

Gale Tree Consultancy

Tree Condition Report

15 Caffyns Rise, Billingshurst, RH14 9JY

October 2024

Ref: TCR/582/24

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Executive Summary

T1 Pedunculate oak

- Decay forming in the assessed stem section
- I do not consider the current extent likely to affect the branch sections structural condition
- However, in the event it did fail it would cause damage to the garden below and possibly reach the property; option to install a section of non-invasive bracing to act as a 'catcher'

T3 Pedunculate oak

- Multiple cavities and pockets of decay throughout the tree
- Main area of concern is around a large open cavity where drill assessments identified a thin depth of sound wood
- A known brown rot decay fungus is also active within the tree where the affected wood structure is crumbly and friable to the touch
- A reduction in height has been recommended to produce a smaller crown mass thus alleviating the loading on those stem sections with cavities and decay present



1.0 Introduction

1.1 Client and Address

- Mr L Trinder, 15 Caffyns Rise, Billingshurst, RH14 9JY

1.2 Site Address if Different from the Above

- As above

1.3 Date of Inspection

- 16th October 2024

1.4 Name of Inspector

- Andrew Gale *Dip Arb L6 (ABC) M.Arbor.A*

1.5 Our Reference

- TCR/582/24

1.6 Instructions Received

- I have been instructed by Mr Trinder to undertake an aerial inspection of two trees within or on the boundary of the above property
- I am to provide my findings in the form of a report detailing any remedial work that may be necessary

2.0 Scope of the Report

- Trees are dynamic living organisms and their health and condition can be subject to rapid changes, depending upon a number of internal and external factors
- The conclusions and recommendations contained within this report are based on information gained at the time of inspection and are subject to the limitations of the specialist nature of this survey
- Therefore, the likelihood of failure is considered for three years from the reports date based on the information gained on the day of the report and on the assumption that any recommended work will be undertaken in the time frame specified
- It should be noted that even completely sound, healthy trees, can fail given sufficiently severe weather conditions
- The survey carried out relates to specific defects identified by the client and does not constitute a full tree inspection or risk assessment
- The site has not been checked for any statutory constraints
- The trees were not assessed for wildlife which would include birds or bat



3.0 Results of Inspection

3.1 General Site Description

- The northern boundary of 15 Caffyns Rise borders properties in a cul-de-sac off Rosehill, where a small stream runs in an east to west direction behind the fence line
- The property is located on a higher piece of ground which drops away to the north where the two trees are c.33 and c.32m above sea level[1]
- The surrounding landscape is built up with other properties and buildings encircling the trees
- The two trees are located behind the fence where another tree, between the two, has already been removed
- Both trees were accessed using modern arboricultural climbing equipment

3.2 Tree Species and Dimensions

No.	Species	Scientific Name	H (m)	Crown Spread (m)				Age	Phys. Con.
				N	E	S	W		
T1	Pedunculate oak	*Quercus robur*	21.5	5.0	7.5	7.0	7.5	M	Fair

3.2 General Description

- The tree is located behind the boundary fence line and within the grounds of 24 Rosehill – see Photo 1 overleaf
- The main stem forks at c.3.5m with a primary stem section heading south over the fence line, this is the section of tree that was assessed
- The southern crown spread has been previously reduced

3.3 Aerial Inspection

- At c.6m above ground level the stem section forks and at c.7m there is an old pruning wound measuring 14x14x5cm (HxWxD); wound wood[2] is forming around the outer edge – see Photo 3 overleaf
- At c.8m above ground level is a woodpecker hole measuring 10x10x20cm (HxWxD), where the stem diameter is c.30cm – see Photo 2 overleaf. An audible change in tone was heard around the area when assessed with a nylon headed sounding mallet
- Just above the woodpecker hole on the west side of the stem is a smaller wound which has almost fully occluded
- At c.8.6m is a further cavity, at the point of a previously removed tertiary stem section – see Photo 2 overleaf
- The wound measures 19x12x10cm (HxWxD), but the cavity extends down into the stem to a depth of c.50cm at an approximate angle of 45^0

[1] www.calcmaps.com

[2] Wound wood – occluding tissues forming around a wound or area of stress, which helps compensate for any loss of strength in that region



