

**JOSEPH PIDUTTI  
CONSULTING ARBORIST**

**Diploma of Horticulture**

**Certificate No. RUH50198 December 2004**

ABN 19 590 337 549

BRN TO356519

24 Desreux Close Eleebana 2282 NSW

Ph 02 49 461619 Mobile 0412 996659

Email: [e-mail@josephpiduttiarborist.com.au](mailto:e-mail@josephpiduttiarborist.com.au) Web: [josephpiduttiarborist.com.au](http://josephpiduttiarborist.com.au)

**ARBORIST REPORT**

**33 WATKINS ROAD  
ELEMORE VALE**

Prepared for

**SCOTT McDOUALL  
29/06/12**

By  
Joseph Pidutti  
Diploma in Horticulture (Arboriculture)

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## 1. SUMMARY

The owner of the property has requested that an assessment in accordance with Newcastle DCP Element 4.10 be carried out on the trees as part of their development application.

The owners propose to remove the existing dwelling and develop the site to contain townhouse styled apartments. The contents of this report have been based on the plans provided by Plan Vision Australia Drawing No. 711-4075 - Site Plan Sheet AR08 and Bulk Earthworks Plan Sheet AR06.

The development of this site as proposed would necessitate the removal of tree nos. 3, 4, 5, 6 & 7. These trees will either be within the footprint of the proposed development or proposed earthworks works. Their removal will be necessary to facilitate the development as proposed.

Tree nos. 1 & 2 are located within the proposed landscaped area and although they are not expected to be significantly impacted upon by the development their removal is preferred. The removal of these trees will enable re-planting with more suitable species that would be more sustainable over the long term.

Due to their small live crown sizes all trees are considered to have low landscape significance and retention values. Their removal will not significantly diminish from the nature of the area and can be replaced within the short term with new plantings.

All remaining vegetation on site are shrubs and as such are not required to be assessed as part of the development application and can be removed without council consent.

As no retainable trees are to be removed replanting to compensate for lost retainable trees would not be required. However re-plant with more suitable species in designated landscaped areas on completion of development

## **2. INTRODUCTION**

The aim of this report is to assess the effects the proposed development of this site will have on the existing trees on the subject property.

Assessment will take into consideration the health, condition and structural integrity of the trees and involve the impact of building and future use of this area on the condition of these trees.

Conclusions and recommendations of this assessment will be based on the results of information collected during site inspections.

The report will be in accordance with Element 4.10 Tree Management Newcastle Development Control Plan 2005 (DCP). The report type will be in accordance with Appendix 3.2 – Contents of an Arborist Report, Tree Survey - to accompany a development site analysis and Assessment - Tree Retention Value.

### **2.1 Brief**

The owner of the property has requested that an assessment in accordance with Newcastle DCP Element 4.10 be carried out on the trees as part of their development application.

The owners propose to remove the existing dwelling and develop the site to contain townhouse styled apartments

The contents of this report have been based on the plans provided by Plan Vision Australia Drawing No. 711-4075 - Site Plan Sheet AR08 and Bulk Earthworks Plan Sheet AR06 (Appendix 3).

The report will contain the following information:

- Tree assessment – Retention Value
- Discussion – Impacts of Development
- Safe Useful Life Expectancy (SULE)
- Recommendations

### 3. LOCATION & SITE DESCRIPTION

**Site Address:** 33 Watkins Road Elemore Vale

The site is a residential corner block on relatively level land with a northwesterly aspect.

The existing dwelling and garage occupies the front northern half of the site.

Existing vegetation consists of the subject trees which are located along the front north and western boundaries and along the eastern side boundary. Remaining vegetation consists of medium size shrubs located along the front north, east and western boundaries. The remainder of the yard consists of maintained lawn.

The site is boarded by existing residential properties to the south and east and by street frontage to the north and west (Photo1) (Site Plan appendix 4).

#### **Photo 1 Development site**



## **4. METHODOLOGY**

A visual tree assessment was made on the 29/06/12 to evaluate the health and condition of these trees in relation to the impacts of the proposed development.

Assessment was undertaken visually from the ground only and based upon the Visual Tree Assessment (VTA) as described by Claus Mattheck and Helge Breloer, *The Body Language of trees*.

