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ARBORICULTURE
PLANT PATHOLOGY

ARBORICULTURAL IMPACT ASSESSMENT
&
TREE PROTECTION SPECIFICATION

REF: L&Co181927 | 05 February 2019 | V1
SITE ADDRESS | 1-2 Murray Rose Avenue, Sydney Olympic Park
PREPARED FOR | Austino Property Group
PREPARED BY | Dr Matthew Laurence

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1.0 EXECUTIVE SUMMARY |

1.1 The proposal, outlined in the supplied plans, show the construction of two residential tower blocks, with associated landscaping, on two vacant blocks located at 1-2 Murray Rose Avenue, Sydney Olympic Park. The proposed development is under the State Significant Development number SSD9403.

1.2 A total of sixty-eight (68) trees were assessed that were a mix of Australian native and exotic species. Twenty-two (22) trees were located within the two sites and the remaining forty-six (46) trees and group trees were located on the adjacent property.

1.3 All trees located on the two sites were either within the proposed building footprint or associated landscaping and will need to be removed to accommodate the development.

1.4 A total of eighteen (18) trees and group trees located on the adjacent property will need to be removed to accommodate the proposed deep soil landscaping.

1.5 All tree removals will require permission from the relevant Consent Authority.

1.6 The remaining twenty-eight (28) trees located on the adjacent property had either no major works proposed within their Tree Protection Zones (TPZ) or only *Minor Encroachment*s (as defined by AS4970). However, due to demolition and construction occurring within close proximity to their TPZs, the tree protection fencing specified in this report should be used to minimise indirect impacts for the duration of the demolition & construction process.

1.7 The installation of underground services should be located outside of the TPZs detailed in this report. Where this is not possible, they should be installed around or below roots (>25mm∅) using either hydrovac or hand excavation and supervised by the Project Arborist.

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2.0 INTRODUCTION |

2.1 Background

2.1.1 This Arboricultural Impact Assessment and Tree Protection Specification Report was prepared for Austino Property Group in relation to the proposed development of 1-2 Murray Rose Avenue, Sydney Olympic Park. This report has determined the impact of the proposed works on the trees at 1-2 Murray Rose Avenue, Sydney Olympic Park and neighbouring properties and where appropriate has provided tree sensitive construction methods to minimise negative impacts to the trees. The subject trees were part of a Preliminary Arboricultural Report (*Laurence & Co Consultancy* Ref. L&CO161712) and a State Significant Development (SSD9403).

2.1.2 In preparing this report, the author is aware of and has considered the objectives of the Sydney Olympic Park Authority (SOPA), Cumberland Council's *Development Control Plan (2010), Australian Standard 4970 Protection of Trees on Development Sites (2009)*, *Australian Standard 2303 Tree Stock for Landscape Use (2015)* and *Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016).*

2.1.3 Further methodology used in the preparation of this report is detailed in Appendix 1.

2.1.4 This Arboricultural Impact Assessment was based on an assessment of the following supplied documentation/plans only (Appendix 3):

- *Detail Survey Over Lots 1 & 2 D.P.1185060 Murray Rose Avenue, Sydney Olympic Park.* Reference 258-14. Prepared by Craig & Rhodes. Dated 27.01.2015.
- *'Antara' Residential Development Application.* Project PA015288.01. Prepared by PTW Architects. Dated 31.10.2018.
- *1-2 Murray Rose Avenue Landscape Submission.* Reference 139569-1. Prepared by RPS Group. Dated 30.10.2018.
- *Request for Comments-Residential Development at 1 & 2 Murray Rose Avenue, Sydney Olympic Park (SSD9403).* Letter from Sydney Olympic Park Authority (SOPA).
- *Exhibition of Residential Development- 1 & 2 Murray Rose Avenue, Sydney Olympic Park (SSD9403).* Letter from the Office of Environment and Heritage. Reference DOC18/890252. Written by Mr Cameron Sargent.

2.2 The Proposal

2.2.1 The supplied plans show the construction of two residential tower blocks over two vacant blocks with associated landscaping.

3.0 RESULTS |

3.1 The Site

3.1.1 The vacant sites, Lots 1 & 2 (D.P.1185060) are approximately square shaped with areas stated in the DP as 3931m^2 and 2522m^2, respectively.

3.1.2 The sites are situated within the Sydney Olympic Park Authority and bound between Parkview Drive to the South, Bennelong Parkway to the North and transected by Murray Rose Avenue.

3.2 The Trees

3.2.1 A Visual Tree Assessment (VTA) (Mattheck & Breloer, 2003) has been undertaken on trees growing within the site to determine their health and structural condition (Appendix 2). A full VTA trees located outside of the site boundaries was undertaken were possible due to limited access. The species and trunk diameter were recorded for the purposes of determining Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) calculations only. The distance of the tree from the site boundary is an approximation due to limited access.

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3.2.2 The Australian Standard 4970 Protection of Trees on Development Sites (2009) Clause 2.3.2 requires the allocation of a Tree Retention Value. This value is based on the Useful Life Expectancy (ULE) and Landscape Significance, which considers the tree's health, structural condition and site suitability. The Retention Value does not consider any proposed development works and is not a schedule for tree retention or removal. The trees have been allocated one of the following Retention Values:

- Priority for Retention
- *Consider for Retention*
- *Consider for Removal*
- *Priority for Removal*

3.2.3 The Australian Standard 4970 Protection of Trees on Development Sites (2009) also requires the calculation of the Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) for each tree (Appendix 1).

3.2.4 A total of sixty-eight (68) trees and group trees were assessed which were a mix of Australian native and exotic species.

3.2.5 All trees are covered by the Council's Tree Management Controls.

3.2.6 Twenty-two (22) trees were located within the two sites and the remaining forty-six (46) trees and group trees were located on the adjacent properties.

3.2.7 Tree A from the previous Preliminary Arboricultural Report (*Laurence & Co Consultancy* Ref. L&CO161712) had been removed as part of development on the adjacent property.

3.2.8 A search of the BioNet Atlas of NSW Wildlife Database was undertaken on January 2019. No individual threatened tree species that were listed within this database for the area were identified during the current field investigations of the site. The ecological significance and habitat value of the trees has not been assessed and is beyond the scope of this report.

4.0 ARBORICULTURAL IMPACT ASSESSMENT |

4.1 Trees 1 & 2

4.1.1 Trees 1 & 2 were identified as *Eucalyptus melliodora* (Yellow Box) and were allocated Low Landscape Significance Values and Retention Values of *Consider for Removal*.

4.1.2 The supplied plans show that Trees 1 & 2 are within the proposed building footprint and will need to be removed to accommodate the development.

4.2 Trees 3,4,9,11,14,15 and 16

4.2.1 Trees 3,4,9,11,14,15 and 16 were identified as *Corymbia eximia* (Yellow Blood-Wood) and were allocated Low to Moderate Landscape Significance Values and Retention Values of *Consider for Retention* and *Priority for Removal*.

4.2.2 The supplied plans show that Trees 3,4,9,11,14,15 and 16 are within the proposed building footprint and will need to be removed to accommodate the development.

4.3 Trees 8 and 17

4.3.1 Trees 8 and 17 were identified as *Corymbia eximia* (Yellow Blood-Wood) and were allocated Low Landscape Significance Values and Retention Values of *Consider for Removal* and *Priority for Removal*, respectively.

4.3.2 The supplied plans show the proposed landscape works are within the SRZs of Trees 8 and 17. Works within the SRZ represent a *Major Encroachment* as defined by AS4970, as root severance within the SRZ can lead to the destabilisation of the tree. Trees 8 and 17 will need to be removed to accommodate the proposed landscaping.

4.3.3 Tree 17 was allocated a poor structural rating due to the presence of major co-dominant inclusions, which are likely to represent points of structural weakness. The proposed replacement planting would replace the loss of amenity within a short to medium timeframe.

4.4 Tree group 5

4.4.1 Tree group 5 was identified as *Elaeocarpus reticulatus* (Blueberry Ash) and was allocated a Moderate Landscape Significance Value and a Retention Value of *Consider for Retention*.

4.4.2 The supplied plans show that Tree group 5 is within the proposed building footprint and will need to be removed to accommodate the development.

4.5 Trees 6 and 7

4.5.1 Trees 6 and 7 were identified as *Ulmus parvifolia* (Chinese Weeping Elm) and were allocated Low Landscape Significance Values and Retention Values of *Consider for Removal*.

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4.5.2 The supplied plans show that Trees 6 and 7 are within the proposed building footprint and will need to be removed to accommodate the development.

4.5.3 Given their small size, the proposed replacement planting would replace the loss of amenity within a short to medium timeframe.

4.6 **Trees 10,12,13,18,20,21 & 22**

4.6.1 Trees 10,12,13,18,20,21 & 22 were identified as *Eucalyptus robusta* (Swamp Mahogany) and were allocated Low to Moderate Landscape Significance Values and Retention Values of *Consider for Removal*.

4.6.2 The supplied plans show that Trees 10,12,13,18,20,21 & 22 are within the proposed building footprint and will need to be removed to accommodate the development.

4.7 **Tree 19**

4.7.1 Tree 19 was identified as *Eucalyptus robusta* (Swamp Mahogany) and was allocated a Low Landscape Significance Value and a Retention Value of *Consider for Removal*.

4.7.2 The supplied plans show the proposed landscaping works are within the SRZ of Tree 19. Works within the SRZ represent a *Major Encroachment* as defined by AS4970, as root severance within the SRZ can lead to the destabilisation of the tree.

4.7.3 Tree 19 will need to be removed to accommodate the proposed landscaping.

4.8 **Trees AM,AP,AQ,AR and Tree group AL**

4.8.1 Trees AM,AP,AQ, AR and Tree group AL were identified as *Casuarina glauca* (Swamp She-oak) and were allocated Low to Moderate Landscape Significance Values and Retention Values of *Consider for Removal* and *Consider for Retention*.

4.8.2 The supplied plans show no works are proposed within the TPZ of Trees AM,AP,AQ, AR and Tree group AL. However, TPZ fencing on the boundary of the site to avoid indirect impacts and especially if the area is used for demolition & construction access.

4.8.3 Refer to the Tree Protection Specification for specific details (Appendices 6 & 8).

4.9 **Tree group B and Tree C**

4.9.1 Tree group B and Tree C were identified as *Casuarina glauca* (Swamp She-oak) and were allocated Low to Moderate Landscape Significance Values and Retention Values of *Consider for Removal* and *Consider for Retention*, respectively.

4.9.2 The supplied plans show the proposed deep soil landscaping within the SRZ of Tree group B and Tree C. Works within the SRZ represent a *Major Encroachment* as defined by AS4970 as root severance within the SRZ can lead to the destabilisation of the tree.

4.9.3 The ongoing viability of the trees is not possible under the proposal and the trees will need to be removed to accommodate the deep soil landscaping.

4.10 **Trees AD,AH,AI,AJ,AK and Tree groups AA, AC, AS and AT**

4.10.1 Trees AD,AH,AI,AJ,AK and Tree groups AA and AC, AS and AT were identified as *Eucalyptus* sp. (Gum tree) and were allocated Low Landscape Significance Values and Retention Values of *Priority for Removal* and *Consider for Removal*. Species level identification was not possible due to the young age class and absence of fruiting structures.

4.10.2 The supplied plans show no works are proposed within the TPZ of Trees AD,AH,AI,AJ,AK and Tree groups AA and AC, AS and AT. However, installation of TPZ fencing on the boundary of the site to avoid indirect impacts is advised, especially if the area is used for demolition & construction access

4.10.3 Refer to the Tree Protection Specification for specific details (Appendices 6 & 8).

4.11 **Trees D,E,L,M,N,O,Q and Z**

4.11.1 Trees D,E,L,M,N,O,Q and Z were identified as *Eucalyptus* sp. (Gum tree) and were allocated Low Landscape Significance Values and Retention Values of *Priority for Removal* and *Consider for Removal*. Species level identification was not possible due to the young age class and absence of fruiting structures.

4.11.2 The supplied plans show the proposed deep soil landscaping within the SRZ of Trees D,E,L,M,N,O,Q and Z. Works within the SRZ represent a *Major Encroachment* as defined by AS4970 as root severance within the SRZ can lead to the destabilisation of the tree.

4.11.3 The ongoing viability of the trees is not possible under the proposal and the trees will need to be removed to accommodate the deep soil landscaping.

