



# Naturally Trees

*Expert Arboricultural planning, advice and care since 1998*

**Arborist Reports, Landscape Design, Flora and Fauna Surveys,  
Biodiversity and Ecological Impact Assessments &  
Bushfire Protection Assessment Services**

## **Arboricultural Impact Appraisal**

(Revision B)

50 Grandview Grove  
Seaforth, NSW

Prepared for  
PDC Holdings Pty Ltd

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1 April 2019

by Andrew Scales

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## Summary

The proposed development is to subdivide the vacant property into two lots, construct new driveways, services and retaining walls plus construct a two-storey dwelling on the southern lot. I have inspected all the trees that could be affected and list their details in Appendix 2. Based on this information, I provided guidance to project architect on the constraints these trees impose on the use of the site.

Three high category trees and two low category trees will be lost because of this proposal. Therefore, the development proposal is expected to have low to moderate impact on the contribution of trees to local amenity or character.



# Table of Contents

	Page
1 INTRODUCTION	4
2 THE LAYOUT DESIGN	5
3 ARBORICULTURAL IMPACT APPRAISAL	7
4 OTHER CONSIDERATIONS	8
5 BIBLIOGRAPHY	8
6 DISCLAIMER	9

## Appendices

1 Qualifications and experience	10
2 Tree schedule and explanatory notes	11
3 Tree AZ categories	12
4 Tree management plan	13



## 1. INTRODUCTION

- 1.1 **Instruction:** I am instructed by Orion Consulting Engineers Pty Ltd to inspect the tree population at 50 Grandview Grove, Seaforth and to provide an arboricultural report to accompany a development application. This report investigates the impact of the proposed development on trees and provides the following guidelines for appropriate tree management and protective measures:
- a schedule of the relevant trees to include basic data and a condition assessment;
  - an appraisal of the impact of the proposal on trees and any resulting impact that has on local character and amenity.
- 1.2 **Purpose of this report:** This report provides an analysis of the impact of the development proposal on trees. Its primary purpose is for the council to review the tree information in support of the planning submission and use as the basis for issuing a planning consent or engaging in further discussions towards that end. Within this planning process, it will be available for inspection by people other than tree experts so the information is presented to be helpful to those without a detailed knowledge of the subject.
- 1.3 **Qualifications and experience:** I have based this report on my site observations and the provided information, and I have come to conclusions in the light of my experience. I have experience and qualifications in arboriculture, and include a summary in Appendix 1.
- 1.4 **Documents and information provided:** Orion Consulting Engineers Pty Ltd provided me with copies of the following documents:
- Survey Plan, Dwg No. 29913445, by Aspect Development & Survey Pty Ltd dated 10 January 2019; and
  - Plans, Dwg No. 000 to 003, 100, 102, 200 and 201 (Revision F), by Orion Consulting Engineers Pty Ltd dated 25 March 2019.
- 1.5 **Scope of this report:** This report is only concerned with five trees located within the subject site. It takes no account of other trees, shrubs or groundcovers within the site unless stated otherwise. It includes a preliminary d assessment based on the site visit and the documents provided, listed in 1.4 above.



## 2. THE LAYOUT DESIGN

- 2.1 **Tree AZ method of tree assessment:** The TreeAZ assessment method determines the worthiness of trees in the planning process. TreeAZ is based on a systematic method of assessing whether individual trees are important and how much weight they should be given in management considerations. Simplistically, trees assessed as potentially important are categorised as 'A' and those assessed as less important are categorised as 'Z'. Further explanation of TreeAZ can be found in Appendix 3.

In the context of new development, all the Z trees are discounted as a material constraint in layout design. All the A trees are potentially important and they dictate the design constraints. This relatively simple constraints information is suitable for use by the architect to optimise the retention of the best trees in the context of other material considerations.

### 2.2 Site visit and collection of data

- 2.2.1 **Site visit:** I carried out an unaccompanied site visit on 24 January 2019. All my observations were from ground level and I estimated all dimensions unless otherwise indicated. Aerial inspections, root or soil analysis, exploratory root trenching and internal diagnostic testing was not undertaken as part of this assessment. I did not have access to trees on other private properties and have confined observations of them to what was visible from within the property. The weather at the time of inspection was dull and damp with average visibility.
- 2.2.2 **Brief site description:** 50 Grandview Grove is located in the residential suburb of Seaforth (refer figure 1). The site is on the north-eastern side of the road and surrounded by residential development. The property is currently vacant with no built structures. A variety of ornamental and indigenous trees are scattered throughout the site and around the site boundaries.



Figure 1: The location of the subject site ([www.googlemaps.com](http://www.googlemaps.com)).