The information required was gathered by a visual inspection from the ground to assess the area around the trunk and roots of the trees.

The assessment also included a visual inspection of the canopy, major scaffold and lateral branches for any structural defects and to inspect for problems such as pest and diseases.

Photographs were taken using a digital camera; no enhancements were made to any photographs used in this report.

Assessment did not include soil testing, root inspection, aerial inspection or any other investigative inspection methods.

## **5. SULE – Safe Useful Life Expectancy**

The SULE method (developed by Jeremy Barrell) of assessment involves classifying trees, after an inspection, into one of five categories that will give an indication of its safe useful life expectancy. The value system is a planning tool only and should be taken in context with other attributes, characteristics or site conditions. These values would change as a result of the proposed development.

SULE takes into consideration the species, age, location, health and condition in trying to determine the possible outcomes and future potential of a tree (Appendix 1).

## **6. TREE ASSESSMENT**

Assessment of trees was by visual inspection from the ground only. No tree can be declared completely safe and further testing by means of an aerial inspection, drilling to test for the amount of sound wood and root inspection would be required in fully determining the structural integrity of these trees.

No guarantee can be given nor can it be predicted that branch failure or uprooting (windthrow) would not occur as a result of high winds and /or excessive rainfall.

A visual assessment can only take into consideration the outward signs of a trees condition. There are many problems that can occur inside a tree that cannot be seen, such as fungal diseases and undetected structural faults such as decay and hollows. Problems can also occur within the root systems due to contaminated soils and root diseases.

These issues have not been taken into consideration in this evaluation and would require further investigation in determining the health and condition of these trees.

## 6.1 Description

**Table 1**

NO	TREE SPECIES &COMMON NAME	Age	dbh mm	dgl	Hgt. mm	Canopy Spread				Struct ure	Healt h	Cond .	SULE	Comments
						N	S	E	W					
1	<i>Cupressus torulosa</i> Bhutan Cypress	M	Multi Avg. 200	450	8	1	1	1	1	Good	Good	4	3b	No significant problems
2	<i>Cupressus torulosa</i> Bhutan Cypress	M	350 200 150	350	9	1	1	1	1	Good	Good	4	3b	No significant problems
3	<i>Metrosideros excelsa</i> New Zealand Christmas Bush	S/M	130	220	4	2	2	2	2	Fair	Good	4	3b	Previously lopped. Foliage consists mostly of epicormic re-growth.
4	<i>Murraya paniculata</i> Murraya	M	Multi < 130	200	3	2	2	2	2	Good	Good	5	2d	No significant problems
5	<i>Archontophoenix alexandrae</i> Alexandra palm Clump x 4	S/M	Avg. 250	500	6	1	2	2	1	Good	Good	4	2d	No significant problems
6	<i>Archontophoenix alexandrae</i> Alexandra palm	J	190	220	5	1	1	1	1	Good	Good	5	2d	No significant problems
7	<i>Cupressus torulosa</i> Bhutan Cypress	J	Multi < 130	200	4	.05	.05	.05	.05	Fair	Fair/ Poor	3	3b	Dieback of central leader.

## 7. TREE RETENTION VALUES

### 7.1 Assessment of the Sustainability of Trees in the Landscape

**Tree No. 3** displays good health and vigour however the tree is in poor structural condition due to past lopping techniques. This has resulted in multi stemmed epicormic shoots arising from where lopping cuts have been made.

Whilst foliage size appears to be normal crown density, growth extension and habit is considered to be abnormal as a result of epicormic re-growth.

No lean, soil mounding, soil lifting, soil cracking or root damage was noticeable at the time of inspection that could indicate problems in relation to the stability of the tree.

**Tree No. 7** is in relatively poor health and vigour displaying substantial dieback of the central leader. Whilst remaining foliage size appears to be normal, crown density, growth extension and habit is considered to be poor due the decline in its condition.

No lean, soil mounding, soil lifting, soil cracking or root damage was noticeable at the time of inspection that could indicate problems in relation to the stability of the tree.

**Tree nos. 1, 2, 4, 5 & 6** all display good health and vigour. No sign of dieback, thinning of leaves, pest or disease was noticeable within the crowns. Crown density, growth and foliage size all appears to be normal.

