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Tree Impact Assessment

Client: ZC Wood Pty Ltd



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Site: 31–33 High Street Rd, Ashwood 3147

Date of Inspection: 26 April 2022

Report prepared by: Joe Kellett (Adv. Cert. Arb. & Dip. App. Sc. (Arb.))

Contact:



Brief: Inspect the trees growing at and adjacent to 31–33 High Street Rd, Ashwood 3147, report on their health and structure, in regard to a proposed building replacement with a medical centre, with underground parking on these properties.

Introduction

I inspected the trees from ground level using non-invasive methods. Trees of 3.5 metres in height and above have been detailed in this assessment. Tree height (Hei.) was estimated, the width (Wid.) is an average of the north/south and the east/west axis, given in metres [m]. Trunk diameter at breast height (DBH) was measured at 1.4 m above ground level, unless otherwise stated; it is given in centimetres [cm]. All data is presented in the table 'Observations of Trees'. This includes the following headings: 'Hea.' meaning health, 'Stru.' refers to the trees structure and 'ULE': Useful Life Expectancy (further illustrated in Appendix 1), and 'Ret. Val.' is for the Retention Value of the tree as per council specifications. Appendix 1 at the end of this document explains tree characteristics such as age, health and structure. Appendix 2 is a plan with tree positions numbered in relation to the proposed new medical centre. Appendix 3 gives details of my credentials and experience. Appendix 4 contains some photos of the trees detailed in this assessment, on these crowded properties.

The 'Tree Protection Zone' (TPZ) was calculated using the methodology described by Harris, Clark & Matheny (1999). This figure reads as a radius in metres from the trunk of the tree, to protect parts of the tree above and below ground. This corresponds with the current Australian Standard for trees on building sites. Some encroachment into this area is possible though it could be detrimental to the long-term health of a tree. It is recommended that a qualified arborist supervise any encroachment into tree protection zones.

Site

This is a pair of rectangular shaped properties, facing south onto High Street Road. There are no significant trees growing in the neighbouring properties, that would be directly affected by this building proposal on this property. There are 2 trees of significance to the immediate landscape growing on the property proposed for development. All necessary trees have been detailed here.

Discussion

Due to site restrictions, it is often not possible or reasonable to retain all trees during a development. A realistic alternative is to select the more significant, healthy trees in good condition and protect these well; rather than trying to retain all trees and decreasing the quality of their protection (Matheny & Clark 1998).

Observations of Trees

Tree No.	Botanical Name	Age	Hei. x Wid.	DBH (cm)	TPZ (m)	SRZ (m)	ULE	Hea.	Stru.	Ret. Val.	Comments (Native or Exotic). 'BE': Building Envelope. 'b.': boundary. 'PL.': Previously Lopped
1	Fraxinus angustifolia subsp. angustifolia	S	5.6x3.2	13	2	1.5	Rem	Poor	Fair	Low	Exotic Weed Close to BE. Remove
2	Citrus japonica	M	4x2.8	9	2	1.5	Rem	Fair	Fair	Low	Exotic Clear of BE. Retain
3	Pittosporum undulatum	S	3.8x3	14	2	1.5	Rem	Fair	Fair	Low	Native Weed Clear of BE. Remove
4	Pittosporum undulatum	S	3.5x2.3	9	2	1.5	Rem	Fair	Fair	Low	Native Weed Clear of BE. Remove
5	Michelia figo	M	4x3.3	15	2	1.5	Rem	Fair	Fair	Low	Exotic Possum damage Inside BE. Remove
6	Coprosma repens	Sen	4.2x3	15	2	1.5	Rem	Poor	Fair	Low	Exotic Weed Clear of BE. Remove
7	Cinnamomum camphora	Y	4x1.4	6	2	1.5	Rem	Fair	Fair	low	Exotic Weed Inside BE. Remove
8	Ligustrum ovalifolium	M	5x5.3	14	2	1.5	Rem	Fair	Fair	Low	2 Exotics Inside BE. Remove
9	Syzygium smithii	S	8x3.2	17	2	1.5	Rem	Fair	Poor	Low	Native PL. Inside BE. Remove
10	Michelia figo	M	3.9x3	13	2	1.5	Rem	Fair	Fair	Low	Exotic Inside BE. Remove
11	Syzygium smithii	S	4.6x3	13	2	1.5	Rem	Fair	Poor	Low	Native PL. Inside BE. Remove
12	Ginkgo biloba	S	14x11	55	6.6	2.5	Med	Fair	Fair	Med	Exotic Inside BE. Remove
13	Acer negundo	Sen	9.7x7	38	4.6	2.2	Rem	Poor	Poor	Low	Exotic Weed PL. Inside BE. Remove
14	Liquidambar styraciflua	D	18x10	59	7.1	2.7	Rem	Dead	Poor	Low	Exotic Dead Inside BE. Remove
15	Acer negundo	S	10x8	39	4.7	2.2	Rem	Poor	Poor	Low	Exotic Weed PL. Inside BE. Remove
16	Waterhousia floribunda	M	18x10	94	11.3	3.2	Rem	Fair	Fair	Med	Native Unsuitable in this position. Blocks sunlight. Inside BE. Remove
17	Camellia japonica	S	4.8x3	13	2	1.5	Rem	Poor	Fair	Low	Exotic Screen. Inside BE. Remove
18	Ligustrum ovalifolium	S	4.6x3	11	2	1.5	Rem	Fair	Fair	Low	Exotic Screen. Inside BE. Remove
19	Nerium oleander	S	5x3.3	14	2	1.5	Rem	Fair	Fair	Low	Exotic Weed. Inside BE. Remove
20	Ligustrum lucidum	S	3.8x2	9	2	1.5	Rem	Fair	Fair	Low	Exotic Weed. Inside BE. Remove

