



Arboricultural Consultancy
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Our Ref: AR4936

Mr. Rupert Taylor
University of Reading
PO Box 235
Whiteknights
Reading
RG6 6BW

26th July 2022

Dear Mr. Taylor,

Re: Health and Safety Tree Survey Relating to University of Reading - Various Sites

Further to your recent instruction, the subject trees were surveyed at the above site during June and July 2022.

Enclosed is a Tree Survey Schedule with Recommended Tree Works at **Appendix 1** and a Picus Sonic Tomographic test report at **Appendix 2**. The tree numbers on the Tree Survey Schedule correspond to the tree numbers and locations that you have provided.

I hope that this information is helpful and if I can be of any further assistance, please do not hesitate to contact me.

Yours sincerely,

Mr. David Challice
Chartered Arboriculturist

Enc.

**Health and Safety
Tree Survey
and
Arboricultural Report**

Relating to:

University of Reading -
Various Sites

Produced for:

University of Reading

Prepared by:

Mr. David Challice
Dip. Arb. (RFS), F. Arbor. A,
MICFor
Chartered Arboriculturist

Our Ref:

AR4936

Date:

26th July 2022

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Contents **Section**

<u>Instructions</u>	<u>1.0</u>
<u>Tree Survey Method</u>	<u>2.0</u>
<u>Legal Status</u>	<u>3.0</u>
<u>General Site Description</u>	<u>4.0</u>
<u>Tree Appraisal</u>	<u>5.0</u>
<u>Recommendations</u>	<u>6.0</u>
<u>Conclusions</u>	<u>7.0</u>
<u>Limitation</u>	<u>8.0</u>

Appendices

<u>Appendix 1</u>	<u>Tree Survey Schedule with Recommended Tree Works</u>
<u>Appendix 2</u>	<u>Picus Sonic Tomographic Test Report (undertaken 26th May 2022 by Mr. Kim Gifford)</u>

1.0 Instructions

- 1.1 I have been instructed by the University of Reading to carry out a detailed survey of the subject ten trees for health and safety and to make recommendations for appropriate tree works.
- 1.2 The purpose of this report is to ensure that the owners of the site have taken reasonable steps to prevent injury to staff/visitors or damage to property by the subject trees. The Owners and Occupiers Liability Acts 1957 and 1984 state that the person responsible for trees has a 'Duty of Care' to carry out regular tree inspections so that sufficient care is taken to avoid foreseeable harm or damage by the trees under the individual's control.
- 1.3 Tree owners and managers have a duty of care and as such have a direct responsibility to ensure that trees do not pose a danger to the public, staff or property. To ensure the correct procedures are in place this report has been produced using current guidance which is underpinned by the five key principles set out below by the National Tree Safety Group (NTSG). These are:
1. Trees provide a wide variety of benefits to society
 2. Trees are living organisms that naturally lose branches or fail
 3. The overall risk to human safety is extremely low
 4. Tree owners have a legal duty of care
 5. Tree owners should take a balanced and proportionate approach to tree safety management

2.0 Tree Survey Method

- 2.1 The subject trees were surveyed in detail from ground level only during June and July 2022. A full description of the trees is provided in **Appendix 1**. Each tree has been assessed from ground level with the aid of binoculars where necessary. A nylon hammer was used when decay was suspected, combined with a 600mm metal probe to aid diagnosis. Any fungal brackets/fruitlet bodies have been identified and assessed with regard to the safety implications.
- 2.2 The heights and crown spreads of the trees were estimated as the accuracy of these measurements is generally not critical to the decision-making process when recommending necessary tree works.

2.3 The Tree Survey Schedule at **Appendix 1** documents the tree dimensions and defects, assesses the risk and recommends remedial tree works and tree works priority based on the criteria listed below:

- Identified tree hazards
- Likelihood of failure
- Typical occupancy of a site that a falling tree or limb could reach
- Proximity of trees to property including but not limited to buildings, fences, footpaths, roads and access drives
- Consequence of failure
- Nature conservation and historic value of the tree(s)
- Re-inspection schedule

2.4 When surveying the subject trees, a system was used which was developed by Nelda P. Matheny and James R. Clark to assess the danger and risk associated with an individual tree (hazard rating maximum 12/ minimum 3). The hazard rating comprises three elements. Firstly, the likelihood of failure occurring (Risk Rating 1 minimum/4 maximum). Secondly, the target surrounding the tree (i.e. people and property – Target 1 minimum/4 maximum). Thirdly, the size of the part likely to fail (i.e. small branches or the whole tree – Part Size 1 minimum/4 maximum). The numerical rating for each of the three elements is added together to give the overall Hazard Rating. The degree to which the tree is deemed to constitute a hazard (maximum 12/minimum 3) has highlighted the requirements for remedial tree works, which are detailed in the Recommended Tree Work Schedule at Appendix 1. A tree with a hazard rating of 12 is more hazardous than one with a rating of 3; however, a tree does not necessarily become a hazard at a rating of 5, 6 or 7. Assessing whether a tree is dangerous entails taking a variety of factors into account. Extensive Arboricultural experience and understanding of a tree in its surroundings is required to inform the decision making process.

2.5 Eight of the subject trees were assessed as well using Picus Sonic Tomographic testing on 26th May 2022 by Mr. Kim Gifford as requested (see **Appendix 2** for the report findings).

3.0 Legal Status

3.1 The protection status of the trees has not been ascertained. However, it is likely that trees of this stature will be covered by some form of protection. It would be prudent to check the protection status with the Local Planning Authority and get written permission before any tree works are carried out.

4.0 General Site Description

- 4.1 The subject site is comprised of the University campus and the Halls of Residence where public occupation is generally high. This high occupancy results in numerous high target areas especially where vehicular access is combined with that of the students and the campus buildings.

5.0 Tree Appraisal

- 5.1 Please refer to the Tree Survey Schedule at **Appendix 1** for specific tree details.
- 5.2 The tree stock on the site is varied in both species and age class and comprises a mixture of native and exotic species.

