

Client No: 10372/66541

Tree

Maintenance Ltd

Mrs J Thompson

TREE CONDITION SURVEY REPORT

The Hazels, Elkstone, GL53 9PB

Date: September 2021

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Table of Contents

1.0	Summary (see Schedule Appendix 1 for full details)	3
2.0	Introduction	3
3.0	Site Description	3
4.0	Method and Abbreviations	4
5.0	Planning Considerations	6
6.0	Wildlife Issues	6
7.0	Arboricultural Methods	6
8.0	Limitations	6
9.0	Re-inspections	7
10.0	Costs for Recommended Works	10

Appendix 1. Tree Survey Schedule (3 Pages)

Appendix 2. Photos

Appendix 3. Copy or reports from 2010

1.0 Summary (see Schedule Appendix 1 for full details)

- 1.1 All trees on site were subject to a ground level condition and safety inspection on 15/09/2021 by a qualified and experienced arboriculturalist. All trees were inspected and were recorded in the Survey Schedule included at Appendix 1.
- 1.2 The tree stock consists of a mainly mature specimens. Overall, the tree stock is considered to be in good/fair condition.
- 1.3 It has been confirmed by Cotswold District Council that the 4 Lime trees within the site are protected by a TPO. Although some works are exempt from the need for consent I recommend that the whole schedule with plan is attached to the application/notification to the Local Planning Authority. Failure to obtain written consent/give notification is a criminal offence and could result in a fine of up to £20,000 on summary conviction, unlimited fine if indicted to crown court and/or 6 months in prison.
- 1.4 Birds and Bats are protected under UK and European Law from disturbance and harm. Where work is being carried out and bats are present, or if the tree is a known roost, consultation must be made with the Statutory Nature Conservation Organisation, Natural England www.naturalengland.org.uk/ . Work likely to disturb nesting birds should be avoided from late March to August.
- 1.5 5 trees were inspected.
- 1.6 T714 contains significant defects which, although not imminently dangerous, require attention within 3 months of date of survey.
- 1.7 There were 2 trees which would benefit from works for reasons of sound arboricultural management. Works should be completed within 6 months.
- 1.8 Should T714 require significant works (following the decay investigation), this might have implications on trees T715 and T716, as they will be left more exposed by this work, and also to the works to T717. Some works may be required to address this increase of exposure.

2.0 Introduction

- 2.1 I am Nick Organ, a consultant for Tree Maintenance Ltd; I have been involved in the care of amenity trees since 1985 and I am an estimator and a consultant for Tree Maintenance Ltd. I hold the Technician's Certificate in Arboriculture (Arboricultural Association). I am also a qualified Professional Tree Inspector as assessed by the industry lead body Lantra.
- 2.2 In accordance with our quotation 10372/66216 dated 20/08/2021, I have been instructed by Mrs J Thompson to carry out a survey of all established trees within the grounds of 'The Hazels', Elkstone GL53 9PB and provide a condition assessment and safety report on all trees present. All individual trees have been inspected; and are recorded within the Survey Schedule at Appendix 1. Tree have been tagged with a numbered aluminium tag to aid identification..

3.0 Site Description

- 3.1 The property sits within the hamlet of Elkstone on a south-east slope overlooking open countryside. The property consists of a single detached house standing in the centre of the plot, with the 4 mature Lime trees on the rear (north-west) boundary and the single Ash tree at

Site: The Hazels, Elkstone, GL53 9PB

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the front, next to the road.

4.0 Method and Abbreviations

4.1 Trees have been visually inspected from ground level using binoculars where necessary. A system of Visual Tree Assessment (VTA) has been used to assess both the physiological and structural condition of the trees. No detailed inspection of suspected defects has been carried out and where this is considered necessary it will be detailed in the recommendations.

4.2 All individual trees have been numbered with an aluminium tag.

4.3 Codes used are as follows

4.3.1 Size Class:

L	Large	Trees more than 20 metres tall
M	Medium	Trees 10-20 metres tall
S	Small	Trees less than 10 metres tall

4.3.2 Age Class:

Age classification is a best predicted assessment considering the tree species together with its current environment:

Y	Young	Recently planted trees at less than a quarter of life expectancy
SM	Semi Mature	Established trees at less than a third of their predicted life expectancy
MA	Early Mature	Trees between a third and two thirds of their predicted life expectancy
M	Mature	Trees at over two thirds of their predicted life expectancy
D	Dead	Trees which have little or no functioning networks of living cells

4.3.3 Structural Condition:

This relates to the physical condition of a tree including its roots, trunk, branch unions and limbs. It is an overall assessment of bio mechanical strength based on visible defects or defect indicators identified at the time of the survey:

G	Good	No significant structural defects
F	Fair	Structural defects which can be improved or removed through moderate remedial tree surgery or other management practices
P	Poor	Significant structural defects which cannot be alleviated through moderate tree surgery or other management practices

4.3.4 Physiological Condition:

Physiological Condition is an assessment of the tree's overall health (ability to resist strain) which affects its ability to tolerate changes such as climate, local environment and colonisation by pests and diseases. The assessment is based on bud density and distribution, leaf size and colour, crown density, annual extension and wound closure compared with similar species within the locality:

G	Good	A tree with a fully functioning biological system showing evidence of normal sustained growth.
F	Fair	A tree with fully functioning biological system showing some evidence of continuing growth which has the potential to improve or decline depending upon environmental conditions and future management.
P	Poor	A tree with a biological system of limited functionality and declining health, unlikely to recover but which may remain in a moribund state for a significant period of time.
D	Dead	A tree which lacks any significant live tissue or functioning biological systems.