Tree No.	Botanical Name	Age	Hei. x Wid.	DBH (cm)	TPZ (m)	SRZ (m)	ULE	Hea.	Stru.	Ret. Val.	Comments (Native or Exotic). 'BE': Building Envelope. 'b.': boundary. 'PL.': Previously Lopped
21	Celtis australis	S	4.3x3	11	2	1.5	Rem	Fair	Fair	Low	Exotic Weedy. Inside BE. Remove
22	Camellia japonica	S	4.7x4	26	3.1	1.9	Rem	Poor	Fair	Low	Exotic Screen. Clear of BE. Remove
23	Magnolia x soulangiana	Sen	5x4.2	19	2.3	1.8	Rem	Poor	Fair	Low	Exotic Possum damage Inside BE. Remove
24	Lagerstroemia indica	S	4.5x4	21	2.5	1.8	Rem	Fair	Fair	Low	Exotic PL. Inside BE. Remove
25	Camellia japonica	S	4x2.9	13	2	1.5	Rem	Fair	Fair	Low	Exotic Screen. PL. Inside BE. Remove
26	Camellia japonica	S	4.5x4	18	2.1	1.6	Rem	Fair	Fair	Low	Exotic Screen. PL. Inside BE. Remove
27	Castanea sativa	S	4.4x6	17	2	1.6	Rem	Poor	Fair	Low	Exotic PL. Inside BE. Remove
28	Castanea sativa	S	4x3.6	14	2	1.6	Rem	Poor	Fair	Low	Exotic PL. Inside BE. Remove
29	Castanea sativa	S	4.3x6	18	2	1.6	Rem	Poor	Fair	Low	Exotic PL. Inside BE. Remove
30	Persea americana	Sen	4.4x3	9	2	1.5	Rem	Poor	Fair	Low	Exotic Possum damage. Close to BE. Remove
31	Persea americana	M	4.2x6	26	3.1	1.9	Rem	Poor	Fair	Low	Exotic PL. Close to BE. Remove
32	Lagunaria patersonia	M	16x8	50	6	2.5	Short	Fair	Fair	Low	Exotic Clear of BE. Causes irritation. Retain
33	Prunus cerasifera Nigra	M	4.9x4	14	2	1.5	Short	Poor	Fair	Low	Exotic Weed Clear of BE. Retain
34	Agonis flexuosa	S	11x9	48	5.8	2.5	Med	Fair	Fair	Med	Native 1.5m to b. Clear of BE. Retain

Tree Protection Zones can be breached, though it is recommended that any work within the TPZ be monitored and managed by a qualified arborist. Any roots that are damaged or have to be removed should be cut cleanly to assist the wound to repair. Supervision by an arborist can prevent catastrophic accidental damage to trees simply by making construction workers aware of the sensitivity of tree roots and methods of avoiding impact with them.

All pruning recommended must be carried out to Australian Standards, 2007 'Pruning of Amenity Trees' AS4373–2007. This work must be supervised or carried out by suitably qualified arborists with a minimum Level 3 AQF in Arboriculture. No pruning has been recommended here to allow this proposal to proceed as it has been presented here.

Trees Proposed for Removal

Trees 1–31 are marked for removal. The trees that have been marked for removal are of poor health, poor structure or weed species that do not contribute to the wider landscape. It would be best to remove these trees and replace them with healthy trees that will contribute to the wider landscape in the long-term.