6.0 Recommendations

- 6.1 Any recommended tree works should be carried out in their entirety in accordance with the time frames given in the Recommended Tree Works Schedule at **Appendix 1**.
- 6.2 All works are to conform to British Standard 3998:2010 'Recommendations for Tree Work' and to current arboricultural best practice. Tree works are to be undertaken by a professional Arboricultural Contractor who has the appropriate knowledge, experience and insurance cover. Commencement of all or some of the proposed works may require written authorisation from the Local Planning Authority. The retained trees should be re-inspected as indicated in the Recommended Tree Works Schedule at **Appendix 1**.
- 6.3 The Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000) and the Habitat Regulations 1994 place a legal obligation on tree owners and Arboricultural Contractors working on trees to protect wildlife species and their habitats. In particular, care should be taken to avoid disturbing all wild birds, Bats and Badgers (including nests, roosting sites and setts). This normally dictates that pruning and felling should not be carried out during bird nesting season (1st March until 31st July) unless safety is an issue.

7.0 Conclusions

- 7.1 The ten subject trees were surveyed and recommendations made on appropriate tree works where necessary. The recommended tree works should be completed

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within the timescales as stated in the Recommended Tree Works Schedule at **Appendix 1.**

- 7.2 It would be reasonable and prudent to have all the trees shown for retention re-inspected as indicated within the Recommended Tree Works Schedule due to the number of mature trees in high target areas on this site.
- 7.3 Deadwood located in the tree crowns where targets are low have been retained to improve nature conservation and bio-diversity.

8.0 Limitation

- 8.1 No soil samples or wood tissues have been sent for laboratory analysis unless specifically stated. My assessments are based on professional experience and expert observation at the time of the inspection. No liability can be assumed to rest with Challice Consulting Ltd. should site conditions or features alter after my inspection. This report has been prepared for the sole use and benefit of the Client. Any liability of Challice Consulting Ltd. shall not be extended to any third party. No part of this report is to be reproduced without authorisation from Challice Consulting Ltd.

Appendix 1

London Plane Tree No. 00YF

Location and Site Conditions

Pepper Lane. Located on wide patch of grass within striking distance of access road and parking.

Tree Particulars

Height in meters (m)	22 m
Stem Diameter @ 1.5m	1210 mm
Crown Spread N	9 m
Crown Spread E	9 m
Crown Spread S	9 m
Crown Spread W	9 m
Vitality	Normal
Age	Mature



Tree crown

Hazard Rating (Max 12/Min 3)

Risk Rating 2 Max. 4

Part Size 4 Max. 4

Target 3 Max. 4

Hazard Rating 9 Max. 12

Adjusted Risk Rating 1 Max. 4

Adjusted Part Size 4 Max. 4

Target 3 Max. 4

Adjusted Hazard Rating 8 Max. 12

Large *Ganoderma* decay fungi bracket**Observations****Roots**

Not visible.

Stem Base

Well buttressed with pockets of decay between buttress roots and large *Ganoderma* decay fungi bracket. Picus results indicates moderate decay with sound buttress roots.

Stem

Topped at 19m with extensive decay into remaining wood tissue.

Branches

Large diameter deadwood present throughout crown.

Shoots

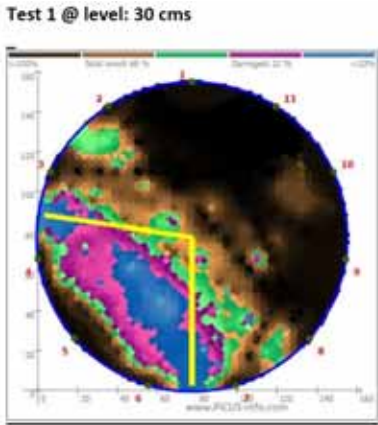
Normal extension growth.

Foliage

Normal.



Large trunk Canker on eastern side at 7m



Picus results indicates moderate decay with sound buttress roots

Management History

Heavy limb removal with decay likely.

Recommended Tree Works

Remove all deadwood over 25mm in diameter. Crown reduce height by approximately 4m and lower crown by approximately 3m.

Maintain reduced mowing cycle to reduce access to trees. Inspect all branches for signs of *Massaria*.

Priority

October 2022.

Next Inspection

Autumn 2024.

Turkey Oak Tree No. 01LS**Location and Site Conditions**

Bridges Hall, near walled garden. The tree is leaning towards adjacent buildings, access road and footpath.

Tree Particulars

Height in meters (m)	19 m
Stem Diameter @ 1.5m	740 mm
Crown Spread N	7 m
Crown Spread E	8 m
Crown Spread S	8 m
Crown Spread W	7 m
Vitality	Moderate
Age	Mature

Hazard Rating (Max 12/Min 3)

Risk Rating 2 Max. 4

Part Size 4 Max. 4

Target 3 Max. 4

Hazard Rating 9 Max. 12

Adjusted Risk Rating 0 Max. 4

Adjusted Part Size 0 Max. 4

Target 3 Max. 4

Adjusted Hazard Rating 3 Max. 12

Observations**Roots**

Not visible.

Stem Base

Sounding hammer indicated stem decay on southern side.
Picus results indicates decay with sound buttress roots.

Stem

Electricity cable attachment point located at 9m.
Numerous well-occluded stem wounds.

Branches

Moderate sized deadwood located throughout crown.

Shoots

Normal.

Foliage

Normal extension growth.

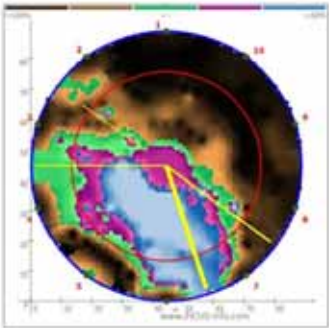


Stem showing target area



Lower stem with dark sap exuding and staining stem

Test 1 @ level: 20cms approximately from ground level.



Test point 1 orientation North.

Picus results indicate decay with
sound buttress roots

Management History	
Large limb removal.	
<u>Recommended Tree Works</u>	
Remove and replace to allow adjacent trees to thrive.	
Priority	Next Inspection
October 2022.	N/a.

Common Oak Tree No. 01SG

Location and Site Conditions

Wessex Hall, near gate house. Located at a junction between two footpaths adjacent to the lake.

Tree Particulars

Height in meters (m)	19 m
Stem Diameter @ 1.5m	860 mm
Crown Spread N	8 m
Crown Spread E	8 m
Crown Spread S	8 m
Crown Spread W	8 m
Vitality	Normal
Age	Mature

Hazard Rating (Max 12/Min 3)

Risk Rating 2 Max. 4

Part Size 3 Max. 4

Target 2 Max. 4

Hazard Rating 7 Max. 12

Adjusted Risk Rating 1 Max. 4

Adjusted Part Size 3 Max. 4

Target 2 Max. 4

Adjusted Hazard Rating 6 Max. 12

Observations

Roots

Not visible.

