



The Tree Man

Arborist services

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TREE MANAGEMENT REPORT

29.11.09

Site:

3 South Street, Strathfield

Client:

Design Link Australia

Commissioned By:

Strathfield Council

Author:

Ben McInerney

Arbourist

Certificate 3 Horticulture (Arboriculture)

Summary

Design Link have requested a Tree Management Report relating to several tree specimens located at 3 South Street, Strathfield.

Ben McInerney qualified Certificate 3 Arborist, author, has prepared this report based on visual assessment on 13 October 2009.

The report discusses the current condition of the specimens identified by:

- The proposed development by *Design Link Australia*, Drawing no. a03
- Landscape concept plan 9082DA 1, Design Link Australia
- Observations on site by Ben McInerney

Twenty two (22) trees have been described & discussed. The aim of this report is to confirm the viability of the trees, relating to the impact of the proposed development on these specimens.

Of the twenty two (22) trees nineteen (19) are to be removed. Of that nineteen (19) one (1) is considered a noxious weed and will not be discussed as permissions is not needed for its removal. It has been identified in this report (tree 15).

Of the nineteen (19) trees to be removed two (2) fall within the proposed building footprint.

For all trees being retained, Tree Protection Zones as described/specified are essential to assist in the long term health of the trees. Photographic documentation of the condition of all retained trees is strongly recommended. Documentation should commence prior to any work commencing, & be updated at monthly intervals during construction & post construction for a minimum period of six months. Annual updates should form part of the tree's long term management strategy.

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Introduction

This report contains observations & recommendations intended to assist in the management of the trees discussed within the property 3 South Street, Strathfield.

The report discusses the current condition of the specimen identified by:

- Their current position in relation to the proposed development and their likelihood of failure
- The lasting impact the development may have on trees retained
- Observations on site by Ben McInerney

Ben McInerney, the author, visited this site on the 24th November 2009.

The subject trees have been described & discussed. The aim of this report is to confirm the viability of the trees, relating to the impact of the proposed development on these specimens.

2 Methodology

Assessment of the tree has been from ground level by eye, using visual tree assessment (VTA) techniques developed by Claus Mattheck, in *The Body Language of Trees* (1994). Assessment includes:

- Trees current condition & likely future health.
- Species tolerance to root disturbance and/or development
- Likely future hazard potential to persons & property
- Trees amenity value, such as significance, screening & habitat.

No root analysis, soil testing, „Resistograph“[®] drilling or aerial canopy inspection was undertaken. See the following Appendix for further information:

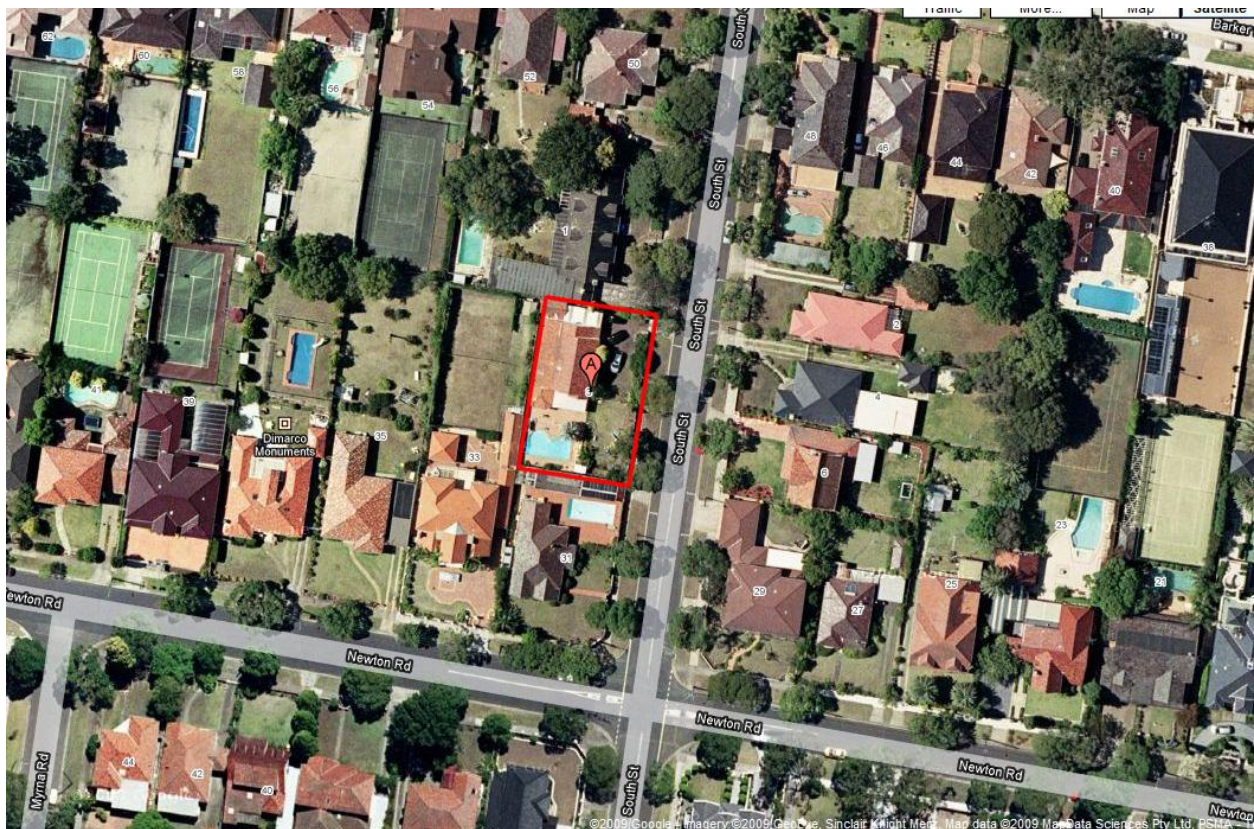
- Appendix A Glossary of common Arboreal terms
 - Appendix B Tree Protection/management
 - Appendix C Post Construction Planting & Management
 - Appendix D Tree Location Plan
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Observations

The Site

The subject trees are located within the property 3 South Street Strathfield. The site is in a residential area. There are some well established tree and shrub specimens in adjacent properties.

The soil is predominately silty sand. The property is flat with no fall or run off.



Arial photo obtained from Google earth maps

The Trees

| # | Identified | Ht:spread | TPZ | Hth/vig |
|---|--|-----------|------|---------|
| 1 | <i>Lophospermum confertus</i> Brush box | 4m:5m | 6m | G |
| 2 | <i>Lophospermum confertus</i> Brush box | 4m:4m | 6m | G |
| 3 | <i>Camellia susanqua</i> camellia | 2m:2m | 1.5m | VG |
| 4 | <i>Camellia susanqua</i> camellia | 2m:1.5m | 1.5m | VG |
| 5 | <i>Murraya paniculata</i> Orange Jasmine | 2m:2m | 1.5m | VG |
| 6 | <i>Abelia x Grandifolia</i> Glossy Abelia | 1m:1m | 1.5m | G |
| 7 | <i>Cupressus macrocarpa</i> Monterey Cypress | 2.5m:1m | 1.5m | G |
| 8 | <i>Murraya paniculata</i> Orange Jasmine | 1m:1m | 1.5m | G |
| 9 | <i>Olea europaea</i> Olive tree | 4m:4m | 1.5m | VG |

| | | | | |
|----|---|-----------|------|----|
| 10 | <i>Melaleuca quinquenervia</i> Paperbark | 5m:4m | 4.8m | VG |
| 11 | <i>Nerium oleander</i> Oliander | 2.5m:2.5m | 1.5 | VG |
| 12 | <i>Photinia x fraseri</i> Red tipped photrinia | 3.5m:2.5m | 1.5m | G |
| 13 | <i>Phoenix roebelenii</i> Pygme date palm | 0.5m:0.5m | 1.5m | G |
| 14 | <i>Phoenix canariensis</i> Canaray Island date palm | 0.5m:1.5m | 1.5m | G |
| 15 | <i>Ligustrum sinense</i> Small leaf privet | 1m:1m | 1.5m | G |
| 16 | <i>Mangifera indica L. cutris</i> Mango tree | 1.5m:1.5m | 1.5m | VG |
| 17 | <i>Citrus limonum</i> Lemon tree | 1m:1m | 1.5m | G |
| 18 | <i>Citrus aurantium</i> Orange tree | 1m:1m | 1.5m | G |
| 19 | <i>Butia capitata</i> Pindo palm | 3m:1.5m | 1.5m | G |
| 20 | <i>Magnolia grandifolia</i> Magnilia | 5m:2m | 2m | G |
| 21 | <i>Camellia japonica</i> camellia | 2.5m:1.5m | 1.5 | G |
| 22 | <i>Murraya paniculata</i> Orange Jasmine | 0.5m:1m | 1.5 | G |