Tree 1 is a *Fraxinus angustifolia* subsp. *angustifolia* (Desert Ash), this exotic tree is a problematic weed tree in our urban landscape. It has been marked for removal to reduce its spread through the local area. It is growing in the front set back and is clear of the proposed building envelope and would not be directly affected by this proposal. Tree 2 is a *Citrus japonica* (Kumquat), this small exotic is growing on the southern boundary, clear of the proposed building envelope. It therefore would not be directly impacted by this proposal. It is suffering from scale infestation, lack of sunlight and long-term neglect; it will not reach its potential and has therefore been marked for removal. It would not be missed in the rejuvenation of this landscape.

Trees 3 and 4 are *Pittosporum undulatum* (Sweet pittosporum), this native is a problematic weed in our urban landscape. They have been marked for removal to reduce its spread through the local area, see Appendix 4. They are growing in the front set back and are clear of the proposed building envelope and would not be directly affected by this proposal. Trees 5 and 10 are *Michelia figo* (Port Wine Magnolia), this type of exotic is used as a screen in the landscape and has limited appeal in this garden. Tree 5 is clear of the proposed works and would not be affected by this proposal. Tree 10 would not survive the demolition of this derelict

house. These screen trees would not be missed if removed and replaced with healthy ones.

Tree 6 is a *Coprosma repens* (Shiny Mirror Bush), this exotic is a problematic weed in our urban landscape and is dying off in areas of its canopy, see Appendix 4. It has been marked for removal to reduce its spread through the local area. It is growing in the front set back and is clear of the proposed building envelope and would not be directly affected by this proposal. Tree 7 is a *Cinnamomum camphora* (Camphor laurel), this exotic is a problematic weed in our urban landscape and can grow to a very large size and dominate unkempt areas. It has been marked for removal to reduce its spread through the local area. It is growing in the front set back and is clear of the proposed building envelope and would not be directly affected by this proposal.

Trees 8 and 18 are *Ligustrum ovalifolium* (Japanese Privet), this exotic is used as a short screen in our urban landscape. These shrubs have been allowed to grow uncontrolled and now are pushing up against the existing house. They will not survive the demolition of the house and have been marked for removal. They would not be missed from this neglected garden. Trees 9 and 11 are *Syzygium smithii* (Lilly Pilly), this type of native tree can reach more than 20 metres in height and is inappropriate in this position up against the house. They were previously lopped to manage their height and have now regrown uncontrolled. Their stems are poorly attached and are highly likely to fail in the near future. These inappropriate trees have been marked for removal and will not be missed from this neglected garden. They would not survive the demolition of the existing house.

Tree 12 is a *Ginkgo biloba* (Ginkgo), this exotic tree is rare in our landscape, in particular due to its reasonable size and potential. This tree is an attractive feature in this neglected landscape, see Appendix 4. There is already a concrete driveway running along the west side of its trunk and the existing house is less than 2 metres from its trunk. The footing for the existing brick house would be acting as an impervious barrier to the spread of the roots of this tree towards the north. This tree is inside the proposed building envelope of the underground car park; it is therefore not compatible with this proposal. It would have to be removed if this proposal was to be approved as it has been presented here.

Trees 13 and 15 are *Acer negundo* (Ash leaved Maple), this type of exotic tree is a problematic weed in our urban landscape. They have been marked for removal to reduce its spread through the local area. They are growing inside the proposed building envelope and would have to be removed to allow it to proceed as it has been presented here. Tree 14 is a *Liquidambar styraciflua* (Liquidambar), this exotic tree is dead, it has been grazed to death by possums and cannot be revived; see Appendix 4. It should be removed before it decays and suffers collapsing scaffold branches. It is inside the proposed building envelope and would have to be removed to allow it to proceed as it has been presented here.

Tree 16 is a *Waterhousia floribunda* (Weeping Lilly Pilly), this native tree has outgrown this confined garden and exceeds the height it is often sold to people as a modest sized tree (below 15 metres in height). This tree dominates this area and over hangs the neighbouring property by a significant margin and greatly restricts how this area could be utilised. This tree is in good health and of fair structure, the only reason to remove this tree is its large size in this confined space and the restriction on how the remainder of this property could be utilised. As it excludes all sun light from entering this area of this property. This tree would be missed from this position, it could be replaced with a more attractive tree, that is deciduous that would allow light into the north side of this property. Trees 17, 22, 25 and 26 are all *Camellia japonica* (Camellia), this type of exotic tree is planted as a screen, see Appendix 4 . These trees have been neglected and allowed to be smothered by vines or have been previously lopped to restrict their height. These small trees would not be missed if removed and replaced with more attractive trees. Most are located inside the proposed building envelope and would have to be removed to allow it to proceed as it has been presented here.