- The area around the stem and below the cavity exhibited an audible change in tone when assessed with a nylon headed sounding mallet



3.4 Summary of Inspection

- The distance between the upper wound and lower cavity is c.60cm, and between these points there was a distinct change in tone when assessed with the sounding mallet suggesting a column of decay and dysfunction is beginning to coalesce. The client informed me that he had witnessed a small bird entering the woodpecker hole and exiting through the nearly fully occluded wound, thus confirming that the features are beginning to join together
- Despite the indications suggesting a column of decay and dysfunction is present, I do not consider the current extent likely to affect the branch sections structural condition and so it does not appear to require any further investigation at present
- However, in the event it did fail during an extreme weather event, it would cause damage to the garden below and possibly reach the property. Therefore, the stem section could be braced where the bracing would act as a 'catcher' in the event of a fail – see Photo 4 below



Approximate line for the bracing to be installed

- The bracing should be of a strength sufficient to hold the weight of the failed stem section were it to fail
- The installed system should be relatively loose so that the stem can still react to wind loads and place adaptive growth around the cavities; I would therefore suggest a non-invasive system



3.5 Tree Species and Dimensions

No.	Species	Scientific Name	H (m)	Crown Spread (m)				Age	Phys. Con.
				N	E	S	W		
T3	Pedunculate oak	*Quercus robur*	19.5	5.5	4.0	5.0	6.0	M	Fair

3.6 General Description

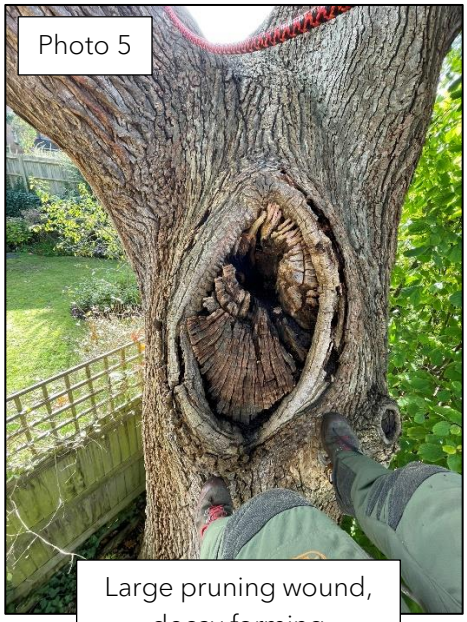
- The tree is located behind the boundary fence line where the northern crown spread overhangs the neighbouring properties garage and parking bays
- At c.5m a primary stem section emanates from the east side of the tree
- The main stem forks again at c.6.5m into two further primary stem sections in a north to south arrangement
- Further forks and bifurcations occur within the tree to produce the crown spread

3.7 Aerial Assessment

- At c.4.0m on the north east side of the main stem is a large wound, generated when a substantial stem section was removed; the wound measures 64x44x38 cm (HxWxD) – see Photo 5 overleaf
- The outer wound wood is decaying and the inner surface of the exposed heartwood of the stem section is friable and crumbly in nature
- At c.7.0m on the east primary stem section is a large open cavity, caused by the failure of its upper section – see Photo 6 overleaf
- The opening measures 155x30x40cm (HxWxD) and experiences an audible change in tone when assessed with the sounding mallet; the crumbly nature of the wood structure suggests a brown rot is active – this was confirmed by the client who forwarded photos of *Laetiporus sulphureus* (Chicken of the Wood) emanating from the opening
- At c.9.5m, the south primary stem section forks once again to form two secondary stem sections in a north east to south west arrangement
- At c.10m on the south west secondary stem section is the point at which a large stem section failed and tore away from the parent stem section – see Photos 7, 8 and 9 overleaf
- The failure occurred at the point of a cavity which continued through to the tertiary stem section which remains in place. The exposed wood is crumbly and friable in nature suggesting a brown rot is active
- On the west side of the north east secondary stem section, at c.10m, is an open cavity measuring 26x19x45cm (HxWxD) – see Photo 10 overleaf. The steel probe extended down the cavity to a depth of c.28cm; the stem section has a diameter of c.65cm at the centre point of the cavity
- Wound wood is forming around the outer edge and a patch of moribund and lifting bark was noted on the south side; the area exhibited an audible change in tone when assessed with the sounding mallet
- At 10m on the east side of the stem section is another woodpecker hole measuring 6x5x21cm – see Photo 11 and 12 overleaf; this too had an audible change in tone when assessed
- At c.14.5m on the same stem section is a further woodpecker hole, although this was small compared to the above measuring 2x2x3cm – see Photo 13 overleaf



