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# Tree Pruning Assessment & Specification

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136-148 New South Head Road
Edgecliff
NSW 2027

Prepared for:

Lendlease Corporation Limited

Prepared by:

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Date: 22/05/2026

Version: 2

# 1 EXECUTIVE SUMMARY

Truth About Trees Pty Ltd have been engaged by Lendlease Corporation Limited, to prepare a Tree Pruning Assessment & Specification in accordance with AS4373-2007 Pruning of Amenity Trees.

This report has been prepared to accompany a s4.55(1A) modification application and has been prepared to assess the three street trees along New South Head Road that will be impacted by the proposed modification to development works at 136 - 148 New South Head Road, Edgecliff.

A previous pruning specification was prepared in October 2025 to facilitate the construction of the approved development through the erection of a B-Class hoarding over part of the public footpath, supporting the upper levels of scaffolding.

Since then, the required pruning has been undertaken and development and consultation with Woollahra Council traffic team and Transport for New South Wales (TfNSW) has been ongoing. A Construction Traffic & Pedestrian Management Plan (CTPMP) has also been prepared by Traffix traffic & transport planners.

The outcome of the CTPMP and discussions with the relevant consent authorities was that the original work/hoisting zones proposed on Darling Point Road would be insufficient and a work/hoisting zone would be required on New South Head Road to enable hoisting with the tower crane.

The necessary tree pruning works have been assessed based upon the construction requirements which have been specified for use by the client following consultation with various consent authorities.
The creation of a 45m hoisting zone on New South Head Road was assessed and resulted in the need to prune the existing street tree canopies to behind the kerb line to facilitate safe hoisting areas.
Truth About Trees attended the site with representatives of Lendlease to discuss the implications of the proposed hoisting zone. It was agreed that were the hoisting zone modified as shown in figure 11, tree three (3) would not require significant pruning, just very minor crown lifting. The pruning requirements outlined in sections 6.1 – 6.3 are based upon the modified works/hoisting zone shown in figure 11.
Based upon this assessment, the impacts of the required pruning would be unsustainable for trees 1 & 2, with the pruning for tree three (3) considered as minor. The total percentage of tree canopy that would require removal has been estimated as follows:

- Tree one (1)- 60% of the tree canopy.
- Tree two (2)- 70% of the tree canopy.
- Tree three (3)- 2.5% of the tree canopy.

- The removal of trees 1 & 2 will be required to facilitate a works/hoisting zone on New South Head Road.
- The pruning dose indicated in sections 6.1 & 6.2 is deemed to be extensive and likely to impose long-term negative impacts upon the tree health and aesthetic value, for these reasons, as well as additional impacts from underground services, trees 1 & 2 are recommended for removal and replacement following the completion of the development.
- Pruning of tree three (3) in accordance with section 6.3 and the marked-up imagery within this report should be undertaken in order to facilitate the proposed project.
- This report does not in any part count as consent for tree pruning. Any information, conclusions or recommendations within this report must only be acted upon following approval from the relevant consent authority.

# 2 CONTENTS

# 3 INTRODUCTION & AIM

Truth About Trees Pty Ltd have been engaged by Lendlease Corporation Limited, to prepare a Tree Pruning Assessment & Specification in accordance with Australian Standard AS4373-2007 Pruning of Amenity Trees.

The purpose of this report is to provide a detailed assessment of the pruning requirements upon 3 x mature *Lophostemon confertus*- Brushbox, located in the council footpath on the Northern side of New South Head Road in front of the approved development of 136-148 New South Head Road Edgecliff.

An overview of the subject site (shown in red) and the trees relevant to this report (shown white) in figure 1 below.


*Figure 1- The approximate property boundaries (red) and the subject trees (white).*

A previous pruning specification was prepared in October 2025 to facilitate the construction of the approved development through the erection of a B-Class hoarding over part of the public footpath, supporting the upper levels of scaffolding.

Since then, the required pruning has been undertaken and development and consultation with Woollahra Council traffic team and Transport for New South Wales (TfNSW) has been ongoing. A Construction Traffic & Pedestrian Management Plan (CTPMP) has also been prepared by Traffix traffic & transport planners.

The outcome of the CTPMP and discussions with the relevant consent authorities was that the original work/hoisting zones proposed on Darling Point Road would be insufficient and a work/hoisting zone would be required on New South Head Road to enable hoisting with the tower crane.

The addition of a hoisting zone on New South Head Road has major repercussions for the three (3) *Lophostemon confertus*- Brushbox, located in the council footpath, as the tree canopies would need to be pruned back behind the kerb line so as to not impede the hoisting zone and tower crane operations. The trafficable lanes of New South Head Road are relatively narrow so there can be no tree canopy extending beyond the edge of the kerb and pruning to just behind the kerb would be required to avoid accidental impact with tree branches.

This tree pruning assessment and specification is to confirm the tree pruning that would be needed to meet these requirements, and to confirm whether the level of pruning required would be tolerable for the trees from an ongoing health and structural viability perspective.

## 3.1 SITE DETAILS

The development is an amalgamation of four separate properties as indicated in figure 2 below.

The property at 136 New South Head Road is a Heritage item, the remaining properties are not Heritage items and are not subject to any additional controls.