Tree 19 is a *Nerium oleander* (Oleander), this exotic is recognised as having a weedy habit and dominating unkempt areas, due to its tolerance to drought and poor soils; see Appendix 4. This unattractive shrub has been marked for removal to allow for the rejuvenation of this neglected landscape. It would not be missed as it cannot be seen from outside this property. Tree 20 is a *Ligustrum lucidum* (Glossy Privet). This exotic is a problematic weed in our urban landscape. It has been marked for removal to reduce its spread through the local area. It is growing inside the proposed building envelope and would have to be removed to allow this proposal to proceed as it has been presented here.

Tree 21 is a *Celtis australis* (European Nettle), this type of exotic tree is becoming a problematic weed in our urban landscape, self-seeding into unkempt gardens; see Appendix 4. This tree is self-sewn and there are some smaller seedlings emerging in these gardens. It has been marked for removal as it is inappropriate in this position. It would not be missed as it cannot be seen from outside these properties. It is inside the proposed building envelope and would have to be removed to allow this proposal to proceed as it has been presented here. Tree 23 is a *Magnolia x soulangiana* (Saucer Magnolia), this type of exotic small tree is drought sensitive and slow growing. This small tree is being over grazed by possums, see Appendix 4. It has entered a spiral of decline from which it cannot be revived. This poor specimen has been marked for removal. It would not be missed as it cannot be seen from outside this property. It is inside the proposed building envelope and would have to be removed to allow it to proceed as it has been presented here.

Tree 24 is a *Lagerstroemia indica* (Crepe Myrtle), this small tree has been lopped in the past and allowed to regrow unrestricted. This was typical past practice for this type of small tree. This tree is drought stressed, with all of its leaves with burnt margins, this is consistent with a garden that has been neglected for some years. This small tree has been marked for removal as it could be easily replaced with a more suitable and better positioned tree. It is inside the proposed building envelope and would have to be removed to allow this proposed to proceed as it has been presented here. Trees 27–29 are *Castanea sativa* (Chestnut), these 3 exotic trees have been previously lopped to manage their height. As this type of tree can exceed 20 metres at full maturity. This has reduced the flower and fruit production and allowed these trees to decline in health as well. These are inappropriate trees in this position and have been marked for removal and replacement. They are inside the proposed building envelope and would have to be removed to allow it to proceed as it has been presented here. They would not be missed as they cannot be seen from outside this property.

Trees 30 and 31 are *Persea americana* (Avocado), these exotic trees are being over grazed by possums, see Appendix 4. This is a common problem for this type of tree in our urban landscape. If they cannot be isolated from their activity, they will go the same way as Tree 14 the Liquidambar and die prematurely. They are growing up against the northern boundary, there is therefore no way to isolate

them from possums. These trees are inside the proposed building envelope and have been marked for removal to allow it to proceed as it has been presented here.

Replacement Tree List

Trees of Modest size and attractive features:

<u>Botanical Name</u>	<u>Common Name</u>	<u>Mature Height/evergreen yes\ no</u> <u>Native: N or Exotic: E</u>
<i>Acacia boormanii</i>	Snowy River Wattle	4m/yes, N
<i>Acacia floribunda</i>	Gossamer Wattle	7m/yes, N
<i>Baeckea virgata</i>	Tall Baeckea	4m/yes, N
<i>Banksia marginata</i>	Silver Banksia	6m/yes, N
<i>Brachychiton acerifolius</i>	Illawarra Flame Tree	12–16m/yes, N
<i>Brachychiton</i> CV	‘Bella Pink’	8–10m/yes, N
<i>Eucalyptus woodwardii</i>	Lemon Flowered Gum	10m/yes, N
<i>Eucalyptus dolichorhyncha</i>	Fuchsia Gum	5m/yes, N
<i>Eucalyptus leucoxylon</i>	‘Rosea’ Dwarf Yellow Gum	8m/yes, N
<i>Eucalyptus mannifera</i>	Red Spotted Gum	12–15m/yes, N
<i>Eucalyptus scoparia</i>	Wallangarra White Gum	12m/yes, N
<i>Hakea laurina</i>	Pincushion Hakea	5m/yes, N
<i>Leptospermum petersonii</i>	Lemon Scented Tea Tree	5m/yes, N
<i>Pistacia chinensis</i>	Chinese Pistachio	10–14m/ no, E
<i>Magnolia grandiflora</i> CV	‘Little Gem’	7m/yes, E
<i>Acer rubrum</i> CV	‘October Glory’ Maple	10–16m/no, E
<i>Acer japonica</i>	Full Moon Maple	8–10m/ no, N
<i>Jacaranda mimosifolia</i>	Jacaranda	15m/no, E (spring)
<i>Citrus x limon</i>	Lemon	5m/yes, E

Trees to Be Retained

Trees marked for retention are generally of good health and structure and have a greater impact on the wider landscape. Buildings and other infrastructure may be located within tree protection zones, at the discretion of the consulting arborist.