- Also, at c.14m is an open tear out wound measuring 55x15x28cm – see Photo 14 overleaf; due to access issues it was only possible to extend the steel probe to a depth of c.20cm
- This cavity is water filled with an audible change in tone down to a distance of c.40cm below the bottom of the cavity when assessed with the nylon headed mallet



Large pruning wound, decay forming



Large failure on east primary stem section resulting in large open cavity







Large stem section failure on south west side of the tree.
Steel probe visible through the cavity in Photo 8



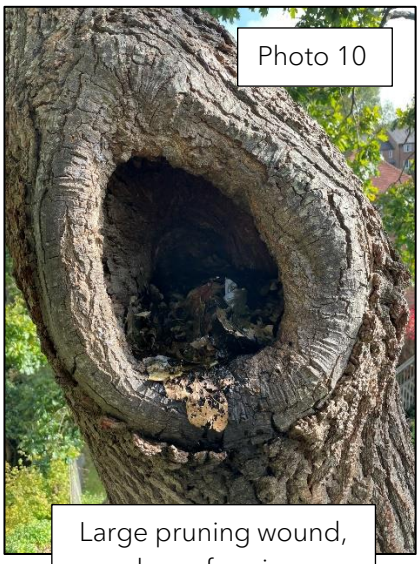


Photo 10