- 4.4 Recommendations are based on an assessment of risk (the likelihood of harm occurring), the size of the hazard (anything with the potential to cause harm), the value of the target (persons or property that could be injured or damaged) and the frequency of occupation. The targets to be considered here are:

Residents and visitors to the site/property.
Users of footpath along the north-west boundary and the road to the front.
Buildings and infrastructure within the site.
Neighbouring residential properties and gardens

- 4.5 Works are also specified for reasons of good arboricultural management and include to abate a possible source of nuisance or to improve the future growth of the tree or adjacent trees.
- 4.6 Trees that require work are listed in the schedule (Appendix 1). Works have been prioritised based on the level of risk they pose, as follows:

- 1 Month** Works required immediately
- 3 Months** Works recommended within 3 months
- 6 Months** Works recommended within 6 months
- 1 Year** Works recommended with 1 year
- ABA** Works recommended as budgets allow

5.0 Planning Considerations

- 5.1 It has been confirmed by Cotswold District Council that the 4 Lime trees within the site are protected by a TPO. Although some works are exempt from the need for consent I recommend that the whole schedule with plan is attached to the application/notification to the Local Planning Authority.
- 5.2 If trees are protected by a Tree Preservation Order, failure to obtain written consent/give notification is a criminal offence and could result in a fine of up to £20,000 on summary conviction, unlimited fine if indicted to crown court and/or 6 months in prison.
- 5.3 If Tree Maintenance Ltd is instructed to carry out the works we will make all the relevant applications/ notifications on your behalf.

6.0 Wildlife Issues

- 6.1 Bats. Under current legislation it is an offence to 'intentionally or recklessly disturb a bat' or 'damage, destroy or block access to the resting place of any bat' (Countryside and Rights of Way Act 2001 and further strengthened by other legislation).

Where work is being carried out and bats are present, or if the tree is a known roost, consultation must be made with the Statutory Nature Conservation Organisation Natural England (www.naturalengland.org.uk).

A European Protected Species Habitat Regulations Licence is likely to be required. Work to trees with the potential for roosting bats is best done from late August to early October. March through to April is also suitable although this may conflict with nesting birds (see below).

- 6.2 Birds. It is an offence under section 1 of The Wildlife and Countryside Act 1981 (as amended) to kill, injure or take any wild bird; intentionally or recklessly disturb any wild bird or take, damage or destroy the nest of any wild bird while it is in use or being built. So work likely to disturb nesting birds should be avoided from late March to August.
- 6.3 All trees requiring work should be evaluated prior to work starting as part of a normal on-site risk assessment. If a bird, badger or bat issue is suspected then the tree works will be suspended and further advice from our office should be sought.

7.0 Arboricultural Methods

- 7.1 All tree work should be carried out to the highest standards, based on British Standard 3998:2010 '*Recommendations for Tree Work*' and current best practice.

8.0 Limitations

- 8.1 Due to the changing nature of trees – and possibly other site circumstances – this report and recommendations are limited to a two-year period. Similarly, this report could be invalidated if any alterations are made to the property that could change the conditions as seen at time of inspection.
- 8.2 Under certain circumstances, roots can affect foundations, drains and other underground services. These issues have not been addressed by this report unless specifically referred to.

8.3 Trees are dynamic structures that can never be guaranteed 100% safe; even those in good condition can suffer occasional damage under only average weather conditions. A lack of recommended work does not imply that a tree will never suffer damage.

9.0 Re-inspections

9.1 For a site like this, where tree safety is of paramount importance, I recommend professional inspection once every 2 years, however, 18-month intervals can be useful, to allow the inspection to alternate between the trees being in leaf and out of leaf as different information can be evaluated.

9.2 As set out in section 8.0 even healthy trees can be subject to damage as a result of even moderate weather conditions. I would therefore recommend that in addition to the regular professional survey you carry out a quick visual inspection of all of the trees following any heavy snow fall or storms which exceed Beaufort Scale 7, near gale force winds. This should quickly identify any hazards to users of the site which require immediate attention.

9.3 Ash Die Back

9.3.1 Ash Die Back is caused by *Hymenoscyphus fraxineus*. This is a very virulent disease which is likely to result in the rapid death of young trees and the decline of mature specimens. From continental experience, it is likely to result in the death of around 95% of our Ash trees including our native and ornamental varieties. The impact is not just in landscape and timber terms, but it has wider implications for habitat and biodiversity loss.

9.3.2 Spread is via airborne spores produced from dead leaves which then colonise the buds and leaves of healthy trees up to 10 miles away. The symptoms include blackening and wilting of the leaves and shoots during mid to late summer (July –September). Most infected leaves are shed prematurely by the tree but, in some cases, the infection progresses from the leaves and into the twigs, branches and eventually the trunk, causing dark lesions, or cankers, to form in the bark. These often have a characteristic elongated-diamond shape centred on the joints between branches, or where branches join the trunk. The lesions typically, but not always, spread upwards and downwards from the joint as the infection spreads in both directions. They can eventually girdle the whole trunk, cutting off the tree's supply of fluid and nutrients from the roots. Timber appears to rapidly lose structural strength and integrity making the tree more prone to failure especially in the later stages. Declining trees are more susceptible to secondary pathogens.

9.3.3 Currently there is no known effective prevention or curative treatment.

9.3.4 Identifying early stages of Ash Die Back on mature trees is difficult when trees are not in full leaf and therefore, where die back is a concern, trees should be inspected from July to September.

9.3.5 Where Ash trees are recorded, they are assigned one of four Ash Health Classes in accordance with *Ash Dieback and Action Plan Tool Kit*, (The Tree Council, February 2019) which can be found at:

https://www.treecouncil.org.uk/Portals/0/Tree%20Council%20Ash%20Dieback%20Toolkit%20280x210%20Feb%208%202019%20-%20flattened_1.pdf).