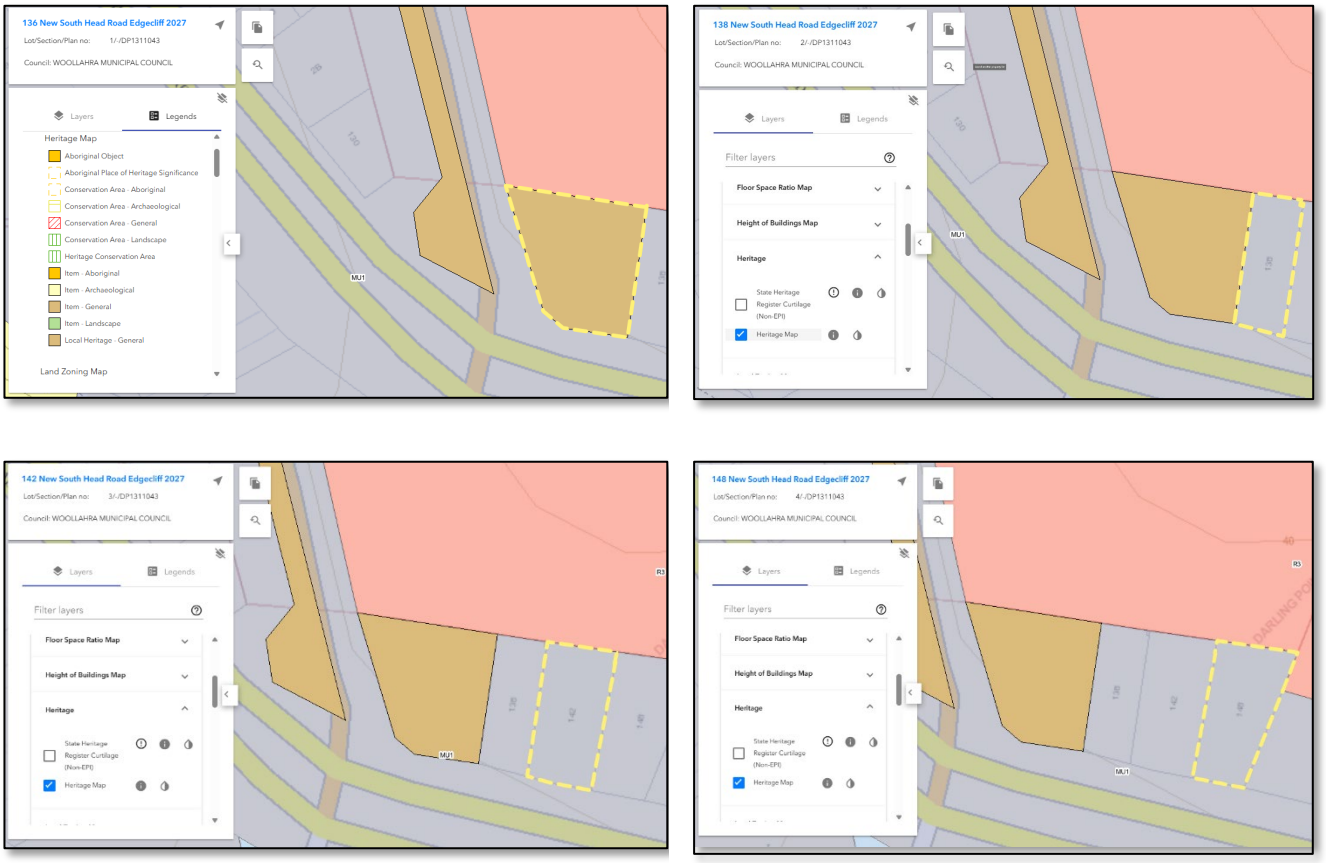


*Figure 2 - Showing the site and its heritage status.*

The site is zoned as MU1- Mixed use.

The site is not located within an area mapped on the Biodiversity Values Map.

The site is located within the Woollahra Council local government area (LGA) and any controls relating to trees are in accordance with the Woollahra Council DCP- Chapter 3- Tree Management.

As the trees are Woollahra Council assets their management including any pruning requests is under the control of Woollahra Council.

# 4 METHODOLOGY

Following our engagement, Truth About Trees Pty Ltd attended the site to meet with representatives from Lendlease to discuss the finer details of the proposal and project requirements. Three (3) council owned street trees were inspected and assessed as to the specific pruning requirements in relation to the proposed 45 metre work/hoisting zone on New South Head Road. During these discussions it was agreed that the hoisting zone should be shortened slightly to avoid impacting the canopy of tree three (3) which is the largest and best quality of the trees. This assessment was conducted to avoid potentially harmful pruning requirements for tree three (3).

Assessment of the trees was undertaken on 30th January 2026 by Tom Hare using the framework of the *Visual Tree Assessment procedure* (VTA) as prescribed by Mattheck & Breloer (Claus Mattheck, 1994).

Details provided for the trees are as follows:

a) Correct botanical identification and common name
b) Health assessment & rating
c) Basic structural assessment & rating
d) Dimensions: height, crown spread
e) Age class
f) Landscape significance assessment & rating
g) Estimated Life Expectancy
h) Retention value in accordance with the STARS system

Tree Retention Values were determined using the Institute of Australian Consulting Arborists (IACA) *'Significance of a Tree, Assessment Rating System'* (STARS) (IACA©, 2010).

A detailed Arboricultural assessment methodology can be found in Appendix 1: Tree Assessment Methodology.

## 4.1 LIMITATIONS OF THE REPORT:

- All observations were made from ground-level where access was reasonably available.
- Branch diameters have been estimated.
- This report has been compiled based only on the information provided by the client during the site meeting and from observations made at the time of the site inspection(s) only.
- Tree structure and defects may be discussed briefly within this report; however, this report is not designed to be, nor does it satisfy the requirements of a detailed Arboricultural Risk Assessment report.

## 4.2 DOCUMENT SCHEDULE

The documents listed below have been relied upon to complete the assessment.

| Document / Drawing Title | Author | Date |
|---|---|---|
| **24.345r05v05 TRAFFIX 136-148 New South Head Road, Edgecliff (1DP) - CTPMP (1).pdf** | TRAFFIX | December 2025 |
| **HV Staging Plans - Hoarding Integration & Excavation Requirements** | JHA | NOT PROVIDED |
| **Existing Services Survey Plan** | CMS Surveyors Pty Ltd | 13/08/24 |
| **AN-30314 Decomm UG Services to 136 New South Head Rd Edgecliff - Ready for Tender** | JHA | 18/02/25 |
| **Additional Documents considered within the assessment** | | |
| **AS4373-2007- Pruning of Amenity Trees** | Standards Australia | 2007 |
| **AS4970-2025- Protection of Trees on Development Sites** | Standards Australia | 2025 |
| **Woollahra Council Local Environmental Plan** | Woollahra Council | 2014 |
| **Woollahra Council Tree Development Control Plan including Chapter 3- Tree Management and subsequent amendments** | Woollahra Council | 2015 |

*Table 1 – Document Register*

# 5 TREE SCHEDULE

| Tree No | Species | Height | Spread | DBH mm | DAB mm | Health | Age | Structure | Landscape Significance | ELE | Retention Value | Arborist Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *Lophostemon confertus* \| Queensland Box | 9 | 7 | 310 | 385 | Fair | Mature | Fair | Medium | Medium | Medium | |
| 2 | *Lophostemon confertus* \| Queensland Box | 9 | 7 | 325 | 425 | Good | Mature | Fair | Medium | Medium | Medium | |
| 3 | *Lophostemon confertus* \| Queensland Box | 12 | 5 | 405 | 500 | Fair | Mature | Fair | Medium | Medium | Medium | Insect attack |

*Table 2 - Tree Schedule*

## 5.1 TREE RETENTION VALUES

| Retention value | Tree number(s) | Total |
|---|---|---|
| High | N/A | **0** |
| Medium | 1,2,3. | **3** |
| Low | N/A | **0** |
| Very low | N/A | **0** |

