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ROBERTS
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September 5, 2018

RE: LUC-2018-387 Application to remove significant tree T358

John Sule
Senior Planner, City Planning
Dunedin City Council
P O Box 5045,
Dunedin 9058

Dear John,

As per your July 23, email request, I have conducted a site visit to number 27 Cranston Street Dunedin, to inspect significant tree T358 listed on Schedule 25.3 as a Lime (*Tilia x europaea*). The purpose of the visit was to assess the condition of the tree, specifically in relation Application LUC-2018-387 [to remove a significant tree T358 – Lime tree].

My report is as follows.

Site Address: 27 Cranston Street Dunedin [Property No: 5016576]
Client: John Sule, City Planning. Dunedin City Council
The Proposal: Assess tree T358 in relation Application LUC-2018-387
Assessment date: July 31, 2018

1 Arboricultural condition assessment and observations

- 1.1 The tree was visually inspected from ground level on the afternoon of July 31, 2018. The weather was clear and calm at the time of the visit.
- 1.2 In general, at the time of the assessment, the tree looked to be in good health and have vitality within the normal range for the species and age.
- 1.3 The tree had a relatively symmetrical canopy and based on bud distribution, it appeared that it would be evenly foliated throughout (once in leaf)
- 1.4 The tree has four (4) main stems which originate from about one meter above ground level.
- 1.5 The tree appears to have been 'pollarded' at some point in time, for a period of time but has been left to grow out
- 1.6 There were no signs to indicate regular or recent tree maintenance had been undertaken on the tree
- 1.7 The tree appears to be lifting the driveway/path between the base of the tree and the house
- 1.8 The tree had good trunk taper and root flare, and the root plate appeared to be stable.
- 1.9 Overall, the tree appeared free from defects that would suggest imminent failure and the main branch unions appeared sound

2 Arboricultural comment in relation to the applicants comments detailed in planning application LUC-2018-387

- 2.1 Application LUC-2018-387 is to remove the tree. There are four (4) statements provided under the Assessment of Environment Effects (AEE) section. On the copy of the application provided to me three (3) of these statements have been 'struck-through' leaving only one.

This statement reads;

"As weather events are becoming more frequent and more severe the danger to property and/or persons has also significantly increased"

- 2.1.1 As an arborist, I am not able to provide expert comment on this subject [the weather and relative frequency of weather events]

- 2.2 The applicant has given four reasons for removing significant tree T358 [page 6; Reasons for Removal of Significant Tree]. The four reasons are

- i) Danger
- ii) Health and Safety
- iii) Dwelling integrity
- iv) Neighbours dwelling integrity

- 2.2.1 Under point one (Danger) the applicant notes, *'One of the biggest perceived dangers from the location of this significant tree is its potential to damage property and injure people. Due to climate change, the number and intensity of severe weather events is increasing...'*

Tree failure as a result of extreme/severe weather events is a possibility, but it is not uncommon for the roofs of houses to be blown off in tornados and sub-tropical cyclones (both of which are mentioned by the applicant) as well. If trees are a perceived danger then house roofs, garden furniture, trampolines, street signs and almost any other outdoor object must be included as potentially dangerous in an extreme/severe weather event.

- 2.2.2 Under point one (Danger) the applicant has offered seven examples where trees have allegedly caused damage or severe injury. There is insufficient detail for me to be able to determine if the examples are directly comparable to the applicant's situation.

- a) Five of the seven examples relate to vehicles in public spaces
- b) The only example where a tree fell on a house, just notes that a tree fell on a house; there is no mention of injury or damage.
- c) Without more information, I cannot determine if the applicants 'north of Auckland' point where a falling tree resulted in the death of a man was not caused as a result of the man falling the tree on himself. Statistically, this is more probable than a tree falling onto an innocent party

In January of 2016, on average two (2) people per week were reported to have been killed by trees, but in each and every instance the person's actions had directly caused their death (it just so happened that a tree was involved in whatever undertaking they were doing).