- 2.2.3 **Collection of basic data:** I inspected each tree and have collected information on species, height, diameter, maturity and potential for contribution to amenity in a development context. I have recorded this information in the tree schedule included, with explanatory notes, in Appendix 2. Each tree was then allocated to one of four categories (AA, A, Z or ZZ), which reflected its suitability as a material constraint on development.
- 2.2.4 **Identification and location of the trees:** I have illustrated the locations of the significant trees on the Tree Management Plan (Plan TMP01) included as Appendix 8. This plan is for illustrative purposes only and it should not be used for directly scaling measurements.
- 2.2.5 **Advanced interpretation of data:** Australian Standard *Protection of trees on development sites* (AS4970-2009), recommends that the trunk diameter measurement for each tree is used to calculate the tree protection zone (TPZ), which can then be interpreted to identify the design constraints and, once a layout has been consented, the exclusion zone is to be protected by barriers.
- 2.3 **The use of the tree information in layout design:** Following my inspection of the trees, the information listed in Appendix 2 was used to provide constraints guidance based on the locations of all the A trees. All the Z trees were discounted because they were not considered worthy of being a material constraint. This guidance identified two zones of constraint based on the following considerations:
- The tree protection zone (TPZ) is an area where ground disturbance must be carefully controlled. The TPZ was established according to the recommendations set out in AS4970-2009 and is the radial offset distance of twelve (x12) times the trunk diameter. In principle, a maximum encroachment of 10% is acceptable within the TPZ and a high level of care is needed during any activities that are authorised within it if important trees are to be successfully retained.
  - The structural root zone (SRZ) is a radial distance from the centre of a tree's trunk, where it is likely that structural, woody roots would be encountered. The distance is generally based on trunk diameter, although this varies with tree height, crown area, soil type and soil moisture. The SRZ may also be influenced by natural or built structures, such as rocks and footings. The SRZ only needs to be calculated when major encroachment (>10%) into a TPZ is proposed.



### 3. ARBORICULTURAL IMPACT APPRAISAL

- 3.1 **Summary of the impact on trees:** I have assessed the impact of the proposal on trees by the extent of disturbance in TPZs and the encroachment of structures into the SRZ (as set out briefly in 2.3 above and more extensively in Appendix 2). All the trees that may be affected by the development proposal are listed in Table 1

**Table 1: Summary of trees that may be affected by development**

Impact	Reason	Important trees		Unimportant trees	
		AA	A	Z	ZZ
Trees to be removed	Building construction and/or level variations within TPZ		1, 2, 3	5	4

#### 3.2 Detailed impact appraisal

- 3.2.1 **Category A trees to be lost:** The proposed development will necessitate the removal of three high category trees (Trees 1, 2 and 3). These trees are considered moderate to high significance and display good health and condition. In order to compensate for loss of amenity, consideration should be given to replacement planting within the site and on the nature strip.

If it is intended to retain these trees, design and/or siting modification would be required to be considered to accommodate setbacks as prescribed by the Australian Standard AS4970-2009 *Protection of trees on development sites*. Specifically, the proposed building would be required to remain outside the TPZ to avoid severance of structural roots.

- 3.2.2 **Other trees to be removed:** The proposed development will necessitate the removal of two trees of low and very low retention value. These include Trees 4 and 5. None of these trees are considered significant or worthy of special measures to ensure their preservation.

#### 3.3 Proposals to mitigate any impact

- 3.3.1 **New planting:** In the context of the loss of trees, a comprehensive new landscaping scheme is proposed including semi-mature trees to be planted within available areas in prominent locations. The suggested selection of species, size and location are provisional and would not be considered final until all relevant parties had been fully consulted. The new trees should have the potential to reach a significant height without excessive inconvenience and be sustainable into the long term, significantly improving the potential of the site to contribute to local amenity and character.

- 3.3.2 **Summary of the impact on local amenity:** Three high category trees and two low category trees will be lost because of this proposal. Therefore, the development proposal is expected to have low to moderate impact on the contribution of trees to local amenity or character.



## 4. OTHER CONSIDERATIONS

- 4.1 **Trees subject to statutory controls:** The subject trees are legally protected under Northern Beaches Council Tree Preservation Order, it will be necessary to consult the council before any pruning works other than certain exemptions can be carried out. The works specified above are necessary for reasonable management and should be acceptable to the council. However, tree owners should appreciate that the council may take an alternative point of view and have the option to refuse consent.

## 5. BIBLIOGRAPHY

### 5.1 List of references:

Australian Standard AS4373-2007 *Pruning of Amenity Trees*.  
Standards Australia.

Australian Standard AS4970-2009 *Protection of trees on development sites*.  
Standards Australia.