4.12 **Trees G,I,S,T,W,Y,AE,AF,AG,AN and AO**

4.12.1 Trees G,I,S,T,W,Y,AE,AF,AG,AN and AO were identified as *Corymbia maculata* (Spotted Gum) and were allocated Low to Moderate Landscape Significance Values and Retention Values of *Consider for Retention* and *Priority for Removal*.

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4.12.2 The supplied plans show no works are proposed within the TPZ of Trees G,I,S,T,W,Y,AE,AF,AG,AN and AO. However, installation of TPZ fencing on the boundary of the site to avoid indirect impacts is advised, especially if the area is used for demolition & construction access.

4.12.3 Refer to the Tree Protection Specification for specific details (Appendices 6 & 8).

4.13 **Tree K**

4.13.1 Tree K was identified as a *Corymbia maculata* (Spotted Gum) and was allocated a Moderate Landscape Significance Value and a Retention Value of *Consider for Retention*.

4.13.2 The supplied plans show that the proposed development is within the TPZ of Tree K. The TPZ encroachment is approximately 7.4% and represents a *Minor Encroachment* as defined by AS-4970. A Minor Encroachment is considered acceptable by the standard when it is compensated for elsewhere and contiguous within the TPZ.

4.13.3 TPZ fencing on the boundary of the site is recommended to avoid further encroachment into the TPZ of Tree K, especially if the area is used for demolition & construction access.

4.13.4 Refer to the Tree Protection Specification for specific details (Appendices 6 & 8).

4.14 **Trees F,H,J,P,R,U,V and X**

4.14.1 Trees F,H,J,P,R,U,V and X were identified as *Corymbia maculata* (Spotted Gum) and were allocated Low to Moderate Landscape Significance Values and Retention Values of *Consider for Retention*.

4.14.2 The supplied plans show the proposed deep soil landscaping within the SRZ of Trees F,H,J,P,R,U,V and X. Works within the SRZ represent a *Major Encroachment* as defined by AS4970 as root severance within the SRZ can lead to the destabilisation of the tree.

4.14.3 The ongoing viability of the trees is not possible under the proposal and the trees will need to be removed to accommodate the deep soil landscaping.

4.15 **Tree AB**

4.15.1 Tree AB was identified as a *Eucalyptus sideroxylon* (Mugga Ironbark) and was allocated a Low Landscape Significance Value and a Retention Value of *Consider for Removal*.

4.15.2 The supplied plans show no works are proposed within the TPZ of Tree AB. However, TPZ fencing on the boundary of the site is recommended to avoid further encroachment into the TPZ of Tree K, especially if the area is used for demolition & construction access.

4.15.3 Refer to the Tree Protection Specification for specific details (Appendices 6 & 8).

4.16 **Pruning & Replacement Planting**

4.16.1 Pruning works should be carried out by a practising Arborist. The practising Arborist should hold a minimum qualification equivalent (using Australian Qualifications Framework) of Level 3 or above in Arboriculture or its recognised equivalent. The practising Arborist should have a minimum of 3 years of practical experience. Pruning works should be undertake in accordance with the Australian Standard 4373: Pruning of Amenity Trees (2007), Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016) and other applicable Legislation and Codes.

4.16.2 Replacement tree planting should be provided when trees are removed. Replacement trees should be supplied as advanced-size stock to help offset the loss of amenity resultant from the tree removals.

4.16.3 Replacement planting should be supplied in accordance with Australian Standard 2303 (2015) *Tree Stock for Landscape Use*.

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5.0 REFERENCES |

Mattheck & Breloer (2003), *The Body Language of Trees – A Handbook for Failure Analysis*.

NSW Office of Environment and Heritage's Atlas of NSW Wildlife (2011), *BioNet Atlas of NSW Wildlife*.

Standards Australia (2009), Protection of Trees on Development Sites AS-4970.

Standards Australia (2007), Pruning of Amenity Trees AS-4373.

Standards Australia (2015) Tree Stock for Landscape Use AS-2303.

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6.0 APPENDIX 1 | METHODOLOGY

6.1 This report was based on data from site inspections conducted on the 11.03.2017 & 17.01.2019. The recommendations in this report are based on and limited to observations from these site inspections.

6.2 The subject tree(s) was assessed using the Visual Tree Assessment methodology described in *The Body Language of Trees – A Handbook for Failure Analysis* (Mattheck et al., 2003). Subject trees were assessed from the ground only to provide an Arboricultural Impact Assessment and Tree Protection Specification Report. No internal diagnostic testing was undertaken as part of this assessment. Trees outside the subject site were assessed from the property boundaries only.

6.3 The dimensions of the subject tree(s) are approximate only.

6.4 The location of the subject tree(s) was determined from the location plan provided. Trees not shown on this plan have been plotted in their approximate location only.

6.5 Tree Protection Zones & Structural Root Zones for the subject tree(s) was based on methods outlined in Australian Standard 4970- Protection of Trees on Development Sites (2009).

6.6 The health of the subject tree(s) was determined by assessing:

- Foliage size and colour
- Pest and disease infestation
- Extension growth
- Crown density
- Deadwood size and volume
- Presence of epicormic growth

6.7 The structural condition of the subject tree(s) was assessed by:

- Visible evidence of structural defects or instability
- Evidence of previous pruning or physical damage

6.8 The Useful Life Expectancy (ULE) is used to estimate a tree's longevity in its growing environment. The ULE is based on a tree's species, health, structural condition and site suitability. The tree(s) has been allocated one of the following ULE categories (Modified from Barrell, 2001):

- 40 years +
- 15-40 years
- 5-15 years
- Less than 5 years

6.9 Landscape Significance is based on a qualitative assessment of a tree's cultural, environmental and aesthetic value. This provides a relative measure of a tree's Landscape Significance and can be used to determine its Retention Value. Trees are rated under the following categories:

- Very High
- High
- Moderate
- Low
- Insignificant

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LANDSCAPE SIGNIFICANCE	DESCRIPTION
VERY HIGH	The subject tree is listed as a Heritage Item under the Local Environmental Plan with a local or state level of significance.
	The subject tree is listed on Council's Significant Tree Register.
	The subject tree is a remnant tree.
HIGH	The subject tree creates a 'sense of place' or is considered 'landmark' tree.
	The subject tree is of local, cultural or historical importance or is widely known.
	The subject tree has been identified by a suitably qualified professional as a species scheduled as a Threatened or Vulnerable Species or forms part of an Endangered Ecological Community associated with the subject site, as defined under the provisions of the Threatened Species Conservation Act 1995 (NSW) or the Environmental Protection and Biodiversity Conservation Act 1999.
	The subject tree is known to provide habitat to a threatened species.
	The subject tree is an excellent representative of the species in terms of aesthetic value.
	The subject tree is of significant size, scale or makes a significant contribution to the canopy cover of the locality.
	The subject tree forms part of the curtilage of a heritage item with a known or documented association with that item.
MODERATE	The subject tree makes a positive contribution to the visual character or amenity of the area.
	The subject tree provides a specific function such as screening or minimising the scale of a building.
	The subject tree has a known habitat value.
	The subject tree is a good representative of the species in terms of aesthetic value.
LOW	The subject tree is an environmental pest species or is exempt under the provisions of the local Council's Tree Management Controls.
	The subject tree makes little or no contribution to the amenity of the locality.
	The subject tree is a poor representative of the species in terms of aesthetic value.
INSIGNIFICANT	The subject tree is declared a Noxious Weed under the Noxious Weeds Act.

The above table was provided by Anna Hopwood of TreeIQ™ and was modified from the Earthscape Criteria for Assessment of Landscape Significance.

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6.10 Retention Value is based on a tree's ULE and Landscape Significance. The subject tree(s) has been allocated one of the following Retention Values:

- Priority for Retention
- *Consider for Retention*
- *Consider for Removal*
- *Priority for Removal*

<table>
<tr><th>ULE</th><th colspan="5">LANDSCAPE SIGNIFICANCE</th></tr>
<tr><td></td><td>VERY HIGH</td><td>HIGH</td><td>MODERATE</td><td>LOW</td><td>INSIGNIFICANT</td></tr>
<tr><td>40 years +</td><td rowspan="2">Priority for Retention</td><td colspan="2">Priority for Retention</td><td rowspan="3">Consider for Removal</td><td rowspan="3">Priority for Removal</td></tr>
<tr><td>15-40 years</td><td>Priority for Retention</td><td>Consider for Retention</td></tr>
<tr><td>5-15 years</td><td colspan="3">Consider for Retention</td></tr>
<tr><td>Less than 5 years</td><td>Consider for Removal</td><td colspan="4">Priority for Removal</td></tr>
</table>

The above table was provided by Anna Hopwood of TreeIQ™

6.11 The Tree Protection Zone (TPZ) is the area above and below ground required to preserve the vigour and long-term viability of the tree. The TPZ is based on scientific research and is generally considered by the arboricultural industry as the area required to provide adequate tree protection during construction. The TPZ is the primary means of protecting trees on development sites (Australian Standard 4970 Protection of Trees on Development Sites 2009).

6.12 Works within the TPZ should be avoided. However, Minor Encroachments, defined in AS4970 as less than 10% of the TPZ area, are considered acceptable when it is compensated for elsewhere and contiguous within the TPZ. A Major Encroachment, defined in AS4970 as greater than 10% of the TPZ area or within the Structural Root Zone (SRZ), may require root investigations by non-destructive methods and tree sensitive construction methods.

6.13 The TPZ is the area within a circle that is centred on the trunk. The radius of the TPZ is calculated by the following formula:

$$TPZ = DBH \times 12$$

where

DBH= Diameter at Breast Height (1.4m)

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6.14 The SRZ is the minimum area around the base of the tree required for the tree's stability. The SRZ only relates to tree stability and not the vigour and long-term viability of the tree.

6.15 The SRZ is the area within a circle that is centred on the trunk. The radius of the SRZ is calculated by the following formula:

$$SRZ = (Dx50)^{0.42} \times 0.64$$

where

D= Trunk diameter (m) above the root buttress

6.16 Encroachment into SRZ (i.e. severance of structural roots >25mmØ) may lead to the destabilisation of the tree and the long-term viability must be demonstrated in such cases. This may require root investigations by non-destructive methods.

6.17 For further details on the TPZ and SRZ please refer to Australian Standard 4970 Protection of Trees on Development Sites (2009).

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7.0 APPENDIX 2 | TREE ASSESSMENT SCHEDULE

Tree No.	Species	Height (m)	Radial Crown Spread (m)	DBH comb. (mm)	Radial TPZ (m)	TPZ Area (m^2)	TPZ Encroachment (%)	Radial SRZ (m)	Health Rating	Structural Rating	Age Class	ULE (years)	L/Sign	Retention Value	COMMENTS
1	*Eucalyptus melliodora (Yellow Box)*	10	7	320	4	46	Within Development Footprint	2.1	Good	Good	Semi-mature	5-15	Low	*Consider for Removal*	Crown density 75-95%. Small (<25mmø) & medium (25-75mmø) deadwood in moderate volumes. Small (<25mmø) & medium (25-75mmø) epicormic growth in moderate volumes. Partially suppressed.
2	*Eucalyptus melliodora (Yellow Box)*	10	7	391	5	69	Within Development Footprint	2.2	Good	Good	Mature	5-15	Low	*Consider for Removal*	Small (<25mmø) deadwood in moderate volumes. Small (<25mmø) epicormic growth in high volumes. Partially suppressed.
3	*Corymbia eximia* (Yellow Blood-Wood)	8	2	200	2	18	Within Development Footprint	1.7	Good	Fair	Young	5-15	Low	*Consider for Removal*	Co-dominant inclusions, major. Grade alteration, fill.
4	*Corymbia eximia* (Yellow Blood-Wood)	12	7	300	4	41	Within Development Footprint	2.0	Good	Good	Semi-mature	15-40	Moderate	*Consider for Retention*	Medium (25-75mmø) & large (>75mmø) deadwood in low volumes. Wound(s), no visible sign of decay. Grade alteration, fill.
5	*Elaeocarpus reticulatus* (Blueberry Ash)	5	2	112	2	13	Within Development Footprint	1.5	Good	Good	Young	5-15	Moderate	*Consider for Retention*	Group of 5 trees.
6	*Ulmus parvifolia* (Chinese Weeping Elm)	4	4	100	2	13	Within Development Footprint	1.5	Fair	Fair	Young	5-15	Low	*Consider for Removal*	
7	*Ulmus parvifolia* (Chinese Weeping Elm)	6	4	100	2	13	Within Development Footprint	1.5	Good	Good	Young	5-15	Low	*Consider for Removal*	
8	*Corymbia eximia* (Yellow Blood-Wood)	11	5	250	3	28	Within Development Footprint	1.8	Good	Fair	Young	5-15	Low	*Consider for Removal*	