Large pruning wound, decay forming

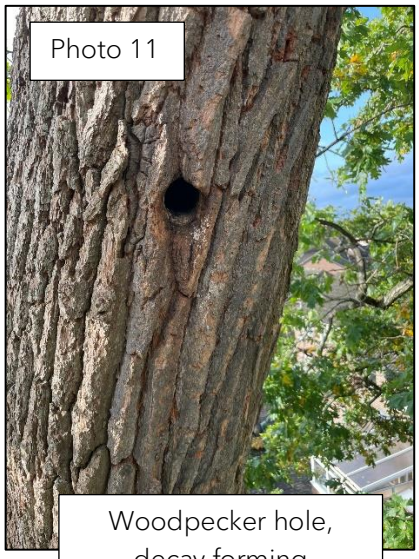


Photo 11

Woodpecker hole, decay forming

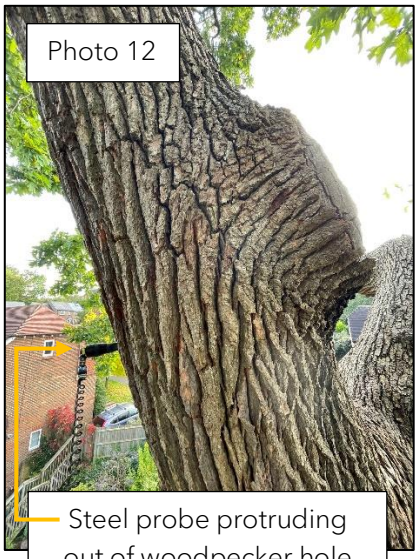


Photo 12

Steel probe protruding out of woodpecker hole



Photo 13

Early stage of a woodpecker hole

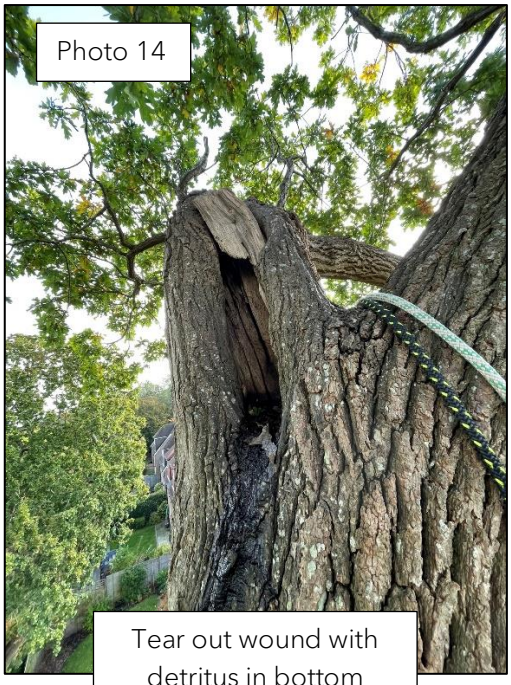


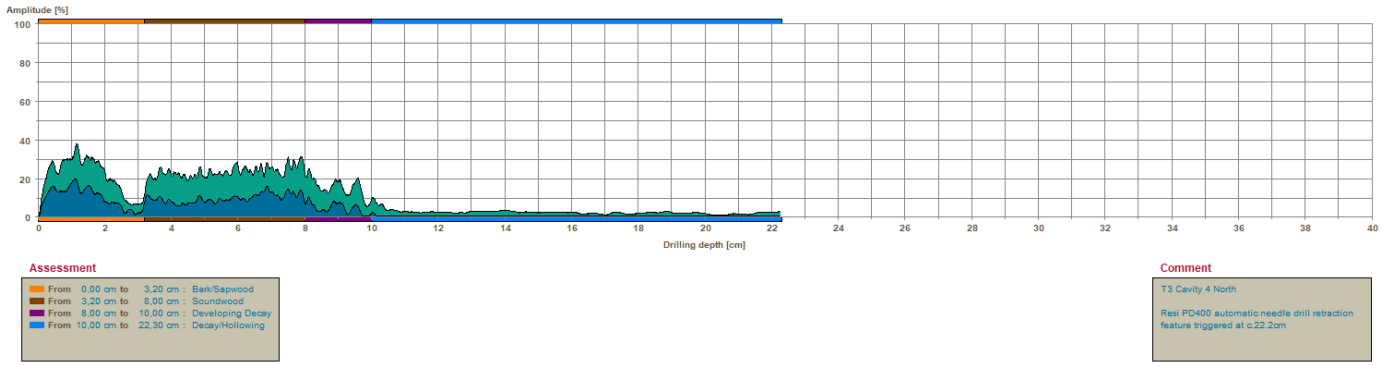
Photo 14

Tear out wound with detritus in bottom

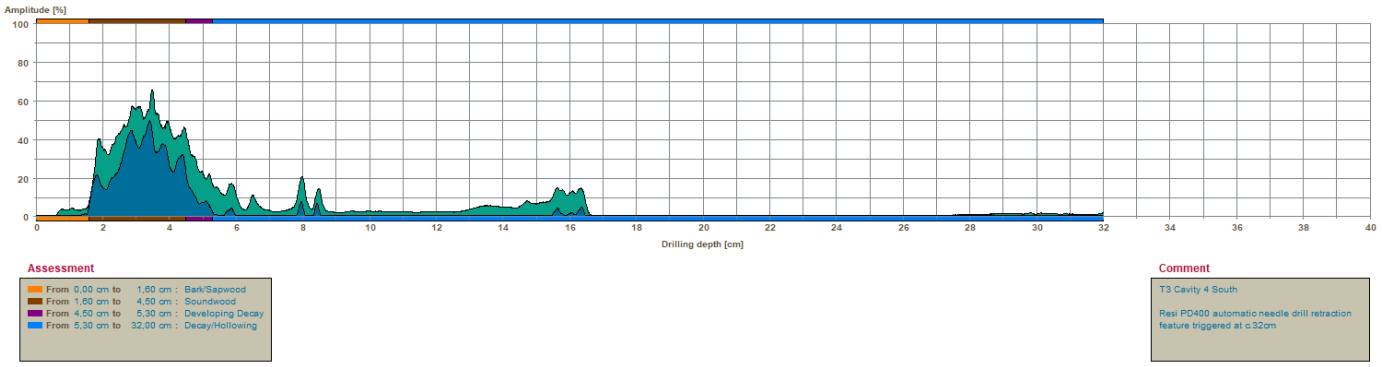


- To confirm the depth of sound wood around the large cavity and woodpecker hole at c.10m, the Resi PD400 was used in three locations, at the midpoint of the cavity – please see the drill traces below:

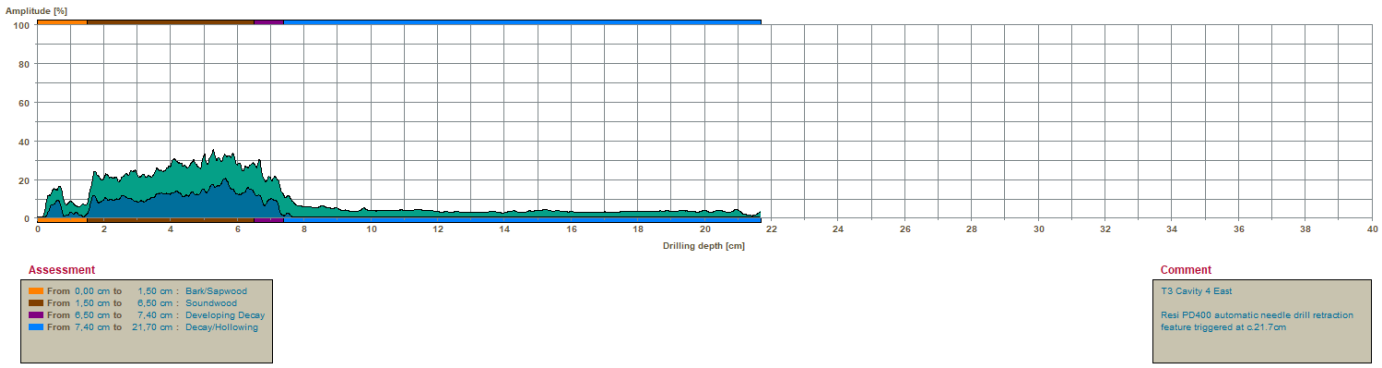
Drill Trace 1 – north side



Drill Trace 2 – south side



Drill Trace 3 – east side

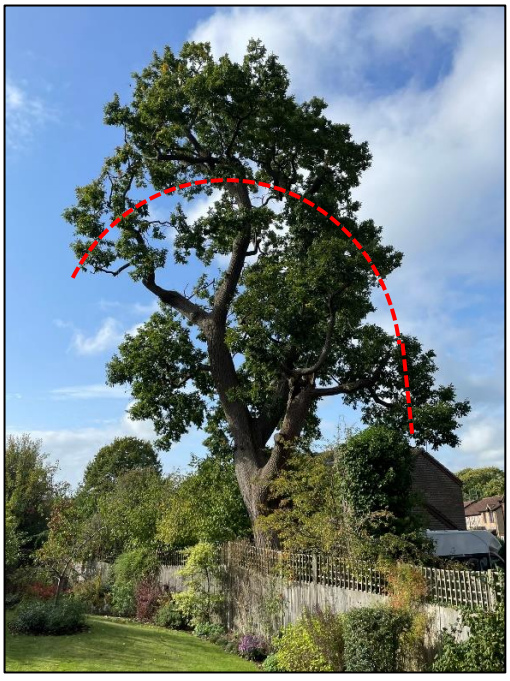


- The Resi PD400 automatic needle retraction feature was activated to either prevent the needle drill from bending and breaking when it reaches the opposite side of the cavity or when it does not have any resistance



3.8 Summary of Results

- The extensive wounds and cavities identified indicate a tree that has experienced a lot of damage, both natural and manmade, throughout its life
- This is also confirmed by the presence of the decay fungus *Laetiporus sulphureus* (Chicken of the Wood) which causes a brown rot to form where the cellulose is removed leaving the lignin behind which can result in a brittle fracture
- This takes time to develop meaning that the decay and dysfunction has been present for some time
- The area of main concern is the cavity and woodpecker hole at c.10m
- This cavity was generated when a large diameter stem section was removed. The wound wood is acting to strengthen the weakened area of the stem; however, the size and extent of the cavity means it is highly unlikely to fully occlude
- The cavity originally followed the branch cone, the more or less cone shaped mass of branch wood embedded in the parent stem wood caused when the branch is smaller than the parent stem
- However, the depths at which the drill assessments reached their respective drops in resistance suggest that the decay has extended beyond the boundaries of the branch cone
- The depth of the woodpecker hole also suggests that the two features have formed a column of dysfunction and decay
- The risk is that this section of the tree may fail now that it has become more exposed following the failure of the stem section earlier in 2024
- I therefore recommend the tree should be reduced in height to the approximate line in the photo below
- The proposed reduction will result in a smaller crown mass which in turn should place less loading on the affected stems sections
- The work will not adhere to BS3998:2010 Tree Work – Recommendations due to the size of the wounds that will be generated, but the options for managing the tree with the extent of decay are limited