No sign of dieback of branches, thinning of crown foliage and deadwood is noticeable within these trees that could indicate problems associated with pest or disease.

No damage or significant defects were observed indicating that the tree is in good structural condition. No signs of decay, bulges, cracking or splitting could be seen to indicate that major tree or branch failure may occur in the near future.

No leans, soil mounding, soil lifting, soil cracking or root damage was noticeable at the time of inspection that could indicate problems within the root system or the stability of the trees.

In their present setting it is considered that all trees have sufficient space to grow and are not causing damage to any structures indicating they are suitable to position.



## 7.2 Landscape Significance Ratings

### Table 2

Tree No	Landscape Significance Rating	
1	5 Low	The tree has a small live crown size of less than 40m <sup>2</sup> and can be replaced within the short term with new tree planting
2	5 Low	The tree has a small live crown size of less than 40m <sup>2</sup> and can be replaced within the short term with new tree planting
3	5 Low	The tree has a small live crown size of less than 40m <sup>2</sup> and can be replaced within the short term with new tree planting Poor form and habit - lopped
4	6 Very Low	Shrub - Exempt development
5	5 Low	The tree has a small live crown size of less than 40m <sup>2</sup> and can be replaced within the short term with new tree planting
6	5 Low	The tree has a small live crown size of less than 40m <sup>2</sup> and can be replaced within the short term with new tree planting
7	6 Very Low	Poor representative of the species. The tree is schedule as exempt (not protected) under the provisions of the NCC LEP 2008 (2) (b)

## 8. IMPACTS OF DEVELOPMENT

### 8.1 Tree Protection Zones

Australian Standard 4970 – 2009 Protection of Trees on Development Sites requires that the Diameter at Breast Height (DBH) of the trunk measured 1.4m above ground be multiplied by 12 to obtain the radius of a Tree Protection Zones (TPZ).

Where major encroachment into the TPZ of trees is expected the Structural Root Zone (SRZ) requires to be calculated. **The SRZ considers the trees structural stability only.**

The method used to determine the TPZ and SRZ for these trees have been based on Australian Standard 4970 – 2009 Protection of Trees on Development Sites 3.3.5.

Table 3 outlines both the Tree Protection Zones and Structural Roots Zone distances for these trees.

**Table 3**  
**TPZ & SRZ**

Tree No.	dbh mm	dgl mm	Tree Protection Zone TPZ (m)	Structural Root Zone SRZ (M)	Impact
1	Multi Avg. 200	450	4.2	2.37	Potential damage to minor roots
2	350 200 150	350	5.1	2.13	Potential damage to minor roots
3	130	220	2	1.7	Potential damage to structural and minor roots
4	Multi < 130	200	Not Applicable	Not Applicable	
5	Avg. 250	500	3	1.5	Potential damage to structural and minor roots
6	190	220	2.2	1.7	Potential damage to structural and minor roots
7	Multi < 130	200	3	1.6	Potential damage to structural and minor roots

## 8.2 Tree No. 4

As **tree no. 4** is shown on the plan comment is only related to the fact that it is a shrub and as such can be removed without permission.

## 8.3 Tree Nos. 3 & 5

Based on the Site Plan and Bulk Earthworks Plan **tree nos. 3 & 5** are within the footprint of the proposed buildings and / or where earthworks to cut soil are proposed and would require removal to facilitate the development.

Due to their small live crown size and /or relatively poor structure these trees are considered to have low retention values and can be replaced within the short term with new planting. Their removal will not significantly diminish from the nature of the area (Photo 2 & 3).



**Photo 2**  
**Tree no. 3 within footprint of proposed development**



**Photo 3**  
**Tree no. 5 within footprint of proposed development**

#### 8.4 Tree Nos. 6 & 7

Plans show that earthworks require soil fill of 600mm to be made that will encompass the root zone of these trees.

The main area of concern is the adverse affects soil fill can have on tree health that can have an adverse effect on the viability of retention.

Soil build-up and construction over the root system is considered to have a detrimental effect on their health and vitality and in the long term can result in their decline and eventually their death.

Roots require oxygen to survive which they get from spaces within the soil. Associated beneficial fungi and micro-organisms that help the tree obtain minerals also need oxygen to thrive.