9.3.6 The assigned Health Class is based on an assessment of the remaining live canopy:

Ash Health Class 1 – 100-75% remaining canopy

Ash Health Class 2 – 75-50% remaining canopy

Ash Health Class 3 – 50-25% remaining canopy

Ash Health Class 4 – 25-0% remaining canopy

9.3.7 Consideration should be given to the continued inspection and management of Ash trees within the site especially in regards the usage and the propensity of declining Ash to fail. Ideally, trees should be removed (or severely reduced) before reaching the end of Class 2 when normal tree surgery practices can still be employed.

9.3.8 Once trees reach Class 3 or beyond - dead or severely moribund - it may be necessary to use working platforms or cranes to safely remove trees which will increase costs.

9.3.9 Evidence shows that once the die back affects 50% of the crown the trees become vulnerable to falling apart (see pictures below)



0% Dieback - Healthy Crown



25% Dieback



50% Dieback



75% Dieback

Additional information on Ash Dieback can be found on the following websites:

<https://www.forestresearch.gov.uk/research/ash-dieback-disease-pest-alert/>

<https://www.woodlandtrust.org.uk/visiting-woods/tree-diseases-and-pests/key-threats/ash-dieback/>

<https://www.treecouncil.org.uk/Portals/0/Example%20-%20Suffolk%20Canopy%20Description.pdf>

<https://www.treecouncil.org.uk/Portals/0/Chalara%20docs/The%20Tree%20Council%20Ash%20Dieback%20Action%20Plan%20Toolkit%20FINAL.pdf>

10.0 Costs for Recommended Works

10.1 Costs can be given in due course if required, however this report is a stand-alone document. Please confirm which trees you would like costed and I will arrange for a colleague to visit site prior to preparing a quotation for the works, which can then be carried out by one of our very experienced and professional contracting teams.

Signed:



Nick Organ, Tech Cert (ArborA), Tech ArborA

Arboricultural Consultant

DATE: 28/09/2021

APPENDIX 1
Tree Survey Schedule

TREE CONDITION SURVEY SCHEDULE

Client: Mrs J Thompson		Site: The Hazels, Elkstone							
Date: 15/09/20214		Consultant: Nick Organ							
Tagged: YES		Weather: Overcast, light wind							
Tree No.	Tree Name	Botanical name	Size	Age class	Struct con	Phys con	Defects & relevant comments	Recommendations	Priority (in months)
714	Lime	<i>Tilia sp</i>	L	M	TBC	G	Three main stems formed from main trunk at 1.75 – 2.5m. Crown previously reduced. Minor deadwood in crown. <i>Kretzschmaria deusta</i> found between the buttresses on the North and East sides from ground level to a height of approximately 40cm. Both mature and juvenile forms are present indicating this to be an active colony. This fungi is an aggressive decayer of wood and can lead to catastrophic failures. There are other cavities on the main stems from historic branch removal (possibly when the house was built) which are not likely to prove a safety issue at present. Otherwise the tree shows good vigour.	Further investigation with a Resistograph decay detector.	3 Months

Tree No.	Tree Name	Botanical name	Size	Age class	Struct con	Phys con	Defects & relevant comments	Recommendations	Priority (in months)
715	Lime	<i>Tilia sp</i>	L	M	F	G	<p>Three stemmed from 2.0m. Crown previously reduced. Slight fire damage at the base on the northwest side with some exposed heartwood, now mostly occluded. This exposed wood is dry and hard and there is good reaction wood growing all round it. The stem on the northwest side is showing signs of weakness on its main junction (bark has been included (sandwiched) between this and the adjoining stem, not allowing the 2 to fully fuse together). This stem arches out to the north with a heavy lateral branch at approximately 7.0m. This tree has cavities in the crown from historic branch removal. Acceptable at present.</p>	No works required on safety grounds at the time of this inspection.	N/A
716	Lime	<i>Tilia sp</i>	L	M	F	G	<p>Fire damage on the northeast side from the base to approximately 1.5m. The exposed heartwood is mainly dry and hard (some surface softness present in places) and the area has good reaction wood growing around it. This tree also has cavities similar to the above trees. The crown of this tree has been previously reduced and the tree is reasonably well sheltered by the adjacent trees. Acceptable at present.</p>	No works required on safety grounds at the time of this inspection.	N/A

Tree No.	Tree Name	Botanical name	Size	Age class	Struct con	Phys con	Defects & relevant comments	Recommendations	Priority (in months)
717	Lime	<i>Tilia sp</i>	L	M	F	G	Twin stemmed from 4.0m. This main junction is showing signs of weakness similar to 715, with some swelling at the base of the junction on the southeast side indicating some movement of the junction. Crown previously reduced.	Reduce the height and spread to the previous reduction points (leaving the tree approx. 18-20m tall). Inspect cable brace for condition, and if found to be defective or overly tight, supplement with another steel brace approx. 30cm below the existing one (which must remain in situ).	6 Months
718	Ash	<i>Fraxinus excelsior</i>	M	MA	P	P	Twin stemmed from 1.0m. Crown over hanging the highway. Utility wires under the crown. Chalara Ash Dieback Class 2-3.	Fell.	6 Months

APPENDIX 2
Photos



View of the Lime (T714-717) trees from the front of the property.



View of the Ash tree (T718) from the front drive.



Kretzschmaria deusta fruiting bodies clearly visible at the base of T714

APPENDIX 3
Reports from 2010

Mr Haslam
The Hazels
Elkstone
Cheltenham
Gloucestershire
GL53 9PB

21 May 2010

Our Reference: 10372 / 33728

TREE REPORT: The Hazels, Elkstone, GL53 9PB

1:0 Introduction

1:1 This report has been requested to assess the condition of 4 mature lime trees to the rear of the above property. The trees are all within falling distance of the house and the end 2 the road also, with the obvious safety implications this poses. The trees are have been inspected from ground level. Recommendations found necessary to put the trees into an acceptable condition have been given for each tree in detail.