Estimated height of the proposed reduction

- To establish a more uniform crown shape, the north primary stem section should also be reduced to mirror the southern side of the tree
- As with any pruning of this degree, I cannot guarantee how well the tree will respond; it is hoped that new growth will not only be generated from the pruned ends but also from lower down on the stem allowing future management and pruning to establish a smaller crown
- This work should be undertaken within six months of the reports date
- The alternative option would be to remove the tree; however, I believe this to be too drastic a response to the extent of dysfunction and decay identified



- If the tree is retained, reassess in three years from the reports date
- Inspect after extreme weather events such as wind gusts in excess of Force 8 on the Beaufort Scale

4.0 Recommendations

- Implement the tree work in the time period specified
- Reassess in three years of the reports dates
- This time frame should be shortened in the event:
    - The tree's local environment changes significantly
    - Fruiting bodies emerge from anywhere on the tree
    - After extreme weather events such as:
        - Wind gusts in excess of Force 8 on the Beaufort Scale – see Appendix 3
        - After named extreme weather events

- If the tree is located within a conservation area or subject to a tree preservation order, a formal application to the local planning authority will be required and written consent obtained prior to any work is carried out

This concludes my report.

Signed:

Andrew Gale *Dip Arb L6 (ABC) M.Arbor.A*

Date: 30th October 2024

Arboricultural ASSOCIATION Professional Member



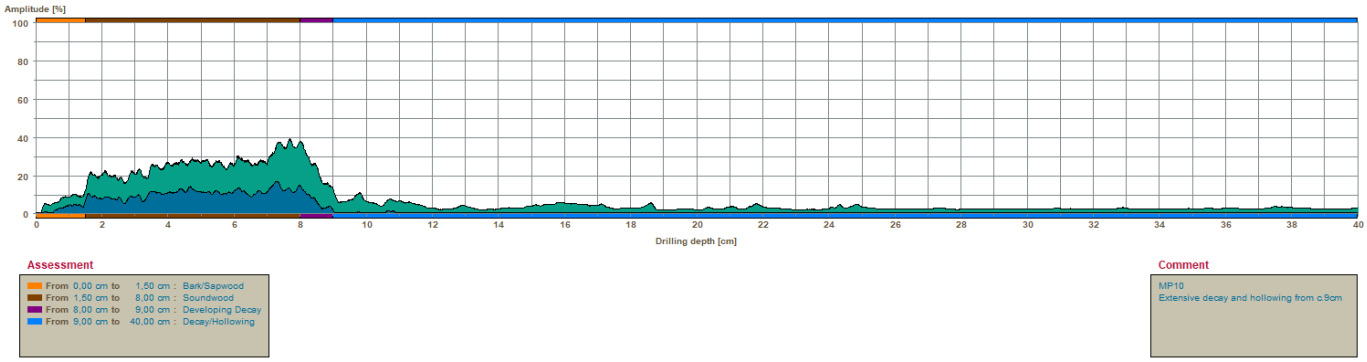
5.0 Appendix 1

Method of Inspection Visual Tree assessment – VTA

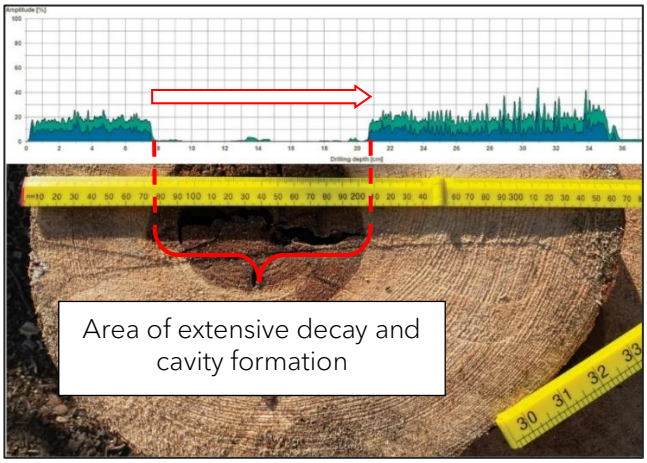
- A nylon headed mallet is used to sound the stem as an initial indication of the presence of decay
- Dull tones indicate areas of lifted and moribund bark, and areas where decay is forming within the main body of the stem
- A thin steel rod is used, where necessary, to assess the depth of any decay in cavities and concavities between buttress roots