Discussion

Trees 1 & 2 are street trees that will need a TPZ during the construction period to prevent soil compaction and mechanical damage from machinery. The 6m TPZ required is unrealistic considering how close the road and side walk is. A 2.5m SRZ would suffice.

Trees 3-8, 11-14, 16-18 & 21-22 are to be removed and replaced as outlined in the landscape plan Drawing # 9082DA 1. All specimens seem to have been randomly planted and have been "let go". As a whole they look untidy and out of place.

Tree 9 looks to have grown from seed (bird dropping). It is growing between the boundary wall and the paperbark tree. It has a poor habit and very little amenity value.

Tree 10 has been incorporated into the design and is to be retained. The current design shows a replacement boundary wall on South Street. Digging the footings for the wall will disturb and or sever more than 50% of the trees SRZ of 2.5m (as calculated using Australian standard AS 4970-2009 section 3.3.5)

Using the original footings for the section of the wall within the trees SRZ would greatly reduce the negative impact on the specimen.

The new pool will also encroach on the TPZ, but only by a small percentage.

Tree 19 is located outside the building footprint, but within the area proposed for paving. It is possible to retain, but this palm is considered undesirable for this area.

Tree 20 falls inside the proposed building footprint. Retention of this tree would require extensive redesign and the loss of 1 room (office). Being at the front of the house it would greatly alter the ascetics of the design.

Recommendations

Recommendation is made that:

If the proposed development were to proceed

Trees 1 & 2 will require a TPZ of 2.5m. Refer to appendix B for TPZ requirements.

Trees 3-9, 11-14, 16-18 & 21-22 are to be removed. The large number of trees and shrubs replacing them will have a positive impact.

Tree 10 is to be retained The Original wall footing are to be used with the construction of the new boundary wall. The footings are to be retained 3.5m either side of the specimen.

If retention not possible due to condition of the current footings, then that section will have to be removed by hand. All roots that will be disturbed are to be located then inspected by an arborist then root pruning is to be carried out. All root pruning is to be done by an arborist (minimum AQF level 3).

TPZ of 3.5m applies. Please refer Appendix B for specifications.

Tree 19 This specimen is mathematically retainable, however it is recommended for removal due to its unsuitability of species for this location.

Where possible TPZ is to be enlarged to each specimen's drip zone &/or to protect a group of trees. TPZ fencing is to comply, at all times, with the specifications contained within **Appendix B Tree Protection/Management** of this report.

Photographic documentation of the condition of all retained trees is strongly recommended. Documentation should commence prior to any work commencing, and be updated at monthly intervals during construction and post construction for a minimum period of six months. Annual updates should form part of the tree's long term management strategy.

Supplementary Pictures



2 x street trees to be retained

Supplementary Pictures



Trees 3-8 inside front boundary wall



Left Tree 10 to be retained Right tree 19 to be removed

Limitations on the use of this report

This report is to be utilized in its entirety only. Any written or verbal submission, report or presentation that includes statements taken from the findings, discussions, conclusions or recommendations made in this report, may only be used where the whole of the original report (or a copy) is referenced in, & directly attached to that submission, report or presentation.

Assumptions

Care has been taken to obtain information from reliable resources. All data has been verified insofar as possible; however, *The Tree Man Arborist Services* can neither guarantee nor be responsible for the accuracy of information provided by others.

Unless stated otherwise:

Information contained in this report covers only the trees that were examined & reflects the condition of the trees at the time of inspection; and

The inspection was limited to visual examination of the subject trees without dissection, excavation, probing or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future.