- 2.2.3 Under point one (Danger). I am a qualified tree risk assessor, approved in two internationally recognised tree risk assessment methodologies; Tree Risk Assessment Qualification (USA) and the Quantified Tree Risk Assessment (UK). Using those assessments, the risk posed by T358 on people or property is as Low As Reasonably Practicable (the lowest possible risk rating that can be generated using the methodology).

- 2.2.4 Under point two (Health and Safety) the applicant notes, '... [the tree] *has soft weak foliage that constantly breaks off...*' The term for this is 'mass damping'. Mass damping is where branches on trees act as coupled masses and in winds develop a mass damping effect which helps distribute, reduce and dissipate the wind energy. The 'detritus' is a sign that the tree is adapting to the wind and lessening the chances of branch failure.
- 2.2.5 Under point two (Health and Safety) the applicant notes that; branches 'fall down'. This could be simply addressed by regular tree maintenance being undertaken on the tree
- 2.2.6 Under point two (Health and Safety) the applicant notes that; foliage, petals and seed pods 'carpet the ground', and these become slippery, promote moss, algae and fill up the gutters. The tree is potentially as old as the dwelling on 27 Cranston Street, therefore the current and previous owners have been aware of and have been dealing with this for many years. At the time of the visit, there was no obvious sign of moss and algae, so I am unsure why now, after all of these years this has become a problem. The amount of debris falling and the build-up of moss and algae could be reduced by some tree maintenance being undertaken on the tree
- 2.2.7 Under point three (Dwelling integrity) the applicant notes that; the roots will 'destabilise' the foundations of the house. At the time of the visit, there were no signs of damage to the foundations of the house. Based on the age of the tree and the age of the house it is unlikely that the roots would actively go under the house, therefore this concern is unlikely to happen.
- 2.2.8 Under point three (Dwelling integrity) the applicant notes that 'there is debris constantly in the guttering'. This could be addressed by regular house maintenance and further reduced by tree maintenance being undertaken on the tree.
- 2.2.9 Under point three (Dwelling integrity) the applicant notes 'stories' from people with concerns that insurance companies may not meet the needs and/or expectations/obligations of their clients. There is no detail of the content of these stories provided. It is my understanding of insurance companies that if a client can demonstrate that they are actively managing their trees then, any damage caused by that tree will be covered by the insurance company - in the same way that if a client installs smoke alarms and ensures that they are working, they are less likely to have claim issues in the event of a fire.
- 2.2.10 Under point four (Neighbours dwelling integrity) the applicant notes that their concerns also relate to their neighbours. As I do not believe that any single or combined point or points provide sufficient reason to approve the application to remove the tree, I cannot then accept those points for the neighbours dwelling.
- 2.2.11 Under point four (Neighbours dwelling integrity), at the time of the site visit, the roof guttering of the neighbour's dwelling was in an advanced state of disrepair. Based on the size of the weeds growing in the front and rear gutters it would appear that the gutters had not been cleared for several years. Due to the fact that the roadside guttering also had substantial weed growth, it would be unrealistic to suggest that source of the leaf litter onto the neighbour's roof was solely from T358.
- 2.2.12 Under point four (Neighbours dwelling integrity) the applicant notes that roots have broken a retaining wall between the two properties. While it is possible that the roots of T358 may have compromised the retaining wall, there were several other trees and shrubs growing along the top of the retaining wall that may have caused and/or contributed to this problem.

3 Arboricultural comment in relation to the applicant's comments

- 3.1 The issues raised by the applicant about Danger are not supported or substantiated, I am a qualified tree risk assessor and the risk posed by T358 on people or property is low.
- 3.2 The issues raised by the applicant about Health and Safety could be addressed and/or reduced by tree maintenance being undertaken on the tree.
- 3.3 The issues raised by the applicant about dwelling integrity (both theirs and their neighbours) is not supported or substantiated and could also be addressed and/or reduced by tree maintenance being undertaken on the tree.