Stem Base

Well buttressed with decay between buttress roots.
Picus results indicates minor decay with sound buttress roots.

Stem

Appears sound straight and stable.

Branches

Minor amounts of deadwood throughout crown which is not unusual for a tree of this age.

Shoots

Normal for this time of year.

Foliage

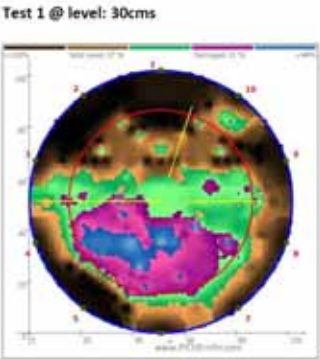
Normal extension growth.



Tree crown



Tree stem



Test point 1 orientation North.

Picus results indicates minor decay with sound buttress roots

Management History

Minor crown lifting.

Recommended Tree Works

Suggest reduction in height by up to approximately 5m. Remove all deadwood above 25mm in diameter.

Priority

October 2022.

Next Inspection

Autumn 2024.

Cedar of Lebanon Tree No. 01WN

Location and Site Conditions

Arboretum. Located in low target area with tall grass reducing access to the tree's canopy.

Tree Particulars	
Height in meters (m)	22 m
Stem Diameter @ 1.5m	1470 mm
Crown Spread N	12 m
Crown Spread E	12 m
Crown Spread S	12 m
Crown Spread W	12 m
Vitality	Low
Age	Mature

Hazard Rating (Max 12/Min 3)

Risk Rating	2	Max. 4
Part Size	2	Max. 4
Target	2	Max. 4
Hazard Rating	6	Max. 12
Adjusted Risk Rating	1	Max. 4
Adjusted Part Size	2	Max. 4
Target	2	Max. 4
Adjusted Hazard Rating	5	Max. 12

Observations

Roots

Not visible.

Stem Base

Well buttressed with decay pockets between buttress roots. Picus results indicates moderate decay with sound buttress roots.

Stem

Appears sound and stable with numerous well included wounds.

Branches

Long, heavy end loaded limbs with one limb touching the ground.

Shoots

Slightly thinning crown with minor deadwood at the branch tips.

Foliage

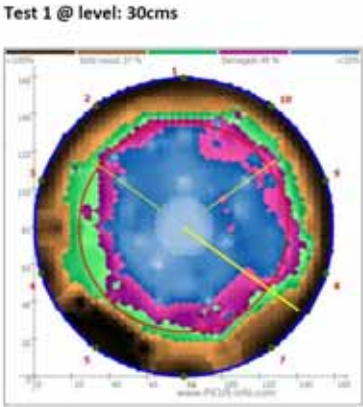
Normal extension growth.



Tree crown



Stem base



Picus results indicates moderate decay with sound buttress roots

Management History

Limb removal.

Recommended Tree Works

Crown reduce by approximately 2m to prevent limb failure.
Maintain reduced mowing cycle to reduce access to trees.

Priority

October 2022.

Next Inspection

Autumn 2024.

Cedar of Lebanon Tree No. 01WM

Location and Site Conditions

Arboretum. Located in low target area with tall grass reducing access to the tree's canopy.

Tree Particulars	
Height in meters (m)	18 m
Stem Diameter @ 1.5m	1360 mm
Crown Spread N	12 m
Crown Spread E	12 m
Crown Spread S	12 m
Crown Spread W	12 m
Vitality	Moderate
Age	Mature

Hazard Rating (Max 12/Min 3)

Risk Rating	2	Max. 4
Part Size	2	Max. 4
Target	2	Max. 4
Hazard Rating	6	Max. 12
Adjusted Risk Rating	1	Max. 4
Adjusted Part Size	2	Max. 4
Target	2	Max. 4
Adjusted Hazard Rating	5	Max. 12

Observations

Roots

Not visible.

Stem Base

Well buttressed with decay pockets between buttress roots.

Stem

Appears sound and stable with numerous well occluded wounds.
Topped at 14m with decay present.
Picus results indicates moderate decay with sound buttress roots.

Branches

Long, heavy end loaded limbs.

Shoots

Minor deadwood at the branch tips.

Foliage

Normal extension growth.

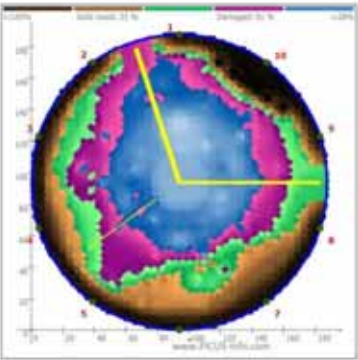


Tree crown



Tree stem

Test 1 @ level: 30cms approximately from ground level.



Picus results indicates moderate decay with sound buttress roots



Open cavity on the northern side of the stem



Stem with numerous well occluded wounds

Management History

Topped at 14m.

Recommended Tree Works

Crown reduce by approximately 2m to prevent limb failure.
Maintain reduced mowing cycle to reduce access to trees.

Priority

October 2022.

Next Inspection

Autumn 2024.

Common Oak Tree No. 02QD

Location and Site Conditions

14 Northcourt Avenue. Footpath, road and house located under canopy.

Tree Particulars	
Height in meters (m)	17 m
Stem Diameter @ 1.5m	5.3 mm
Crown Spread N	6 m
Crown Spread E	13 m
Crown Spread S	10 m
Crown Spread W	8 m
Vitality	Moderate
Age	Veteran

Hazard Rating (Max 12/Min 3)

Risk Rating	2	Max. 4
Part Size	4	Max. 4
Target	3	Max. 4
Hazard Rating	9	Max. 12
Adjusted Risk Rating	1	Max. 4
Adjusted Part Size	4	Max. 4
Target	3	Max. 4
Adjusted Hazard Rating	8	Max. 12

Observations

Roots

Roots are not visible.

Stem Base

Well buttressed with decay between buttress roots. Picus results indicate extensive decay with sound buttress roots.

Stem

Numerous well-occluded wounds on stem.

Branches

Minor deadwood in crown. Recently crown reduced to reduce failure risk.

Shoots

Normal shoot extension.

