NEWPORT LAKES PRIMARY SCHOOL

40 ELIZABETH STREET NEWPORT

ARBORICULTURAL REPORT

JULY 2020

AUSTRALIAN TREE CARE

Authored by: Stephen Williams

1 Executive Summary

The site is planted with mainly *Eucalyptus camaldulensis* River Red Gum and *Eucalyptus cladocalyx* Sugar Gum. These species are not recommended for planting within high use or risk adverse sites such as a school. River Red Gum is susceptible to decay which often results in limb failure while Sugar Gum is a fast growing species that holds all of its leaf, bud and fruit at the branch tips causing them to become very heavy and break in wind and rain events.

Decay has been found in all of the mature River Red Gums (Tree #1, Tree #2 & Tree #8) as well as an active split with a stem attachment (Tree #8). Given there is no treatment available for decay, these specimens have been recommended for removal due to their high risk of failure.

The Sugar Gums can be retained with pruning to improve their form and structure. Consideration should be given to removing these trees over the coming years and replacing them with a more suitable species for a school.

The recommendations should be carried out as per the timeframes outlined within this report.

Contents

2 Introduction

2.1 Brief

Provide an Arboricultural Report on the health and condition of the trees within Newport Lakes Primary School at 40 Elizabeth Street, Newport.

The arborist report is to be prepared by a suitably qualified person/ company, assessing the major specimens within the grounds. All submitted reports are in accordance with *Australian Standard 4970-2009 – Protection of trees on development sites* and *Australian Standard 4373-2007 – Pruning of amenity trees*.

2.2 Methodology

The tree assessment tool TreeAZ was utilized to class or grade the tree condition. Details for the definitions stated within the report can be obtained from Appendix A – TreeAZ.

The site was assessed by Stephen Williams for Australian Tree Care on Saturday 11 July 2020.

A visual tree assessment was carried out from the ground on the subject trees with each individual specimen being assessed for the purpose of this report. No trees were assessed from above ground via methods such as climbing or drone.

Stem diameters were measure using a DBH tape and calculated in accordance with *Australian Standard 4970-2009 – Protection of trees on development sites*.

Nearmap.com was utilised to provide overhead imagery for this report.