4 Arboricultural comment in relation to the July 14, 2018 Greentrees Report written by Peter Waymouth

- 4.1 Mr. Waymouth on STEM [pages 4 to 7]. Mr. Waymouth has assessed the tree and produced a STEM score of 138, in 2001 the tree was assessed and given a score of 168. I have assessed the tree and gave it a score of 156.
 - 4.1.1 When I assessed the tree, I did not undertake the Amenity assessment. Amenity points are awarded by a landscape architect, I am not a landscape architect. An arborist is used to calculate the condition section. My condition assessment compared to the initial assessment differs with a reduced function rating by 6 points (from significant to important). The difference there could be accounted for due to changes on the site between my assessment and 2001. I also reduced the age rating by 6 points (from significant to important) based on Mr. Waymouth's information on age. This produced 75 Condition points and with 81 Amenity points (from the initial assessment), generated a score of 156.
 - 4.1.2 Even when considering the reduced function rating the revised age, the tree still scores above the 147 STEM points required for inclusion onto the schedule of significant trees.
- 4.2 In relation to Tree Risk [pages 8 to 9], Mr. Waymouth has used the Tree Risk Assessment Qualification method to generate a moderate risk. It appears that Mr Waymouth has combined the targets (people and property) and in doing so has used the occupancy of the property and consequences of impact on the people. This is incorrect and has produced an elevated rating.
 - 4.2.1 The property [the house] has a constant occupancy rate (it is in the target zone all of the time). The house accounts for less than half of the potential fall zone (a circle taken from the centre of the tree equal to the height of the tree). If a major leader failed and contacted the house the consequences would be minor due to the proximity of the limb to the house (the limb could not fall far enough to generate sufficient momentum to cause significant damage), and the weight distribution of the limb (only the branch ends would contact the house, the larger heavier sections of the limb would fall to the ground before they contacted the house).
 - 4.2.2 With this factored into the two matrix tables and using Mr. Waymouth's one-year time frame, the chance of impact on the property reduce from high to medium.
 - 4.2.3 Using Mr. Waymouth's possible; possible + medium = unlikely. Unlikely + minor = Low
 - 4.2.4 The risk of major leader falling from the tree and causing minor damage to the property (in the next year) is Low

- 4.2.5 The people occupancy rate is occasional (people are only outside under the tree for a small portion of the day or week), and the space they occupy under the tree accounts for less than a quarter of the potential fall zone. If a major leader failed and contacted a person, the consequences would be significant.
- 4.2.6 With this factored into the two matrix tables and using Mr. Waymouth's one-year time frame, the chances of impact reduce from high to low.
- 4.2.7 Using Mr. Waymouth's possible; possible + low = unlikely. Unlikely + significant = Low
- 4.2.8 The risk of a major leader falling from the tree and causing significant harm to people (in the next year) is Low
- 4.3 Once people and property have been separated in Mr. Waymouth's Tree Risk Assessment Qualification method, the risk to people and property is Low
- 4.4 Mr. Waymouth also provides two potential mitigation options. Option one is to, '... reduce end-weight and install cable support system...' Using this option the risk can be reduced to Low
- 5 Arboricultural comment in relation to the Peter Waymouth, Greentrees Report
 - 5.1 Mr. Waymouth combined the targets (people and property) when he used the Tree Risk Assessment Qualification method and has produced an incorrectly elevated risk rating. Once separated and reapplied into the methodology, the risk rating comes out as low.
 - 5.2 Even with the combined targets in Mr. Waymouth tree risk assessment with some minor pruning and the installation of a cable support (option one) the risk posed by the tree drops to low.
 - 5.3 Mr. Waymouth has assessed the tree and produced a STEM score of 138, in 2001 the tree was assessed and given a score of 168. I have assessed the tree and gave it a score of 156.
- 6 Summary
 - 6.1 At the time of my assessment tree appeared free from defects that would suggest imminent failure
 - 6.2 Trees as well as house roofs, garden furniture, trampolines, street signs and almost any other outdoor object must be included as potentially dangerous in an extreme/severe weather event.
 - 6.3 There is insufficient detail to determine if any of the seven examples given by the applicant where trees have allegedly caused damage or severe injury are directly comparable to the applicant's situation.
 - 6.4 I have risk assessed the tree using two internationally recognised tree risk assessment methodologies. Using both of those methods, the risk posed by the tree on people or property is the lowest possible risk rating that can be generated using each assessment
 - 6.5 The Health and Safety concerns relating to falling branches and detritus could be addressed by regular tree maintenance being undertaken on the tree.
 - 6.6 Due to the fact that the roadside guttering also had substantial weed growth it would be unrealistic to suggest that source of the leaf litter onto the neighbour's