*Table 3 - Showing tree retention values.*



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## 5.2 THE TREES

*Figure 3- Tree one (1) viewed from the East.*

*Figure 4- Tree two (2) viewed from the East.*


*Figure 5- Tree three (3) viewed from the West.*



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# 6 THE PROPOSAL

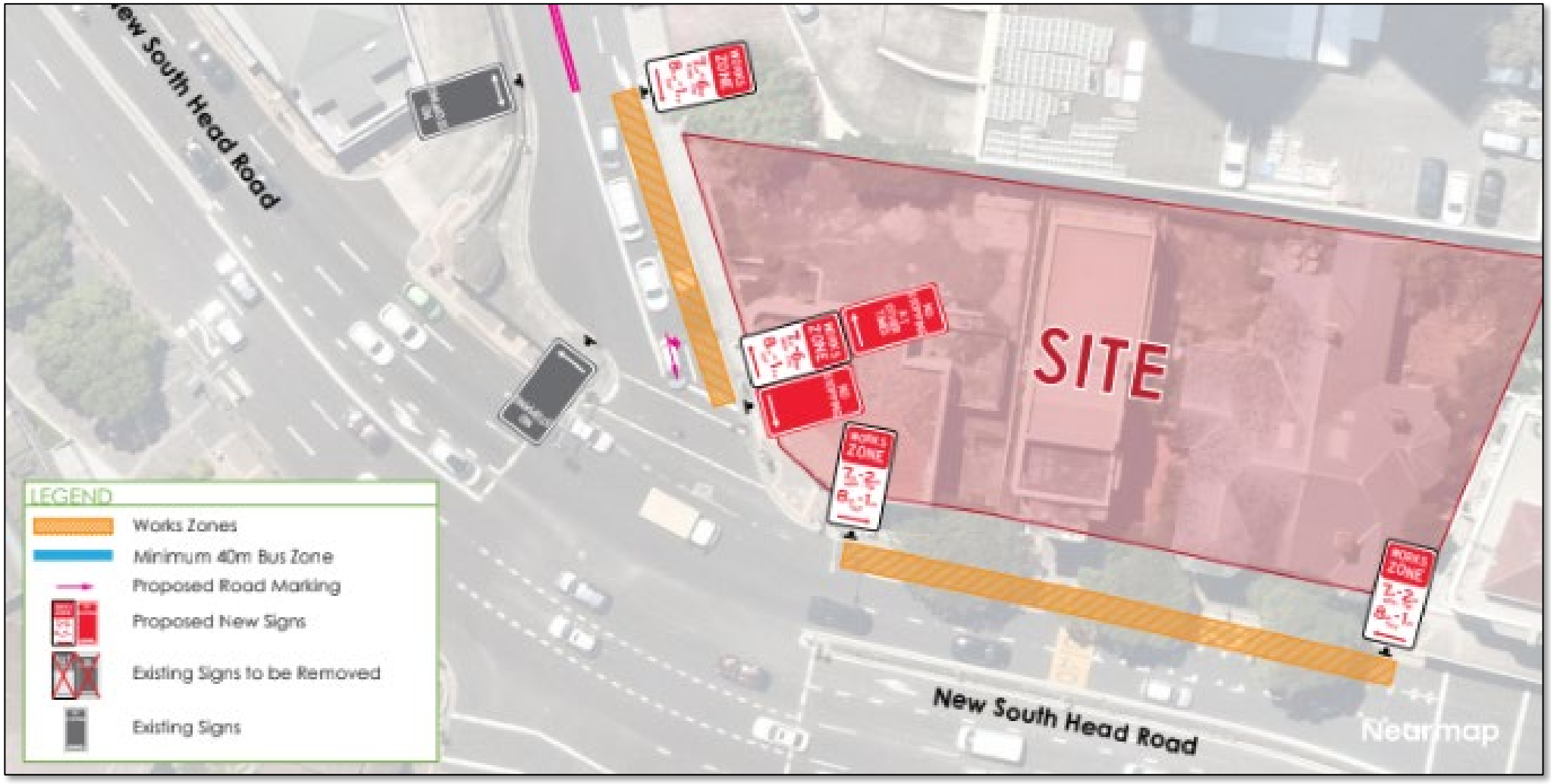


*Figure 6-Site plan showing 45m works/hoisting zone on New South Head Road.*

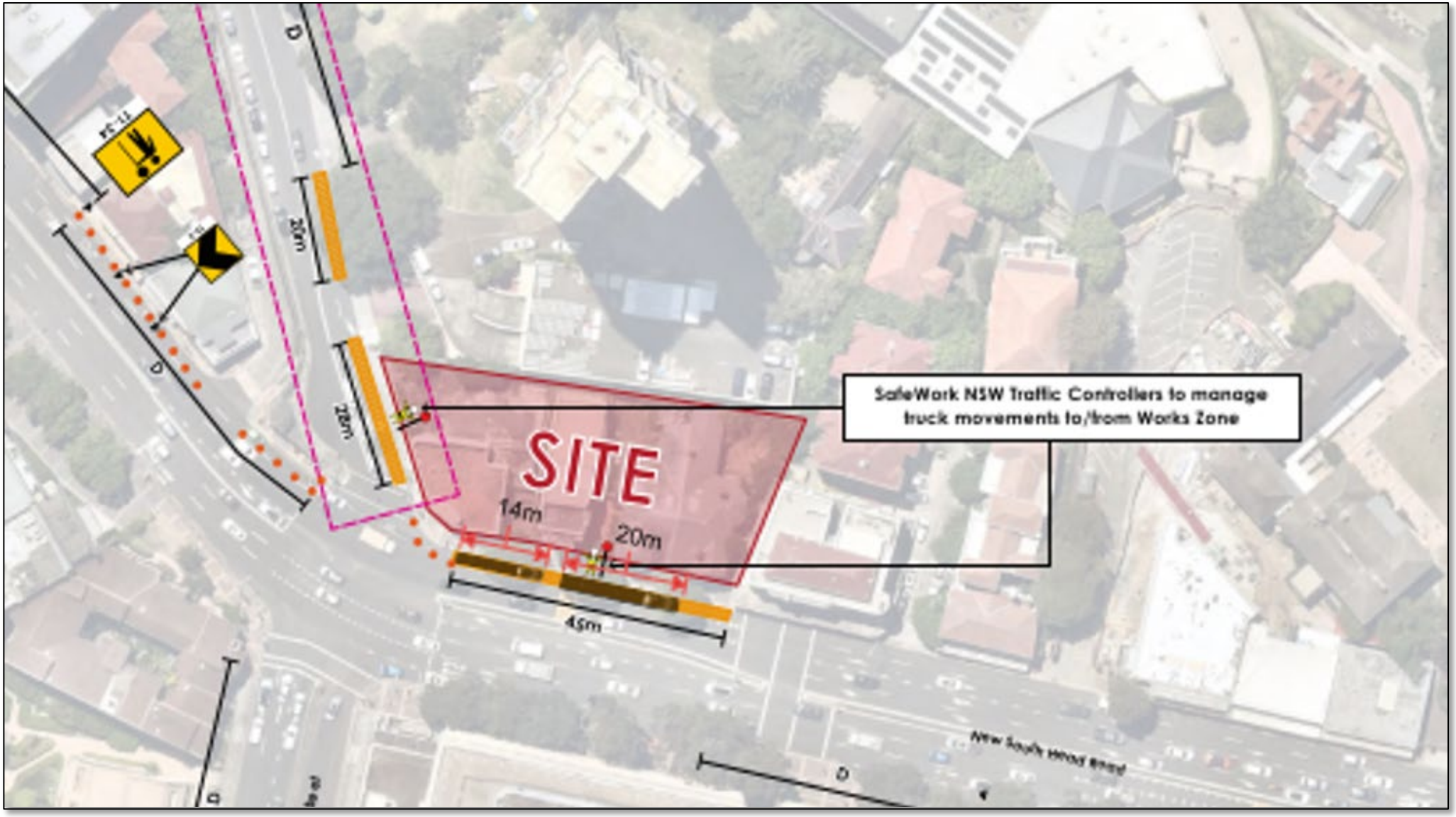


*Figure 7- Amended plan showing truck locations with hoisting zone reduced.*

## 6.1 TREE PRUNING REQUIREMENTS- TREE 1


*Figure 8- Tree pruning requirements for tree one (1).*

| Species | Picture | Arborist Notes | Canopy % | Total % |
|---|---|---|---|---|
| *TREE ONE (1)* *Lophostemon confertus* \| Brushbox | Centre | 1 x 40mm, 1 x 50mm diameter S/E branches from the Eastern side of the canopy. 1 x 40mm S/E branch (Blue) potentially tied back to scaffolding. | 5% | **60%** |
| | Right | 1 x 40mm Eastern branch from centre of canopy, 2 x 40mm, 1 x 100mm diameter S/W branches from the lower Western side of the canopy. 1 x 120mm diameter Southern leader from the upper-central part of the canopy. | 55% | |

## 6.2 TREE PRUNING REQUIREMENTS- TREE 2


*Figure 9- Tree pruning requirements for tree two (2).*

| Species | Picture | Arborist Notes | Canopy % | Total % |
|---|---|---|---|---|
| *TREE TWO (2)*<br>*Lophostemon confertus* \|<br>Brushbox | Centre | 1 x 120mm S/E branch from the lower- eastern side of the canopy.<br>1 x 85mm S/W branch from the mid S/W side of the canopy.<br>1 x 150mm southern stem from the upper-central canopy.<br>1 x 25mm S/W branch from the upper canopy. | 55% | **70%** |
| | Right | 1 x 175mm and 1 x 60mm S/W branches from the lower western canopy. | 15% | |

## 6.3 TREE PRUNING REQUIREMENTS- TREE 3


*Figure 10- Tree pruning requirements for tree three (3).*

| Species | Picture | Arborist Notes | Canopy % | Total % |
|---|---|---|---|---|
| *TREE THREE (3)*<br>*Lophostemon confertus* \|<br>Brushbox | Centre | 1 x 40mm diameter S/E branch from the lower-eastern canopy.<br>2 x 40mm diameter Southern descending branches centre of canopy.<br>1 x 20mm diameter descending branch from the S/W side of the canopy. | 2% | **2.5%** |
| | Right | 1 x 40mm diameter S/W branch from the lower-Western canopy. | 0.5% | |

# 7 DISCUSSION

The necessary tree pruning works have been assessed based upon the construction requirements which have been specified for use by the client following consultation with various consent authorities.
The creation of a 45m hoisting zone on New South Head Road was assessed and resulted in the need to prune the existing street tree canopies to behind the kerb line to facilitate safe hoisting areas.
