 2.8.3 Implement recommendations of soil test results if required. Apply nutrient/hormone drench at planting. Install weed-free wood chip mulch to a depth of 100mm within a radius of 2m.
- 2.8.4 A compliance Certificate should be prepared for Occupation Certificate by the Transplant Contractor in relation to the transplantation works.