Tree 32 is a *Lagunaria patersonia* (Norfolk Island Hibiscus) is growing on the nature strip in Kennett Street, outside the eastern boundary of this property. It is clear of the proposed building envelope and would not be impacted by this proposal. This type of tree is problematic when people move around near its canopy, as they produce fine fibres in their seed capsules that can cause severe irritation in peoples' skin. Many councils are removing this drought tolerant type of tree to prevent this problem form occurring. It is growing opposite a double brick boundary wall on the boundary of this property. This will have prevented the roots of this tree from entering this property and restricting the proposed building envelope. It will require temporary fencing around it to isolate it from any possible impact. It must be isolate the exposed areas of the TPZ of this tree, to protect it from soil compaction or direct impact.

Tree 33 is a *Prunus cerasifera* 'Nigra' (Purple leaf Plum), this exotic tree is growing in the nature strip to the east of this property (see Appendix 4), clear of the proposed building envelope. It is well clear of the proposed works and will not be impacted by it. It will require temporary fencing around it to isolate it from any possible impact. It must be isolate the exposed areas of the TPZ of this tree, to protect it from soil compaction or direct impact.

Tree 34 is an *Agonis flexuosa* (Willow Myrtle), this native tree growing 1.5 metre to the north of the northern boundary of this property, on the natures trip to the east of it. It is clear of the proposed building envelope and therefore would not be directly impacted by it, see Appendix 4. It will require temporary fencing around it to isolate it from any possible impact. It must be isolate the exposed areas of the TPZ of this tree, to protect it from soil compaction or direct impact.

Methods that **must** be used and closely adhered to, to fully protect trees on and adjacent to building sites include:

- Employing a suitably qualified arborist (Level 5 or above) to oversee all works in and around Tree Protection Zones (TPZ) for Tree 12 and 32–34 as the 'project arborist'.
- Suspended walls, using pier and beam construction inside a TPZ.
- Hand digging footings for piers inside a TPZ of Tree 12.
- Use of cantilevered slabs over the TPZ of Tree 12 to reduce the possible impact of such an incursion into that area.

- All services must be routed outside 'Tree Protection Zones'. If there is no alternative to passing through the protection zone, the project arborist must be advised on the need for boring beneath root zone and remaining below 50cm in natural soil depth while inside a TPZ.
- Tree Protection Zones for Trees 32–34 must be fenced off with a 1.8 metres high temporary cyclone wire fence prior to the commencement of any works; clearly marked with signs indicating it as an exclusion zone.
- The fenced protection zones for retained trees are to be set outside the critical root zone and should incorporate the maximum amount of optimal root zone. This will be done in consultation between the project arborist and site manager.
- Where major works are to occur inside a TPZ, ground protection measures must be used to protect the roots of tree from contamination or soil compaction. This must include mulching of the area to a depth of 7cm and covering it with ply wood or 'rumble boards'.
- Under no circumstances is a Tree Protection Zone of a retained tree to be encroached without the consent of the project arborist.
- Under no circumstance is there to be any incursion into the Structural Root Zone (SRZ).
- No storage of building materials, waste or excess soils inside the Tree Protection Zone.
- No digging, trenching or other soil disturbance is allowed in the fenced area. This includes washing of tools or equipment or allowing the residue of any cleaning to wash into this zone.
- No fittings or fixtures are to be attached to the trees, including temporary services, wires, nails or screws during the construction phase of development.
- The Tree Protection Zone is to be mulched and irrigated to ensure the water needs of each tree during construction.

Conclusion

There are no trees in neighbouring properties that would be affected by this building proposal on this property. Trees 32–34 are growing in the nature strip to the east of this property, they will require temporary protective fencing around them to isolate them from the proposed works and any possible impact.

Trees 1–31 are marked for removal. These trees are of poor health, poor structure or weed species that do not contribute to the wider landscape. Removal of these trees will allow rejuvenation of the immediate landscape and contribute to the improvement of the wider landscape in the long-term. The planning on replacement trees will offset the loss of the poor and weedy trees currently growing here.

Tree 12 is a *Ginkgo biloba* (Ginkgo), this exotic deciduous tree is still growing towards its mature size. This is the most significant tree detailed in this report. This type of tree is slow growing in our hot and dry climate, though prone to possums over grazing its canopy. This can cause the premature death of this type of tree if it is not managed appropriately. This tree is inside the proposed building envelope and would have to be removed to allow this proposal to proceed as it has been presented here. Tree 16 a *Waterhousia floribunda* (Weeping Lilly Pilly) is marked for removal and is one of two trees of any worth here. It dominates the northern boundary and would greatly restrict the landscaping or possible building envelope if it were to remain in position. It is still growing and is yet to reach its fully mature size. The replacement tree must be able to achieve at least 12 metres in height and greatly enhance this landscape. A deciduous tree would allow winter light to enter this property, while providing good summer shade.