Truth About Trees attended the site with representatives of Lendlease to discuss the implications of the proposed hoisting zone. It was agreed that were the hoisting zone modified as shown in figure 11 below, tree three (3) would not require significant pruning, just very minor crown lifting. The pruning requirements outlined in sections 6.1 – 6.3 are based upon the modified works/hoisting zone shown in figure 11 below.


*Figure 11- Showing the approximate extent of pruning required to achieve the proposed 45m hoisting zone.*

Based upon this assessment, the impacts of the required pruning would be unsustainable for trees 1 & 2, with the pruning for tree three (3) considered as minor. The total percentage of tree canopy that would require removal has been estimated as follows:

- Tree one (1)- 60% of the tree canopy.
- Tree two (2)- 70% of the tree canopy.
- Tree three (3)- 2.5% of the tree canopy.

The pruning required for trees 1 & 2 would be extensive due to the constricted area available for hoisting. The kerb-side lane of New South Head Road is narrow and the trucks to be loaded/unloaded would take up all available space in the lane. The risk of impacting branches would need to be eliminated as deviation of a load may result in impacting the adjacent traffic lane. This means that branches would have to be cut back behind the kerb. Tying back of branches was also considered but there are very limited opportunities for this, given the clearances required for safe operation of the hoisting zone. These trees have already been pruned on the northern side of the canopies to facilitate the installation of the hoarding and scaffolding further reducing their long-term viability from health and aesthetic perspectives. The modification of the work/hoisting zone as shown in figure 11 would enable tree three (3) to be retained with some very minor crown lifting. Crown lifting to achieve a 5m clearance over the road would involve very minor pruning and would ensure that the tree canopy above the work zone remains clear of any

construction vehicles for the duration of the project. This area would not be used for hoisting but would be used for heavy vehicle parking.
The modification of the work/hoisting zone does result in the reduction of space for hoisting, and it is understood that instead of the proposed 2 x semi- trailers which are 19m in length, the reduced area would be suitable to accommodate 1 x semi-trailer and one heavy rigid truck which are 12.5m in length.

In addition to the required tree pruning impacts, there are also additional impacts upon the trees from underground service decommissioning and installation. Whilst these works will obviously need to be conducted under Arborist supervision with minimally invasive techniques, there are still likely to be negative impacts imposed by these works.