1:2 A priority rating has been given for each recommendation as follows:

Priority 1: Urgent work to be under taken within 1 month.

Priority 2: Safety related work to be under taken before next winter.

1:3 Site visit: 19 May 2010

Present: N Organ.

1:4 Limitations

1) Due to the changing nature of trees – and possibly other site circumstances – this report and recommendations are limited to a two year period. Similarly, this report could be invalidated if any alterations are made to the property that could change the current circumstances.

2) Under certain circumstances, roots can affect foundations, drains and other underground services. These issues have not been addressed by this report.

3) Trees are dynamic structures that can never be guaranteed 100% safe; even those in good condition can suffer occasional damage under only average weather conditions. A lack of recommended work does not imply that a tree will never suffer damage.

1:5 I have been employed by Tree Maintenance Ltd and been involved in the care of amenity trees since 1985. I hold the Technician's Certificate in Arboriculture (Arboricultural Association).

2:0 Report

Starting at the right hand end working to the left

- 2:1 Mature Lime. Three main stems formed from main trunk at 1.75 – 2.5m. ‘*Ustulina deusta*’ found between two buttresses on the East Side from ground level to a height of approximately 40cm. Both mature and juvenile forms are present indicating this to be an active colony. This fungi is an aggressive decayer of wood and can lead to catastrophic failures. There are other cavities on the main stems from historic branch removal (possibly when the house was built) which are not likely to prove a safety issue at present. Otherwise the tree shows good vigour.

Recommendation

Further investigation with a Resistograph decay detector. This is a micro drill that measures the density of the wood and therefore quantifying its strength. Priority 1

It is likely that if the tree is to stay that some form of reduction will be necessary, along with future inspections to monitor the spread of the decay.

- 2:2 Mature Lime – three stemmed from 2.0m. Slight fire damage at the base on the northwest side with some exposed heartwood. This exposed wood is dry and hard and there is good reaction wood growing all round it. The stem on the northwest side is showing signs of weakness on its main junction (bark has been included (sandwiched) between this and the adjoining stem, not allowing the 2 too fully fuse together). This stem arches out to the north with a heavy lateral branch at approximately 7.0m. As for 2:1 this tree has cavities in the crown from historic branch removal.

Recommendation

- (A) Reduce the spread of the 2 stems to the north by approximately 25% to reduce the risk of failure. Priority 2
- (B) If tree 2:1 is reduced in size it will leave this tree more exposed. I would therefore also recommend the height of this tree be reduced by approximately 25% due to the increased exposure. Priority 2

- 2:3 Mature Lime. Fire damage on the northeast side from the base to approximately 1.5m. The exposed heartwood is mainly dry and hard (some surface softness present in places) and the area has good new reaction wood growing around it. This tree also has cavities similar to the above trees. The crown of this tree is reasonably well sheltered by the adjacent trees, but the defect at the base does dramatically increase the chance of failure.

Recommendation

Reduce its height by approximately 25% and shape the crown. Priority 2

- 2:4 Mature Lime. Last tree in the row. Twin stemmed from 4.0m. This main junction is showing signs of weakness similar to 2:2, with some swelling at the base of the junction on the southeast side indicating some movement of the junction. The tree has a full crown with good vigour.

Recommendation

Reduce the height of the crown by approximately 25% and shape the spread to balance. Fit a steel cable brace between the 2 stems to check the outwards movement. Priority 2

Signed:

Nick Organ Tech. Cert. (Arbor. A)

Mr Haslam
The Hazels
Elkstone
Cheltenham
Gloucestershire
GL53 9PB

15th August 2010

Our Reference: 10372/34535

TREE REPORT: Mature Lime Tree at 'The Hazels', Elkstone.

1:0 Introduction

- 1:1 This report contains the findings from a specialist inspection of a mature Lime tree situated within the grounds of 'The Hazels', a modern detached property situated within the village of Elkstone, Nr Cheltenham, Gloucestershire. The tree is a prominent specimen, the end tree in a row of mature Lime that are situated along the garden boundary of the property. The tree is one of the larger, more significant specimens within the row and provides obvious visual amenity. The tree is in the proximity of a single lane highway as well as the client's house, both are potential targets in the case of potential failure of parts of the tree.
- 1:2 The tree is some 20m in height, with a diameter (measured at 1.5m above ground level) of 1010mm. The diameter around the root-collar is 1250mm. The structure of the tree is reasonably balanced, despite the tree being a component of a row it has developed a dominant form with a generally symmetric canopy spread. Some previous pruning works have been carried out to the tree, though this is limited to removal of lower canopy branches in order to provide clearance of the garden. The overall vitality of the tree is good, given the mature age of the tree (vitality is a visual evaluation of physiological condition based on leaf or bud size/colour/density, annual extension growth, lack of die-back etc). The most significant factor affecting the tree is a cluster of fruiting bodies of *Ustulina deusta*. These fungal fruiting bodies are present at the base of the eastern side of the trunk, spreading from soil level to some 400mm height, situated within a bark crevice. *Ustulina deusta* is a wood decay fungi that can cause brittle soft rot within trees, usually in the base and root system. The fungi is capable of causing significant decay can in extreme cases can result in acute failure of affected parts.
- 1:3 Site visit: 21st July 2010. Present: M Gregory. Weather conditions: Clear.
- 1:4 I hold a Higher National Diploma in Arboriculture and am a professional member of The Arboricultural Association. I have been carrying out contract and consultancy work for Tree Maintenance Ltd since 2005. I have previously been employed as a tree officer for two different Local Planning Authorities and undertaken work for other arboricultural companies since 1990.

