

Naturally Trees

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

ARBORICULTURAL APPRAISAL & ROOT INVESTIGATION

Revised:
2 November 2015

163a Victoria Road
Bellevue Hill, NSW

Prepared for
Bellevue Hill Public School

1. INTRODUCTION

- 1.1 **Instruction:** This Root Investigation Report has been commissioned by Group GSA Pty Ltd to determine the likely impacts of a proposed development near to four trees at 163a Victoria Road, Bellevue Hill. The subject trees are located adjacent to the south-eastern site boundary. Recommendations for best tree management will be provided as part of the assessment based on findings.
- 1.2 **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.
- 1.3 **Documents and information provided:** Group GSA Pty Ltd provided me with copies of the following documents:
- Survey Plan, Dwg No. 76530 (Sheet 1 and 2), by Rygate Surveyors dated 4 November 2014; and
 - Amended Amphitheatre, by Group GSA dated 30 October 2015
- 1.4 **Scope of this report:** This report is only concerned with four trees. Three trees are located within the subject site and one adjacent to it on other private property. It takes no account of other trees, shrubs or groundcovers within the site unless stated otherwise. It includes a detailed assessment based on the site visit and root investigation.



2. SITE VISIT AND METHOD OF DATA COLLECTION

- 2.1 **Site visit:** Naturally Trees contractors carried out a detailed root investigation on 22 August 2015. The weather at the time of inspection was clear and dry, with good visibility.
- 2.2 **Brief site description:** 163a Victoria Road is located in the suburb of Bellevue Hill (refer figure 1). The site is on the eastern side of the road and surrounded by residential development. The property consists of the Bellevue Hill Public School.

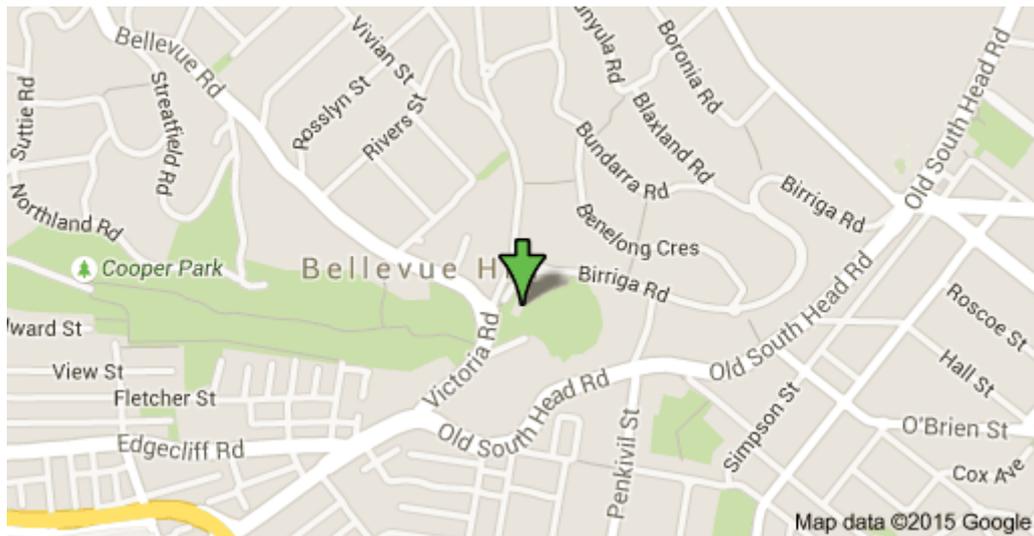


Figure 1: The location of the subject site (www.google.com).

- 2.4 **Collection of basic data:** I inspected the subject trees and have collected information on species, height, diameter and maturity. I have recorded this information in the tree schedule included as Appendix 2.
- 2.5 **Method of data collection:** Findings within this report are based on data collected at time of site inspection. Root identification and location was carried out in the alignment of the proposed works.

All below ground excavation required to facilitate this investigation was undertaken by hand only using spades, shovels and small hand tools. Exposed roots were treated with care to minimise damage. Plan RIP01 (refer Appendix 4) provides details of the trench location and exposed roots.

The purpose of the investigatory trench was to determine the number, location and size of woody roots growing into the proposed works area. On completion of excavation and data collection, the trenches were backfilled to reduce the likelihood of roots drying.



3. APPRAISAL

- 3.1 **General tree condition:** After correlating the facts of the tree survey, it is evident that the subject trees are of moderate significant value based on its individual merits. The trees display good health and integrity with a bifurcated trunk bases.
- 3.2 **Root investigation findings:** Ten major woody roots were identified within the two exploratory trenches (refer Photo log and plan RIP01, Appendix 3 and 4). Nine roots were exposed in Trench 1 and one in Trench 2. The roots varied in size and undoubtedly emanate from the subject trees. The table below shows provides a summary of each root.