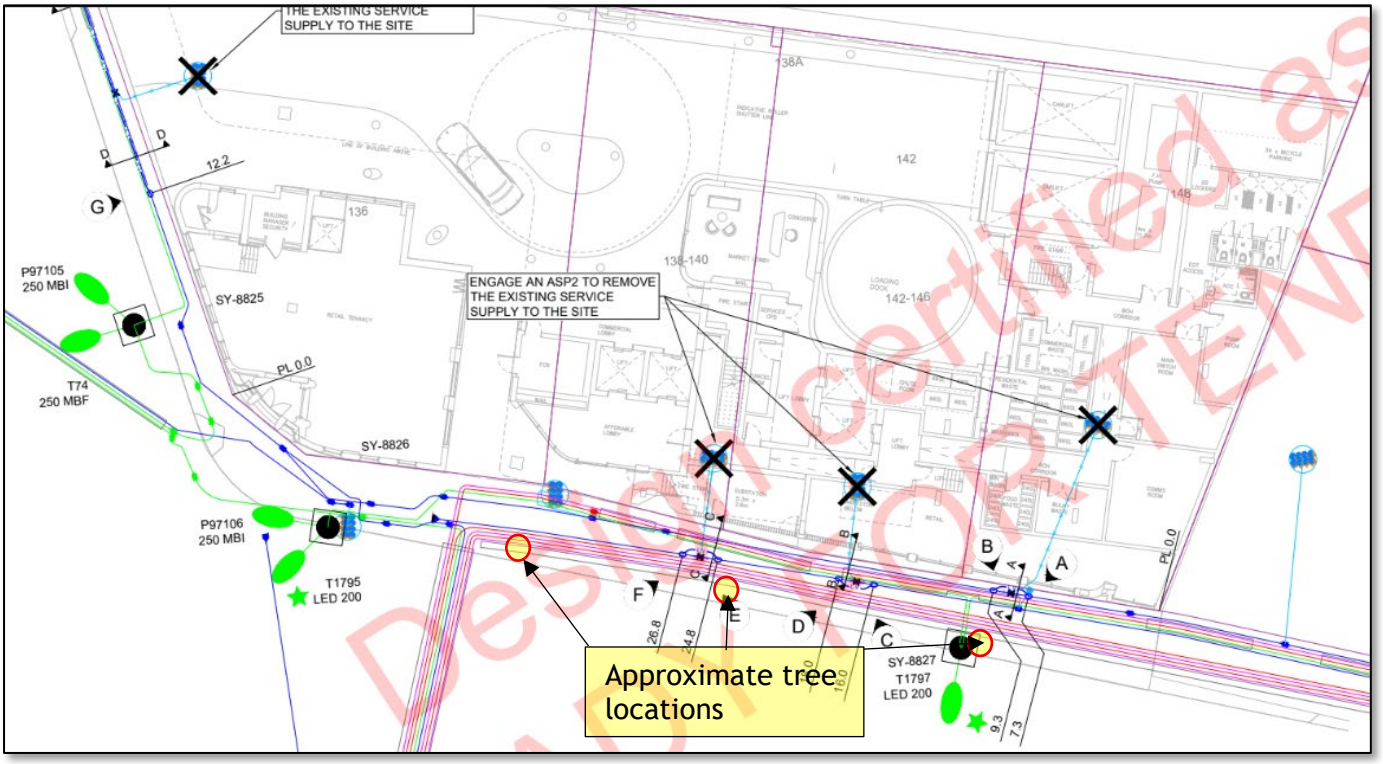


*Figure 12- Underground services plans showing existing services and proposed modifications.*

The subject trees are impacted upon by the required hoisting zones on New South Head Road to load materials into the development site with the tower crane.
Trees one (1) and two (2) will be subject to substantial and unsustainable negative impacts from the tree pruning which would be required. Tree one (1) would lose approximately sixty (60%) of its canopy, whilst tree two (2) would need to have approximately 70% of its canopy removed. This level of pruning is unsustainable and would result in very poorly formed trees with limited visual amenity. Pruning to this extent would impose negative impacts upon the trees and would likely result in decline and death or proliferation of epicormic growth in response to the stress.
Tree three (3) is the best specimen of the three (3) trees and is only minimally impacted due to the revised hoisting zone shown in figure 11 which results in approximately 2.5% of the tree canopy being pruned. This level of pruning is considered to be minor and would have no long-term impact upon tree health.

The three (3) trees are also impacted by works to install underground services within the Structural root zones of the trees. These would be installed using minimally invasive techniques such as vacuum excavation, however, regardless of the methods used, this would still impose negative impacts upon the trees.

# 8 CONCLUSION

- The subject trees were inspected and assessed on 30th January 2026.
- The trees are located in the New South Head Road footpath fronting the approved development and are providing amenity in the form of aesthetic value, shade and other Environmental benefits.
- Ongoing development planning and consultation with Woollahra Council traffic team and Transport for New South Wales (TfNSW) has been proceeding and a Construction Traffic & Pedestrian Management Plan (CTPMP) has also been prepared by Traffix traffic & transport planners.
- The outcome of the CTPMP and discussions with the relevant consent authorities was that the original work/hoisting zones proposed on Darling Point Road would be insufficient and a work/hoisting zone would be required on New South Head Road to enable hoisting with the tower crane.
- A modification to the proposed hoisting zone was discussed on site as a potential way to reduce the impacts upon tree three (3). This results in the proposed pruning for tree three (3) being very minor.
- This pruning specification has been prepared in accordance with the requirements of AS4373-2007 Pruning of Amenity Trees.
- The required pruning works specified in sections 6.1,6.2 & 6.3 fall under the class of selective pruning 7.2.4 within AS4373-2007.
- Section 6.2 of AS4373 states that consideration should be given to the species, health, age, condition, and location of the tree as well as reason for pruning, location of foliage to be removed and size of cuts. Care should be taken to avoid excessive pruning. These factors have been considered and taken into account when assessing the feasibility of the pruning requirements.
- Based upon this assessment, the impacts of the required pruning would be unsustainable for trees 1 & 2, with the pruning for tree three (3) considered as minor.
- The pruning required for tree one (1) would be approximately 60% of its existing foliage which is considered to be unsustainable from both a health and aesthetic perspective. In addition to the pruning, underground service installation and decommissioning will impose additional impacts upon the tree.
- The pruning required for tree two (2) would be approximately 70% of its existing foliage which is considered to be unsustainable from both a health and aesthetic perspective. In addition to the pruning, underground service installation and decommissioning will impose additional impacts upon the tree.
- The pruning required for tree three (3) would be approximately 2.5% of its existing foliage which is considered to be very minor from both a health and aesthetic perspective. Underground service installation and decommissioning will impose impacts upon the tree, however, this should be tolerable given the current condition of the tree.

# 9 RECOMMENDATIONS

- The removal of trees 1 & 2 will be required to facilitate a works/hoisting zone on New South Head Road.
- The pruning dose indicated in sections 6.1 & 6.2 is deemed to be extensive and likely to impose long-term negative impacts upon the tree health and aesthetic value, for these reasons, as well as additional impacts from underground services, trees 1 & 2 are recommended for removal and replacement following the completion of the development.
- Pruning of tree three (3) in accordance with section 6.3 and the marked-up imagery within this report should be undertaken in order to accommodate the new work zone and increased heavy vehicle movements.
- Tree pruning works are to be undertaken by a suitably qualified, experienced and insured Arboricultural contractor with a minimum AQF level 3 qualification in Arboriculture **and** directly supervised by a suitably qualified and experienced minimum AQF level 5 Consulting Arborist.
- It is highly likely that one of Woollahra Councils tree contractors would undertake the approved pruning/removal works following a customer request process.
- Two (2) *Lophostemon confertus* – Queensland Box are to be replanted on the verge to replace the trees to be removed. The trees are to be installed at the completion of building works. Further details on the replacement trees (including size) are provided on the plans prepared by Oculus.
- The replacement trees must be grown and installed in accordance with AS2303-2018 Tree Stock for Landscape Use.
- This report does not in any part count as consent for tree pruning or removal. Any information, conclusions or recommendations within this report must only be acted upon following approval from the relevant consent authority.
- Tree pruning works should be undertaken in accordance with the following:
    - *(AS4373 – 2007) Pruning of Amenity Trees*
    - *NSW Code of Practice for the Amenity Tree Industry 1998*
    - *NSW Code of Practice for Work Near Overhead Power Lines 2006*
    - *NSW Work Health & Safety Act & Regulations 2011*
    - *Safe Work Guide to managing Risks of Tree Trimming and Removal Work 2016*

# 10 REFERENCES

Australia, M. M. *Aerial Imagery*. Retrieved January 9, 2026, from MetroMaps: https://web.metromap.com.au/map#

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Environment, N. D. (2026, February 9). *ePlanning Spatial Viewer*. Retrieved from NSW Planning Portal: https://www.planningportal.nsw.gov.au/spatialviewer/#/find-a-property/address

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Lonsdale, D. (1999). *Principles of Tree Hazard Assessment and Management* (2007 5th ed.). Norwich: The Stationary Office.