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Tree No.	Species	Height (m)	Radial Crown Spread (m)	DBH comb. (mm)	Radial TPZ (m)	TPZ Area (m^2)	TPZ Encroachment (%)	Radial SRZ (m)	Health Rating	Structural Rating	Age Class	ULE (years)	L/Sign	Retention Value	COMMENTS
9	*Corymbia eximia* (Yellow Blood-Wood)	10	2	200	2	18	Within Development Footprint	1.7	Poor	Fair	Young	<5	Low	*Priority for Removal*	Crown density 50-75%. Small (<25mmø) & medium (25-75mmø) deadwood in moderate volumes. Heavily suppressed. Wound(s), no visible sign of decay.
10	*Eucalyptus robusta* (Swamp Mahogany)	8	5	350	4	55	Within Development Footprint	2.1	Good	Good	Semi-mature	5-15	Low	*Consider for Removal*	Small (<25mmø), medium (25-75mmø) & large (>75mmø) deadwood in low volumes. Small (<25mmø) & medium (25-75mmø) epicormic growth in high volumes. Partially suppressed. Previous branch failure(s).
11	*Corymbia eximia* (Yellow Blood-Wood)	12	5	300	4	41	Within Development Footprint	2.0	Good	Good	Semi-mature	15-40	Moderate	*Consider for Retention*	Small (<25mmø) deadwood in low volumes. Partially suppressed.
12	*Eucalyptus robusta* (Swamp Mahogany)	8	5	250	3	28	Within Development Footprint	1.8	Fair	Poor	Semi-mature	5-15	Moderate	*Consider for Retention*	Small (<25mmø) deadwood in low volumes. Small (<25mmø) & medium (25-75mmø) epicormic growth in moderate volumes. Heavily suppressed. Co-dominant inclusions, major. Adaptive growth.
13	*Eucalyptus robusta* (Swamp Mahogany)	6	6	250	3	28	Within Development Footprint	1.8	Fair	Good	Semi-mature	5-15	Moderate	*Consider for Retention*	Small (<25mmø) deadwood in low volumes. Small (<25mmø) & medium (25-75mmø) epicormic growth in moderate volumes. Heavily suppressed.
14	*Corymbia eximia* (Yellow Blood-Wood)	11	6	361	4	59	Within Development Footprint	2.2	Fair	Poor	Semi-mature	5-15	Moderate	*Consider for Retention*	Crown density 50-75%. Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Co-dominant inclusions, major. Bark inclusion(s), major. Poor form.
15	*Corymbia eximia* (Yellow Blood-Wood)	10	5	250	3	28	Within Development Footprint	1.8	Fair	Good	Semi-mature	<5	Moderate	*Priority for Removal*	Crown density 50-75%. Small (<25mmø) deadwood in low volumes. Heavily suppressed.

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Tree No.	Species	Height (m)	Radial Crown Spread (m)	DBH comb. (mm)	Radial TPZ (m)	TPZ Area (m^2)	TPZ Encroachment (%)	Radial SRZ (m)	Health Rating	Structural Rating	Age Class	ULE (years)	L/Sign	Retention Value	COMMENTS
16	*Corymbia eximia* (Yellow Blood-Wood)	10	6	283	3	36	Within Development Footprint	1.9	Fair	Poor	Semi-mature	5-15	Moderate	*Consider for Retention*	Partially suppressed. Co-dominant inclusions, major. Bark inclusion(s), major. Poor form.
17	*Corymbia eximia* (Yellow Blood-Wood)	7	4	224	3	23	Within Development Footprint	1.8	Fair	Poor	Young	<5	Low	*Priority for Removal*	Small (<25mmø) deadwood in moderate volumes. Small (<25mmø) epicormic growth in high volumes. Partially suppressed. Co-dominant inclusions, major. Bark inclusion(s), major. Poor form.
18	*Eucalyptus robusta* (Swamp Mahogany)	11	4	350	4	55	Within Development Footprint	2.1	Fair	Fair	Semi-mature	5-15	Low	*Consider for Removal*	Crown density 75-95%. Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Partially suppressed
19	*Eucalyptus robusta* (Swamp Mahogany)	11	6	400	5	72	Within Development Footprint	2.3	Fair	Good	Semi-mature	5-15	Low	*Consider for Removal*	Small (<25mmø) & medium (25-75mmø) deadwood in high volumes. Small (<25mmø) & medium (25-75mmø) epicormic growth in high volumes. Partially suppressed.
20	*Eucalyptus robusta* (Swamp Mahogany)	8	5	250	3	28	Within Development Footprint	1.8	Fair	Fair	Semi-mature	5-15	Low	*Consider for Removal*	Small (<25mmø) & medium (25-75mmø) deadwood in high volumes. Small (<25mmø) & medium (25-75mmø) epicormic growth in high volumes. Partially suppressed. Poor form.
21	*Eucalyptus robusta* (Swamp Mahogany)	9	4	250	3	28	Within Development Footprint	1.8	Fair	Poor	Semi-mature	5-15	Low	*Consider for Removal*	Small (<25mmø) & medium (25-75mmø) deadwood in high volumes. Small (<25mmø) & medium (25-75mmø) epicormic growth in high volumes. Partially suppressed. Co-dominant inclusions, major. Poor form.

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Tree No.	Species	Height (m)	Radial Crown Spread (m)	DBH comb. (mm)	Radial TPZ (m)	TPZ Area (m^2)	TPZ Encroachment (%)	Radial SRZ (m)	Health Rating	Structural Rating	Age Class	ULE (years)	L/Sign	Retention Value	COMMENTS
22	*Eucalyptus robusta* (Swamp Mahogany)	10	7	300	4	41	Within Development Footprint	2.0	Fair	Good	Semi-mature	5-15	Low	*Consider for Removal*	Crown density 50-75%. Small (<25mmø) & medium (25-75mmø) deadwood in moderate volumes. Small (<25mmø) & medium (25-75mmø) epicormic growth in high volumes. Storm damage.
A	*Eucalyptus sp.* (Gum tree)	10	6	400	5	72	No Encroachment	2.3						Removed	10m from site boundary.
B	*Casuarina glauca* (Swamp She-oak)	8	3	300	4	41	Within SRZ	2.0	Fair	Fair	Semi-mature	5-15	Low	*Consider for Removal*	Group of 27. Crown density 75-95%. Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Partially suppressed. Co-dominant inclusions, minor. Wound(s), early signs of decay. Structures within SRZ.
C	*Casuarina glauca* (Swamp She-oak)	10	4	475	6	102	Within SRZ	2.4	Good	Good	Mature	5-15	Moderate	*Consider for Retention*	Crown density 75-95%. Partially suppressed. Structures within SRZ.
D	*Eucalyptus sp.* (Gum tree)	7	2	125	2	13	Within SRZ	1.5	Poor	Fair	Young	<5	Low	*Priority for Removal*	Crown density 50-75%. Small (<25mmø) deadwood in moderate volumes. Partially suppressed. Wound(s), early signs of decay. Borer.
E	*Eucalyptus sp.* (Gum tree)	9	2	100	2	13	Within SRZ	1.5	Poor	Fair	Young	<5	Low	*Priority for Removal*	
F	*Corymbia maculata* (Spotted Gum)	12	5	225	3	23	Within SRZ	1.8	Good	Good	Semi-mature	15-40	Moderate	*Consider for Retention*	Partially suppressed.
G	*Corymbia maculata* (Spotted Gum)	10	3	200	2	18	No Encroachment	1.7	Good	Good	Semi-mature	15-40	Moderate	*Consider for Retention*	

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Tree No.	Species	Height (m)	Radial Crown Spread (m)	DBH comb. (mm)	Radial TPZ (m)	TPZ Area (m^2)	TPZ Encroachment (%)	Radial SRZ (m)	Health Rating	Structural Rating	Age Class	ULE (years)	L/Sign	Retention Value	COMMENTS
H	*Corymbia maculata* (Spotted Gum)	12	3	200	2	18	Within SRZ	1.7	Good	Good	Semi-mature	15-40	Moderate	*Consider for Retention*	Wound(s), early signs of decay.
I	*Corymbia maculata* (Spotted Gum)	7	2	75	2	13	No Encroachment	1.5	Fair	Good	Young	5-15	Low	*Consider for Removal*	Crown density 50-75%. Heavily suppressed.
J	*Corymbia maculata* (Spotted Gum)	8	3	150	2	13	Within SRZ	1.5	Good	Good	Semi-mature	15-40	Low	*Consider for Removal*	Partially suppressed.
K	*Corymbia maculata* (Spotted Gum)	12	4	300	4	41	7.4%	2.0	Good	Good	Mature	15-40	Moderate	*Consider for Retention*	Small (<25mmø) deadwood in low volumes.
L	*Eucalyptus sp.* (Gum tree)	8	2	75	2	13	Within SRZ	1.5	Fair	No access to base. No rating.	Young	5-15	Low	*Consider for Removal*	Crown density 50-75%. Partially suppressed.
M	*Eucalyptus sp.* (Gum tree)	6	1	100	2	13	Within SRZ	1.5	Fair	No access to base. No rating.	Young	5-15	Low	*Consider for Removal*	
N	*Eucalyptus sp.* (Gum tree)	6	1	100	2	13	Within SRZ	1.5	Fair	No access to base. No rating.	Young	5-15	Low	*Consider for Removal*	
O	*Eucalyptus sp.* (Gum tree)	6	1	100	2	13	Within SRZ	1.5	No access to base. No rating.	Young	5-15	Low	Low	*Consider for Removal*	
P	*Corymbia maculata* (Spotted Gum)	13	4	325	4	48	Within SRZ	2.1	Good	Good	Mature	15-40	Moderate	*Consider for Retention*	

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Tree No.	Species	Height (m)	Radial Crown Spread (m)	DBH comb. (mm)	Radial TPZ (m)	TPZ Area (m^2)	TPZ Encroachment (%)	Radial SRZ (m)	Health Rating	Structural Rating	Age Class	ULE (years)	L/Sign	Retention Value	COMMENTS
Q	*Eucalyptus sp.* (Gum tree)	10	4	275	3	34	Within SRZ	1.9	No access to base. No rating.	Young	5-15	Low	Low	*Consider for Removal*	
R	*Corymbia maculata* (Spotted Gum)	12	5	250	3	28	Within SRZ	1.8	Good	Good	Mature	15-40	Moderate	*Consider for Retention*	
S	*Corymbia maculata* (Spotted Gum)	11	2	200	2	18	No Encroachment	1.7	Good	Good	Mature	15-40	Moderate	*Consider for Retention*	
T	*Corymbia maculata* (Spotted Gum)	11	2	200	2	18	No Encroachment	1.7	Poor	Fair	Young	<5	Low	*Priority for Removal*	Crown density 25-50%. Wound(s), early signs of decay. Borer.
U	*Corymbia maculata* (Spotted Gum)	11	2	200	2	18	Within SRZ	1.7	Good	Good	Mature	15-40	Moderate	*Consider for Retention*	
V	*Corymbia maculata* (Spotted Gum)	11	2	200	2	18	Within SRZ	1.7	Good	Good	Mature	15-40	Moderate	*Consider for Retention*	
W	*Corymbia maculata* (Spotted Gum)	11	2	200	2	18	No Encroachment	1.7	Good	Good	Mature	15-40	Moderate	*Consider for Retention*	
X	*Corymbia maculata* (Spotted Gum)	11	2	200	2	18	Within SRZ	1.7	Good	Good	Mature	15-40	Moderate	*Consider for Retention*	
Y	*Corymbia maculata* (Spotted Gum)	11	2	200	2	18	No Encroachment	1.7	Good	Good	Mature	15-40	Moderate	*Consider for Retention*	