1 Recommended References

Barrell, J. 1993. '*Preplanning Tree Surveys: Safe Useful Life Expectancy (SULE) is the Natural Progression*', *Arboricultural Journal* 17:1, February 1993,

Barrell, J. 1995, '*Pre-development Tree Assessments*', in *Trees & Building Sites*, Proceedings of n International Conference Held in the Interest of Developing a Scientific Basis for Managing Trees in Proximity to Buildings, International Society of Arboriculture, Illinois,

Dr. G. Watson & Dr. D. Neely, '*Trees & Building Sites*', ISA Illinois USA 1995,

Dr. N. Matheny & Dr. J.R. Clark, '*Trees & Development*', ISA Illinois USA 1998 ,

Phillip J. Craul, '*Urban Soil in Landscape Design*', J. Wiley & Sons, New York USA 1992,

Clark, Ross, '*A Guide to Assessment of Tree Quality*'. NATSPEC/ Construction Information, Milson's Point NSW, 2003

Clark, Ross. '*Purchasing Landscape Trees*', Construction Information Systems Australia Pty. Ltd., Milson's Point NSW, 1996. &

Committee EV-018 (Formerly BD-068), Australian standard Protection of trees on development sites, Sydney 2009

2 Selected Bibliography

Hitchmough, J.D. 1994. '*Urban Landscape Management*', Inkata Press, Sydney.

Mattheck, C. & Breloar, H. (1994) '*Body Language of Trees*'. The Stationery Office. London.

A54373.2007 '*Pruning of Amenity Trees*', Standards Australia.

BS5837-2005. '*Guide for Trees in Relation to Construction*', Standards Board, UK.

Appendix A – Glossary

Glossary of common Arboreal terms

- Age:**
- I** *Immature* refers to a refers to a well-established but juvenile tree
 - SM** *Semi-mature* refers to a tree at growth stages between immaturity & full size
 - M** *Mature* refers to a full sized tree with some capacity for further growth
 - LM** *Late Mature* refers to a full sized tree with little capacity for growth that is not yet about to enter decline
 - OM** *Over-mature* refers to a tree about to enter decline or already declining
 - LS** *Live Stag* refers to a tree in a significant state of decline. This is the last life stage of a tree prior to death.

Hth & Vig Health & Vigour.

Health refers to the tree's form & growth habit, as modified by its environment (aspect, suppression by other tree, soils) & the state of the scaffold (ie. trunk & major branches), including structural defects such as cavities, crooked trunks or weak trunk/branch junctions. These are not directly connected with health & it is possible for a tree to be healthy but in poor condition/vigor. **Classes are:**

Excellent (E), V. Good (VG), Good (G), Fair (F), Declining (D), Poor (P), Very Poor (VP)

Vigour refers to the tree's growth rate/condition as exhibited by the crown density, leaf colour, presence of epicormic shoots, ability to withstand disease invasion & the degree of dieback. **Classes are:**

Excellent (E), V. Good (VG), Good (G), Fair (F), Declining (D), Poor (P), Very Poor (VP)

Useful Life Expectancy (ULE) refers to any individual tree specimen potential life

expectancy (viability) based on VTA assessment, three groups are described,

Short = Less than Five years

Medium = Five–Fifteen years

Long = more than Fifteen years

Diameter at Breast Height (DBH) refers to the tree trunk diameter at breast height (1.4 meters above ground level).

Critical Root Zone (CRZ) refers to a radial offset of Five (5) times the trunk DBH raised to the next 0.5m increment (measured from the centre of the trunk). This zone is often the location of the tree's structural support roots, i.e. primary woody roots.

Primary Root Zone (PRZ) refers to a radial offset of Five (5) times the trunk DBH measured from the centre of the trunk. This zone often contains a significant amount of (but by no means all of a tree's) fine, non-woody roots required for uptake of nutrients, oxygen & water.

Tree Protection Zone (TPZ) is a "No Go Zone" surrounding a tree to aid in its ability to cope with disturbances associated with construction works. Tree protection involves minimising root damage that is caused by activities such as construction. Tree protection also reduces the chance of a tree's decline in health or death & the possibly damage to structural stability of the tree from root damage.

To limit damage to the tree, protection within a specified distance of the tree's trunk must be maintained throughout the proposed development works. No excavation, stockpiling of building materials or the use of machinery is permitted within the TPZ.