Nelda P Matheny, J. R. (2009). *A Photographic guide to the Evaluation of Hazard Trees in Urban Areas.* Champaign: International Society of Arboriculture.

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Standards Australia. (2025). *AS4970-2025 - Protection of trees on development sites.* Sydney: SAI Global.

# 11 DISCLAIMER

The information contained within this report is to be used solely for the purposes that were specified at the time of engagement.

All attempts have been made to ensure the legitimacy of any information which has been gathered in the process of compiling this report, however Truth About Trees Pty Ltd cannot be held liable for inaccurate or misguiding information which has been provided by others.

Any tree inspections or assessments which have been carried out for the purposes of this report are valid only at the time of inspection and are based on what could reasonably be seen or diagnosed from a visual inspection carried out from ground level.

All inspections, unless otherwise stated, are based upon Visual Tree Assessment (VTA) techniques, industry best practice and applied knowledge.

No internal diagnostic testing or below ground investigation has been carried out unless otherwise stated.

Trees are a dynamic living organism and as such they have a finite lifespan the end of which cannot always be predicted or understood, even apparently healthy trees can die suddenly or fall without warning. As such there is no warranty or guarantee provided, or implied, regarding the future risks associated with any tree.

Unless specifically stated within the scope and methodology sections of this report, this report does not constitute a detailed Arboricultural Risk Assessment if relating to construction and development related report types.

Assessment of tree health and condition has been included to guide assessment of tree retention aspects only and is based on a basic visual assessment using elements of the VTA method. Tree defects may be discussed briefly within this report; however, this report does not satisfy the requirements of a detailed Arboricultural Risk Assessment report.

It is noted that upon acceptance and completion of any development, that there may be trees that impose a risk of impacting a target that was not previously present prior to the development.

It is up to the client and the tree owner/manager to determine the risk threshold that they are willing to accept and undertake a suitably detailed Arboricultural risk assessment that identifies potential tree risk(s) and provides tree management recommendations in line with this threshold.

Please feel free to contact me either via telephone or email if you have any questions regarding this report.

# 12 APPENDIX 1: TREE ASSESSMENT METHODOLOGY

## 12.1 VISUAL TREE ASSESSMENT (VTA)

The VTA system is based on the theory of tree biology and physiology, as well as tree architecture and structure. This method is used by arborists to identify visible signs on trees that indicate good health, or potential problems. Symptoms of decay, growth patterns and defects are identified and assessed as to their potential to cause whole-tree, part-tree and/or branch failure. This system (represented by the image below) is based around methods discussed in `*The Body Language of Trees*'. (Claus Mattheck, 1994)

For the purpose of this report, elements of the VTA system will be used, along with industry standard literature, and other relevant studies that provide an insight into potential hazards in trees. This assessment is a snapshot of what could be reasonably seen or determined from a basic visual inspection. The VTA system is generally used as a means to identify hazardous trees; however, it is important to realize that for a tree to be hazardous there must be a target; a hazard poses no risk if there is no exposure to the hazard.

## 12.2 HEALTH & VIGOUR ASSESSMENT

The health and vigour of a tree are assessed by looking at the tree canopy and how it is performing. Certain indicators provide information on which to base the assessment. Abnormally small leaves, chlorosis (yellowing), sparse crown, wilting, and die-back can be signs of ill-health or decline but may also be related to a temporary imbalance due to drought or pest infestations. Epicormic growth can be a sign of stress and low energy reserves but can also be related to increased light levels through the removal or pruning of adjacent trees. Extension growth can be a good indicator of vigour, but this can vary greatly between species and under differing climatic conditions. For these reasons, each individual symptom or observation needs to be assessed with objectivity and consideration of all available information.

## 12.3 STRUCTURAL ASSESSMENT

The structural assessment of trees is carried out using the basic framework of Visual Tree Assessment. Signs and symptoms of defects are assessed to gauge the likelihood of failure, because not every defect constitutes a hazard e.g., *"…co-dominant stems are a structural defect. The severity of the defect is increased by included bark, large crowns and strong wind."* (Nelda P Matheny, 2009)

If trees were removed purely on the basis that there were defects present without assessing the likelihood of failure or whether practical mitigation measures are available, the urban forest would cease to exist. A basic visual tree assessment is undertaken from ground level, if defects are suspected further investigation may be required and recommended.

"*[When using] the Visual Tree Assessment (VTA) procedure for assessing trees, as the suspicion increases that defects are present, the examination becomes more thorough and searching."* (Claus Mattheck, 1994)

*"Some defects, especially some forms of decay, do not give rise to external signs and therefore tend to escape detection in a purely visual survey. If there is no reason for suspecting a hidden defect to occur within a particular part of the tree, there is no reasonable basis for carrying out a detailed internal assessment. Although in theory an unsuspected defect might be detectable by the use of specialized diagnostic devices, this would be impracticable in the absence of some external sign to indicate the place which should be probed. Also, internal examination without good reason is undesirable, as it usually causes injury to the tree and is unreasonably time consuming and costly."* (Lonsdale, 1999)

## 12.4 TREE PROTECTION ZONE (TPZ) & STRUCTURAL ROOT (SRZ) ZONE CALCULATIONS

In accordance with Australian Standard *AS4970-2025 Protection of trees on development sites* (Standards Australia, 2025), Notional Root Zone (NRZ) radius is calculated using the following procedure. Diameter of the trunk is measured at approximately 1.4m above ground level; this measurement is referred to as DSH (Diameter at Standard Height). $R_{NRZ} = DSH \times 12$. For multi-stemmed trees the formula used is $R_{NRZ} = \sqrt{[(DSH1)^2 + (DSH2)^2 + (DSH3)^2]}$. The NRZ is measured radially from the centre of the stem and must be protected on all sides.

The Structural Root Zone (SRZ) radius is calculated by measuring the diameter of the stem close to ground level, just above the basal flare. This measurement is taken as ***D*** and then used in the following formula: $R_{SRZ} = (Dx50)^{0.42} \times 0.64$ and becomes the Structural Root Zone, measured radially from the centre of the stem.

It is important to realize that these calculations provide a notional figure only and tree dynamics, form and site conditions will greatly affect these zones, and it is the job of the arborist to interpret the information correctly.

For palms, cycads, tree ferns, and similar monocots, the TPZ is not calculated but should not be less than 2m.

AS4970-2025 states "*a NRZ should not be less than 2m nor greater than 15m (except where crown protection is required*" and the minimum radius for an SRZ is 1.5m.