Barrell, J (2009) Draft for Practical Tree AZ version 9.02 A+NZ  
Barrel Tree Consultancy, Bridge House, Ringwood BH24 1EX

Matheny, N.P. & Clark, J.R. (1998) Trees & Development: A Technical Guide to Preservation of Trees During Land Development  
International Society of Arboriculture, Savoy, Illinois.

Mattheck, Dr. Claus R., Breloer, Helge (1995) The Body Language of Trees - A Handbook for Failure Analysis;  
The Stationery Office, London. England.

Robinson, L (1994) Field Guide to the Native Plants of Sydney  
Kangaroo Press, Kenthurst NSW





## 6. DISCLAIMER

### 6.1 Limitations on 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, and directly attached to that submission, report or presentation.*

#### ASSUMPTIONS

*Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible: however, Naturally Trees can neither guarantee nor be responsible for the accuracy of information provided by others.*

*Unless stated otherwise:*

- *Information contained in this report covers only those trees that were examined and reflects the condition of those trees at 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.*

Yours sincerely



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## APPENDIX 1

### Brief qualifications and experience of Andrew Scales

#### 1. Qualifications:

Associate Diploma Horticulture	Northern Sydney Institute of TAFE	1995-1998
Certificate in Tree Surgery	Northern Sydney Institute of TAFE	1998
Associate Diploma Arboriculture	Northern Sydney Institute of TAFE	1999-2006

#### 2. Practical experience:

Being involved in the arboricultural/horticultural industry for in excess of 10 years, I have developed skills and expertise recognized in the industry. Involvement in the construction industry and tertiary studies has provided me with a good knowledge of tree requirements within construction sites.

As director of Naturally Trees, in this year alone I have undertaken hundreds of arboricultural consultancy projects and have been engaged by a range of clients to undertake tree assessments. I have gained a wide range of practical tree knowledge through tree removal and pruning works.

#### 3. Continuing professional development:

Visual Tree Assessment (Prof. Dr. Claus Mattheck)	Northern Sydney Institute of TAFE	2001
Wood Decay in Trees (F.W.M.R.Schwarze)	Northern Sydney Institute of TAFE	2004
Visual Tree Assessment (Prof. Dr. Claus Mattheck)	Carlton Hotel, Parramatta NSW	2004
Tree A-Z / Report Writing (Jeremy Barrell)	Northern Sydney Institute of TAFE	2006
Up by Roots – Healthy Soils and Trees in the Built Environment (James Urban)	The Sebel Parramatta NSW	2008
Tree Injection for Insect Control (Statement of Attainment)	Northern Sydney Institute of TAFE	2008
Quantified Tree Risk Assessment (QTRA) Registered Licensee #1655	South Western Sydney Institute TAFE	2011
Practitioners Guide to Visual Tree Assessment	South Western Sydney Institute TAFE	2011
Quantified Tree Risk Assessment (QTRA) Registered Licensee #1655	Richmond College NSW TAFE	2014
VALID Approach to Likelihood of Failure (David Evans)	Centennial Park NSW	2017



## APPENDIX 2

### Tree schedule

NOTE: Colour annotation is AA & A trees with green background; Z & ZZ trees with blue background; trees to be removed in red text.

No.	Genus species	Height	Spread	DBH	TPZ	Foliage %	Age class	Defects/Comment	Location	Services	Significance	Tree AZ
1	<i>Magnolia grandiflora</i>	7	4	150	2.0	80%	M	Nil	Garden bed	Nil	L	A1
2	<i>Magnolia grandiflora</i>	7	4	150	2.0	80%	M	Nil	Garden bed	Nil	L	A1
3	<i>Glochidion ferdinandi</i>	10	10	450	5.4	80%	M	Co-dominant	Garden bed	Nil	M	A1
4	<i>Syzygium sp.</i>	8	8	500	6.0	50%	O	Borer and decay on failed bough, Poor form and condition	Garden bed	Nil	M	ZZ5
5	<i>Glochidion ferdinandi</i>	9	5	350	4.2	70%	M	Included bark union failure	Garden bed	Nil	M	Z9