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Tree No.	Species	Height (m)	Radial Crown Spread (m)	DBH comb. (mm)	Radial TPZ (m)	TPZ Area (m^2)	TPZ Encroachment (%)	Radial SRZ (m)	Health Rating	Structural Rating	Age Class	ULE (years)	L/Sign	Retention Value	COMMENTS
Z	*Eucalyptus sp.* (Gum tree)	4	2	100	2	13	Within SRZ	1.5	Good	Good	Young	5-15	Low	*Consider for Removal*	
AA	*Eucalyptus sp.* (Gum tree)	4	2	50	2	13	No Encroachment	1.5	Good	Good	Young	5-15	Low	*Consider for Removal*	Group of 4 trees.
AB	*Eucalyptus sideroxylon* (Mugga Ironbark)	7	2	225	3	23	No Encroachment	1.8	Fair	No access to base. No rating.	Semi-mature	5-15	Low	*Consider for Removal*	Crown density 50-75%. Small (<25mmø) deadwood in moderate volumes.
AC	*Eucalyptus sp.* (Gum tree)	4	2	75	2	13	No Encroachment	1.5	Good	Good	Young	5-15	Low	*Consider for Removal*	Group of 2 trees. Partially suppressed.
AD	*Eucalyptus sp.* (Gum tree)	10	4	300	4	41	No Encroachment	2.0	Poor	Fair	Semi-mature	<5	Low	*Priority for Removal*	Crown density 25-50%. Small (<25mmø) & medium (25-75mmø) deadwood in high volumes. Small (<25mmø) epicormic growth in high volumes. Partially suppressed. Co-dominant inclusions, minor. Wound(s), early signs of decay.
AE	*Corymbia maculata* (Spotted Gum)	12	4	300	4	41	No Encroachment	2.0	Good	Good	Semi-mature	15-40	Moderate	*Consider for Retention*	Partially suppressed.
AF	*Corymbia maculata* (Spotted Gum)	12	4	300	4	41	No Encroachment	2.0	Good	Good	Semi-mature	15-40	Moderate	*Consider for Retention*	
AG	*Corymbia maculata* (Spotted Gum)	4	2	75	2	13	No Encroachment	1.5	Fair	Good	Young	5-15	Low	*Consider for Removal*	Crown density 50-75%. Small (<25mmø) & medium (25-75mmø) deadwood in moderate volumes. Partially suppressed.

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Tree No.	Species	Height (m)	Radial Crown Spread (m)	DBH comb. (mm)	Radial TPZ (m)	TPZ Area (m^2)	TPZ Encroachment (%)	Radial SRZ (m)	Health Rating	Structural Rating	Age Class	ULE (years)	L/Sign	Retention Value	COMMENTS
AH	*Eucalyptus sp.*	7	2	175	2	14	No Encroachment	1.6	Fair	Good	Young	5-15	Low	*Consider for Removal*	Crown density 50-75%. Small (<25mmø) deadwood in moderate volumes. Partially suppressed. Structures within SRZ.
AI	*Eucalyptus sp.* (Gum tree)	9	4	300	4	41	No Encroachment	2.0	Fair	No access to base. No rating.	Semi-mature	5-15	Low	*Consider for Removal*	Crown density 50-75%. Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Structures within SRZ.
AJ	*Eucalyptus sp.* (Gum tree)	8	3	150	2	13	No Encroachment	1.5	Poor	Good	Semi-mature	<5	Low	*Priority for Removal*	Crown density 25-50%. Small (<25mmø) & medium (25-75mmø) deadwood in high volumes. Partially suppressed. Structures within SRZ.
AK	*Eucalyptus sp.* (Gum tree)	6	4	150	2	13	No Encroachment	1.5	Good	Good	Semi-mature	5-15	Low	*Consider for Removal*	
AL	*Casuarina glauca* (Swamp She-oak)	9	4	250	3	28	No Encroachment	1.8	Good	Good	Mature	15-40	Moderate	*Consider for Retention*	Group of 12 trees. 100dbh to 200. Structures within SRZ.
AM	*Casuarina glauca* (Swamp She-oak)	7	2	175	2	14	No Encroachment	1.6	Fair	Good	Semi-mature	5-15	Low	*Consider for Removal*	Crown density 50-75%. Partially suppressed.
AN	*Corymbia maculata* (Spotted Gum)	11	5	350	4	55	No Encroachment	2.1	Good	Good	Mature	15-40	Moderate	*Consider for Retention*	Wound(s), early signs of decay. Structures within SRZ.
AO	*Corymbia maculata* (Spotted Gum)	11	5	300	4	41	No Encroachment	2.0	Good	Good	Mature	15-40	Moderate	*Consider for Retention*	
AP	*Casuarina glauca* (Swamp She-oak)	9	4	275	3	34	No Encroachment	1.9	Good	Good	Mature	15-40	Moderate	*Consider for Retention*	

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Tree No.	Species	Height (m)	Radial Crown Spread (m)	DBH comb. (mm)	Radial TPZ (m)	TPZ Area (m^2)	TPZ Encroachment (%)	Radial SRZ (m)	Health Rating	Structural Rating	Age Class	ULE (years)	L/Sign	Retention Value	COMMENTS
AQ	*Casuarina glauca* (Swamp She-oak)	9	4	200	2	18	No Encroachment	1.7	Good	Good	Mature	5-15	Low	*Consider for Removal*	Partially suppressed.
AR	*Casuarina glauca* (Swamp She-oak)	9	4	250	3	28	No Encroachment	1.8	Good	Good	Mature	5-15	Low	*Consider for Removal*	Partially suppressed.
AS	*Casuarina glauca* (Swamp She-oak)	7	3	150	2	13	No Encroachment	1.5	Good	Good	Semi-mature	5-15	Low	*Consider for Removal*	Group of 28 trees. Partially suppressed.
AT	*Eucalyptus sp.* (Gum tree)	4	2	50	2	13	No Encroachment	1.5	Good	Good	Young	5-15	Low	*Consider for Removal*	Group of 3 trees. Retaining wall separating trees from site.

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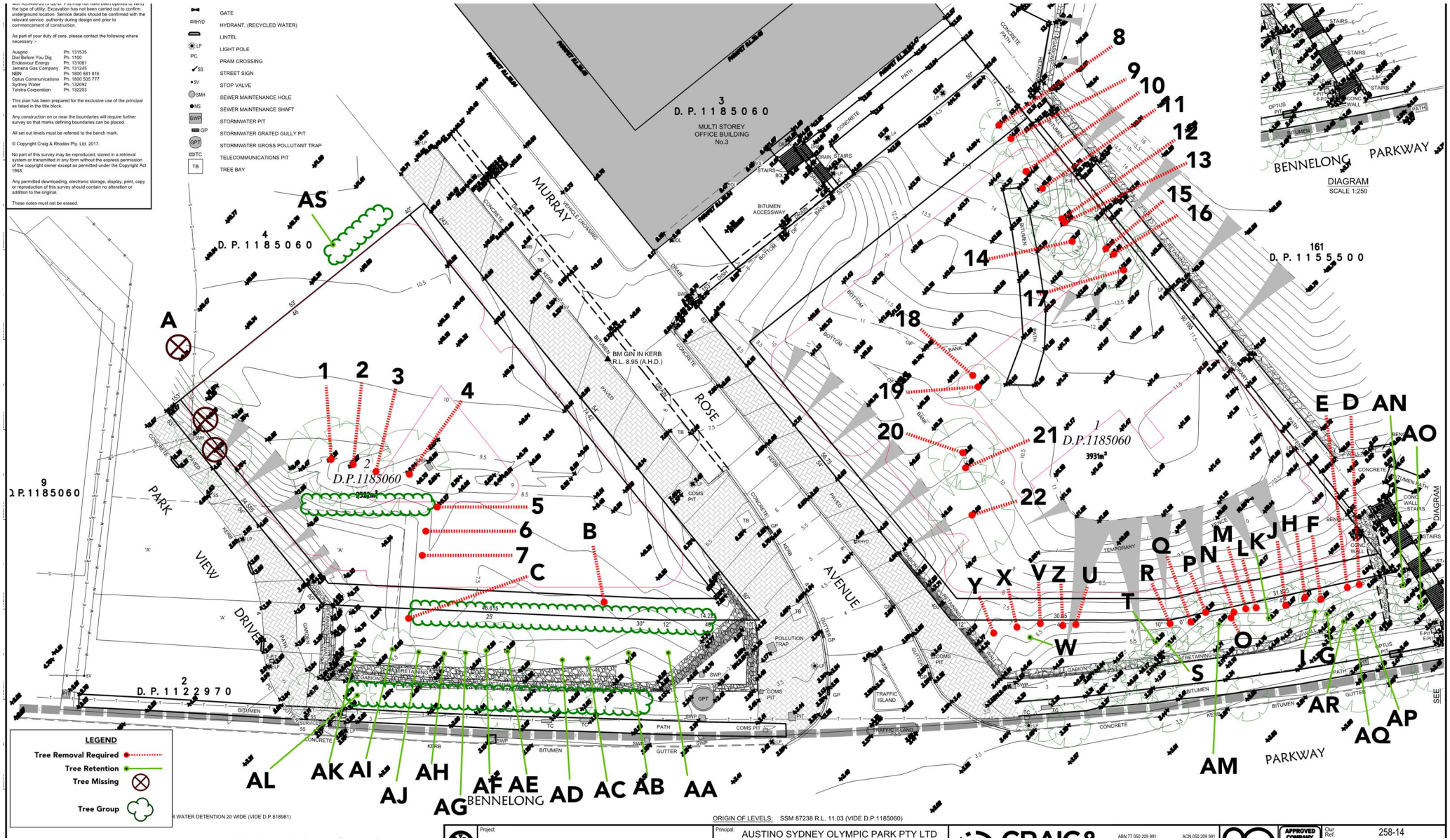
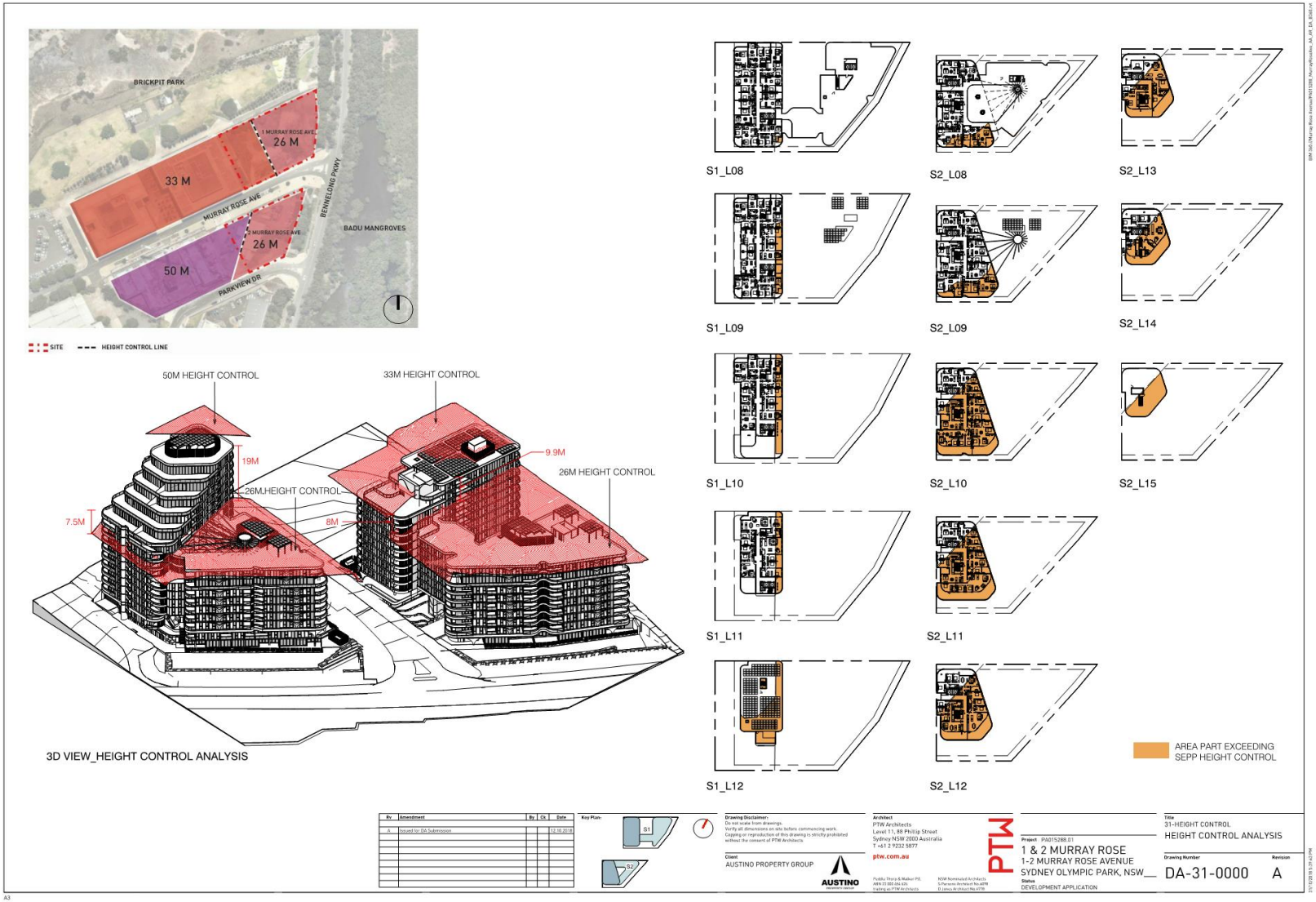
8.0 APPENDIX 3 | TREE LOCATION PLAN