## 12.5 REFERENCE DIAGRAMS

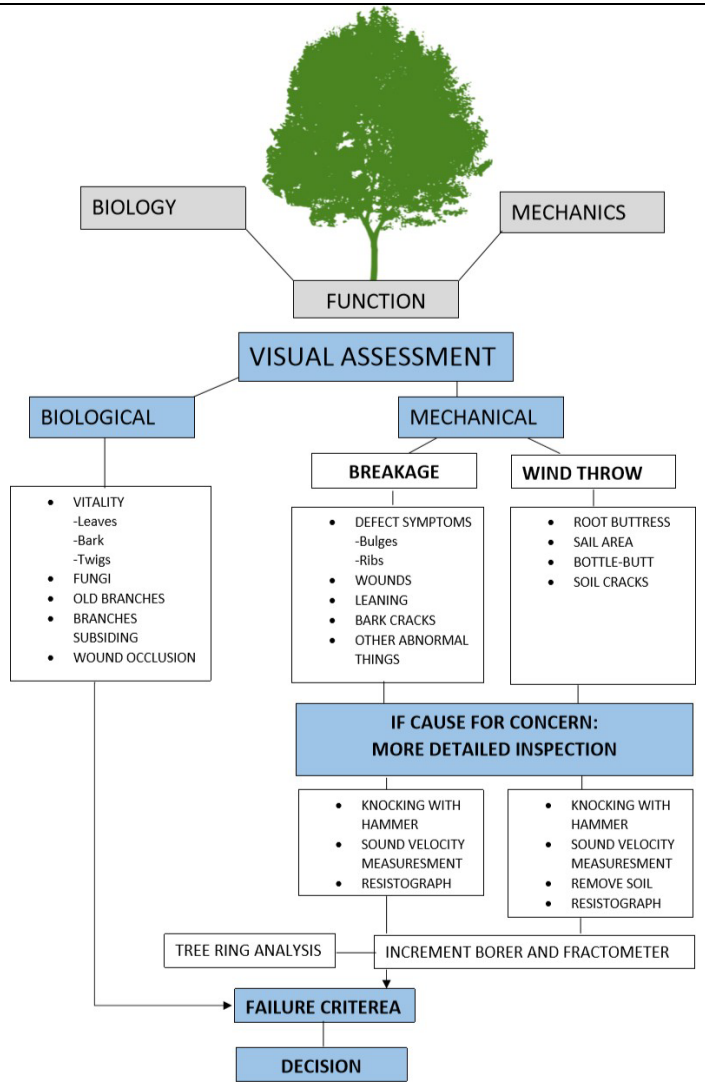



*Figure 13- VTA Procedure flowchart*

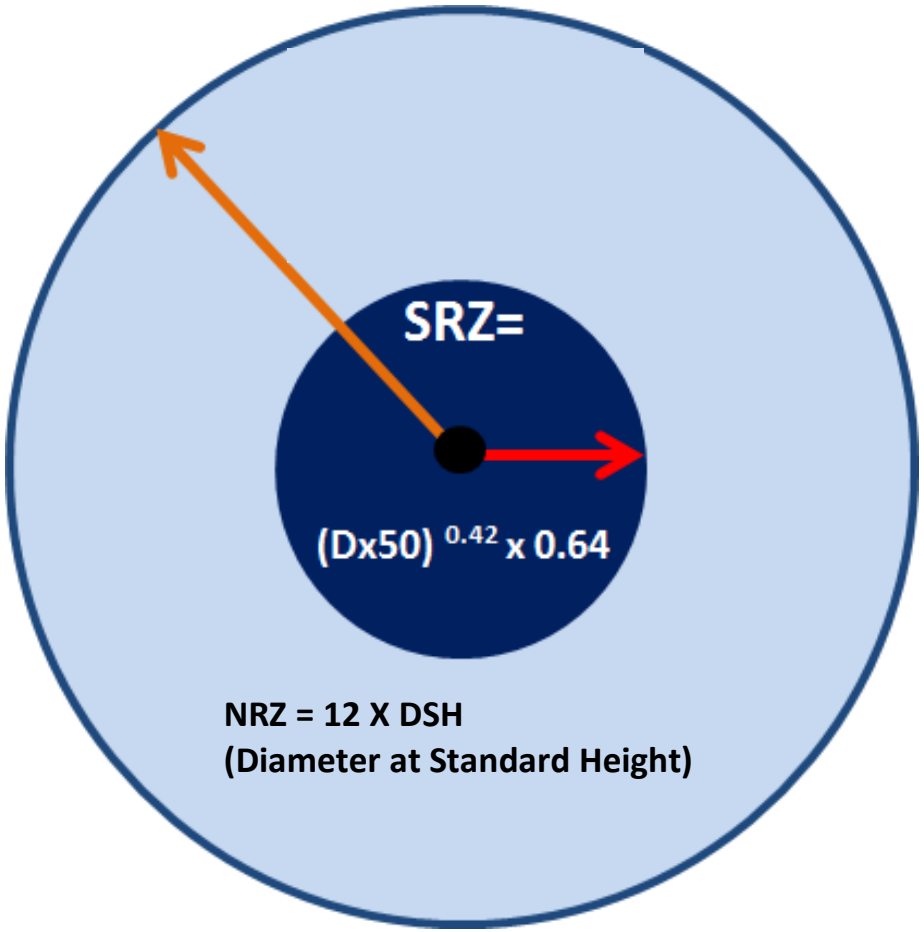



*Figure 14 - A representation of NRZ & SRZ calculations*

### 12.5.1 SIGNIFICANCE OF A TREE, ASSESSMENT RATING SYSTEM (STARS)

# IACA Significance of a Tree, Assessment Rating System (STARS)© (IACA 2010)©

In the development of this document IACA acknowledges the contribution and original concept of the Footprint Green Tree Significance & Retention Value Matrix, developed by Footprint Green Pty Ltd in June 2001.

The landscape significance of a tree is an essential criterion to establish the importance that a particular tree may have on a site. However, rating the significance of a tree becomes subjective and difficult to ascertain in a consistent and repetitive fashion due to assessor bias. It is therefore necessary to have a rating system utilising structured qualitative criteria to assist in determining the retention value for a tree. To assist this process all definitions for terms used in the *Tree Significance - Assessment Criteria* and *Tree Retention Value - Priority Matrix*, are taken from the IACA Dictionary for Managing Trees in Urban Environments 2009.

This rating system will assist in the planning processes for proposed works, above and below ground where trees are to be retained on or adjacent a development site. The system uses a scale of *High*, *Medium* and *Low* significance in the landscape. Once the landscape significance of an individual tree has been defined, the retention value can be determined. An example of its use in an Arboricultural report is shown as Appendix A.