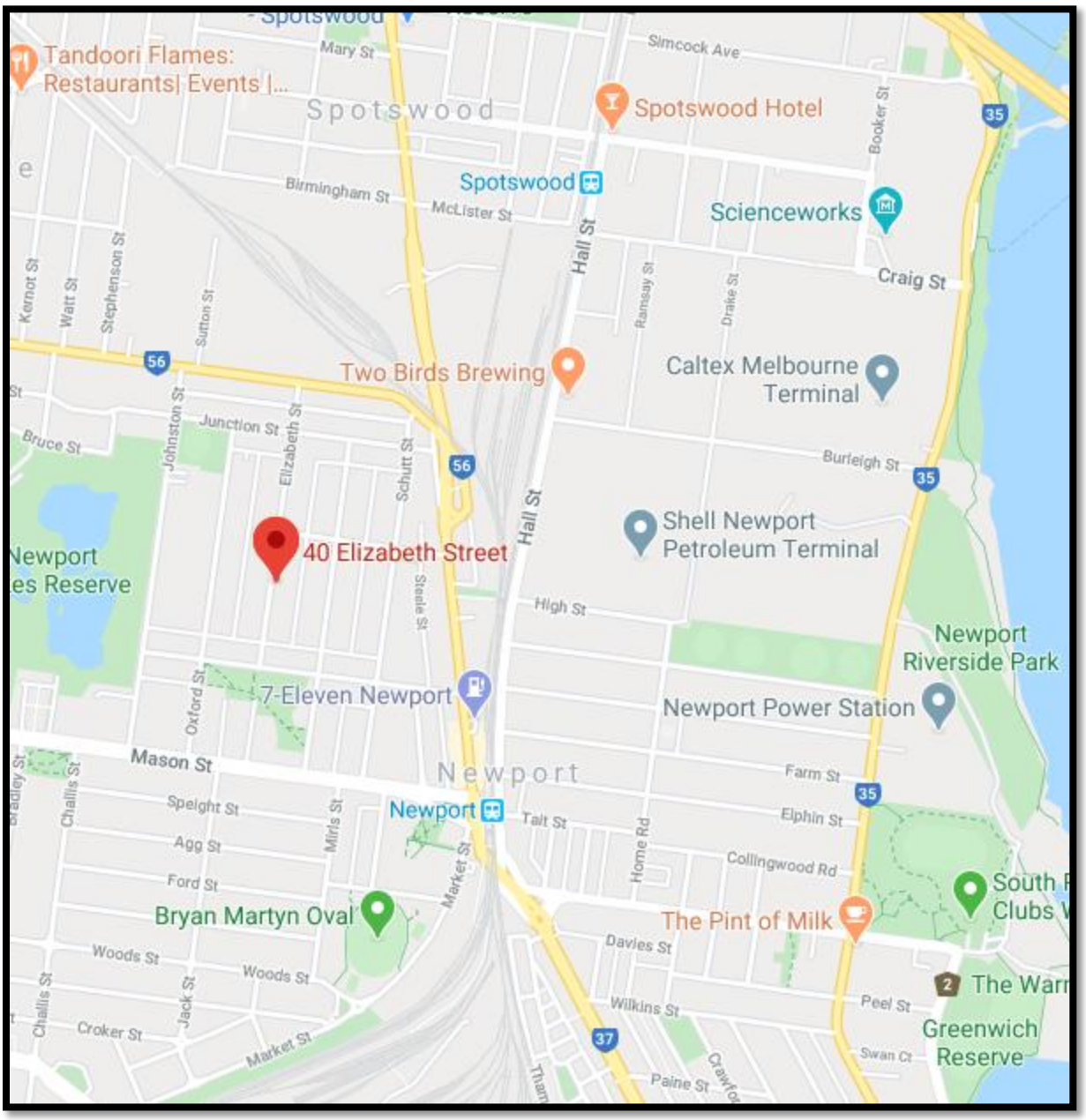
2.3 Project Arborist

In accordance with Australian Standard 4970-2009 – Protection of Trees on Development Sites the project arborist is suitably experienced and competent in arboriculture, having acquired through training, qualification (minimum Australian Qualification Framework (AQF) Level 5, Diploma of Horticulture (Arboriculture)) and also has equivalent industry experience (24 years), which indicates that the person has the knowledge and skills enabling them to perform tasks required by the Standard.

Company	Australian Tree Care
Project Arborist	Stephen Williams
Qualifications	Diploma of Horticulture (Arboriculture)
Phone	0403 867 449
E-mail	steve@austrecare.com.au

3 Site address

The site of interest is located 40 Elizabeth Street, Newport, Victoria, 3015. The subject trees are located within the property.



4 Tree locations

5 Tree Audit

For the purposes of the audit trees have been given a colour code to indicate priority. The following timeframes for work to be completed apply to these priorities:

Low Green 12 months +

High Red <3 month

About half the site has high priority trees with issues that require addressing. The high priority trees a high risk for failure, high frequency of people being present within the drop/ fall zone and high risk of property damage.

The colour code within the audit corresponds with the tree numbering on the provided site map.