1:5 Limitations

- 1) Due to the changing nature of trees – and possibly other site circumstances – this report and recommendations are limited to a two year period. Similarly, this report could be invalidated if any alterations are made to the property that could change the current circumstances.
- 2) Under certain circumstances, roots can affect foundations, drains and other underground services. These issues have not been addressed by this report.
- 3) Trees are dynamic structures that can never be guaranteed 100% safe; even those in good condition can suffer occasional damage under only average weather conditions. A lack of recommended work does not imply that a tree will never suffer damage.

2:0 **The IML Resistograph 400 Microdrill ('the Microdrill')**

2:1 This battery-powered device was developed in Germany to enable decay detection in timber, including standing trees and telegraph poles. It utilises a 3mm diameter drilling head on a thin spring steel drilling needle. The drilling needle is inserted into the tree under a constant drive pressure and the resistance to the drilling needle is measured, and simultaneously printed out, on a 1:1 scale as a graph. Once the drilling is complete the hole closes, inflicting very little wounding on the tree. The device therefore records the speed at which the wood is penetrated, with decayed wood being penetrated faster than sound wood. However the recording is extremely sensitive (annual growth rings can often be detected), enabling quite detailed information to be obtained. Sometimes this can lead to conclusions about the particular type of decay and even the fungal species. Conversely it may be invaluable in ruling out decay, perhaps enabling a decision to retain a tree.

2:2 The graphs from the drillings are included within this report with a description of the findings (Appendix A). The grid within the graphs represent 10mm (1 centimetre). A graphical indication is also included showing the approximate drilling positions (the arrows show approximate angle of drilling and are colour coded as follows: Green: healthy wood, Orange: compromised wood, Red: significant decay. At the end of the Appendix is a diagrammatic indication of the drilling positions.

3:0 **Observations**

3:1 Thirteen measurements were taken using the Microdrill. Detailed findings are attached at Appendix A. To summarise, significant breakdown within the internal wood structure within the tree was discovered. The most significant areas of decay occur on the easterly side of the trunk, the findings conforming largely to the visual indications of the decay fungi fruiting body locations (at the base of the eastern side of the trunk).

3:2 Significant decay is present in the vicinity of the fruiting bodies, however the decay is localised. It is important to note that there is no evidence of significant decay throughout the trunk, and no evidence to support immediate felling of the tree for health and safety reasons. However, the decay is established and the possibility of the decay fungi continuing to spread within the base of the tree must be considered as should the existing impact of the decay fungi. Decay was found to extend to at least 1/3 of the depth of the trunk (decayed wood extended beyond the limits of the drill probe of 400mm in places), though such measurements were limited. The general circumference of the affected zone was approximately 1/3 of the whole circumference (take from the root collar) though even within this area, sections of sound wood were encountered. Overall I consider the extent of decay is significant enough to warrant some level of intervention to address possible structural weaknesses within the base of the tree (particularly in regard to the root-system).

3:3 In order to address structural concerns the only management option (other than felling) is a reduction in canopy size. This would lessen structural stresses within the trunk and root-system, but would also inevitably have a detrimental physiological impact on the tree, as well as (at least to some degree) reducing the visual amenity the tree provides. Lime trees are generally tolerant of heavy pruning, their common management as a pollard underlines this, though ideally such management is based on a cyclic regime of pruning, and not 'one off' heavy pruning. Nonetheless I consider that the tree will be capable of tolerating canopy reduction, and that such pruning is beneficial in addressing structural concerns relating to the onset of wood decay. I consider that a 30 to 40% reduction will be tolerated by the tree, and will lessen stresses acting within the base and root-system.

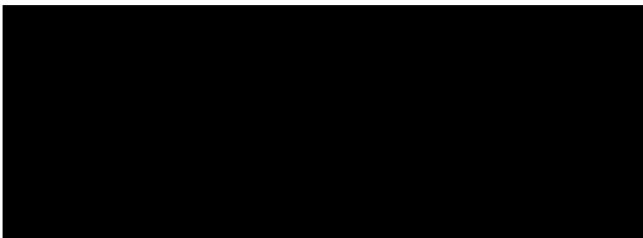
4:0 **Recommendation**

- 4:1 1) Undertake a canopy reduction of the tree by approximately 30% to 40%, to lower wind loading and reduce structural stresses.
- 4:2 2) An additional inspection should be undertaken no longer than two years from the date of this report. The inspection should incorporate use of a decay detection device (providing recommendations as/if necessary).

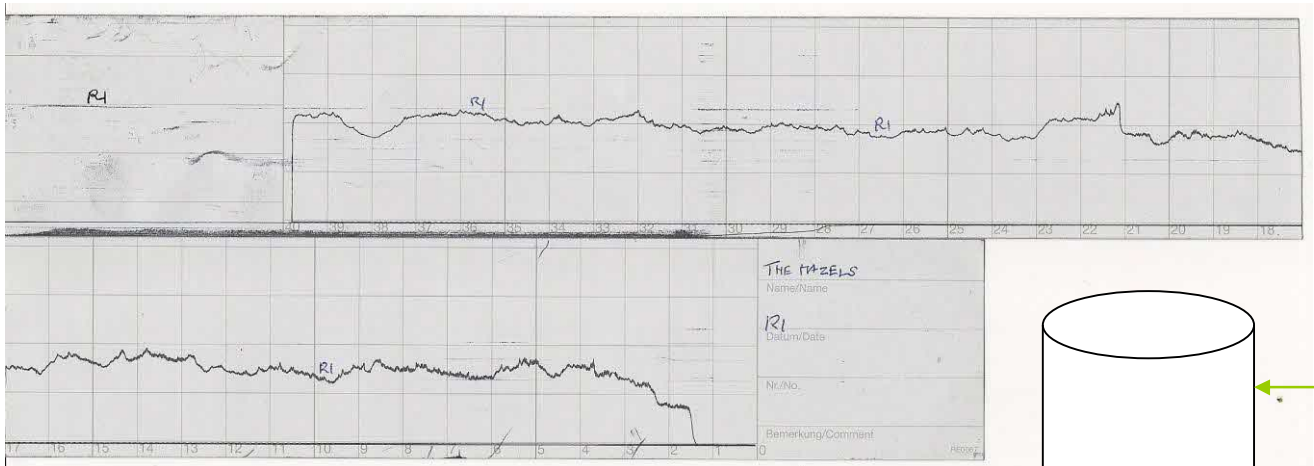
Signed:

A handwritten signature in black ink that reads "Mike Gregory". The signature is written in a cursive style with a long, sweeping tail on the letter 'y'.