Foliage

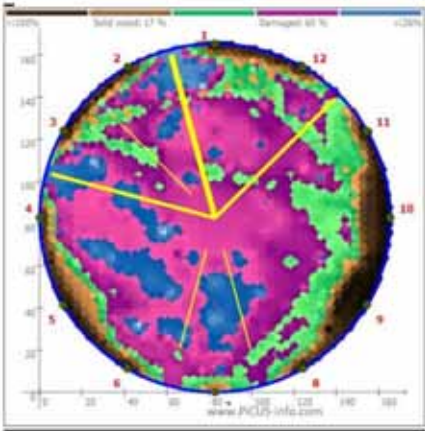
Normal extension growth.



Photograph of the buttress roots with decay between buttress roots



Photograph of the crown taken from the east



Picus results indicate extensive decay with sound buttress roots

Management History

Significant limb removal and crown reduction.

Recommended Tree Works

Remove all dead, dying and dangerous branches over 25mm in diameter.

Crown reduce by up to approximately 5m in all directions.

Priority

October 2022.

Next Inspection

Autumn 2024.

Cedar of Lebanon Tree No. 02LZ**Location and Site Conditions**

London Road. Limbs hanging over boundary wall.

Tree Particulars

Height in meters (m) 19 m
 Stem Diameter @ 1.5m 1390 mm
 Crown Spread N 8 m
 Crown Spread E 8 m
 Crown Spread S 8 m
 Crown Spread W 10 m
 Vitality Moderate
 Age Mature

Hazard Rating (Max 12/Min 3)

Risk Rating 2 Max. 4

Part Size 4 Max. 4

Target 2 Max. 4

Hazard Rating 8 Max. 12

Adjusted Risk Rating 0 Max. 4

Adjusted Part Size 0 Max. 4

Target 2 Max. 4

Adjusted Hazard Rating 2 Max. 12

Observations**Roots**

Roots are not visible.

Stem Base

Stem decay northern side.

Stem

Picus results indicate extensive decay with sound buttress roots.

Branches

Significant deadwood located throughout crown.
 Heavy over-extended limbs liable to failure.

Shoots

Slightly thinning crown.

Foliage

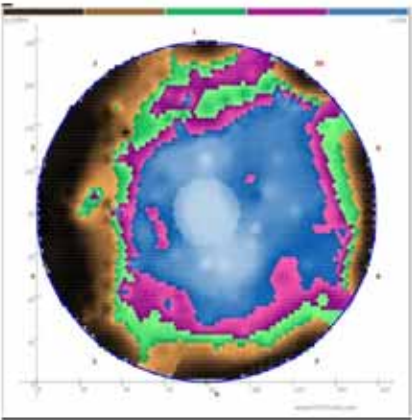
Normal extension growth.



Tree crown



Tree stem



Picus results indicate extensive decay with sound buttress roots



Large failure of decayed limb

Management History

Significant limb removal.

Recommended Tree Works

Crown reduce to approximately 10m stump and habitat pile arisings.

Priority

October 2022.

Next Inspection

N/a.

Common Oak Tree No. 002Q

Location and Site Conditions

Fox Hill Drive. Leaning away from road towards the parkland which is not mown regularly.

Tree Particulars	
Height in meters (m)	24 m
Stem Diameter @ 1.5m	980 mm
Crown Spread N	6 m
Crown Spread E	9 m
Crown Spread S	14 m
Crown Spread W	7 m
Vitality	Normal
Age	Mature



Tree crown

Hazard Rating (Max 12/Min 3)

Risk Rating	2	Max. 4
Part Size	4	Max. 4
Target	2	Max. 4
Hazard Rating	8	Max. 12
Adjusted Risk Rating	1	Max. 4
Adjusted Part Size	3	Max. 4
Target	2	Max. 4
Adjusted Hazard Rating	6	Max. 12



Bark necrosis on the northern side

Observations

Roots

Not visible.

Stem Base

Well buttressed.

Stem

Bark necrosis on the northern side up to 2m covering 40% of the stem radius. Timber behind necrosis is sound in the heartwood.

Branches

Significant deadwood throughout crown over low target area. Branches are hanging and touching the ground.

Shoots

Normal for time of year.

Foliage

Normal extension growth.

Management History

Limb removal.

Recommended Tree Works

Reduce height by approximately 8m to create Pollard.
Maintain reduced mowing cycle to reduce access to trees.

Priority

October 2022.

Next Inspection

Autumn 2024.

Common Oak Tree No. 03LA**Location and Site Conditions**

Located adjacent to the main lake with the crown hanging over footpath.

Tree Particulars

Height in meters (m)	19 m
Stem Diameter @ 1.5m	940 mm
Crown Spread N	8 m
Crown Spread E	8 m
Crown Spread S	8 m
Crown Spread W	8 m
Vitality	Normal
Age	Mature

Hazard Rating (Max 12/Min 3)

Risk Rating 2 Max. 4

Part Size 3 Max. 4

Target 2 Max. 4

Hazard Rating 7 Max. 12

Adjusted Risk Rating 0 Max. 4

Adjusted Part Size 0 Max. 4

Target 2 Max. 4

Adjusted Hazard Rating 2 Max. 12

Observations**Roots**

Not visible but likely to be retaining the soil around the lake edge.

Stem Base

Sound and stable.

Stem

Triple stemmed from 1m with weak included unions.

Branches

Broad spreading crown that is suppressing an adjacent Alder tree hanging over the lake.
Minor deadwood throughout the crown.

Shoots**Foliage**

Normal extension growth.



Tree crown



Stem from the northwest



Stem from the northwest



Stem from the south

Management History

None visible.

Recommended Tree Works

Coppice both Oak and adjacent Alder to improve view to lake and remove risk of significant limb failure from the Oak.
Retain Alder as coppiced Pollard.

Priority

October 2022.

Next Inspection

N/a.

Horse Chestnut Tree No. 028M

Location and Site Conditions

Located adjacent to access road.

Tree Particulars

Height in meters (m)	20 m
Stem Diameter @ 1.5m	760 mm
Crown Spread N	7 m
Crown Spread E	7 m
Crown Spread S	7 m
Crown Spread W	7 m
Vitality	Normal
Age	Mature

Hazard Rating (Max 12/Min 3)

Risk Rating 2 Max. 4

Part Size 3 Max. 4

Target 3 Max. 4

Hazard Rating 8 Max. 12

Adjusted Risk Rating 0 Max. 4

Adjusted Part Size 0 Max. 4

Target 3 Max. 4

Adjusted Hazard Rating 3 Max. 12

Observations

Roots

Not visible.

Stem Base

Sound and stable.