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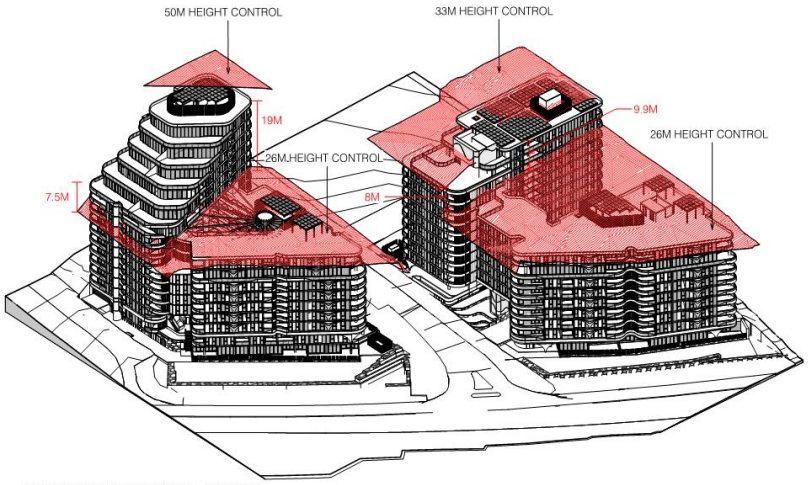
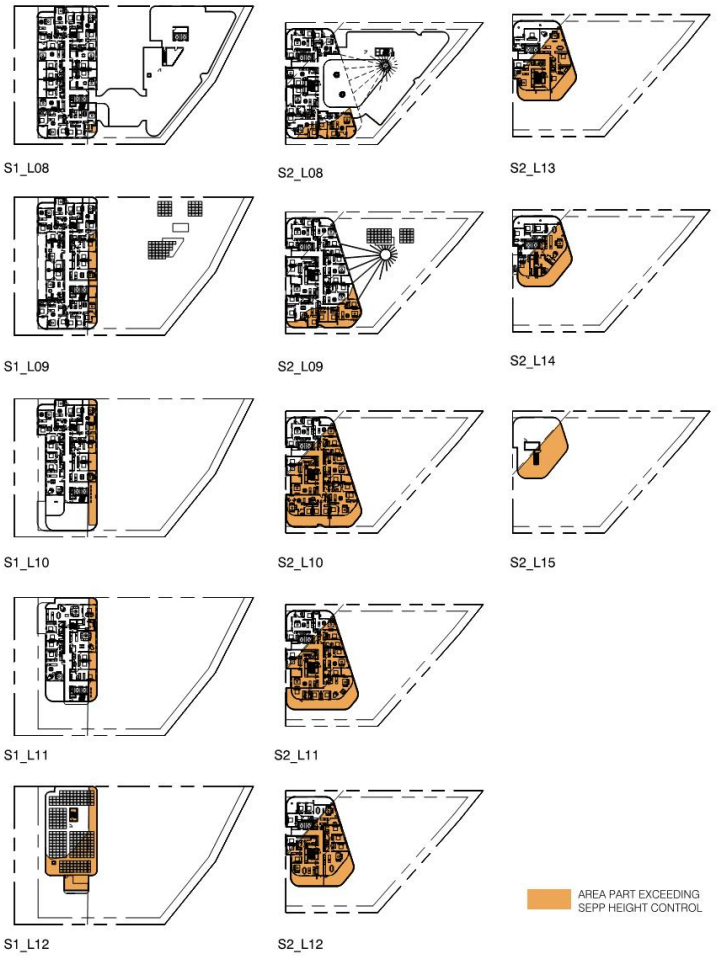
SITE — HEIGHT CONTROL LINE



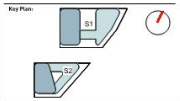
3D VIEW_HEIGHT CONTROL ANALYSIS



AREA PART EXCEEDING SEPP HEIGHT CONTROL

Rv	Amendment	By	Ck	Date
A	Issued for DA Submission			12.10.2018

Key Plan:



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Sj Parsons Architect No 6978
D Lenau Architect No 6778

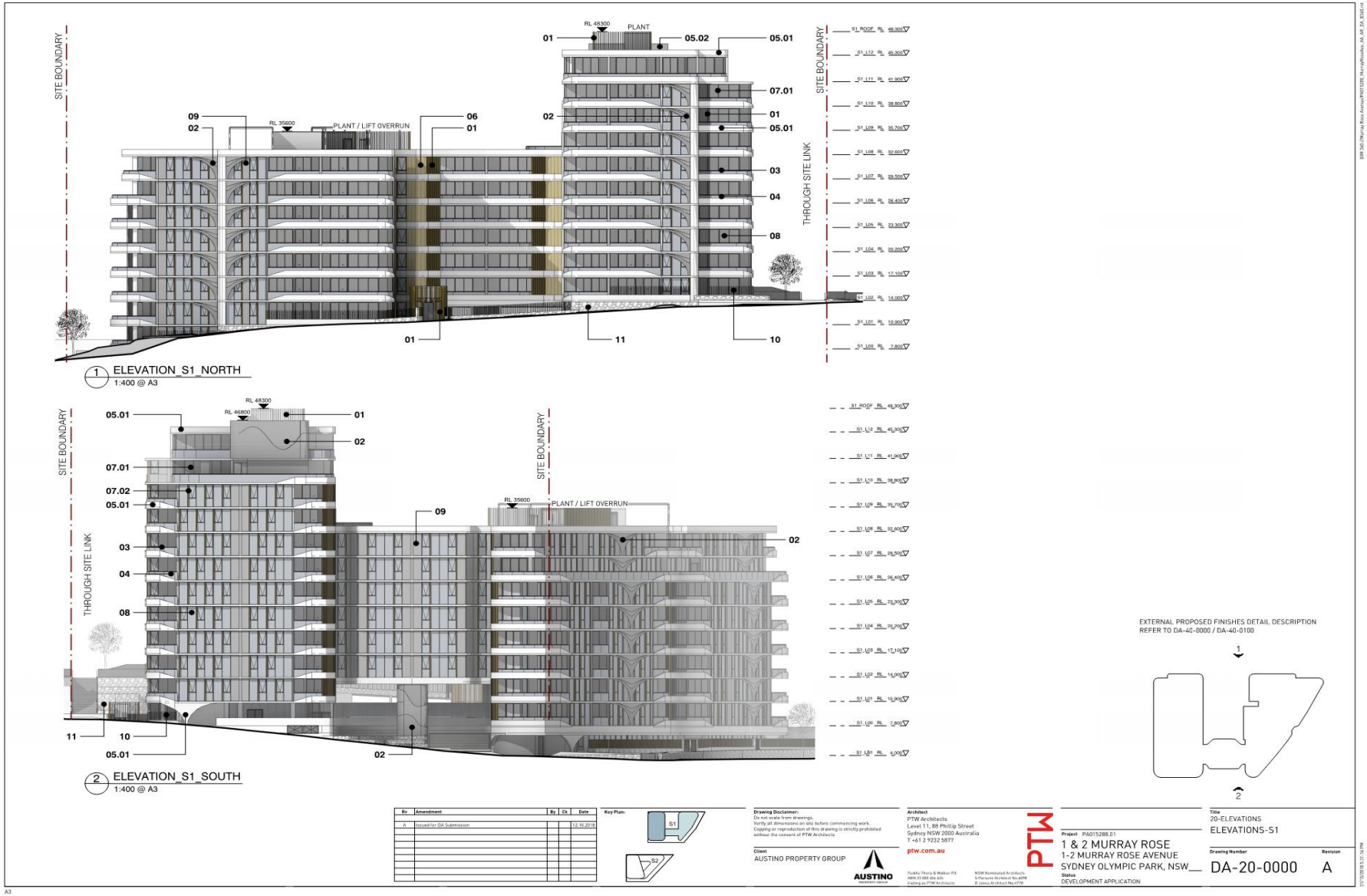
PTW

Project PA015288.01
1 & 2 MURRAY ROSE
1-2 MURRAY ROSE AVENUE
SYDNEY OLYMPIC PARK, NSW
Status
DEVELOPMENT APPLICATION

Title
31-HEIGHT CONTROL
HEIGHT CONTROL ANALYSIS

Drawing Number DA-31-0000
Revision A

A3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THROUGH SITE LINK
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PLANT
RL 35600
PLANT / LIFT OVERRUN
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02
03
04
05.01
05.02
06
07.01
08
09
10
11
S1_ROOF RL 48,300
S1_L12 RL 45,300
S1_L11 RL 41,900
S1_L10 RL 38,800
S1_L09 RL 35,700
S1_L08 RL 32,600
S1_L07 RL 29,500
S1_L06 RL 26,400
S1_L05 RL 23,300
S1_L04 RL 20,200
S1_L03 RL 17,100
S1_L02 RL 14,000
S1_L01 RL 10,900
S1_L00 RL 7,800
1 ELEVATION_S1_NORTH
1:400 @ A3
RL 46800
07.02
S1_LB1 RL 4,000
2 ELEVATION_S1_SOUTH
1:400 @ A3
EXTERNAL PROPOSED FINISHES DETAIL DESCRIPTION
REFER TO DA-40-0000 / DA-40-0100
Rv Amendment By Ck Date
A Issued for DA Submission 12.10.2018
Key Plan:
S1
S2
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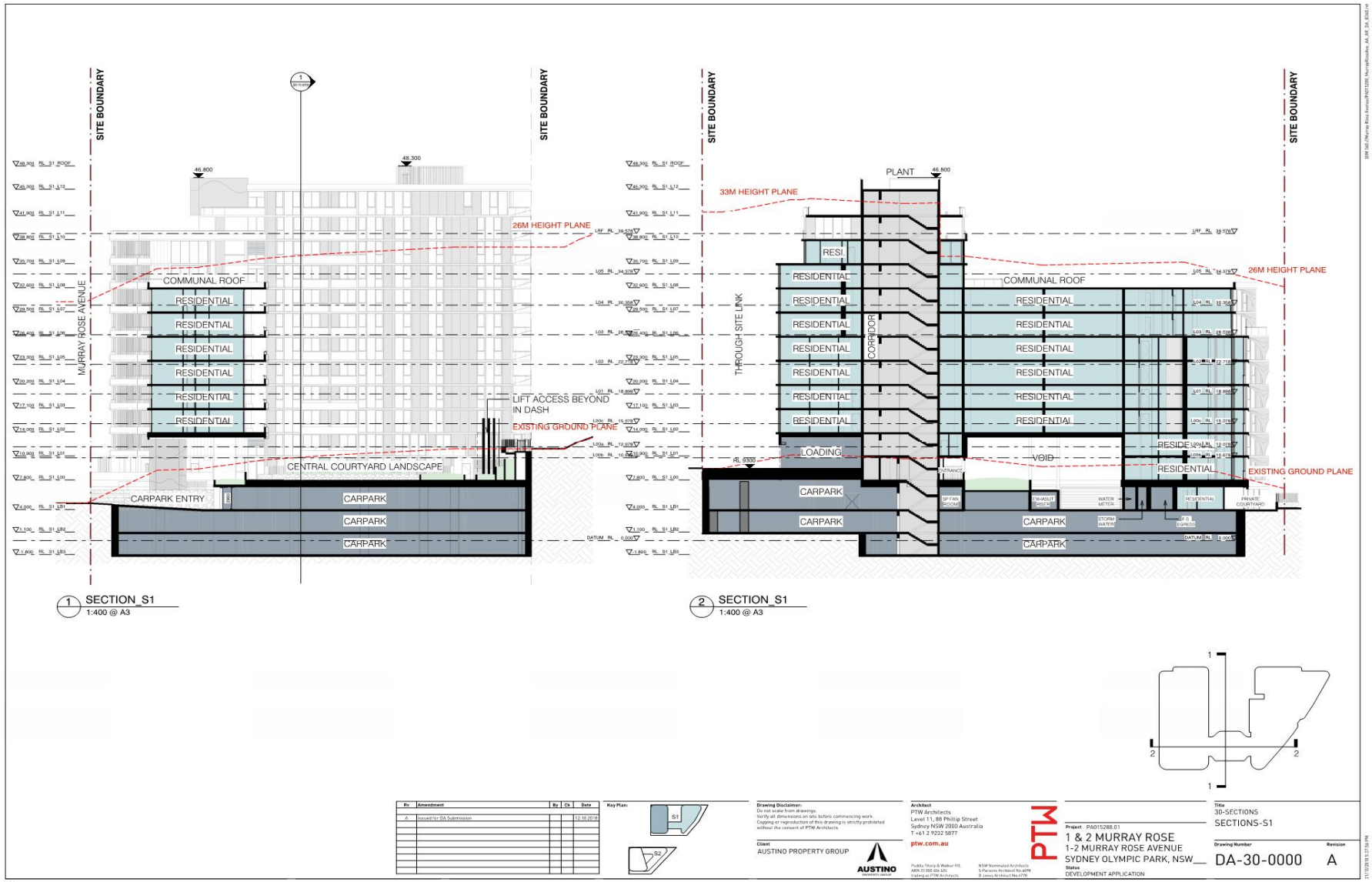
PTW
Project PA015288.01
1 & 2 MURRAY ROSE
1-2 MURRAY ROSE AVENUE
SYDNEY OLYMPIC PARK, NSW
Status
DEVELOPMENT APPLICATION
Title
20-ELEVATIONS
ELEVATIONS-S1
Drawing Number
DA-20-0000
Revision
A
A3