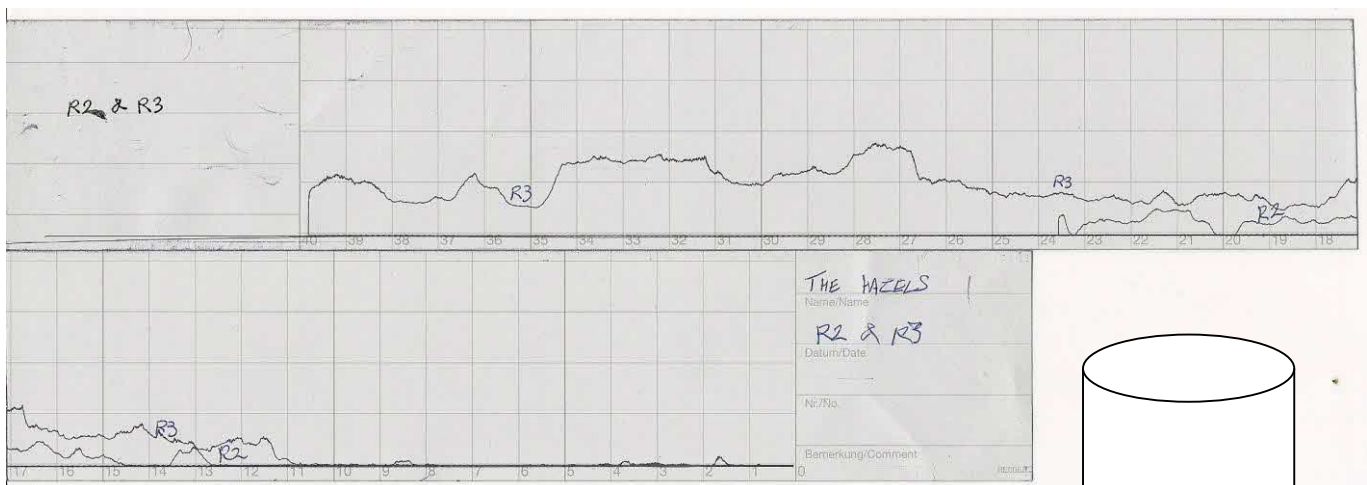
Mike Gregory HND Arb. M.Arbor.A



APPENDIX A. – Resistograph Results



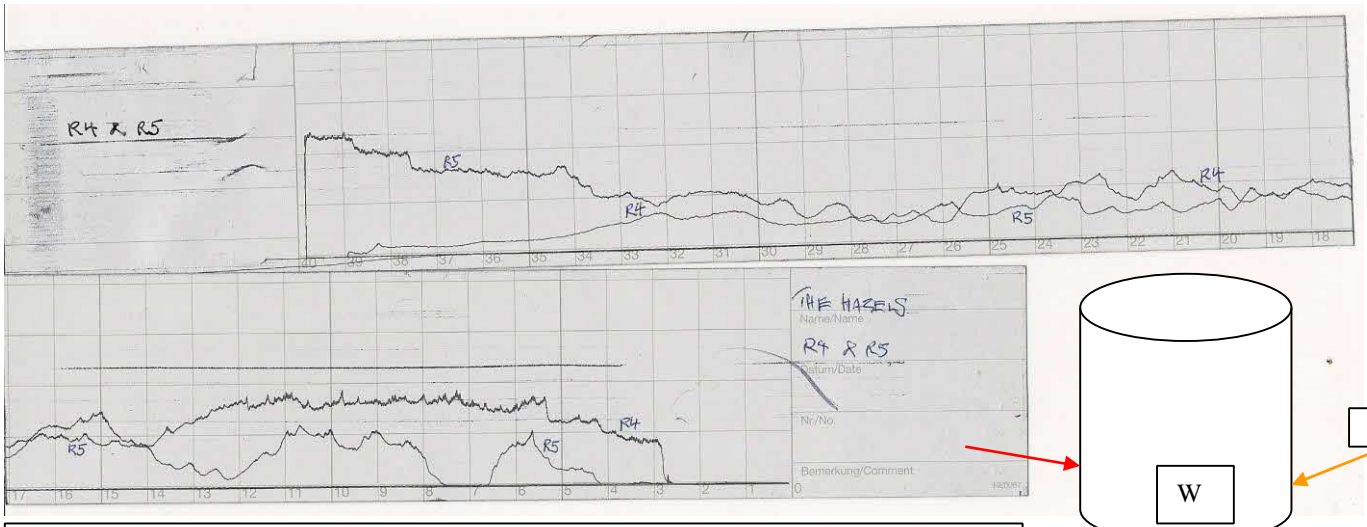
Measurement 1. Taken at 1.2m height to east of trunk, above area affected by *Ustulina deusta*. The measurement is used as a control sample, no defects are expected to be encountered and a sound wood reading expected. The result is that of a sound wood reading, however it is noted that there is little increasing resistance within the reading; a normal behaviour expected within broadleaf trees.



Measurements 2 & 3.

Measurement 2 taken at 100mm height to east, descending at an angle of some 30°. Very heavily decayed wood found (reading ends at 23.5cm).