Stem

Large area of decay at 8m from old wound likely to extend 3m below. Twin stemmed at 10m with weak union and signs of limb separation.

Branches

Significant deadwood throughout crown over 25mm in diameter.

Shoots

Significant infestation of Horse Chestnut Leaf Miner.

Foliage

Normal extension growth.



Location of Lime located to the south



Tree stem



Large area of decay from old wound

Management History

Limb removal.

Recommended Tree Works

Remove and replace due to location adjacent to road and poor response of this species to heavy pruning.

Numerous trees are located to the rear that will benefit from the removal of this tree especially the Lime located 6m to the northeast.

Priority

October 2022.

Next Inspection

N/a.

Appendix 2



Arboricultural Consultant: Kim Gifford
11 Oakview, Selsey Road, Hunston, Chichester, West Sussex PO20 1AU.
kim@treetesting.com
0783148456

Picus Sonic Tomographic Test Report
University of Reading.

1.1 Test date: 26th May 2022 by Mr. Kim Gifford, undertaken in the area of test and at the time of inspection.

1.2 Method: using Picus software Q74std, 10 modules in accordance with manufacturers manual. *Visual Tree inspection references, Principles of Tree Hazard Assessment and Management by David Lonsdale and The body language of trees by Claus Mattheck and Helge Breuer. The Arboricultural Association guidance note 7 tree surveys a guide to good practice. Lantra award Professional tree inspection.*

1.3 Instruction: I Kim Gifford Arboricultural Consultant (see profile page)

My brief is to carry out decay detection/assessment using a Picus Sonic Tomograph tests at: Sites at Whiteknights Campus, University of Reading.

The test will involve taking readings at an appropriate level determined by the requirements of the specimen defect. I am to make recommendations on the immediate and future management of the subject tree based on the test findings.

1.4 Background: I understand that there has been concerns about the safety of this specimen. As a result of this inspection, it was felt that further investigation was required to determine the extent of decay so that he could make an informed decision on the future management.

1.5 Picus Test Methodology:

The method of decay detection is based on the fact that solid wood is a better sound wave conductor than wood that is decayed or structurally damaged. The Picus Sonic Tomograph consists of a set of sensors which are strategically placed around the area of the tree previously identified as potentially having decay or a structural fault. Each sensor is connected to a nail which is tapped through the bark into contact with the wood. This process is virtually non-invasive to the tree's system. The sensors are connected by a data cable to a power supply and laptop computer. Each nail is tapped in turn and the sound wave flight paths are measured by each of the sensors. The test data is compiled by the Picus system software algorithm into a matrix of collected values. This results in a dense network of sound velocities through a cross-section.

The velocity of sound through wood depends on the degree of elasticity and density of the material. Tree damage such as white rot, brown rot, soft rot, cavities, and cracks reduce the elasticity and density of the wood.

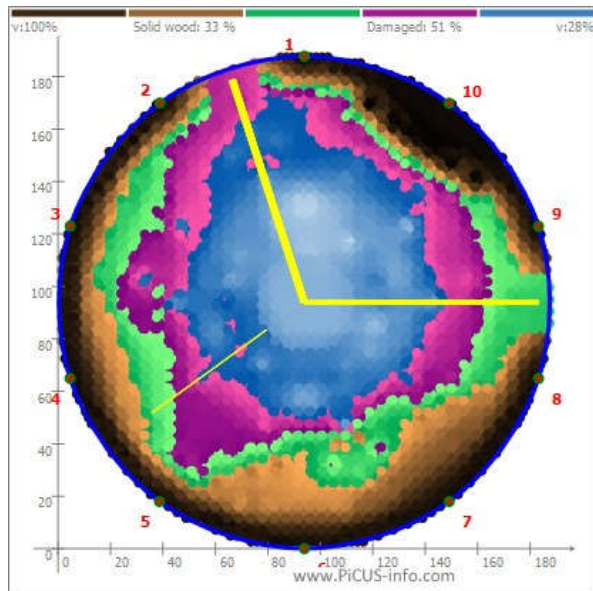
The data from the sensors is translated by the computer software into a representative colour tomographic image of the cross-section of the tree. This tomogram gives information about the presence of decay, cavities, and faults in the tree. Features such as remaining wall thickness, the opening angle of cavities and percentage of solid, decayed or altered wood can be measured by the computer.

Final analysis of the tomogram has been undertaken to see the following recommendation below. *Note: All recommended works should be undertaken in accordance with British Standard Institutes Recommendations for Tree Works B.S.3998:2010*

1.6 Cedar of Lebanon 01WM

Test undertaken in fine weather conditions.

Test 1 @ level: 30cms approximately from ground level.



Test point 1 orientation North.

Picus Test Analysis:

The measuring point readings give evidence of low velocities overall in the area of test representation showing as decayed timber. The tomographic images shown above has a percentage amount of altered timber. With reference to the 'colour chart see figure 2', the slower sonic speed of sound is represented by three bands of data representation blue/violet/white being the slowest altered/decayed timber, green being faster altered timber, brown being fast sonic-speeds solid timber.

(see Picus sonic representation chart figure 2).

The resulting Picus test is of borderline limits in relation the altered timber. This ratio called a 'trunk ratio' TR (*reference Claus Mattheck*) has been calculated to be a guideline in terms of stability and rigidity of cylindrical structure. Although a debated theory in arboriculture in general terms the TR of 30% is an average.

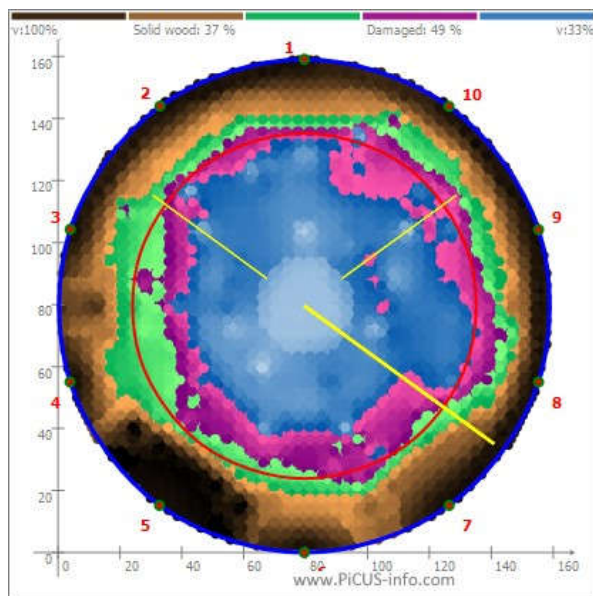
1.7 Recommendation:

Continue to monitor.