### Explanatory Notes

- **Measurements/estimates:** All dimensions are estimates unless otherwise indicated. Measurements taken with a tape or clinometer are indicated with a '\*\*'. Less reliable estimated dimensions are indicated with a '?'.
- **Species:** The species identification is based on visual observations and the botanical name. In some instances, it may be difficult to quickly and accurately identify a particular tree without further detailed investigations. Where there is some doubt of the precise species of tree, it is indicated with a '?' after the name in order to avoid delay in the production of the report. The botanical name is followed by the abbreviation sp if only the genus is known. The species listed for groups and hedges represent the main component and there may be other minor species not listed.
- **Tree number:** relates to the reference number used on site diagram/report.
- **Height:** Height is estimated to the nearest metre.
- **Spread:** The average crown spread is visually estimated to the nearest metre from the outermost tips of the live lateral branches.
- **DBH:** These figures relate to 1.4m above ground level and are recorded in millimetres. If appropriate, diameter is measured with a diameter tape. 'M' indicates trees or shrubs with multiple stems.
- **Foliage Cover:** Percent of estimated live foliage cover for particular species range.
- **Age class:**
  - Y Young = recently planted
  - S Semi-mature (<20% of life expectancy)
  - M Mature (20-80% of life expectancy)
  - O Over-mature (>80% of life expectancy)
- **Tree AZ:** See reference for Tree AZ categories in Appendix 3.
- **Significance:** A tree's significance/value in the landscape takes into account its prominence from a wide range of perspectives. This includes, but is not limited to neighbour hood perspective, local perspective and site perspective. The significance of the subject trees has been categorized into three groups, such as: High, Moderate or Low significance.



## APPENDIX 3

### TreeAZ Categories (Version 9.02 A+NZ)

#### **Z** Category Z: Unimportant trees not worthy of being a material constraint

**Local policy exemptions:** Trees that are unsuitable for legal protection for local policy reasons including size, proximity and species

<b>Z1</b>	Young or insignificant small trees, i.e. below the local size threshold for legal protection, etc
<b>Z2</b>	Too close to a building, i.e. exempt from legal protection because of proximity, etc
<b>Z3</b>	Species that cannot be protected for other reasons, i.e. scheduled noxious weeds, out of character in a setting of acknowledged importance, etc

**High risk of death or failure:** Trees that are likely to be removed within 10 years because of acute health issues or severe structural failure

<b>Z4</b>	Dead, dying, diseased or declining
<b>Z5</b>	Severe damage and/or structural defects where a high risk of failure cannot be satisfactorily reduced by reasonable remedial care, i.e. cavities, decay, included bark, wounds, excessive imbalance, overgrown and vulnerable to adverse weather conditions, etc
<b>Z6</b>	Instability, i.e. poor anchorage, increased exposure, etc

**Excessive nuisance:** Trees that are likely to be removed within 10 years because of unacceptable impact on people

<b>Z7</b>	Excessive, severe and intolerable inconvenience to the extent that a locally recognised court or tribunal would be likely to authorise removal, i.e. dominance, debris, interference, etc
<b>Z8</b>	Excessive, severe and intolerable damage to property to the extent that a locally recognised court or tribunal would be likely to authorise removal, i.e. severe structural damage to surfacing and buildings, etc

**Good management:** Trees that are likely to be removed within 10 years through responsible management of the tree population

<b>Z9</b>	Severe damage and/or structural defects where a high risk of failure can be temporarily reduced by reasonable remedial care, i.e. cavities, decay, included bark, wounds, excessive imbalance, vulnerable to adverse weather conditions, etc
<b>Z10</b>	Poor condition or location with a low potential for recovery or improvement, i.e. dominated by adjacent trees or buildings, poor architectural framework, etc
<b>Z11</b>	Removal would benefit better adjacent trees, i.e. relieve physical interference, suppression, etc
<b>Z12</b>	Unacceptably expensive to retain, i.e. severe defects requiring excessive levels of maintenance, etc

**NOTE:** Z trees with a high risk of death/failure (Z4, Z5 & Z6) or causing severe inconvenience (Z7 & Z8) at the time of assessment and need an urgent risk assessment can be designated as ZZ. ZZ trees are likely to be unsuitable for retention and at the bottom of the categorisation hierarchy. In contrast, although Z trees are not worthy of influencing new designs, urgent removal is not essential and they could be retained in the short term, if appropriate.

#### **A** Category A: Important trees suitable for retention for more than 10 years and worthy of being a material constraint

<b>A1</b>	No significant defects and could be retained with minimal remedial care
<b>A2</b>	Minor defects that could be addressed by remedial care and/or work to adjacent trees
<b>A3</b>	Special significance for historical, cultural, commemorative or rarity reasons that would warrant extraordinary efforts to retain for more than 10 years
<b>A4</b>	Trees that may be worthy of legal protection for ecological reasons (Advisory requiring specialist assessment)

**NOTE:** Category A1 trees that are already large and exceptional, or have the potential to become so with minimal maintenance, can be designated as AA at the discretion of the assessor. Although all A and AA trees are sufficiently important to be material constraints, AA trees are at the top of the categorisation hierarchy and should be given the most weight in any selection process.

TreeAZ is designed by Barrell Tree Consultancy ([www.treeaz.com/tree\\_az/](http://www.treeaz.com/tree_az/))



## APPENDIX 4

### Tree management plan

-refer attached Tree Management Plan, Dwg No. TMP01 (Revision B),  
by Naturally Trees dated 1 April 2019