Using the *British Standard for Trees on Construction Sites (BS5837)*, a TPZ is based on the age of the tree, young, middle aged or mature, the trunk diameter at D.B.H. & the tree's vigor. A TPZ is required for each tree or group of trees within five meters of building envelopes.

Branch Bark Ridge & Branch Bark Collar (BBR & BBC) a zone of natural protection.

Stem/bark inclusion refers to a genetic fault in the tree's structure. This fault is located at the point where the stems/branches meet. In the case of an inclusion this point of attachment is potentially weak due to bark obstructing healthy tissue from joining together to strengthen the joint.

Decay refers to the break down tissues within the tree. There are numerous types of decay that affect different types of tissues, spread at different rates & have different affect on both the tree's health & structural integrity.

Point of Attachment refers to the point at which a stem/branch etc join.

Dead wood refers to any whole limb that no longer contains living tissues (eg live leaves &/or bark). Some dead wood is common in a number of tree species.

Die back refers to the death of growth tips/shoots & partial limbs. Die back is often an indicator of stress & tree health.

One dimensional crown refers to branching habits & leaves that extend/grow in one direction only. There are many causes for this growth habit such as competition & pruning.

Crown Foliage Density of Potential (CFDP) refers to the density of a tree's crown in relation to the expected density of a healthy specimen of the same species. CFDP is measured as a percentage.

Epicormic growth/shoots refers to growth/shoots that are/have sprouted from axillary buds within the bark. Epicormic growth/shoots are a survival mechanism that often indicates the presence of a current or past stress even such as fire, pruning, drought etc.

Over Head Power lines (OHP) Over head electricity wiring

LVOHP Low Voltage Overhead Power lines

HVOHP High Voltage Overhead Power lines

ABC Aerial Bundled Cable

Appendix B - Tree Protection & Management

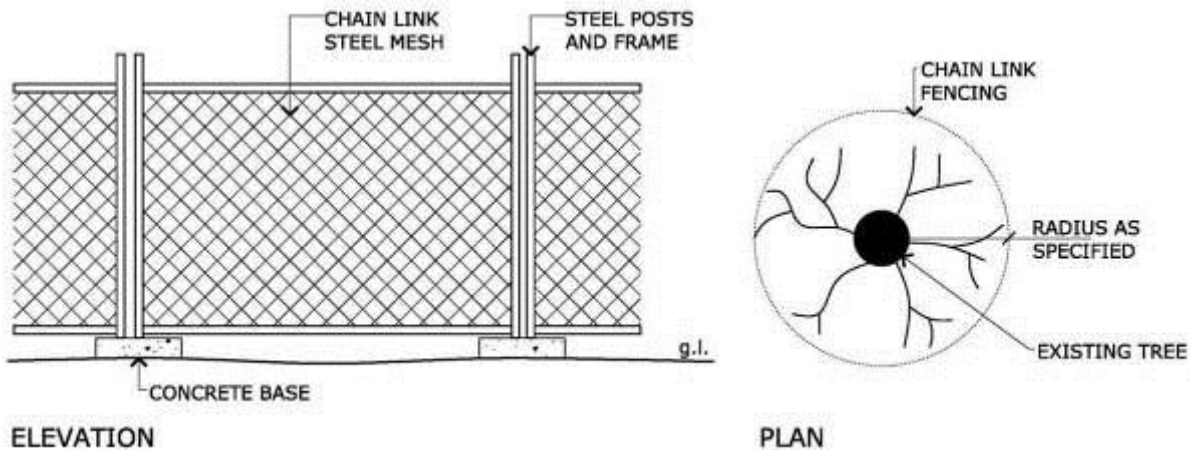
Tree Protection & Management Prior to & During Construction

The installation of Tree Protection Zone (TPZ) fencing is to be carried out prior to commencement of all works. The most suitable fencing material is 1.8m tall chain link mesh with 50mm metal pole supports, see **detail 1: tree protection fencing**.

Trunk protection “Tree Guards” are detailed (below) by generic diagram.