1.8 Cedar of Lebanon 01WN

Test undertaken in fine weather conditions.

Test 1 @ level: 30cms



Test point 1 orientation North.

Picus Test Analysis:

The measuring point readings give evidence of low velocities overall in the area of test representation showing as decayed timber. The tomographic images shown above has a percentage amount of altered timber. With reference to the 'colour chart see figure 2', the slower sonic speed of sound is represented by three bands of data representation blue/violet/white being the slowest altered/decayed timber, green being faster altered timber, brown being fast sonic-speeds solid timber.

(see Picus sonic representation chart figure 2).

The resulting Picus test is of borderline limits in relation the altered timber. This ratio called a 'trunk ratio' TR (*reference Claus Mattheck*) has been calculated to be a guideline in terms of stability and rigidity of cylindrical structure. Although a debated theory in arboriculture in general terms the TR of 30% is an average.

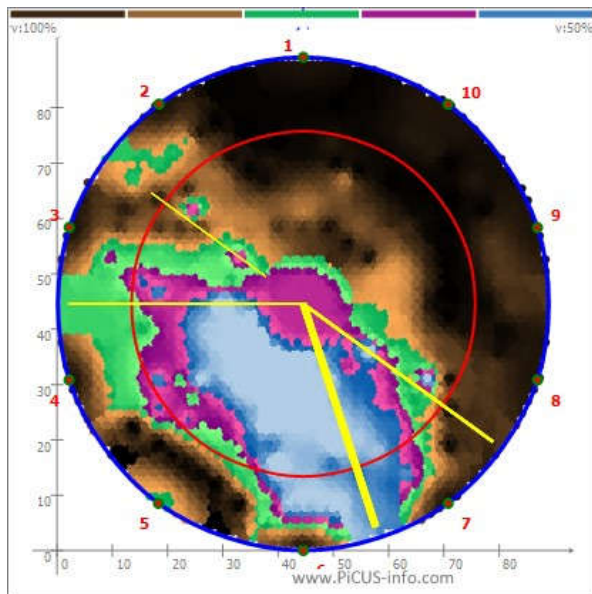
1.9 Recommendation:

Continue to monitor.

2.0 Turkey Oak 01LS

Test undertaken in fine weather conditions.

Test 1 @ level: 20cms approximately from ground level.



Test point 1 orientation North.

Picus Test Analysis:

The measuring point readings give evidence of low velocities overall in the area of test representation showing as decayed timber. The tomographic images shown above has a percentage amount of altered timber. With reference to the 'colour chart see figure 2', the slower sonic speed of sound is represented by three bands of data representation blue/violet/white being the slowest altered/decayed timber, green being faster altered timber, brown being fast sonic-speeds solid timber.

(see Picus sonic representation chart figure 2).

The resulting Picus test is of acceptable limits in relation the altered timber. This ratio called a 'trunk ratio' TR (*reference Claus Mattheck*) has been calculated to be a guideline in terms of stability and rigidity of cylindrical structure. Although a debated theory in arboriculture in general terms the TR of 30% is an average.

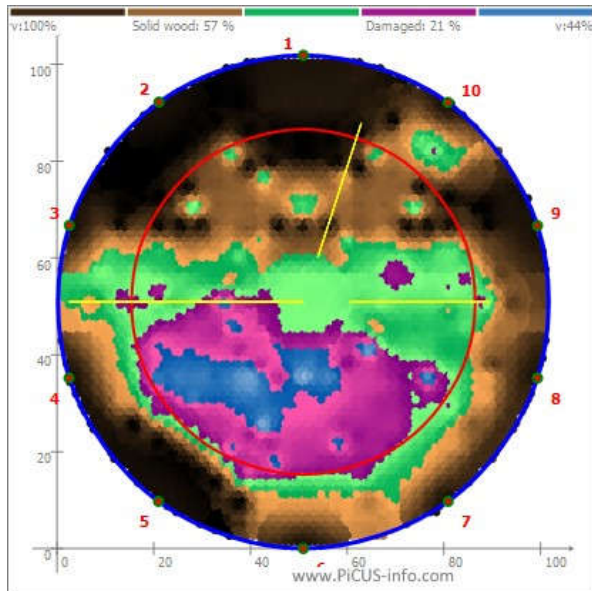
2.1 Recommendation:

Consider removal in this high-risk location. Poor species.

2.2 Common Oak 01SG

Test undertaken in fine weather conditions.

Test 1 @ level: 30cms



Test point 1 orientation North.

Picus Test Analysis:

The measuring point readings give evidence of medium velocities overall in the area of test representation showing as altered timber. The tomographic images shown above has a percentage amount of altered timber. With reference to the 'colour chart see figure 2', the slower sonic speed of sound is represented by three bands of data representation blue/violet/white being the slowest altered/decayed timber, green being faster altered timber, brown being fast sonic-speeds solid timber.

(see Picus sonic representation chart figure 2).

The resulting Picus test is of acceptable limits in relation the altered timber. This ratio called a 'trunk ratio' TR (*reference Claus Mattheck*) has been calculated to be a guideline in terms of stability and rigidity of cylindrical structure. Although a debated theory in arboriculture in general terms the TR of 30% is an average.

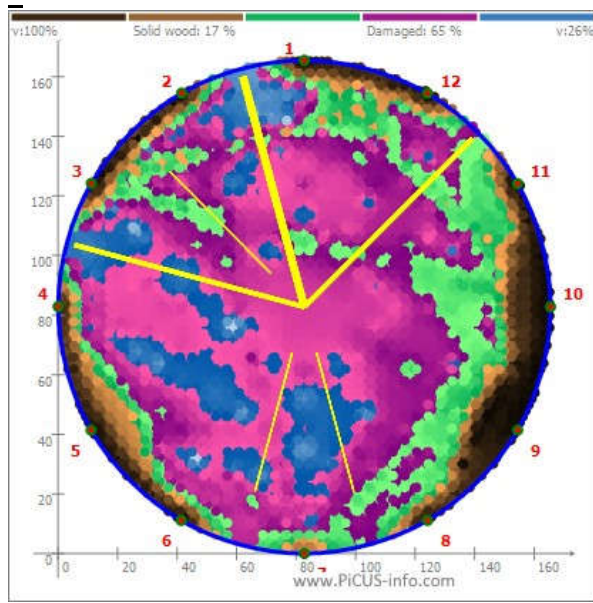
2.3 Recommendation:

Consider necessary remedial treatment to manage crown as required.