When extra soil is placed over the root systems of established trees, the aeration of the soil is disrupted and they can no longer get sufficient oxygen. This effect is more pronounced depending on the depth of fill and soil type.

Trees that have soil fill around the trunk can become stressed and are more susceptible to attack by phloem- cambium feeders such as longicorn beetles and wood moths.

A tree that has soil build up usually develops a thinning crown, old branches die and its health is in decline.

Tree No. 7 is also exempt under the provisions of the local council's Tree Preservation Order Newcastle City Local Environmental Plan Schedule 1 – Exempt Development 2 (b) - Circumference not greater than 450mm for a single trunk or greater than 300 mm in diameter for each trunk of a multi trunked tree and as such permission for its removal is not required.

Due to its small live crown size and /or relatively poor structure these tree no.6 is considered to have low retention value and can be replaced within the short term with new planting.

The removal of these trees will not significantly diminish from the nature of the area (Photo 4).

**Photo 4**  
Soil to be placed over root zone of trees  
Low landscape and retention value



### 8.5 Tree nos. 1 & 2

Based on the calculated TPZ's required for these trees construction activity will not significantly encroach within the required Tree Protection Zones.

Based on the proposed plans encroachment is expected to be minor and should be tolerated by these trees. Encroachment into the TPZ is expected to be less than less than 10%, outside their Structural Root Zone and the area lost to encroachment can be compensated for elsewhere and contiguous with the TPZ.

The trees are located within the proposed landscaped area and as they are not expected to be significantly impacted upon by the development could be retained.

However their removal is preferred as this will allow for re-planting with more suitable species that would be more sustainable over the long term.

Due to their small live crown sizes they are considered to have low retention values and can be replaced within the short term with new planting. The removal of these trees will not significantly diminish from the nature of the area (Photo 5).



**Photo 5**  
**Tree nos. 1 & 2 not significantly impacted upon by construction however removal is preferred and will allow for replanting with more suitable species.**

### 8.6 Remaining vegetation

All remaining vegetation on site is shrubs and as such is not required to be assessed as part of the development application and can be removed without council consent.

## 9. RE-PLANTING

As no retainable trees are to be removed replanting to compensate for lost retainable trees would not be required. However a list of smaller native trees that could be used for planting within the residential allotment is provided below.

*Callistemon viminalis* - Weeping Bottlebrush

*Cupaniopsis anacardioides* - Tuckeroo

*Melaleuca bracteata* - Revolution Green

These trees will attract honey and nectar feeding birds and provide shade and screening They prefer moist well-drained soils but are very adaptable to sandy or clay soils.

These trees are very adaptable, can tolerate full sun or part shade and soils ranging from well-drained sandy soils to moderately well drained clay soils and should only reach heights up to eight to 12 meters in cultivation.

Native trees have been recommended that are suitable and common to the area. Native trees also encourage native wild life to the area such as honey and insect eating birds and various species of fauna.

## 10. CONCLUSION

The report concludes that for the development to be approved as proposed would necessitate the removal of **tree nos. 3, 4, 5, 6 & 7**. Plans show that these trees will either be within the footprint of the proposed development or proposed earthworks works.

Based on the calculated TPZ's required for these trees construction activity will not significantly encroach within the required Tree Protection Zones.

Based on the proposed plans encroachment is expected to be minor and should be tolerated by these trees. Encroachment into the TPZ is expected to be less than less than 10%, outside their Structural Root Zone and the area lost to encroachment can be compensated for elsewhere and contiguous with the TPZ.

Tree nos.1 & 2 are located within the proposed landscaped area and as they are not expected to be significantly impacted upon by the development could be retained. However their removal is preferred as this will allow for re-planting with more suitable species that would be more sustainable over the long term.

All trees are considered to have a low retention values and could be removed due to their small live crown sizes and /or poor structure and poor form.

The removal of these trees will not significantly diminish from the nature of the area and can be replaced within the short term with new plantings.

## 11. RECOMMENDATIONS

Based on the results of a visual inspection of these trees the following outcomes are recommended.

### 1. Removal of Tree Nos. 3, 4, 5, 6 & 7

**Reason:**

These trees will either be within the footprint of the proposed development or proposed earthworks works. Their removal will be necessary to facilitate the development as proposed.