6 Tree list

Type	Num	ID	Stem diameter (cm)	Height x Width	TreeAZ	Priority	Recommendations
Tree	1	*Eucalyptus camaldulensis*	123	16 x 18	Z9	HIGH	Remove tree
Tree	2	*Eucalyptus camaldulensis*	87	14 x 14	Z9	HIGH	Remove tree
Group	3	*Mixed native species*	NA	4-8 x 2-6	Z1	LOW	Clear foliage from fence and buildings
Tree	4	*Eucalyptus cladocalyx*	50	12 x 12	A2	HIGH	Reduce canopy by 10%
Tree	5	*Eucalyptus cladocalyx*	67	16 x 14	A2	HIGH	Reduce canopy by 10%
Tree	6	*Eucalyptus cladocalyx*	84	16 x 12	A2	HIGH	Reduce canopy by 10%, remove deadwood
Group	7	*Eucalyptus cladocalyx*	NA	4-6 x 3-5	Z1	LOW	No maintenance identified
Tree	8	*Eucalyptus camaldulensis*	100	16 x 18	Z9	HIGH	Remove tree (URGENT)
Tree	9	*Ulmus parvifolia*	90	8 x 8	A2	LOW	Pollard/ reduce stems
Tree	10	*Eucalyptus sideroxylon*	53	18 x 10	A2	HIGH	Reduce canopy by 10%
Tree	11	*Corymbia citriodora*	65	14 x 12	A2	LOW	Reduce canopy by 10%
Tree	12	*Quercus robur*	58	8 x 14	A1	LOW	No maintenance identified
Group	13	*Mixed exotic species*	NA	2-5 x 2-5	A1	LOW	No maintenance identified

6.1 Tree details

Tree #1		
ID	*Eucalyptus camaldulensis*	
Stem Diameter at 1.5 m (cm)	123	
Height x Width (metres)	16 x 18	
TreeAZ	Z9	
Comment	Fungal fruiting bodies attached to tree which indicates the decay is present within the stems.	
Recommendations	**Remove tree**	
Priority	HIGH	

Tree #2		
ID	*Eucalyptus camaldulensis*	
Stem Diameter at 1.5 m (cm)	87	
Height x Width (metres)	14 x 14	
TreeAZ	Z9	
Comment	Fungal fruiting bodies attached to tree which indicates the decay is present within the stems.	
Recommendations	**Remove tree**	
Priority	HIGH	

Group #3

ID	Mixed native species
Stem Diameter at 1.5 m (cm)	NA
Height x Width (metres)	4-8 x 2-6
TreeAZ	Z1
Comment	
Recommendations	**Clear foliage from buildings and fence** **Remove stems with acute unions**
Priority	LOW

Tree #4

ID	*Eucalyptus cladocalyx*
Stem Diameter at 1.5 m (cm)	50
Height x Width (metres)	12 x 12
TreeAZ	A2
Comment	Branches becoming elongated and tip heavy
Recommendations	**Reduce stem end weight by approximately 10%**
Priority	HIGH

Tree #5

ID	*Eucalyptus cladocalyx*
Stem Diameter at 1.5 m (cm)	67
Height x Width (metres)	14 x 14
TreeAZ	A2
Comment	Branches becoming elongated and tip heavy
Recommendations	**Reduce stem end weight by approximately 10%**
Priority	HIGH

Tree #6

ID	*Eucalyptus cladocalyx*
Stem Diameter at 1.5 m (cm)	84
Height x Width (metres)	16 x 12
TreeAZ	A2
Comment	Branches becoming elongated and tip heavy
Recommendations	**Reduce stem end weight by approximately 10%** **Prune deadwood from canopy**
Priority	HIGH

Group #7

ID	*Eucalyptus cladocalyx*
Stem Diameter at 1.5 m (cm)	NA
Height x Width (metres)	4-6 x 3-5
TreeAZ	Z1
Comment	
Recommendations	**No requirement for maintenance works was identified**
Priority	LOW

Tree #8

ID	*Eucalyptus camaldulensis*
Stem Diameter at 1.5 m (cm)	100
Height x Width (metres)	16 x 18
TreeAZ	Z9
Comment	Tree is actively splitting at its main union Weight of stem failure is supported by a small diameter cable
Recommendations	**Remove (URGENT)**
Priority	HIGH

Tree #9

ID	*Ulmus parvifolia*
Stem Diameter at 1.5 m (cm)	90
Height x Width (metres)	8 x 8
TreeAZ	A2
Comment	Tree has been lopped in the past Canopy consists of epicormic regrowth
Recommendations	**Pollard tree/ or remove the smaller less dominant stems and allow for the larger better limbs to dominate the canopy**
Priority	LOW

Tree #10

ID	*Eucalyptus sideroxylon*
Stem Diameter at 1.5 m (cm)	53
Height x Width (metres)	18 x 10
TreeAZ	A2
Comment	Branches becoming elongated and tip heavy
Recommendations	**Reduce stem end weight by approximately 10%**
Priority	HIGH