roof was solely from T358. The removal of leaves from the roof guttering of the neighbours dwelling could be addressed by regular tree maintenance being undertaken.

- 6.7 Using the Tree Risk Assessment Qualification method Mr. Waymouth had incorrectly combined the targets (people and property) and in doing so had produced an elevated risk rating. With the targets separated and reapplied into the risk methodology system the actual risk posed by the tree is low.
- 6.8 Using the Tree Risk Assessment Qualification method Mr. Waymouth proposes that with some minor work and maintenance the risk posed by the tree can be maintained at low
- 6.9 Using the Tree Risk Assessment Qualification method, I have assessed the tree as having a low risk to people and property.
- 6.10 Using STEM the tree scores above the 147 STEM points required for inclusion onto the schedule of significant trees.

7 Recommendations

- 7.1 I recommend that the Council decline application LUC-2018-387 and does not allow the applicant to remove significant tree T358 listed on Schedule 25.3 as a Lime (*Tilia x europaea*).

As per your request, I have provided a relatively concise report. If you require an explanation of any of the recommendations provided, or documentary evidence to support any of the content in this report please do not hesitate to ask.

Comments in relation to the condition of this tree only considered known targets and visible or detectable tree conditions at the time of the inspection.

Yours sincerely



Mark Roberts
Roberts Consulting Ltd

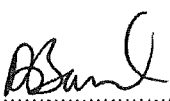
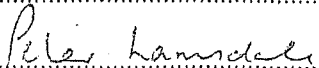
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STANDARD TREE EVALUATION FORM

Date	8.8.01					
Tree	change Lime					
Address	27 Cranston Street.					
Height (m)	1216		Radius (m)	Circumference (m) @ 1.2m		
CONDITION EVALUATION						
Points	3	9	15	21	27	Score
• Form	Poor	Moderate	Good	Very Good	Specimen	15
• Occurrence	Predominant	Common	Infrequent	Rare	Very Rare	15
• Vigour & Vitality	Poor	Some	Good	Very Good	Excellent	15
• Function	Minor	Useful	Important	Significant	Major	21
• Age (Yr)	10 Yrs+	20 Yrs +	40 Yrs +	80 Yrs +	100 Yrs+	21
					Subtotal Points	87

AMENITY EVALUATION						
Points	3	9	15	21	27	Score
• Stature (m)	3-8	9-14	15-20	21-26	27+	15
• Visibility (km)	0.5	1.0	2.0	4.0	8.0	9
• Proximity	Forest	Parkland	Group 10+	Group 3+	Solitary	27
• Role	Minor	Moderate	Important	Significant	Major	15
• Climate	Minor	Moderate	Important	Significant	Major	15
					Subtotal Points	81

NOTABLE EVALUATION						
Recognition Points	Local 3	District 9	Regional 15	National 21	International 27	Score
Stature						
• Feature						
• Form						
Historic	four leaders.					
• Age 100+						
• Association						
• Commemoration						
• Remnant						
• Relict						
Scientific						
• Source						
• Rarity						
• Endangered						
					Subtotal Points	
					Total Points	168


Arborist


27 Cranston Street



Lime
29.01.01

Tree No 1216