There is to be no stock piling of building material (including waste), machinery or any other item within the TPZ of any retained tree. Access to personnel, machinery, & storage of fuel, chemicals, cement or site sheds is prohibited

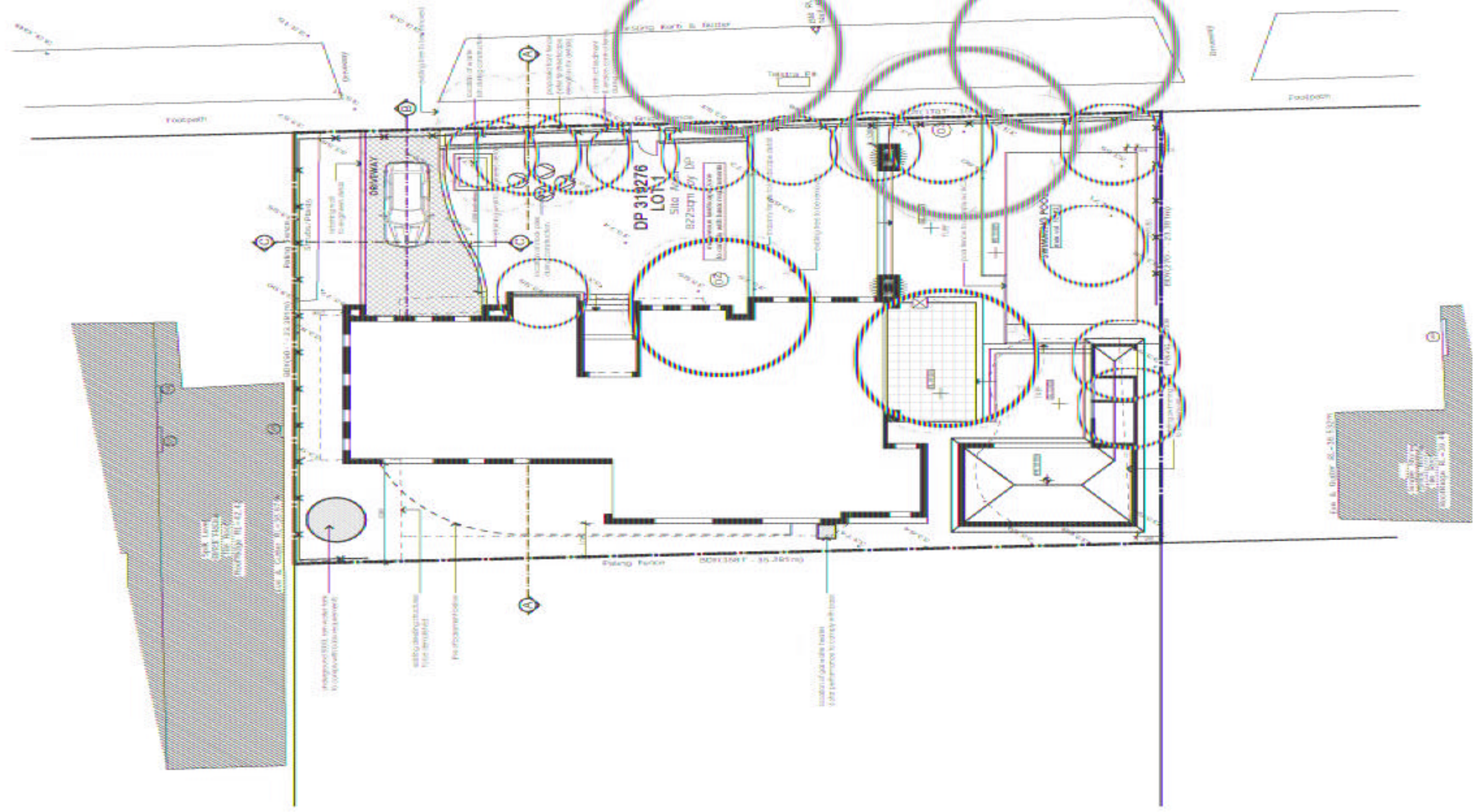
Regular monitoring of protected trees during development works for unforeseen changes or decline, will aid in the success & longevity of the retained trees.



detail 1: tree protection fencing
not to scale

(Diagram is generic & is for illustrative purpose only)

SOUTH STREET



Topographic Survey
1:100
10/1/2011