Tree #11

ID	*Corymbia citriodora*
Stem Diameter at 1.5 m (cm)	65
Height x Width (metres)	14 x 12
TreeAZ	A2
Comment	Branches becoming elongated and tip heavy
Recommendations	**Reduce stem end weight by approximately 10%**
Priority	LOW

Tree #12

ID	*Quercus robur*
Stem Diameter at 1.5 m (cm)	58
Height x Width (metres)	8 x 14
TreeAZ	A1
Comment	
Recommendations	**No requirement for maintenance works was identified**
Priority	LOW

Group #13		
ID	*Mixed exotic species*	 
Stem Diameter at 1.5 m (cm)	NA	
Height x Width (metres)	2-5 x 2-5	
TreeAZ	A1	
Comment		
Recommendations	**No requirement for maintenance works was identified**	
Priority	LOW	

7 Findings

Many of the trees within the site are not suited to high traffic, risk adverse settings such as a school.

The *Eucalyptus camaldulensis* River Red Gum can be prone to brown rot decay which eventually results in stem loss. This can occur during stormy weather, high wind or on a normal day. The Red Gums on the site have been assessed for indications of decay and it was found to be present (Tree #1 & Tree #2).

Figure 1 - (Tree #1) Fungal fruiting bodies which indicate the presence of decay

Figure 2 - (Tree #2) Fungal fruiting body is located within a wound face on the main stem. There is also dieback at the base

Assessment of Tree #8 found that the main stem is actively splitting and is only remaining intact due to a small diameter cable within the tree. The cable is insufficient for the size and weight material within the tree and is commonly installed to reduce stem movement during high winds and to catch fallen stems. In this situation the stem has failed and is rotating upon the cable during wind movement. While the tree is currently supported it is recommended that the tree be removed as urgently as possible as it is only a matter of time before the cable of stem fail completely.

Figure 3 - (Tree #8) Decay is present within one of the stems of the tree

Figure 4 - (Tree #8) Image on the right shows the splitting main stem with the small diameter cable in the foreground. The image on the right shows the cable diameter in perspective to our climber's finger. A cable of this size is insufficient to support the weight of this size tree

Eucalyptus cladocalyx Sugar Gum is characterised by long elongated stems with all their foliage, fruit and bud located at the tips. This species is been traditionally used for farm wind rows and as a resource timber due to its rapid growth rate.

There is a higher than normal failure risk for this species due to its tendency to elongate, grow fast and support all its leaf, fruit and bud material at the branch tips. Given the planting location of the trees has buildings, footpaths and unrestricted access for the children it has been recommended that these tree by managed through pruning to reduce their end weight. This pruning will reduce the concentrated weight from the tip which will increase the union strength and reduce the forces that excessive end weight generates during rain and wind events. Additionally the pruning will increase the strength of the stem attachment and the removal of the apical bud will suppress hormones within the stems allowing for increased lateral growth. This will essentially slow the rate of the branch extension and improve the stem taper and stability.

An improvement of taper will allow the stems to hold up much better during extreme weather events which is where you are more likely see the loss of large limbs. These trees have been rated with a high priority rating due to having targets within striking distance of falling limbs.

8 Disclaimer

The tree(s) referred to in this report are living entities and are therefore subject to natural processes. They will also be subject to changes to their environment caused by human's activities and to exceptional weather conditions. The inspection undertaken by our qualified staff relies on visual attributes of tree health and structure which can be assessed from a ground based inspection. Hidden defects which are not readily visible may not be detected. We therefore cannot wholly guarantee the condition and safety of the trees inspected beyond what can be reasonably assessed from the procedure used. We would recommend that the trees are regularly inspected and our staff will advise on the suitable frequency of these inspections.

No discussion will be entered into in regards to any one point within this report as it will be considered out of context. Only the report as a whole will be discussed. No discussion will be entered into regarding the actions of a third party in regards to the trees.