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2 SECTION_S1
1:400 @ A3

Rv	Amendment	By	Ck	Date
A	Issued for DA Submission			12.10.2018

Key Plan:

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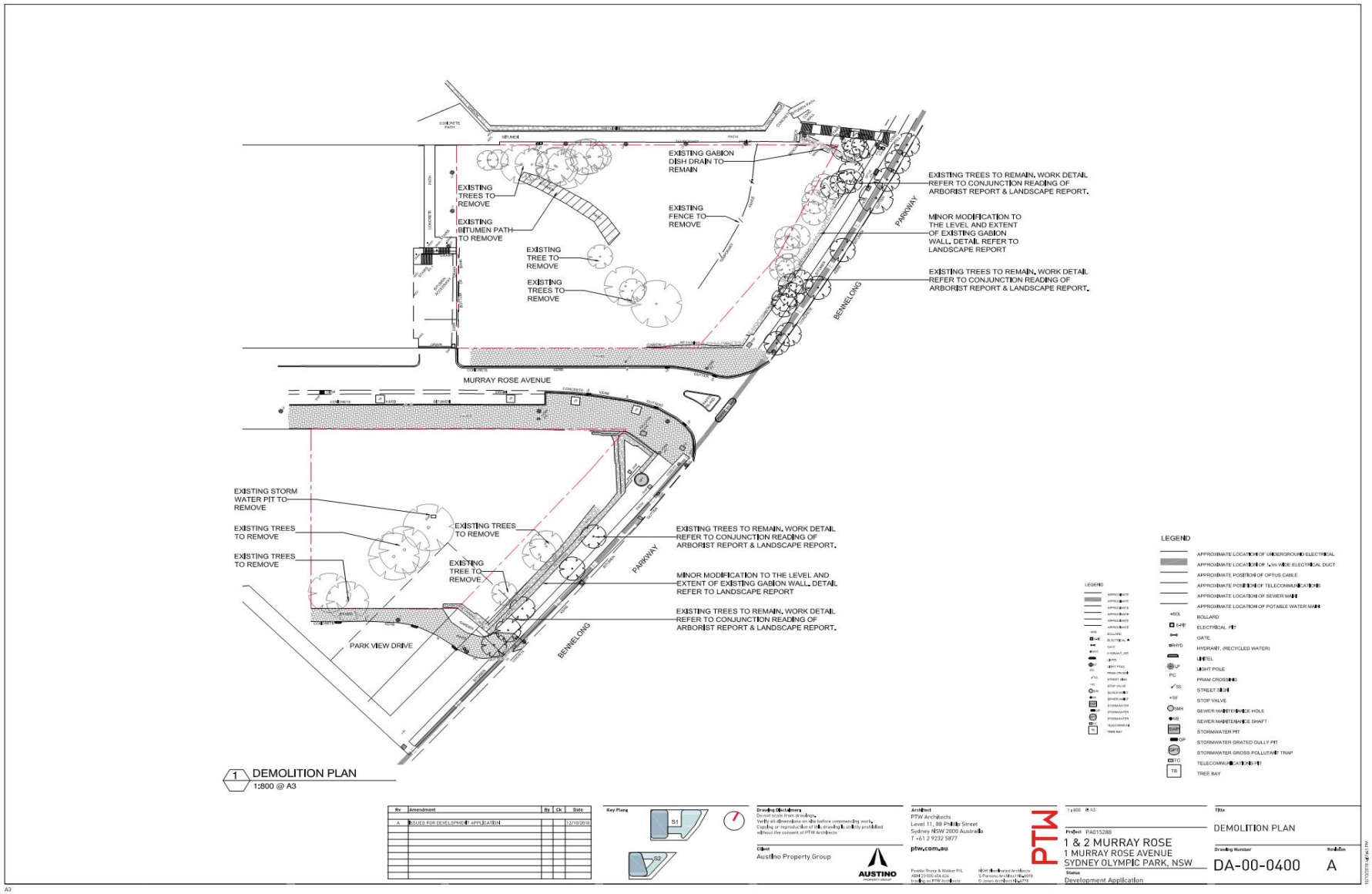
Project PA015288.01
1 & 2 MURRAY ROSE
1-2 MURRAY ROSE AVENUE
SYDNEY OLYMPIC PARK, NSW
Status
DEVELOPMENT APPLICATION

Title
30-SECTIONS
SECTIONS-S1

Drawing Number
DA-30-0000

Revision
A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EXISTING TREES TO REMOVE
EXISTING BITUMEN PATH TO REMOVE
EXISTING FENCE TO REMOVE
EXISTING TREE TO REMOVE
EXISTING TREES TO REMOVE
EXISTING TREES TO REMAIN. WORK DETAIL REFER TO CONJUNCTION READING OF ARBORIST REPORT & LANDSCAPE REPORT.
MINOR MODIFICATION TO THE LEVEL AND EXTENT OF EXISTING GABION WALL. DETAIL REFER TO LANDSCAPE REPORT
EXISTING TREES TO REMAIN. WORK DETAIL REFER TO CONJUNCTION READING OF ARBORIST REPORT & LANDSCAPE REPORT.
PARKWAY
BENNELONG
MURRAY ROSE AVENUE
EXISTING STORM WATER PIT TO REMOVE
EXISTING TREES TO REMOVE
EXISTING TREES TO REMOVE
EXISTING TREES TO REMOVE
EXISTING TREE TO REMOVE
EXISTING TREES TO REMAIN. WORK DETAIL REFER TO CONJUNCTION READING OF ARBORIST REPORT & LANDSCAPE REPORT.
PARKWAY
MINOR MODIFICATION TO THE LEVEL AND EXTENT OF EXISTING GABION WALL. DETAIL REFER TO LANDSCAPE REPORT
EXISTING TREES TO REMAIN. WORK DETAIL REFER TO CONJUNCTION READING OF ARBORIST REPORT & LANDSCAPE REPORT.
PARK VIEW DRIVE
BENNELONG
LEGEND
APPROXIMATE LOCATION OF UNDERGROUND ELECTRICAL
APPROXIMATE LOCATION OF 1.1m WIDE ELECTRICAL DUCT
APPROXIMATE POSITION OF OPTUS CABLE
APPROXIMATE POSITION OF TELECOMMUNICATIONS
APPROXIMATE LOCATION OF SEWER MAIN
APPROXIMATE LOCATION OF POTABLE WATER MAIN
BOLLARD
ELECTRICAL PIT
GATE
HYDRANT, (RECYCLED WATER)
LINTEL
LIGHT POLE
PRAM CROSSING
STREET SIGN
STOP VALVE
SEWER MAINTENANCE HOLE
SEWER MAINTENANCE SHAFT
STORMWATER PIT
STORMWATER GRATED GULLY PIT
STORMWATER GROSS POLLUTANT TRAP
TELECOMMUNICATIONS PIT
TREE BAY
1 DEMOLITION PLAN
1:800 @ A3
Rv Amendment By Ch Date
A ISSUED FOR DEVELOPMENT APPLICATION 12/10/2018
Key Plans
S1
S2
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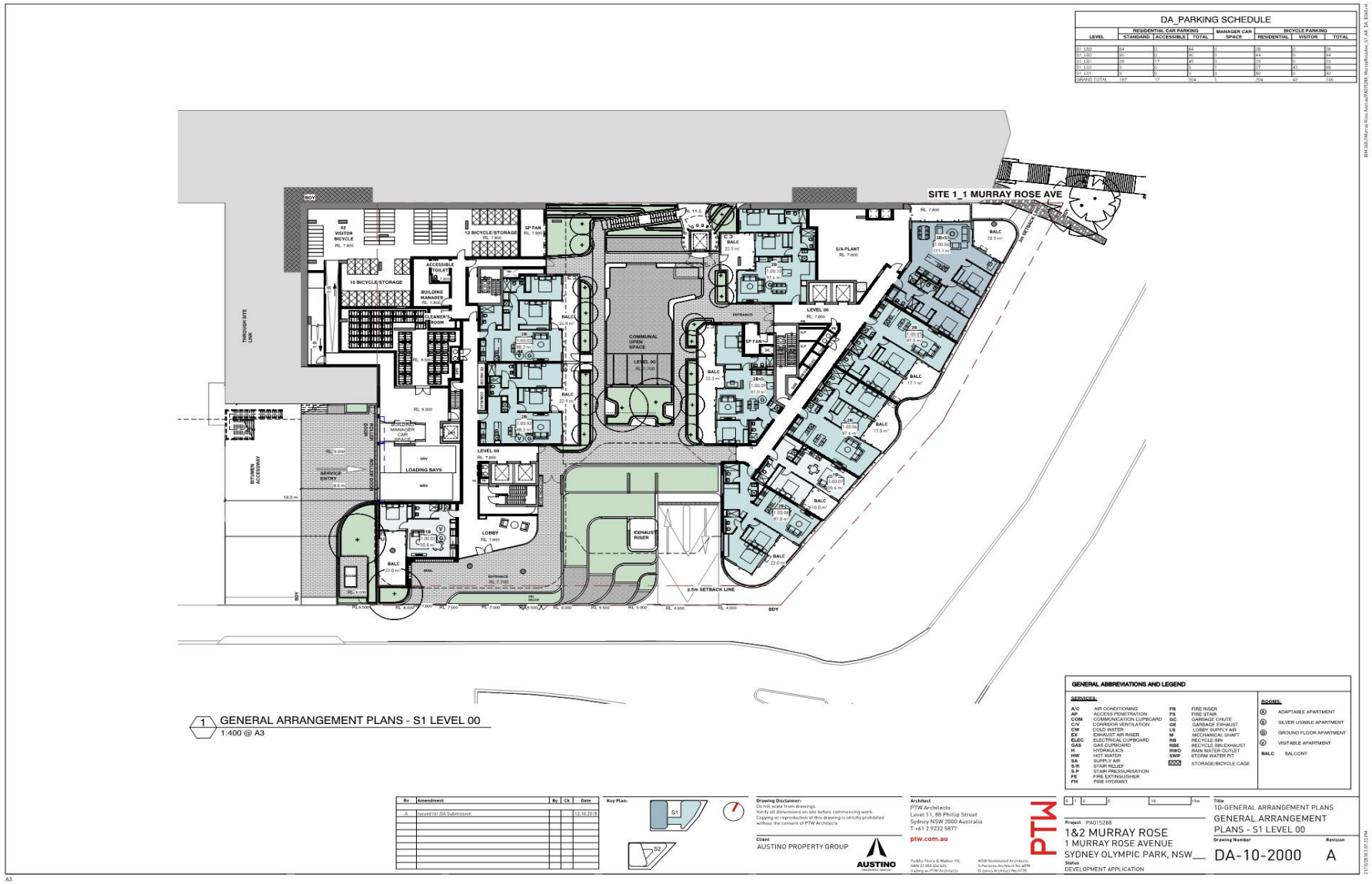
PTW
Project PA015288
1 & 2 MURRAY ROSE
1 MURRAY ROSE AVENUE
SYDNEY OLYMPIC PARK, NSW
Status
Development Application
Title
DEMOLITION PLAN
Drawing Number
DA-00-0400
Revision
A