Detailed Decay Evaluation

- An IML Resi PD400 microdrill, which measures the resistance of a very fine drill bit to a depth of 400mm, can be used for further confirmation. Significant drops in drilling resistance are indicative of decay or hollowing
- On the example below, extensive decay and hollowing is indicated from a depth of c.9cm through to the end of the assessment
- Please note, the colours of the Resi Drill Traces have been colour coded to match those of the PiCUS 3 Sonic Tomography unit



- Historically, Resi drill traces have read from right-to-left due to the configuration of the original machine. However, by using the software available, I have flipped the drill traces to read left-to-right, the more conventional way to read a graph



- On the image to the left, you can see where the drill entered the area of extensive decay and cavity at c.7.5cm and re-entered the sound wood at c.20.8cm; the drill exited the stem at c.35.4cm



Appendix 2

Survey Key

Tree No.	Relating the tree being assessed	
Species	Common name in English	
Scientific name	The current scientific name will be used	
Height	Measured using a TruPulse digital clinometer and shown in metres (m)	
Crown Spread	Measured using a TruPulse digital clinometer and shown in metres (m)	
Age Class	Young [Y]	recently planted or established within the last 5 years
	Semi Mature [SM]	a well-established youngish tree but far from full maturity
	Early Mature [EM]	long established nearing its full size but not fully mature
	Mature [M]	fully mature tree that has met its full size
	Late Mature [LM]	a fully mature tree that has passed its peak; may exhibit areas of decline
	Veteran [V]	a tree with the physical characteristics of an Ancient tree but is not ancient in years compared to other trees of the same species
	Ancient [A]	a tree that has past full maturity and is old or aged in comparison to other trees of the same species
Physiological Condition	GOOD	No significant physiological problems
	FAIR	Some physiological problems
	POOR	Significant physiological problems
	MORIBUND	In a serious and irreversible decline
	DEAD	Not alive
Tree Structure	Main Stem	The stem, from ground level up to the point at which it bifurcates
	Primary Stem Section (PSS)	The larger stem sections that emanate from the main stem after bifurcation; form the main crown structure
	Secondary Stem Section (SSS)	The stem sections that emanate from the primary stem sections that contribute to the inner crown structure
	Tertiary Stem Section (TSS)	The stem sections that emanate from the secondary stem sections that contribute to the inner and outer crown structure
	Subordinate Branch Structure (SBS)	The smaller diameter branches that help form the inner and outer branch structure; leaf bearing twigs emanate from these to form the crown



Appendix 3

Beaufort Scale

Beaufort Number	Name	Knots	MPH	Effects Observed on Land
0	Calm	Under 1	Under 1	Calm, smoke rises vertically
1	Light Air	1-3	1-3	Direction of wind is shown by smoke drift but not by wind vanes
2	Light Breeze	4-6	4-7	Wind felt on face, leaves rustle, ordinary wind vane moved by wind
3	Gentle Breeze	7-10	8-12	Leaves and small twigs in constant motion, wind extends light flag
4	Moderate Breeze	11-16	13-18	Raises dust and loose paper, small branches are moved
5	Fresh Breeze	17-21	19-24	Small trees in leaf begin to sway, crested wavelets in inland waters
6	Strong Breeze	22-27	25-31	Large branches in motion, whistling heard in telegraph wires, umbrellas used with difficulty
7	Near Gale	28-33	32-38	Whole trees in motion, inconvenience felt in walking against the wind
8	Gale	34-40	39-46	Breaks twigs off trees, generally impedes progress
9	Strong Gale	41-47	47-54	Slight structural damage occurs – chimney pots, slates removed
10	Storm	48-55	55-63	Seldom experienced inland, trees uprooted, considerable structural damage occurs
11	Violent Storm	56-63	64-72	Very rarely experienced, accompanied by widespread damage
12	Hurricane	64 and over	73 and over	