9 Appendices

9.1 Appendix A – TreeAZ

TreeAZ Categories Field Sheet (Version 10.04-ANZ)

CAUTION: TreeAZ assessments must be carried out by a competent person qualified and experienced in arboriculture. The following category descriptions are designed to be a brief field reference and are not intended to be self-explanatory. They must be read in conjunction with the most current explanations published at www.TreeAZ.com.

Category Z: Unimportant trees not worthy of being a material constraint

Local policy exemptions: Trees that are unsuitable for legal protection for local policy reasons including size, proximity and species	
Z1	Young or insignificant small trees, i.e. below the local size threshold for legal protection, etc
Z2	Too close to a building, i.e. exempt from legal protection because of proximity, etc
Z3	Species that cannot be protected for other reasons, i.e. scheduled noxious weeds, out of character in a setting of acknowledged importance, etc
High risk of death or failure: Trees that are likely to be removed within 10 years because of acute health issues or severe structural failure	
Z4	Dead, dying, diseased or declining
Z5	Severe damage and/or structural defects where a high risk of failure cannot be satisfactorily reduced by reasonable remedial care, i.e. cavities, decay, included bark, wounds, excessive imbalance, overgrown and vulnerable to adverse weather conditions, etc
Z6	Instability, i.e. poor anchorage, increased exposure, etc
Excessive nuisance: Trees that are likely to be removed within 10 years because of unacceptable impact on people	
Z7	Excessive, severe and intolerable inconvenience to the extent that a locally recognized court or tribunal would be likely to authorize removal, i.e. dominance, debris, interference, etc
Z8	Excessive, severe and intolerable damage to property to the extent that a locally recognized court or tribunal would be likely to authorize removal, i.e. severe structural damage to surfacing and buildings, etc
Good management: Trees that are likely to be removed within 10 years through responsible management of the tree population	
Z9	Severe damage and/or structural defects where a high risk of failure can be temporarily reduced by reasonable remedial care, i.e. cavities, decay, included bark, wounds, excessive imbalance, vulnerable to adverse weather conditions, etc
Z10	Poor condition or location with a low potential for recovery or improvement, i.e. dominated by adjacent trees or buildings, poor architectural framework, etc
Z11	Removal would benefit better adjacent trees, i.e. relieve physical interference, suppression, etc
Z12	Unacceptably expensive to retain, i.e. severe defects requiring excessive levels of maintenance, etc

NOTE: Z trees with a high risk of death/failure (Z4, Z5 & Z6) or causing severe inconvenience (Z7 & Z8) at the time of assessment and need an urgent risk assessment can be designated as ZZ. ZZ trees are likely to be unsuitable for retention and at the bottom of the categorization hierarchy. In contrast, although Z trees are not worthy of influencing new designs, urgent removal is not essential and they could be retained in the short term, if appropriate.

Category A: Important trees suitable for retention for more than 10 years and worthy of being a material constraint

A1	No significant defects and could be retained with minimal remedial care
A2	Minor defects that could be addressed by remedial care and/or work to adjacent trees
A3	Special significance for historical, cultural, commemorative or rarity reasons that would warrant extraordinary efforts to retain for more than 10 years
A4	Trees that may be worthy of legal protection for ecological reasons (Advisory requiring specialist assessment)

NOTE: Category A1 trees that are already large and exceptional, or have the potential to become so with minimal maintenance, can be designated as AA at the discretion of the assessor. Although all A and AA trees are sufficiently important to be material constraints, AA trees are at the top of the categorization hierarchy and should be given the most weight in any selection process.