2.4 Common Oak 02QD

Test undertaken in fine weather conditions.

Test 1 @ level: 30 cms



Test point 1 orientation North.

Picus Test Analysis:

The measuring point readings give evidence of low velocities overall in the area of test representation showing as decayed timber. The tomographic images shown above has a percentage amount of altered timber. With reference to the 'colour chart see figure 2', the slower sonic speed of sound is represented by three bands of data representation blue/violet/white being the slowest altered/decayed timber, green being faster altered timber, brown being fast sonic-speeds solid timber.

(see Picus sonic representation chart figure 2).

The resulting Picus test is of unacceptable limits in relation the altered timber. This ratio called a 'trunk ratio' TR (*reference Claus Mattheck*) has been calculated to be a guideline in terms of stability and rigidity of cylindrical structure. Although a debated theory in arboriculture in general terms the TR of 30% is an average.

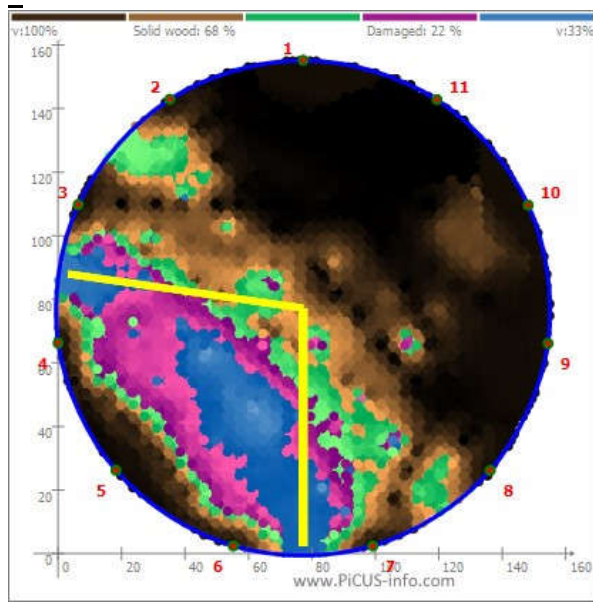
2.5 Recommendation:

Consider major crown reduction to reduce stress from the decayed areas.

2.6 Plane 00YF

Test undertaken in fine weather conditions.

Test 1 @ level: 30 cms



Test point 1 orientation North.

Picus Test Analysis:

The measuring point readings give evidence of medium velocities overall in the area of test representation showing as decayed timber. The tomographic images shown above has a percentage amount of altered timber. With reference to the 'colour chart see figure 2', the slower sonic speed of sound is represented by three bands of data representation blue/violet/white being the slowest altered/decayed timber, green being faster altered timber, brown being fast sonic-speeds solid timber.

(see Picus sonic representation chart figure 2).

The resulting Picus test is of acceptable limits in relation the altered timber. This ratio called a 'trunk ratio' TR (*reference Claus Mattheck*) has been calculated to be a guideline in terms of stability and rigidity of cylindrical structure. Although a debated theory in arboriculture in general terms the TR of 30% is an average.

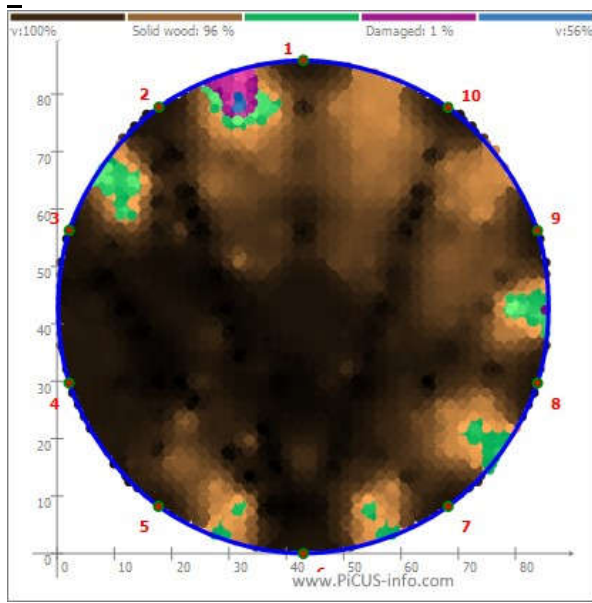
2.7 Recommendation:

Consider major crown reduction to reduce stress from the decayed areas.

2.8 Horse Chestnut 028M

Test undertaken in fine weather conditions.

Test 1 @ level: 30 cms



Test point 1 orientation North.

Picus Test Analysis:

The measuring point readings give evidence of high velocities overall in the area of test representation showing as sound timber. The tomographic images shown above has a percentage amount of altered timber. With reference to the 'colour chart see figure 2', the slower sonic speed of sound is represented by three bands of data representation blue/violet/white being the slowest altered/decayed timber, green being faster altered timber, brown being fast sonic-speeds solid timber.

(see Picus sonic representation chart figure 2).

The resulting Picus test is of acceptable limits in relation the altered timber. This ratio called a 'trunk ratio' TR (*reference Claus Mattheck*) has been calculated to be a guideline in terms of stability and rigidity of cylindrical structure. Although a debated theory in arboriculture in general terms the TR of 30% is an average.

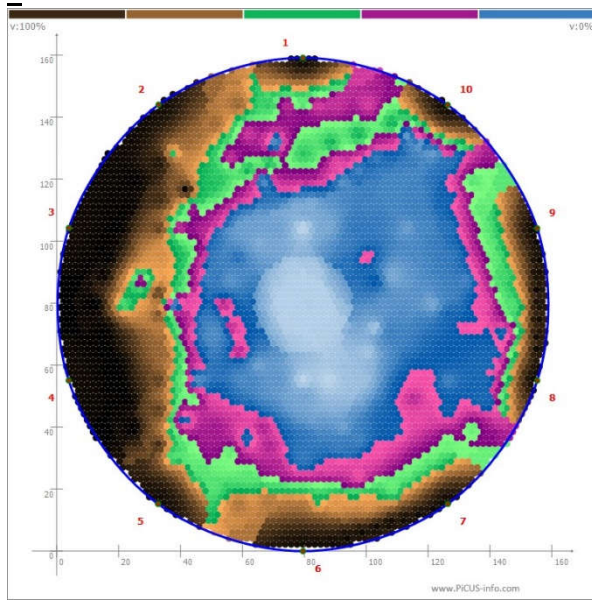
2.9 Recommendation:

Consider major crown reduction/ monolith to reduce stress from the decayed areas.