## Tree Significance - Assessment Criteria

### 1. High Significance in landscape

- The tree is in good condition and good vigour;
- The tree has a form typical for the species;
- The tree is a remnant or is a planted locally indigenous specimen and/or is rare or uncommon in the local area or of botanical interest or of substantial age;
- The tree is listed as a Heritage Item, Threatened Species or part of an Endangered ecological community or listed on Councils significant Tree Register;
- The tree is visually prominent and visible from a considerable distance when viewed from most directions within the landscape due to its size and scale and makes a positive contribution to the local amenity;
- The tree supports social and cultural sentiments or spiritual associations, reflected by the broader population or community group or has commemorative values;
- The tree's growth is unrestricted by above and below ground influences, supporting its ability to reach dimensions typical for the taxa *in situ* - tree is appropriate to the site conditions.

### 2. Medium Significance in landscape

- The tree is in fair-good condition and good or low vigour;
- The tree has form typical or atypical of the species;
- The tree is a planted locally indigenous or a common species with its taxa commonly planted in the local area
- The tree is visible from surrounding properties, although not visually prominent as partially obstructed by other vegetation or buildings when viewed from the street,
- The tree provides a fair contribution to the visual character and amenity of the local area,
- The tree's growth is moderately restricted by above or below ground influences, reducing its ability to reach dimensions typical for the taxa *in situ*.

### 3. Low Significance in landscape

- The tree is in fair-poor condition and good or low vigour;
- The tree has form atypical of the species;
- The tree is not visible or is partly visible from surrounding properties as obstructed by other vegetation or buildings,
- The tree provides a minor contribution or has a negative impact on the visual character and amenity of the local area,
- The tree is a young specimen which may or may not have reached dimension to be protected by local Tree Preservation orders or similar protection mechanisms and can easily be replaced with a suitable specimen,
- The tree's growth is severely restricted by above or below ground influences, unlikely to reach dimensions typical for the taxa *in situ* - tree is inappropriate to the site conditions,
- The tree is listed as exempt under the provisions of the local Council Tree Preservation Order or similar protection mechanisms,
- The tree has a wound or defect that has potential to become structurally unsound.

**Environmental Pest / Noxious Weed Species**

- The tree is an Environmental Pest Species due to its invasiveness or poisonous/ allergenic properties,
- The tree is a declared noxious weed by legislation.

**Hazardous/Irreversible Decline**

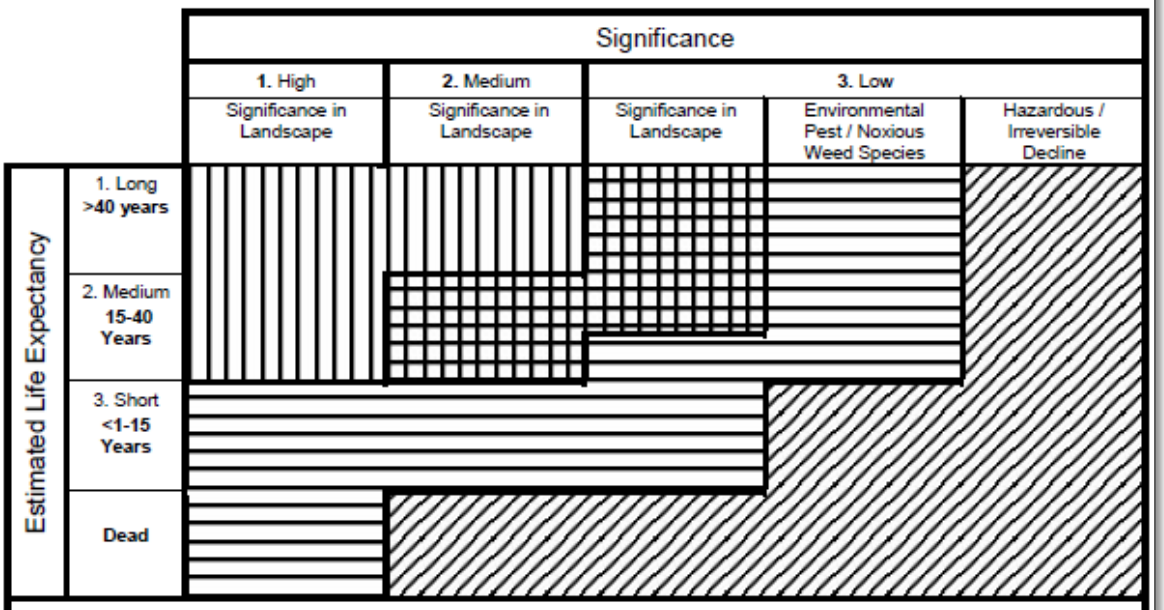
- The tree is structurally unsound and/or unstable and is considered potentially dangerous,
- The tree is dead, or is in irreversible decline, or has the potential to fail or collapse in full or part in the immediate to short term.

**The tree is to have a minimum of three (3) criteria in a category to be classified in that group.**

Note: The assessment criteria are for individual trees only, however, can be applied to a monocultural stand in its entirety e.g. hedge.

IACA 2010, *IACA Significance of a Tree, Assessment Rating System (STARS)*, Institute of Australian Consulting Arboriculturists, www.iaca.org.au

**Table 1.0 Tree Retention Value - Priority Matrix.**




Legend for Matrix Assessment

**Priority for Retention (High)** - These trees are considered important for retention and should be retained and protected. Design modification or re-location of building/s should be considered to accommodate the setbacks as prescribed by the Australian Standard AS4970 *Protection of trees on development sites*. Tree sensitive construction measures must be implemented e.g. pier and beam etc if works are to proceed within the Tree Protection Zone.

**Consider for Retention (Medium)** - These trees may be retained and protected. These are considered less critical; however their retention should remain priority with removal considered only if adversely affecting the proposed building/works and all other alternatives have been considered and exhausted.

**Consider for Removal (Low)** - These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.

**Priority for Removal** - These trees are considered hazardous, or in irreversible decline, or weeds and should be removed irrespective of development.

**USE OF THIS DOCUMENT AND REFERENCING**

The IACA Significance of a Tree, Assessment Rating System (STARS) is free to use, but only in its entirety and must be cited as follows:

IACA, 2010, *IACA Significance of a Tree, Assessment Rating System (STARS)*, Institute of Australian Consulting Arboriculturists, Australia, www.iaca.org.au

**REFERENCES**

Australia ICOMOS Inc. 1999, *The Burra Charter – The Australian ICOMOS Charter for Places of Cultural Significance*, International Council of Monuments and Sites, www.icomos.org/australia

Draper BD and Richards PA 2009, *Dictionary for Managing Trees in Urban Environments*, Institute of Australian Consulting Arboriculturists (IACA), CSIRO Publishing, Collingwood, Victoria, Australia.

Footprint Green Pty Ltd 2001, *Footprint Green Tree Significance & Retention Value Matrix*, Avalon, NSW Australia, www.footprintgreen.com.au

IACA 2010, *IACA Significance of a Tree, Assessment Rating System (STARS)*, Institute of Australian Consulting Arboriculturists, www.iaca.org.au

*Figure 15- Significance of a Tree Assessment Rating System (STARS) – IACA*