Further explanations to assist categorization

Z1	Any existing statutory definitions of trees that are too small to be legally protected should be applied and trees less than those heights or diameters will be Z1. If there are none, then if the tree has been planted for less than 5 years it is Z1. If it is less than 5m in height, it will be Z1 unless it is significant, i.e. clearly mature, but small trees are not Z1. If it is greater than 10m in height it is not Z1 unless it was planted in the last 5 years. Applying Z1 to trees between 5–10m is a matter of judgment; the most obvious test being that the tree could be easily and reliably moved or replaced. Ideally, the replacement tree should not be less than 20% of the replaced tree's trunk, height and spread dimensions.
Z2	Any existing statutory rules that prevent protection of trees within a fixed distance of a structure will allow a tree to be subcategorized as Z2.
Z3	Any existing statutory rules or guidance that prevent protection of trees for reasons other than size and proximity dictate Z3, i.e. invasive or alien species. If none exist, then Z3 cannot be applied.
Z4	This subcategory is for trees that are unlikely to recover from a serious health problem. The condition must be terminal with no obvious potential to recover, i.e. severe crown dieback related to excavation damage or root decay, to the extent that the structural branch framework is compromised. Trees that are likely to recover or improve should not be placed in this subcategory, i.e. trees suffering from a foliar problem that has little impact on the branch framework and varies from year to year.
Z5	Severe means so bad that there is no realistic chance of the tree achieving its full potential and there is a high of failure risk. In many cases, the risk of failure can be reduced by dramatic reduction in tree size, but this has severe health, maintenance cost and amenity implications, so is unlikely to be a sustainable management option. A common example is a severely unbalanced tree within a group that will be particularly vulnerable in adverse weather conditions and the adjacent trees mean there is no hope of remedial works resulting in an improvement. Topped trees do not automatically fit into this subcategory, although there is an obvious temptation. Species prone to decay, such as willow and poplar, often have severe decay at the origin of vigorous re-growth, creating a high risk of failure in adverse weather conditions. Z5 is clearly appropriate for them. However, this needs to be a careful judgment because topping in itself does not necessarily condemn a tree to this subcategory. Some trees, such as plane, oak and lime, are particularly good at coping with this treatment and often are able to mature with a low risk of failure. If remedial works will allow the tree to be retained with no significant adverse impact on amenity, health or maintenance costs, then it does not fit here.
Z6	Trees can become poorly anchored because of soil erosion through climatic factors, i.e. water or wind, wear from traffic-pedestrian or vehicular, changing soil conditions - increasing wetness, sudden and severe physical stress from storms and root damage such as decay or severance reducing root strength. In some case, i.e. storm induced instability, there may be a realistic chance of recovery and a sub categorization of Z6 may be premature. However, if excessive remedial work is required, it is likely that Z6 is a defensible subcategory. Alterations to tree exposure to the wind occurs because of changes in the shelter provided by adjacent objects such as buildings or trees. This often applies to groups of trees where one large dominant individual will be lost because of poor health or a structural problem, which then dramatically exposes the remaining trees.