3.0 Cedar of Lebanon 02LZ

Test undertaken in fine weather conditions.

Test 1 @ level: 30 cms



Test point 1 orientation North.

Picus Test Analysis:

The measuring point readings give evidence of low velocities overall in the area of test representation showing as decayed timber. The tomographic images shown above has a percentage amount of altered timber. With reference to the 'colour chart see figure 2', the slower sonic speed of sound is represented by three bands of data representation blue/violet/white being the slowest altered/decayed timber, green being faster altered timber, brown being fast sonic-speeds solid timber.

(see Picus sonic representation chart figure 2).

The resulting Picus test is of borderline limits in relation the altered timber. This ratio called a 'trunk ratio' TR (*reference Claus Mattheck*) has been calculated to be a guideline in terms of stability and rigidity of cylindrical structure. Although a debated theory in arboriculture in general terms the TR of 30% is an average.

3.1 Recommendation:

Consider major crown reduction/monolith to reduce stress from the decayed areas.

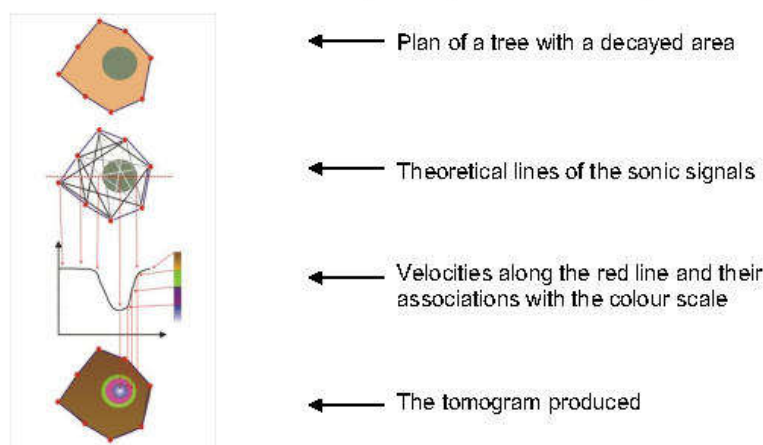
Kim Gifford
Gifford Tree Service
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www.treetesting.com

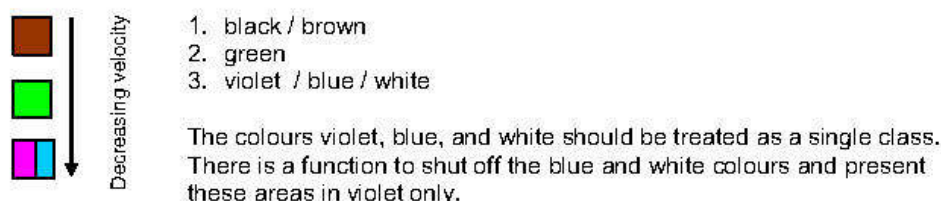
7.13.1. Tomogram colours

To display different acoustic conductivity of wood, the PICUS program uses set colours, assigning one colour to each point of the tomograph. Areas of high velocity are represented in black or dark brown. Areas of low velocity appear in violet, white or blue, and these are the areas that indicate problems. Green areas mark those sections which could not be classified as being either fast or slow, and these areas must be interpreted together with the overall damage.

The colour scale (black, brown, green, violet, blue, white) ranges from 100% velocity (brown) to the slowest velocity (blue). Colours are switched as specific special trigger levels to show the differences, as shown in the following sketch (not drawn to scale):



There are three main colour groups to be considered:



Warning!

In order to read a tomogram correctly, you need **sound knowledge of trees and their diseases**, and you must be familiar with the **working principles of measuring instruments**. **DO NOT** fell a tree based solely on a tomogram reading. You must first analyse all possible reasons for slow acoustic conductivity, and you will have to apply different investigative methods as needed.

Unfortunately, the results of sonic measurements cannot give information about the exact type of structural loss in a tree. This means a tomogram does not tell us if the violet or blue areas are caused by a cavity, a crack, or by decay – it can only display the levels measured.

Figure 2 Image Colour Representation

Consultant Mr Kim Gifford: Profile

Prior to starting GTS Kim Gifford completed a 4-year apprenticeship in 1972 with the Royal Parks at Hampton Court Palace acquired City and Guilds Horticulture and Arboriculture. In addition to these qualifications Kim Gifford continued his professional development by attending seminars, conferences, studying for the professional diploma and foundation degree in Arboriculture. Further work experience during pre-business period included sub-contracting for Arb. Companies. Work as a lead Arborist for London Borough of Ealing and Arborist in Berlin Germany.

Kim Gifford t/a Gifford Tree Service started trading as a sole trader in 1980 and in 1985 became a partnership. The company specialises in all aspects of Arboriculture. From 2007 Kim Gifford now again, trades as a sole trader in his own right. In 1988 Kim Gifford became an approved contractor with Arboricultural Association after a comprehensive assessment and reassessments in 2002/2007 Kim Gifford served on committees of the Arboricultural Association for 10 years and became the National Chairman of the Arboricultural Association in 2001. Kim Gifford is now an honorary member of the Arboricultural Association.

Kim Gifford personally undertakes Picus sonic decay tests for local authorities and other Arboricultural contractors all over the Southern area of England. Kim Gifford owns the Picus equipment treetesting.com for 17 years and completed over 3000 tests, so he has considerable experience in the analysis of the tomographic images. He provides this service to complement other consultant reports, this is combined with my 48 years' knowledge in Arboriculture.

The whole Picus system has been updated and maintained to the recent Picus manufactures improvements.

Kim Gifford has undertaken many Tree Surveys including Mortgage reports and BS5837 surveys to meet planning authorities' requirements during development proposals plus Tree Preservation applications and planning inspectorate appeals.

Kim Gifford was certificated recently by Lantra training awards with Professional Tree Inspection Certificate 30th November 2013 and Arboricultural Association Certificate BS5837 – Advanced Tree Assessment for Planning 4th May 2016.

Kim Gifford also provides quotations for recommended works, Risk Methods Statements, Health & Safety Policies, Site Specific procedures operation supervision and management services.