Table 1: Summary of findings

Root No.	Diameter (mm)	Depth (mm)	Root Type
TRENCH 1			
1	150	690	<i>Ficus sp.</i>
2	180	700	<i>Ficus sp.</i>
3	180	350	<i>Ficus sp.</i>
4	70	600	<i>Ficus sp.</i>
5	80	300	<i>Ficus sp.</i>
6	150	440	<i>Ficus sp.</i>
7	90	720	<i>Ficus sp.</i>
8	100	1150	<i>Ficus sp.</i>
9	170	720	<i>Ficus sp.</i>
TRENCH 2			
10	105	200	<i>Ficus sp.</i>

- 3.3 **Trench 1:** Trench 1 had nine large roots within it ranging from 70mm to 180mm diameter. All these roots are within the Tree Protection Zone¹ (TPZ) and Structural Root Zone² (SRZ) of Trees 3, 4 and 5. The loss of this number of woody roots within a SRZ would very likely result in whole tree failure of Trees 3 and 4.
- 3.4 **Trench 2:** Trench 2 only had one root measuring 105mm. I believe root growth has been contained to the south-eastern side of the existing retaining wall and an asphalt layer at 300mm and evidence of non-native fill. Pruning this root

¹ The term Tree Protection Zone refers to the recommended area around each retained tree that should be protected from disturbance "in order to avoid (unacceptable) damage to the roots or rooting environment" (as a result of root severance, damage, compaction or pollution of the soil). The Tree Protection Zone (TPZ) is the radial offset distance of twelve times the trunk diameter. It is generally regarded that a tree may sustain a loss of up to 10% of its TPZ, without causing significant future health implications.

² 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 area within this radial distance from trunk centre is the SRZ and disturbance to roots within this area may cause tree instability



would have no detrimental impact to Tree 6 if the excavation occurred up to the 5.1m from the tree. Consideration should be given to the significant canopy pruning that will be required to accommodate the building. Based on observations on site, the current structure of the canopy will cope with pruning quite well and the overall amenity of the tree will not be diminished.

4. CONCLUSIONS AND RECOMMENDATIONS

4.1 **Summary:** Based on the recent findings, I summarise the following:

- Under the current layout Tree 3 can be retained if appropriate protective measures are properly specified and controlled through a detailed arboricultural method statement. The amphitheatre excavations have been relocated outside the SRZ to ensure its stability. The incursion to the TPZ of this tree is 13%.
- Under the current layout Tree 4 can be retained however a 30% incursion to its TPZ may result in adverse effects. The amphitheatre excavations have been relocated outside the SRZ to ensure its stability.
- Tree 5 will be directly impacted and will require complete removal.
- Under the current layout Tree 6 will require removal to accommodate the new building, scaffolding and build zone. The roots of this tree will remain unaffected however the extensive pruning of its canopy will very likely result in the demise of the tree.



5. OTHER CONSIDERATIONS

- 5.1 **Trees subject to statutory controls:** The subject trees are legally protected under Woollahra Municipal Council's Tree Preservation Order, it will be necessary to consult the council before any pruning or removal 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.

6. BIBLIOGRAPHY

6.1 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.

Matheny, N. Clark, R (1999) Arboriculture
Prentice-Hall, Inc. New Jersey 07458



7. DISCLAIMER

7.1 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, 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



Andrew Scales
Arboriculture Australia #2136
Dip. Horticulture / Arboriculture
Mobile: 0417 250 420



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

4. Current professional memberships:

Arboriculture Australia – (Registered Consulting Arborist #2136)



APPENDIX 2

Tree schedule

Tree No	Genus species Common Name	Height (m)	Spread (m)	DBH (mm)	Age Class	Foliage cover	Significance	Located on Property	Observations and comments
3	<i>Ficus microcarpa</i> var. <i>hillii</i> Hills Weeping Fig	14	20	900	M	80%	H	Yes	Co-dominant trunk
4	<i>Ficus microcarpa</i> var. <i>hillii</i> Hills Weeping Fig	14	20	900	M	80%	H	Yes	Co-dominant trunk
5	<i>Ficus microcarpa</i> var. <i>hillii</i> Hills Weeping Fig	14	20	1100	M	80%	H	Yes	Co-dominant trunk
6	<i>Ficus microcarpa</i> var. <i>hillii</i> Hills Weeping Fig	14	20	900	M	80%	H	Yes	Co-dominant trunk

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 1.2m 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)
- **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
Photo log



Fig 1, 2 and 3: Trench 1 and the exposed woody roots near Trees 3, 4 and 5.