1 GENERAL ARRANGEMENT PLANS - S1 LEVEL 00
1:400 @ A3

DA_PARKING SCHEDULE

LEVEL	RESIDENTIAL CAR PARKING STANDARD	RESIDENTIAL CAR PARKING ACCESSIBLE	RESIDENTIAL CAR PARKING TOTAL	MANAGER CAR SPACE	BICYCLE PARKING RESIDENTIAL	BICYCLE PARKING VISITOR	BICYCLE PARKING TOTAL
S1_B3	64	0	64	0	58	0	58
S1_B2	65	0	65	0	44	0	44
S1_B1	58	17	75	0	73	0	73
S1_L02	0	0	0	0	37	42	79
S1_L01	0	0	0	0	82	0	82
GRAND TOTAL	187	17	204	1	294	42	336

GENERAL ABBREVIATIONS AND LEGEND

SERVICES:

A/C	AIR CONDITIONING	FR	FIRE RISER
AP	ACCESS PENETRATION	FS	FIRE STAIR
COM	COMMUNICATION CUPBOARD	GC	GARBAGE CHUTE
C/V	CORRIDOR VENTILATION	GE	GARBAGE EXHAUST
CW	COLD WATER	LS	LOBBY SUPPLY AIR
EX	EXHAUST AIR RISER	M	MECHANICAL SHAFT
ELEC	ELECTRICAL CUPBOARD	RB	RECYCLE BIN
GAS	GAS CUPBOARD	RBE	RECYCLE BIN EXHAUST
H	HYDRAULICS	RWO	RAIN WATER OUTLET
HW	HOT WATER	SWP	STORM WATER PIT
SA	SUPPLY AIR	XXX	STORAGE/BICYCLE CAGE
S/R	STAIR RELIEF		
S/P	STAIR PRESSURISATION		
FE	FIRE EXTINGUISHER		
FH	FIRE HYDRANT		

ROOMS:

A	ADAPTABLE APARTMENT
S	SILVER LIVABLE APARTMENT
G	GROUND FLOOR APARTMENT
V	VISITABLE APARTMENT
BALC	BALCONY

Rv	Amendment	By	Ck	Date
A	Issued for DA Submission			12.10.2018

Key Plan: S1 S2

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Project PA015288
1&2 MURRAY ROSE
1 MURRAY ROSE AVENUE
SYDNEY OLYMPIC PARK, NSW

Status
DEVELOPMENT APPLICATION

Title
10-GENERAL ARRANGEMENT PLANS
GENERAL ARRANGEMENT PLANS - S1 LEVEL 00

Drawing Number DA-10-2000
Revision A

A3

1 GENERAL ARRANGEMENT PLANS - S2 LEVEL 01
1:400 @ A3

DA_PARKING SCHEDULE

LEVEL	RESIDENTIAL CAR PARKING STANDARD	ACCESSIBLE	TOTAL	BICYCLE PARKING RESIDENTIAL	VISITOR	TOTAL
S2_LB3	56	0	56	93	5	98
S2_LB2	89	9	98	97	9	97
S2_LB1	91	5	96	115	9	115
S2_L03	12	1	13	21	0	21
S2_L01	2	0	2	0	12	12
GRAND TOTAL	110	15	125	107	37	144

GENERAL ABBREVIATIONS AND LEGEND

SERVICES:

A/C	AIR CONDITIONING	FR	FIRE RISER
AP	ACCESS PENETRATION	FS	FIRE STAIR
COM	COMMUNICATION CUPBOARD	GC	GARBAGE CHUTE
C/V	CORRIDOR VENTILATION	GE	GARBAGE EXHAUST
CW	COLD WATER	LS	LOBBY SUPPLY AIR
EX	EXHAUST AIR RISER	M	MECHANICAL SHAFT
ELEC	ELECTRICAL CUPBOARD	RB	RECYCLE BIN
GAS	GAS CUPBOARD	RBE	RECYCLE BIN EXHAUST
H	HYDRAULICS	RWO	RAIN WATER OUTLET
HW	HOT WATER	SWP	STORM WATER PIT
SA	SUPPLY AIR	XXX	STORAGE/BICYCLE CAGE
S/R	STAIR RELIEF		
S/P	STAIR PRESSURISATION		
FE	FIRE EXTINGUISHER		
FH	FIRE HYDRANT		

ROOMS:

A	ADAPTABLE APARTMENT
S	SILVER LIVABLE APARTMENT
G	GROUND FLOOR APRTMENT
V	VISITABLE APARTMENT
BALC	BALCONY

Rv	Amendment	By	Ck	Date
A	Issued for DA Submission			12.10.2018

Key Plan:

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Project PA015288
1&2 MURRAY ROSE
2 MURRAY ROSE AVENUE
SYDNEY OLYMPIC PARK, NSW

Status
DEVELOPMENT APPLICATION

Title
10-GENERAL ARRANGEMENT PLANS
GENERAL ARRANGEMENT PLANS - S2 LEVEL 01

Drawing Number
DA-10-5100

Revision
A

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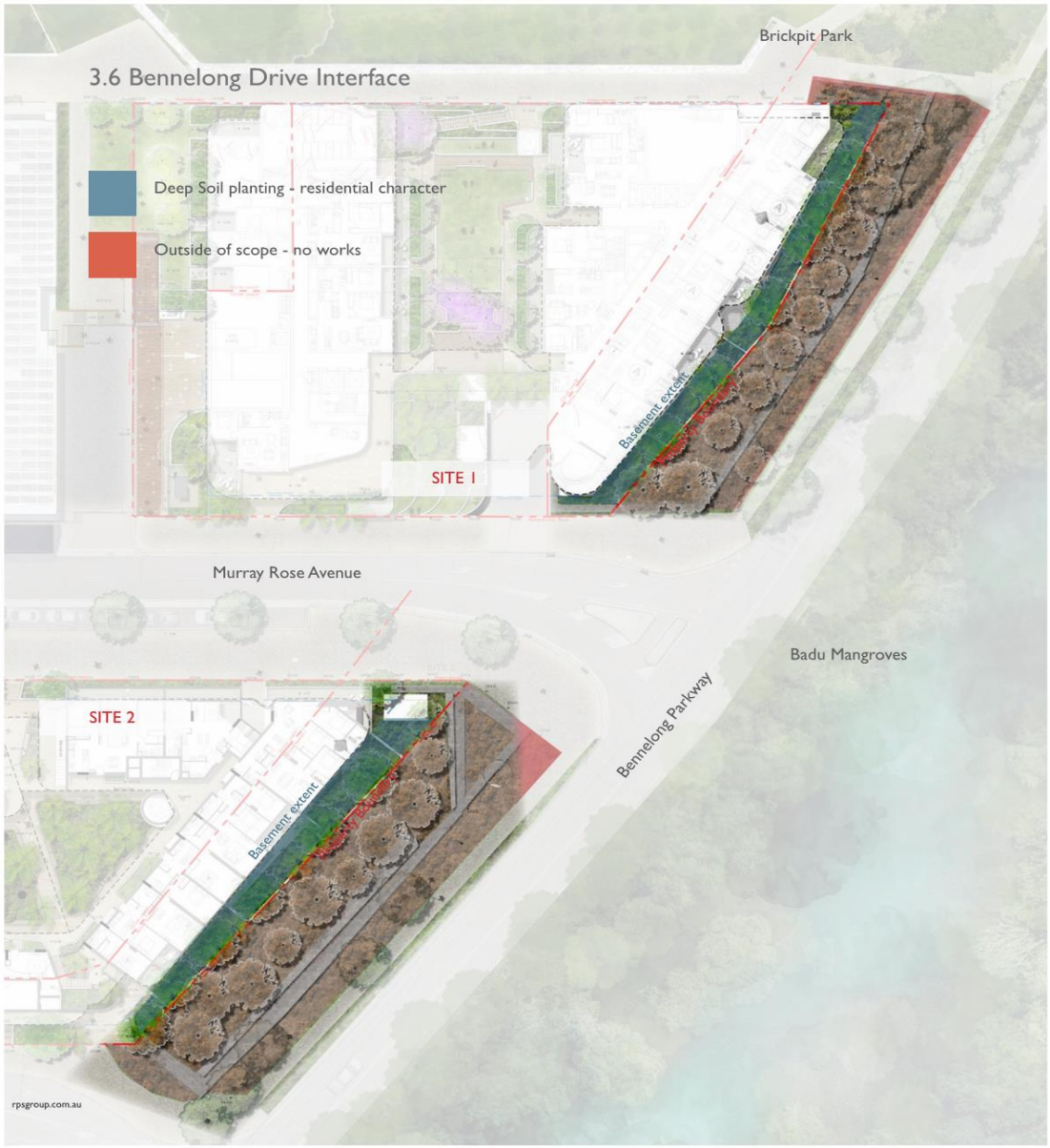


Rehabilitation planting palette


anigozanthos kangaroo paw- 140mm

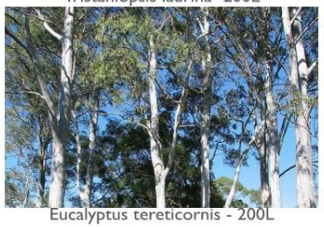

dianella caerulea 140mm


Lomandra tanika- 140mm


myoporum parvifolium- 140mm


Tristaniopsis laurina -200L


Eucalyptus maculata - 400L


Eucalyptus tereticornis - 200L


Dietes grandiflora - 140mm

SCALE 1:1250@A 1:500@A3 DATE 30/10/2018 PROJECT NUMBER 139569-1 |

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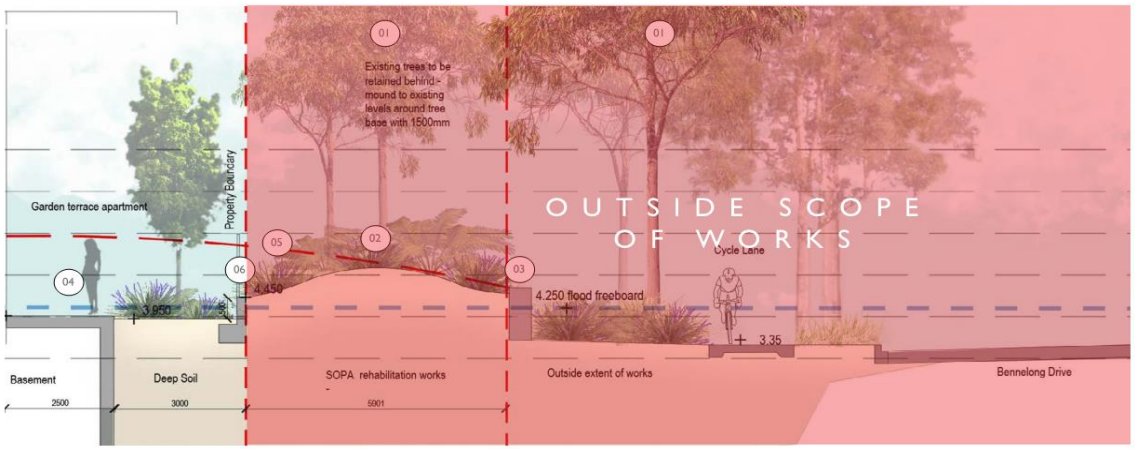
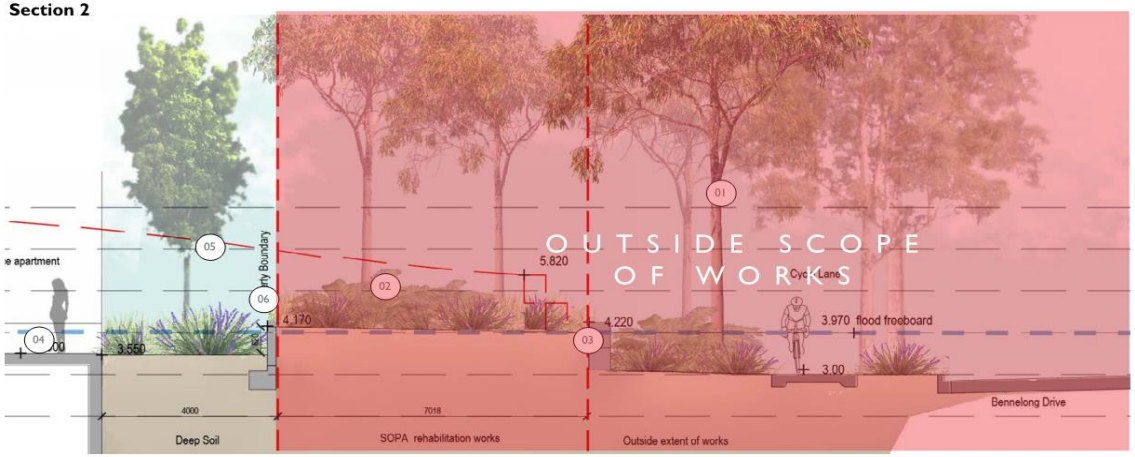
3.7 Sections