Measurement 3 taken at 300mm height from east, entering the trunk horizontally. Clearly affected wood that lacks structure, though still provides some level of resistance (albeit reduced from healthy wood). Indications of decay within this zone.

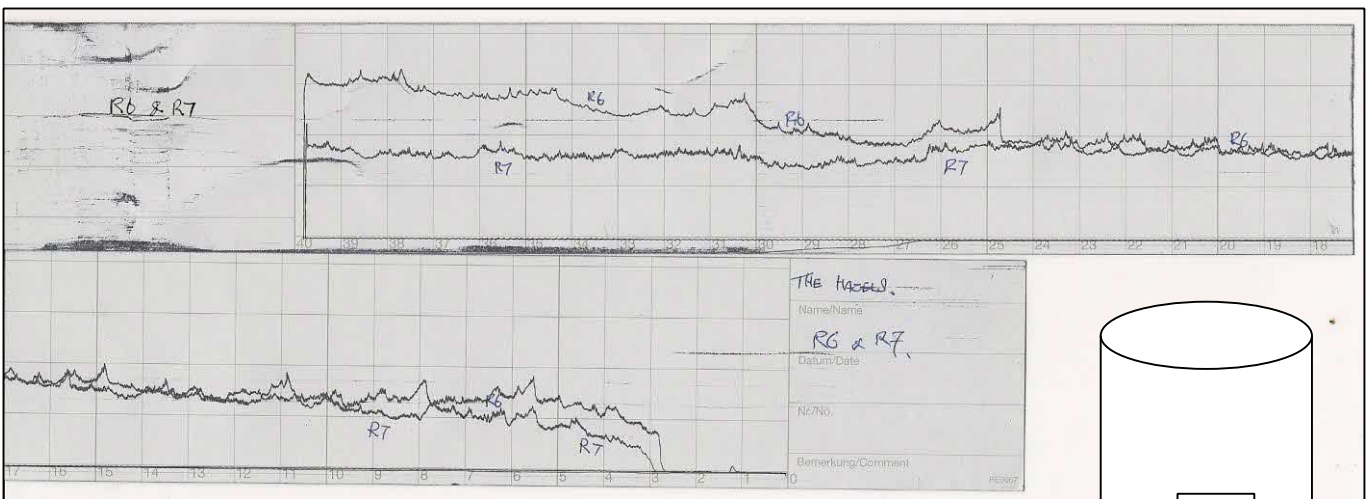


Measurements 4 & 5.

Measurement 4 is was taken from the south east at 300mm height with an approximate downward angle of 30° into a root buttress. Initially sound wood is present to a depth of some 12cm, before significant degradation of the wood structure is encountered.

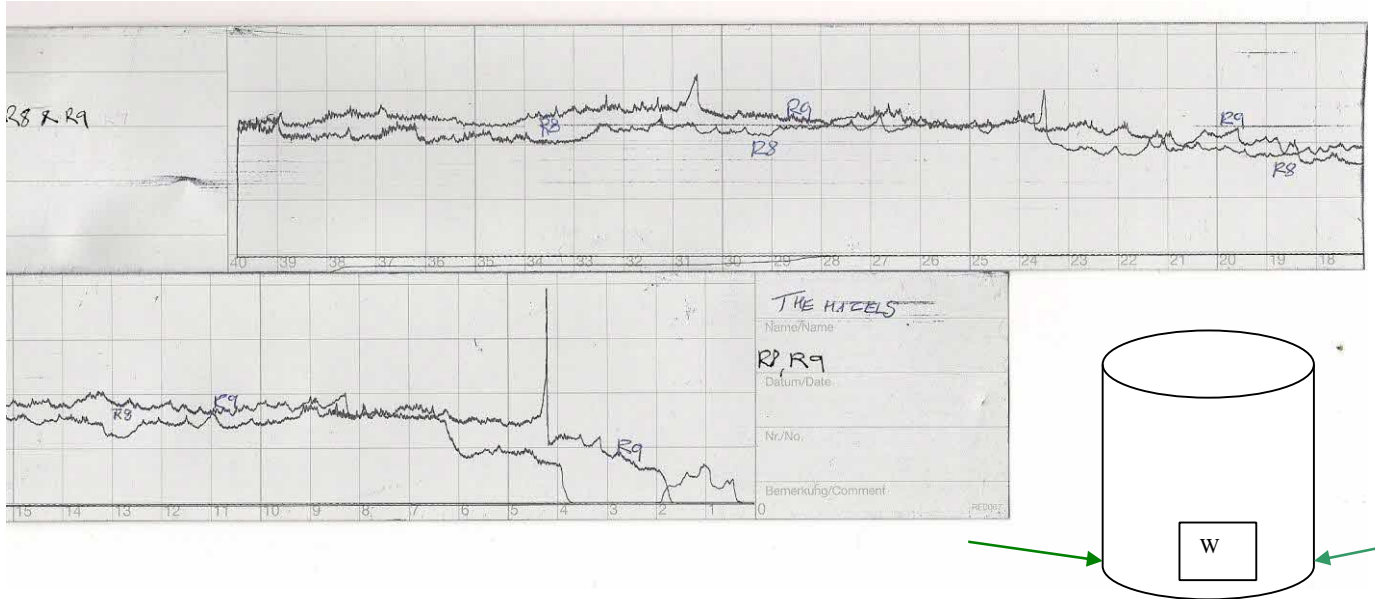
Measurement 5.

R5 was a taken as a level reading at 400mm height from the north east. Reading indicates significant degradation within trunk, however sound wood is encountered at 35cm depth.