References

Australian Standard. 2007 Pruning of Amenity Trees
AS4373–2007. Standards Australia.

Australian Standard 2009 Protection of trees on development sites.
AS 4970–2009

Harris R. Clark J. & Matheny N. 1999. Arboriculture
Third Edition. Prentice Hall.

Matheny N. & Clark J. 1998 Trees and Development
International Society of Arboriculture.

Appendix 1

TREE DESCRIPTORS

AGE

Category	Description
Young (Y)	Juvenile or recently planted tree.
Semi-mature (S)	Tree is actively growing.
Mature (M)	Tree has reached expected size in situation.
Senescent (Sen)	Tree is over mature and has started to decline.

Health

Category	Description
Good	Foliage of tree is entire, with good colour, very little pathogen damage and of good density. Growth indicators are good e.g., extension growth of twigs and wound wood development. There is minimal or no canopy dieback.
Fair	Tree is showing one or more of the following symptoms: <25% dead wood, foliage generally with good colour, though some imperfections may be present. Minor pathogen damage present, with growth indicators such as leaf size, canopy density and twig extension growth typical for species in this location.
Poor	Tree is showing one or more of the following symptoms :> 25% dead wood, canopy dieback is observable, discoloured or distorted leaves. Pathogen is present, stress symptoms are obvious e.g., small leaf size or small twig extensions; these could lead to decline of specimen.
Dying or Dead	Tree is in severe decline with greater than 55% dead wood; very little foliage that could mostly be epicormic shoots or no twig extension.

Structure

Category	Description
Good	Trunk and scaffold branches show good taper and attachment with minor or no structural defects. Tree is a good example of the species with a well-developed form showing no obvious root pests or diseases.
Fair	Tree shows some minor structural defects or minor damage to trunk e.g., bark missing, cavities could be present. Minimal damage to structural roots could be seen as typical for this species.
Poor	There are major structural defects, damage to trunk or bark missing. Co-dominant stems could be present, likely point of branch failure, girdling or damaged roots obvious and structurally problematic.
Hazardous (Haz.)	Tree is an immediate hazard with potential to fail; this should be rectified as soon as possible.

Useful Life Expectancy – ULE

Long ULE: Trees that appear to be retainable with an acceptable level of risk for more than 40 years.

1. Structurally sound trees located in positions that can accommodate future growth.
2. Storm damaged or defective trees that could be made suitable for retention in the long term by remedial tree surgery.
3. Trees of special significance for historical, commemorative or rarity reasons that would warrant extraordinary efforts to secure their long-term retention.

Medium ULE (Med.): Trees that appear to be retainable with an acceptable level of risk for 15–40 years.

1. Trees that may only live between 15–40 years.
2. Trees that may live for more than 40 years but would be removed to allow the safe development of more suitable individuals.
3. Trees that may live for more than 40 years but would be removed during the course of normal management for safety and nuisance reasons.
4. Storm damaged or defective trees that can be made suitable for retention in the medium term by remedial work.