- The trees are considered to have low landscape and retention values and could be removed due to their small live crown sizes and /or poor structure and poor form.
- Retention of trees will result in significant changes to the design

### 2. Removal of Tree Nos. 1 & 2

**Reason:**

The trees are located within the proposed landscaped area and although they are not expected to be significantly impacted upon by the development their removal is preferred and will allow for re-planting with more suitable species that would be more sustainable over the long term.

- These trees are considered to have low landscape significance and retention values due to their small live crown sizes. Their removal will not significantly diminish from the nature of the area and can be replaced within the short term with new plantings.

### 3. Re-plant with more suitable species in designated landscaped areas on completion of development

### 4. Tree work to be carried out by a qualified tree worker in accordance to Australian Standard 4373 –2007 and in accordance with the Code of Practice Amenity Tree Industry August 2007.

Report by



**Diploma of Horticulture (Arboriculture)**

## 12. REFERENCES

Matheny, Nelda and Clark, James R. 1998, Trees and Development: A Technical Guide to Preservation of Trees During Land Development, International Society Of Arboriculture Champaign, USA.

Matheny, Nelda and Clark, James R. 1994, A Photographic Guide To The Evaluation Of Hazard Trees In Urban Areas,

Australian Standards – AS 4970 – 2009, Protection of Tree on Development Sites  
Standards Australia Sydney

Newcastle Urban Forest, Technical Manual 2010

Jim Clarke and Nelda Matheny April 1999, Care and Management of Trees on Development Sites

## 13. DISCLAIMER

The conclusions and recommendations contained in this report refer to the tree's condition on the day of inspection only. The report should be read and considered in its entirety. All care has been taken using the most up to date arboricultural information in the preparation of this report.

The report is based on visual inspection only. No guarantee can be given nor can it be predicted that branch failure or uprooting (windthrow) would not occur as a result of high winds and /or excessive rainfall and other unpredictable events. Tree health and environmental conditions can change at any time due to unforeseen circumstances.

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# APPENDIX 1

## SULE - Safe Useful Life Expectancy

### 1. Long SULE

- a. Structurally sound and can accommodate future growth
- b. Long term potential with minor remedial treatment
- c. Trees of special significance which warrant extra care

### 2. Medium SULE

- a. Will live between 15-40 years
- b. Will live for more than 40 years but would be removed for safety or nuisance reasons
- c. May live for more than 40 years but will interfere with more suitable specimens and need removal eventually
- d. More suitable for retention in the medium term with some remedial care

### 3. Short SULE

- a. Trees that may only live between 5-15 more years
- b. May live for more than 15 years but would need removal for safety or other reasons
- c. Will live for more than 15 years but will interfere with more suitable specimens or provide space for replacement plantings
- d. Require substantial remedial care but are only suitable for short term retention

### 4. Removals

- a. Dead, dying or seriously diseased
- b. Dangerous trees through instability or loss of adjacent trees
- c. Structural defects such as cavities
- d. Damaged that are clearly not safe to retain
- e. May or are causing damage to structures
- f. That will become dangerous

### 5. Moved or Replaced

Trees, which can be reliably moved or replaced

- a. Small trees less than 5 meters
- b. Young trees between 5-15 years
- c. Trees that have been regularly pruned to control growth

## **APPENDIX 2**

### **CONDITION RATINGS**

Each tree or groups of trees have been placed into categories ranging from 1 to 6, with no.1 being in the worst condition through to no.6 in a health condition.

This is based on observations of their health and structure.

1. A dead tree.
2. A tree in severe decline. Major structural damage that cannot be repaired, dieback of trunk or scaffold branches and the majority of foliage consist of epicormic growth.
3. A tree in decline. Significant structural damage that cannot be repaired, dieback of medium to larger branches and epicormic growth.
4. A tree moderate vigor, dieback of smaller branches and twigs, thinning of crown, poor leaf colour and moderate structural defects that could be mitigated with regular care.
5. A tree in slight decline with only a small amount of twig dieback and minor structural damage that could be easily rectified.
6. A healthy vigorous tree that shows reasonably free signs of pest and diseases and good structural form.