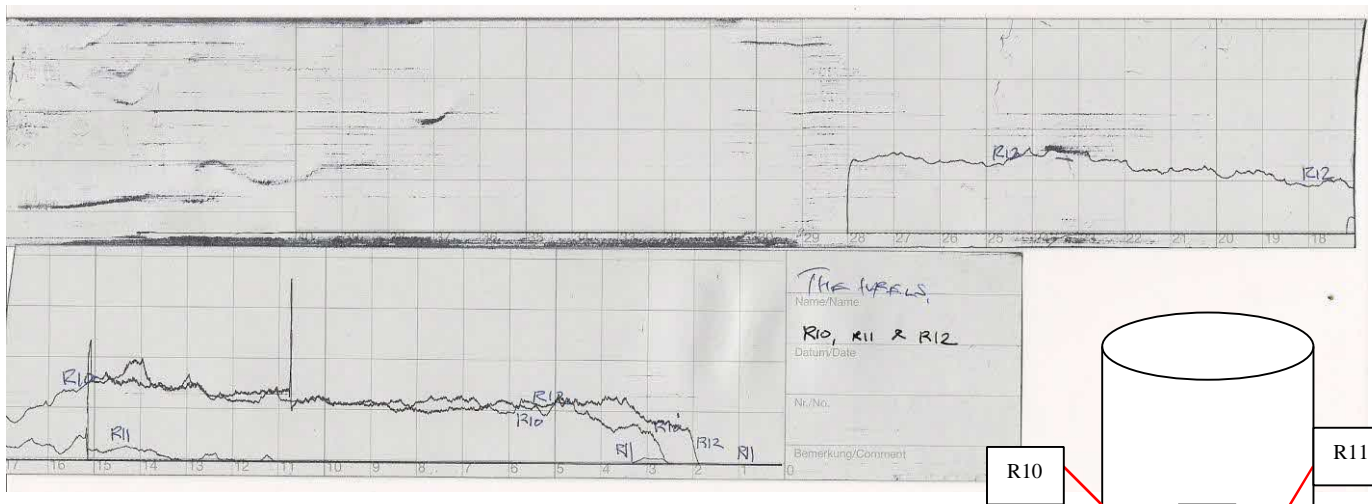


Measurements 6 and 7.

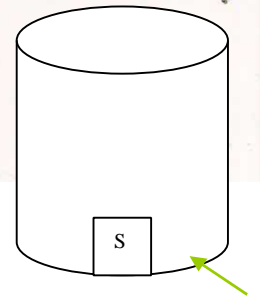
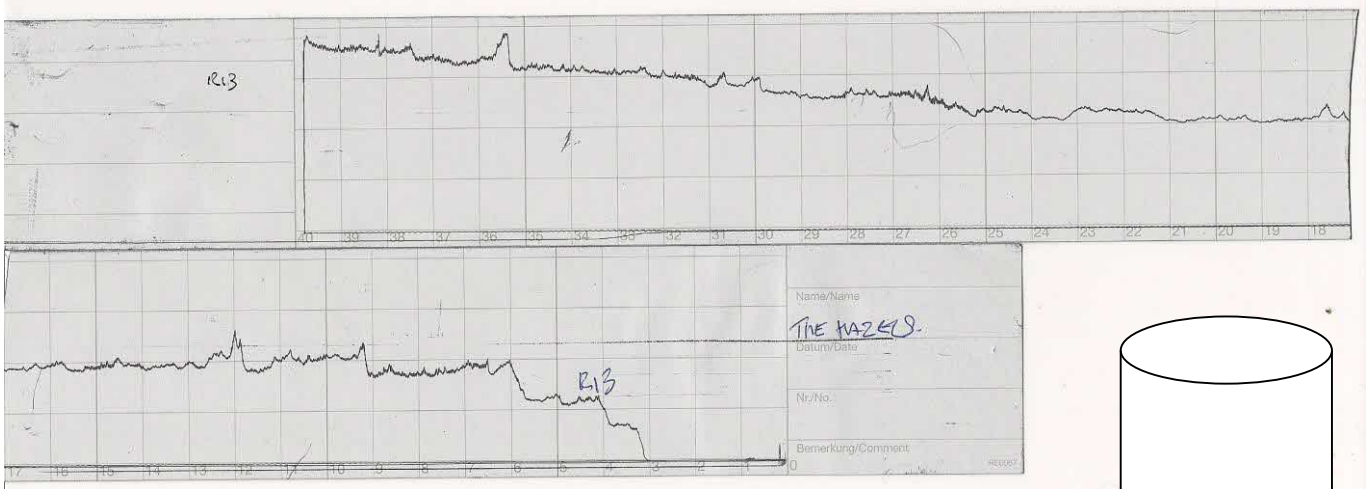
Taken at 300mm from the south west and north west on the side of the trunk that does not indicate any external defects. Both readings indicate a sound internal wood structure.



Measurements R8 & R9. Taken from north and south of the trunk at a height of 150mm with a downward angle of some 30°. Both readings indicated sound wood. The peak just after 5cm's on R9 is a result of the drilling needle stopping and re-starting.



Measurements 10,11 and 12.
 Three measurements taken in the vicinity of the fruiting bodies of *Ustulina deusta*. All three measurements were taken at a 45° angle down into the trunk to establish the condition of the rooting area. R10 was taken at a root buttress, the buttress was found to be in reasonable condition. R11 indicated virtually no remaining sound wood, while R12 indicated some resistance (albeit of an amorphous form before further weakening at a depth of some 15cm).



Measurement 13. A single measurement taken from near the south east corner of the trunk at a height of some 10mm, bearing horizontally towards the centre. Overall a sound reading though possible indications of brittle wood decay occurring from 16 to 24 cm distance.

Approximate measurements Positions

- Heights**
- R1 - 1.2m
 - R2 - 10cms
 - R3 - 30cms
 - R5 - 40cms
 - R6 - 30cms
 - R7 - 30cms
 - R8 - 15cms
 - R9 - 15cms
 - R10 - 10cms
 - R11 - 10cms
 - R12 - 10cms
 - R13 - 40cms