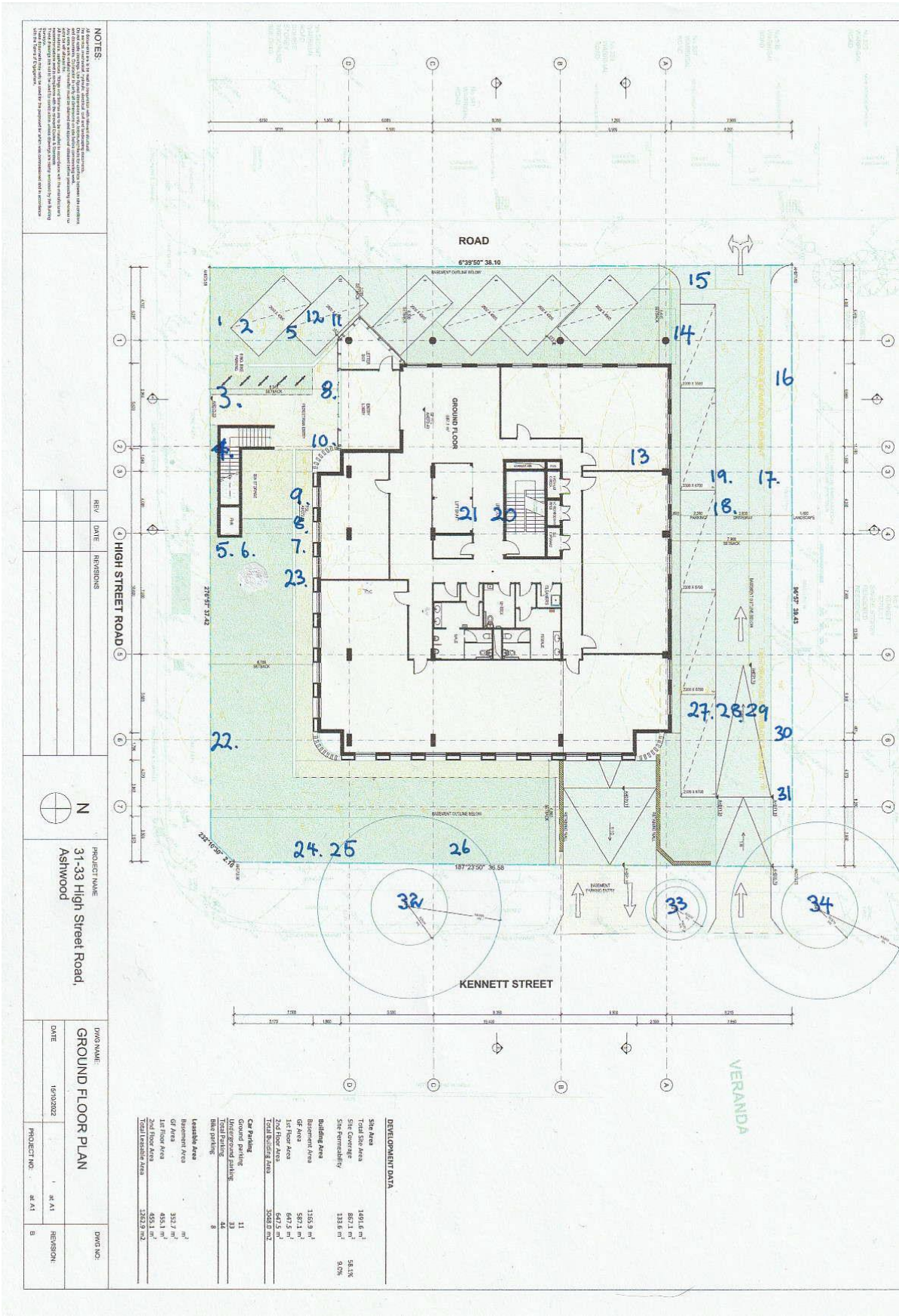
Short ULE: Trees that appear to be retainable with an acceptable level of risk for 5–15 years.

1. Trees that may live for 5–15 years.
2. Trees that may live for more than 15 years but would be removed to allow the safe development of more suitable individuals.
3. Trees that may live for more than 15 years but would be removed during the course of normal management for safety and nuisance reasons.
4. Storm damaged or defective trees that can be made suitable for retention in the medium term by remedial work.

Remove (Rem.): Trees with a high level of risk that would need removal within the next 5 years.

1. Dead Trees.
2. Dying or suppressed and declining trees through disease or inhospitable conditions.
3. Dangerous trees through instability or recent loss of adjacent trees.
4. Dangerous trees through structural defects including decay, included bark, wounds or poor form.
5. Damaged trees that are considered unsafe to retain.
6. Trees that will become dangerous after removal of other trees for the above reasons.

Appendix 2 Plan of Proposal with Trees Numbered



Appendix 3 Qualifications, Experience and Area of Expertise

Professional Qualifications & Affiliations

- Advanced Certificate of Arboriculture
- Diploma of Applied Science (Arboriculture)
- Member International Society of Arboriculture

Professional Experience

2010 – present	Director of Joe Kellett Arboriculture; Sessional instruction at Melbourne Polytechnic in Arboriculture training
1986 – 2010	Director, Assured Tree Care, Pty Ltd. Sessional instruction and teaching at Burnley College and Northern Metropolitan College of TAFE.
1984 – 1986	Arborist, Heidelberg City Council.
1982 – 1984	Trainee Arborist, Rivett Enterprises.

Areas of Expertise

- Management of trees in the urban environment, including environmentally and historically significant trees.
- Pruning, planting and transplanting of trees.
- Assessment of trees including risk (hazard) assessment, suitability for retention and in areas of proposed building development.
- Preparation of written tree reports for planning applications to local authorities.

Expertise to prepare this report

My experience includes the provision of tree assessments for both building permit applicants and objectors. All information contained within this report pertaining to the mentioned trees in relation to this property are within my expertise as an arborist. I believe that this report is complete and accurate in every respect.

Facts, matters and assumptions relied upon

- Inspection of subject site.
- Inspection of the trees, using non-invasive methods of data collection from ground level.
- Viewing of plans of proposed building & underground parking.