Section 1



Section 2



Legend

1. Existing tree behind
2. New rehabilitation understory and tree planting
3. Existing gabion walls
4. Private terrace apartment
5. Existing ground line
6. Aluminium batten security perimetre fence

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SCALE 1:50@a1 1:100@a3 DATE 30/10/2018 PROJECT NUMBER 139569-1 | Page 24 of 32

139569-1 MURRAY ROSE AVE.INDD

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10.0 APPENDIX 5 | IMPACT ASSESSMENT PLANS

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11.0 APPENDIX 6 | TREE PROTECTION PLAN

12.0 APPENDIX 7 | PLATES

a) Showing Site 1 from Bennelong Parkway. b) Showing Site 2 from Bennelong Parkway. c) Showing Tree C and Tree group B. d) Showing Trees AE & AF. e) Showing Tree A. f) Showing Trees 8 & 9.

g) Showing Trees 10 & 11. h) Showing Tree 12 with poor structure. i) Showing newly planted Tree group AS with retaining wall. j) Showing Trees Q,P and AM. k) Showing Tree 16 with poor structure. l) Showing Trees I,G,AR,AQ and AP.

13.0 APPENDIX 8 | TREE PROTECTION SPECIFICATION

13.1 Appointment of Project Arborist

Prior to commencement of works a Project Arborist shall be engaged to monitor compliance with the protection measures. The Project Arborist will inspect tree protection measures and prepare a Compliance Certification for the Principal Certifying Authority prior to release of Compliance Certification. Contractors and site workers are to receive these specifications at least 3 days prior to commencing works. Contractors and site workers working within the TPZ should sign the site log confirming they have read and understood these specifications prior to commencing works.

13.2 Compliance

The Project Arborist will conduct regular site visits to certify the works are compliant with this specification. A Compliance Document will be prepared by the Project Arborist following each site inspection. The Compliance Document will include evidence of compliance with the tree protection measures detailed in this specification.

13.3 Tree & Vegetation Removal

Tree and vegetation removal will be undertaken prior to installation of tree protection measures. Tree removal works should be undertaken in accordance with the Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016).

Tree and vegetation removal will not damage trees to be retained.

13.4 Tree Protection Zone

Trees that are to be retained must be protected prior and during construction from works that could negatively impact their health and structural integrity. The following works should not occur within the TPZ unless authorised by the Project Arborist:

- Modification of existing soil levels, excavations and trenching
- Mechanical removal of vegetation
- Movement of naturally occurring rock
- Storage of materials, plant/equipment and building of sheds
- No signage or hoarding shall be fixed to the trees
- Preparation of building materials, refuelling or disposal of waste materials and chemicals
- No lighting of fires
- No pedestrian or vehicular traffic
- Temporary or permanent location of services, or works required for their installation
- Any other activities that may damage the tree

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13.5 Tree Protection Fencing

The TPZ fencing must be positioned at the perimeter of the TPZ and may be combined to form a single area where the TPZs of multiple trees overlap. The approximate location of the TPZ fencing is outlined in the Arboricultural Impact Assessment with the exact location determined by consultation between the Principle Contractor/Project Manager and the Project Arborist prior to the commencement of works. Fencing may be setback to allow for demolition/construction access and for the installation of pavements only where appropriate ground protection is installed and approved by the Project Arborist. The TPZ fencing must be at least 1.8m above grade and made of wire mesh panels that are supported by concrete feet and fastened together to prevent sideways movement. Tree damage, including any low branches, must be avoided during the installation of the Tree Protection Fencing. The TPZ fencing must include signage to identify the TPZ fencing and include the Project Arborist contact details.

13.6 Site Management

Materials, waste storage and temporary services should not be located within the TPZ.

13.7 Works within the Tree Protection Zones

In certain situations, works within the TPZ may be authorised by the determining authority. These works must be supervised by the Project Arborist. When working within the TPZ, special care should be taken to avoid damage to the tree's root system, trunks and lower branches.

If roots (>25mm∅) are encountered during excavation, demolition and construction works these roots must be retained undamaged and advice sought from the Project Arborist. The design and final levels must remain flexible to enable the retention of roots >25mm∅ where deemed necessary by the Project Arborist.

13.8 Ground Protection

The movement of machinery should be restricted to existing paved areas or in areas with temporary ground protection (i.e. steel road plates, ground mats) when deemed necessary by the Project Arborist.

13.9 Trunk & Branch Protection

If Trunk protection is required it should be installed by wrapping the trunk and first order branching with padding (i.e. carpet underlay or 10mm thick geotextile) to a minimum height of 2m. Timber battens (90 x 45mm), spaced at 150mm centres should be strapped together and placed over the padding (Refer to AS4970 for further details).

Branch protection should be installed when considered necessary by the Project Arborist.

Branches should be wrapped with padding (i.e Ableflex) to provide protection. Where possible branches should be tied back and construction works to take place around branches (with appropriate branch protection installed as required). If pruning is unavoidable it should be in accordance with AS4373 and supervised by the Project Arborist.

13.10 Structure & Pavement Demolition

The Project Arborist should supervise the demolition of existing structures/pavement within the TPZ. Machinery is to be excluded from the TPZ unless operating from existing slabs, pavements or areas of ground protection. Machinery should not contact the tree's roots, trunks, branches and crown.

Existing pavement should be hand lifted to minimise disturbance to the existing sub-base and to prevent damage to tree roots. Wherever possible, the existing sub-base material should remain in situ.

When removing slab sections within the TPZ, machinery must work from the tree outwards to ensure the machinery always remains on the un-demolished section of slab. Wherever possible, footings or elements below grade should be retained to minimise disturbance to the tree's roots.

Structures must be shattered with hand-operated pneumatic/electric breaker before removal when considered necessary by the Project Arborist.

If roots (>25mm∅) are encountered during excavation, demolition and construction works these roots must be retained undamaged and advice sought from the Project Arborist. Exposed roots must be protected from direct sunlight, drying out and extremes of temperature by using 10mm thick jute geotextile fabric. This fabric should be kept moist at all times.

Where the Project Arborist determines that the tree is using underground elements (i.e. footings, pipes, rocks etc.) for support, these elements should be left in situ.

13.11 Pavement/Kerb Installation

Installation of pavements and sub-base within the TPZ must be supervised by the Project Arborist. New surfaces and sub-base materials should be placed above grade to minimise excavations and retain roots (unless prior root mapping has determined that there are no roots within the area of construction).

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If roots (>25mm∅) are encountered during the installation of the new sub-base and surfaces these roots must be retained undamaged and advice sought from the Project Arborist. The design and final levels must remain flexible to enable the retention of roots >25mm∅ where deemed necessary by the Project Arborist.
Compaction of the ground prior to the installation of fill is not permitted.
New sub-base material should be a 20mm no-fines road base (i.e. Benedict Sand & Gravel- Product Code 20NF/RB or similar). Recycled concrete aggregates should not be used to avoid raising soil pH levels.
If required, bedding sand should be washed river sand (no crushed paving blends). The bedding sand should be consolidated with a pedestrian operated plate compactor only. If possible, pavement material should be permeable.
Kerbs within the TPZ should be modified to bridge roots (>25mm∅) unless root pruning is approved and undertaken by the Project Arborist.

13.12 Underground Services

The installation of underground services should be located outside of the TPZ. Where this is not possible they should be installed around or below roots (>25mm∅) using either hydrovac or hand excavation and supervised by the Project Arborist.
Boring methods may be used for the installation of services 800mm below grade. Excavations for starting and receiving pits for the boring equipment should be located outside of the TPZ or located to avoid roots (>25mm∅, or determined by the Project Arborist).

13.13 Excavations, Root Protection & Root Pruning

Excavations and root pruning within the TPZ must be supervised by the Project Arborist and should be avoided where possible.
No over-excavation, battering, or benching should be undertaken beyond the footprint of any structure unless approved by the Project Arborist. Hand excavation and root pruning along the excavation line should be completed prior to the commencement of mechanical excavation to prevent tearing and shattering damage to the roots.
Roots >25mm∅ should be pruned by the Project Arborist only. Roots <25mm∅ may be pruned by the Principle Contractor. Root pruning should be undertaken with clean, sharp secateurs or a pruning saw to ensure a smooth wound face, free from tears.
Damaged roots should be pruned behind the damaged tissues with the final cut made to the undamaged part of the root.

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14.0 APPENDIX 9 | LIMITATIONS & DISCLAIMERS

14.1 Subject trees were assessed from the ground only and for providing an Arboricultural Impact Assessment and Tree Protection Specification.

14.2 All recommendations in this Arboricultural Impact Assessment and Tree Protection Specification Report are based on the observations made on the days of inspection (11.03.2017 & 17.01.2019). There is no warranty, expressed or implied, that problems or deficiencies relating to the subject trees, or the subject site may not arise in the future.

14.3 Laurence & Co Consultancy takes care to obtain information from reliable sources. However, Laurence & Co Consultancy can neither guarantee nor be responsible for the accuracy of information provided by others. Plans, diagrams, graphs and photographs in this Arboricultural Impact Assessment and Tree Protection Specification Report are visual aids only and are not necessarily to scale. This Report provides recommendations relating to tree management only. Advice should be sought from appropriately qualified consultants regarding design/construction/ecological/heritage etc. issues.

14.4 This report has been prepared for exclusive use by the client. This report should not be viewed by others or for any other reason outside its intended target or without the prior written consent of Laurence & Co Consultancy. Unauthorised alteration or separate use of any section of the Report invalidates the Report.

14.5 Many factors may contribute to tree failure and cannot always be predicted. Laurence & Co Consultancy takes care to accurately assess tree health and structural condition. However, a tree's internal structural condition may not always correlate to visible external indicators.

14.6 Limitation of Liability. Laurence & Co Consultancy shall be liable only for direct damages that result from negligence or wilful misconduct in the performance of its services. Under no circumstances shall Laurence & Co Consultancy be liable for indirect, consequential, special, or punitive damages, or for damages caused by the client's failure to perform its obligations under law or contract. Laurence & Co Consultancy shall not be liable for and Client shall indemnify Laurence & Co Consultancy from and against all claims, demands, liabilities and costs (including attorneys' and expert fees) arising out of or in any way related to our performance or non-performance of services, including all on-site activities except to the extent caused by Laurence & Co Consultancy's negligence or wilful misconduct. In no event shall Laurence & Co Consultancy's liability exceed the amount paid to Laurence & Co Consultancy by the Client for our professional services (net of reimbursable expenses) and Client specifically releases Laurence & Co Consultancy for any damages, claims, liabilities and costs in excess of that amount.

14.7 Reference should be made to any relevant legislation including Tree Management Controls. All recommendations contained within this report are subject to approval from the relevant Consent Authority.

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