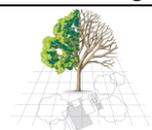


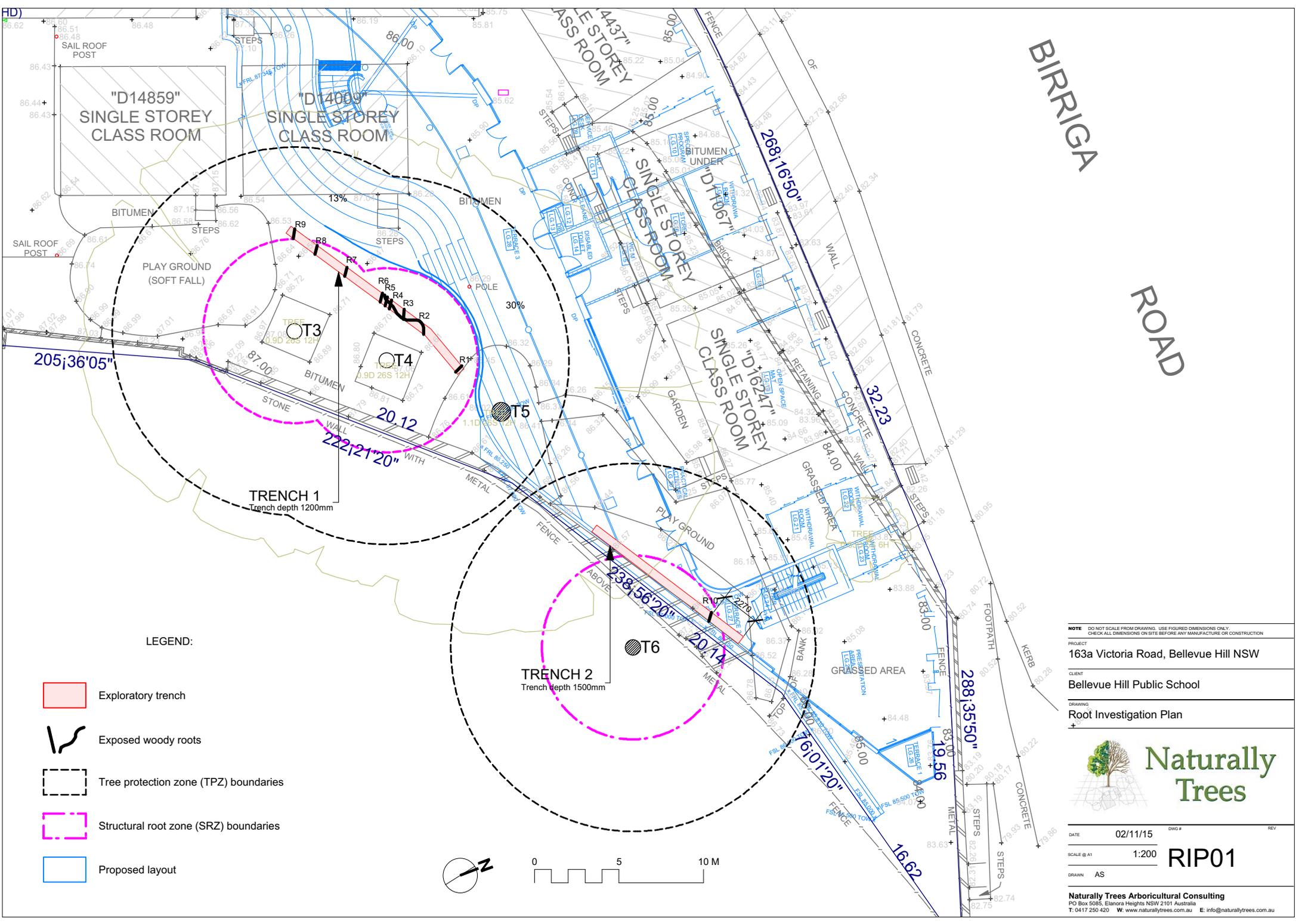
Fig 4 and 5: Trench 2 near the existing retaining wall and Tree 6.

APPENDIX 4

Root investigation plan

-refer attached Root Investigation Plan, Dwg No. RIP01,
by Naturally Trees dated 2 November 2015





BIRRIGA ROAD

LEGEND:

- Exploratory trench
- Exposed woody roots
- Tree protection zone (TPZ) boundaries
- Structural root zone (SRZ) boundaries
- Proposed layout



NOTE DO NOT SCALE FROM DRAWING. USE FIGURED DIMENSIONS ONLY.
CHECK ALL DIMENSIONS ON SITE BEFORE ANY MANUFACTURE OR CONSTRUCTION

PROJECT
163a Victoria Road, Bellevue Hill NSW

CLIENT
Bellevue Hill Public School

DRAWING
Root Investigation Plan



DATE	02/11/15	DWG #		REV	
SCALE @ A1	1:200	RIP01			
DRAWN	AS				

Naturally Trees Arboricultural Consulting
PO Box 5085, Elanora Heights NSW 2101 Australia
T: 0417 250 420 W: www.naturallytrees.com.au E: info@naturallytrees.com.au