Appendix 4

Photos of Trees



Photo A shows Tree 1 a *Fraxinus angustifolia* subsp. *angustifolia* (Desert Ash) as seen from the south east. This exotic weed tree is dying back and has been marked for removal. The blue arrow indicates tree 2 a *Citrus japonica* (Kumquat) growing next to the driveway.



Photo B shows Tree 3 a *Pittosporum undulatum* (Sweet Pittosporum) as seen from the south east. This native is a problematic weed tree and has been marked for removal.



Photo C shows Tree 4 a *Pittosporum undulatum* (Sweet Pittosporum) as seen from the south east. On the right of shot is Tree 5 a *Camellia japonica* (Camellia); both are marked for removal to allow for the rejuvenation of this neglected landscape.



Photo D shows Tree 5 a *Michelia figo* (Port Wine Magnolia) on the right of shot. On the left of shot is Tree 6 a *Coprosma repens* (Shiny Mirror Bush) dying back at its top, both exotics are marked for removal.



Photo E shows Tree 7 a *Cinnamomum camphora* (Camphor Laurel) in the centre of shot, as self-sewn exotic weed tree. On the left of shot is Tree 8 a *Ligustrum ovalifolium* (Hedge Privet) an exotic that is usually hedged; it has been allowed to out grow this position and has been marked for removal.



Photo F shows Tree 10 on the right of shot a *Michelia figo* (Port Wine Magnolia), to the left is Tree 11 a *Syzygium smithii* (Lilly Pilly) as indicated by the blue arrow; both are marked for removal. On the far left of shot is the lower trunk of Tree 12 a *Ginkgo biloba* (Ginkgo) an attractive tree marked for retention.



Photo G shows Tree 12 a *Ginkgo biloba* (Ginkgo) as seen from the north, illustrating its close proximity to the existing house and the large scaffold branch growing towards the west.



Photo H shows Tree 13 an *Acer negundo* (Ash leaved Maple) as seen from the south west; the exotic is a problematic weed in our urban landscape and has been marked for removal. Its patchy canopy a symptom of its poor health.



Photo I shows Tree 14 a *Liquidambar styraciflua* (Liquidambar) as seen from the south; it is devoid of leaves as it is dead. It must be removed before it decays and begins to shed branches.



Photo J shows Tree 16 a *Waterhousia floribunda* (Weeping Lilly pilli) as seen from the south; illustrating its thick and dark canopy, blotting out sunlight from this property. There is nothing growing under it, due to its high water use and dense canopy, preventing anything substantial from establishing.



Photo K shows Tree 19 a *Nerium oleander* (Oleander) on the right of shot. On the left is Tree 18 a *Ligustrum lucidum* (Hedge Privet), these exotics have been marked for removal and replacement.



Photo L shows Tree 17 a *Camellia japonica* (Camellia) as seen from the west, growing in the shade of Tree 16 and partially covered in vines. It will never reach its potential and has been marked for removal.



Photo M shows Tree 21 a *Celtis australis*

(European Nettle) as seen from the south west. This self-sewn exotic is recognised as being weedy in our urban landscape and has been marked for removal.



Photo N shows Tree 22 a

Camellia japonica (Camellia) as seen from the north; this exotic screen tree is covered in vines and will not reach its potential. It has been marked for removal to allow for the rejuvenation of this neglected landscape.



Photo O shows Tree 23 a *Magnolia x soulangiana* (Saucer Magnolia) as seen from the south east. It is being stripped by possums over grazing its leaves; it cannot be recovered from this position and has been marked for removal.



Photo P shows Tree 24 a *Lagerstroemia indica* (Crepe Myrtle), this exotic has been previously lopped and is inside the proposed building envelope. It has therefore been marked for removal and replacement.



Photo Q shows Tree 26 a *Camellia japonica* (Camellia) as seen from the north; this exotic screen tree has been marked for removal and replacement.



Photo R shows Trees 27 and 28 a pair of *Castanea sativa* (Chestnut) as seen from the south east; illustrating the small size of these exotic nut trees.



Photo S shows Trees 30 and 31 a pair of *Persea americana* (Avocado) as seen from the south east. Illustrating the stripped top leaves of Tree 31 on the right of shot; these poor exotics are marked for removal.



Photo T shows Tree 32 a *Lagunaria patersonia* (Norfolk Island Hibiscus) as seen from the north; illustrating its position in the nature strip clear of the property boundary.



Photo U shows Tree 33 a *Prunus cerasifera*

'Nigra; (Purple leaf Plum), this exotic is weedy in our urban landscape. This poor tree is clear of the property and would not be affected by this proposal.



Photo V shows Tree 34 an *Agonis flexuosa*

(Willow Myrtle) as seen from the north, 1.5 metres to the north of site; this native is clear of the property; it will require temporary protective to isolate it from the proposed works.