Z7	**Establishing thresholds of acceptable levels of inconvenience:** In its broadest sense, inconvenience is the interference with the authorized use of land. In relation to trees, it can be in the form of roots disrupting landscaping and hard surfacing, parts of trees physically preventing land use, tree debris such as leaves and fruit falling and tree crowns causing excessive shade. The principles for establishing what are acceptable levels of inconvenience are the same irrespective of the cause. In a community context, it is generally accepted that trees provide a significant benefit to society and it is reasonable for individuals to tolerate some level of inconvenience from their presence. However, the precise location or value of these thresholds is not always obvious and is often a subjective interpretation rather than a definitive point. There will always have to be a balancing of the benefit to the community weighed against the inconvenience suffered by the individual. What is an acceptable, tolerable or reasonable level of inconvenience is often a matter of judgment for each specific situation, tempered by experience and common sense. This, in turn, should be guided by court, tribunal and planning decisions that have made informed judgments on these issues. **Common examples:** Very large trees near existing occupied buildings can dominate to the extent that the disbenefit from the anxiety of the occupants outweighs the benefit of the tree. Regular and severe staining caused by fallen debris to a swimming pool surround may be unacceptable because the stark contrast in colours creates a dirty impression whereas the same staining on a path or drive surface may be more acceptable. In contrast, falling leaves blocking gutters causing them to be cleaned once a year is not that much of a local inconvenience in the context of the wider benefits that trees impart. **Making the decision:** Assessing inconvenience is almost entirely a subjective judgment, based on experience and understanding of what is perceived as being reasonable and unreasonable for a normal person. As with all these judgments, a simple test is to imagine a court hearing where a judge has to decide if the levels of inconvenience are intolerable. If they are, then the tree is Z7; if they are not that bad, then the tree belongs in another subcategory.
Z8	Where more serious damage occurs to property from root action, then court/ tribunal judgments on liability help to focus on what level of damage is deemed tolerable by society. The most common example is direct damage from roots, trunks and branches to structures and surfacing. Repairs to walls may require such extensive excavation and cutting of roots that the tree cannot be retained. However, the use of innovative techniques may reduce root damage, but still produce a viable boundary, allowing the tree to be retained. Root damage to surfacing is often a sustainable reason for removal if rectifying the damage will significantly adversely affect the tree. In contrast, the potential for roots to deform surfacing would be a less reliable basis for allocation to this subcategory because it is so unpredictable. As a general rule, there would need to be good evidence for ongoing damage, with little scope for remedial works, before a tree could be reliably allocated to this subcategory.
Z9	This is a similar subcategory to Z5, but where the defect is not so severe that remedial works have to be extensive and immediate. Quite often, there are less severe defects that are so bad there is no realistic potential for the tree to improve, but it could be retained in the short term with some significant remedial works. This would only be seen as a temporary measure because to continue applying the same principle would not be cost-effective compared to replacement. A typical example would be a tree with a large and progressive cavity that will clearly prevent it ever improving its condition or contribution to amenity. However, substantial thinning and reduction would allow it to be retained in the short term to allow other replacement trees to develop to buffer its inevitable loss. The benefit of retaining it in the short term might outweigh the cost of doing the works as a one-off, but not on a regular basis.
Z10	It is common to find trees that are obviously not good enough for long term retention because they look unhealthy or are so unbalanced or so tall and thin or that they will never improve. However, the problems are not so severe that there is a high risk of death or failure, and they cannot be discounted for that reason. This subcategory is for those trees and relies on the principle of sustained amenity to justify the allocation. Trees with no potential to improve are taking up space where new trees could be growing, which would be enhancing the desirable objective of an uneven age class structure. The replacements would obviously be small trees and these would then fall into the Z1 subcategory. As set out in the Z1 explanations, the precise location on the site is not often that critical, so these trees would not generally be considered worthy of being a material constraint.
Z11	This applies to trees in groups where one individual is destructively interfering with another. The judgment of which is the better tree is obviously subjective and would be informed by which tree had the best potential for sustainable retention. An obvious example is one tree growing up through another and directly rubbing causing damage. Retaining both would probably result in the loss of each, whereas removing one may allow the other to achieve its full potential. Another example would be one tree shading and preventing the sustainable development of a neighbour to the extent that both trees would be prematurely removed if left alone. The removal of one tree may be justified if it allowed the remaining tree to reach its full potential. If both trees could be retained as a group and achieve their full potential, then they should not be included in this subcategory.

Z12	This is a matter of judgment and may vary widely. It primarily applies to existing trees that are not suited to their location, but there is resistance to their replacement. As a general principle, all trees will incur some management costs and these would normally not be a valid reason for removal. However, as those costs increase, their acceptability decreases to a point where it will be more cost-effective to plant a new tree more suited to the location rather than incur the burden of repeated and excessive costs indefinitely. Typical examples include topped trees with excessive decay, pollarded trees to reduce subsidence risk, trees beneath power lines and trees close to buildings, roads and paths. All these examples will require high levels of maintenance that may not be financially acceptable unless the benefits that arise from retaining the trees are particularly high.

A1	Trees that do not require any specific remedial works above those that would be required for normal maintenance.
A2	Trees with minor defects likely to recover from remedial works to be retainable in the long term, i.e. pollards with little decay.
A3	'Special' means unusual, rare or uncommon, i.e. a tree of some historical/cultural significance, etc.
A4	Trees can be valuable ecological habitat that may be protected by legislation, which may be a material constraint on the type and timing of changes that can occur on a site. If an ecological assessment has not been carried out by the time of the survey, and the arborist suspects there may be habitat issues, the tree should be identified as A4, and specialist assessment should be sought.