Gale Tree Consultancy

Tree Condition Report

Plaistow and Ifold Parish Council

June 2025

Ref: TCR/643/25

Tel: 01798 875731 | Email: office@galetreeconsultancy.co.uk | Web: galetreeconsultancy.co.uk

Contents

Executive Summary

- A veteran Sessile oak location within a fenced off area on a recreation ground, overhanging a small yet busy lane to the south
- The SoT assessment shows an increase in decay/hollowing from the 2021 assessment whilst the ERT assessment shows this to be larger beneath the assessed plane
- No further action required at this time
- Reassess in three years from the report's date so any further increase can be mapped

1.0 Introduction

1.1 Client and Address

- Jane Bromley, Clerk to the Parish Council, Plaistow & Ifold Parish Council, The Winterton Hall, Loxwood Road, Plaistow, RH14 0PX

1.2 Site Address if Different from the Above

- Plaistow & Ifold Recreation Ground

1.3 Date of Inspection

- 11th June 2025

1.4 Name of Inspector

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

1.5 Our Reference

- TCR/643/25

1.6 Instructions Received

- I have been instructed by the Clerk to the Parish Council to undertake a ground level internal inspection of a veteran tree growing along the southern boundary of the recreation ground
- 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 therefore this report is not valid in adverse or unpredictable weather conditions or for any failure due to Force Majeure
- The site has not been checked for any statutory constraints
- The trees were not assessed for wildlife which would include birds or bats

3.0 Results of Inspection

3.1 Tree Species and Dimensions

No.	Species	Scientific Name	H (m)	Crown Spread (m)				Age	Phys. Con.
				N	E	S	W		
T30/530	Sessile oak	*Quercus petraea*	20.5	13.0	18.0	16.0	13.0	Vet	Fair

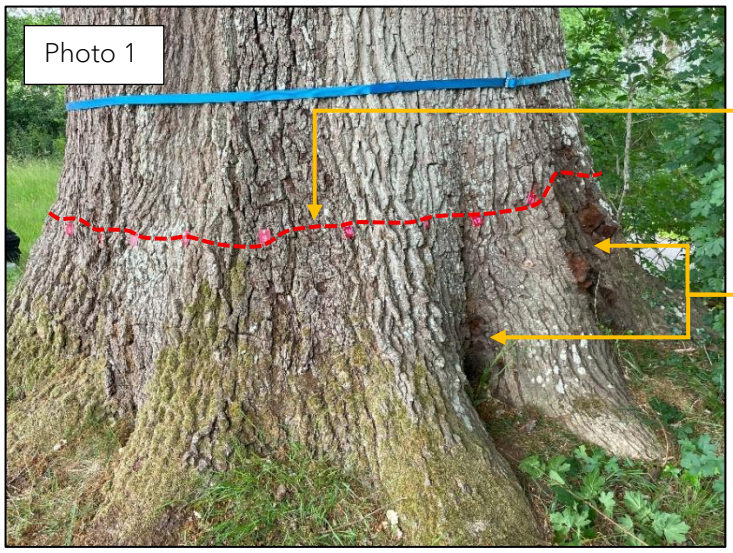
3.2 General Description

- The tree is located along the southern boundary line of the recreation ground and Common House Road, opposite the drive entrance to the property Sunnymead and is c.76m above sea level[1]
- The wider landscape is made up of open farmland and blocks of woodland with the main area of housing being to the north and northwest with a further area of housing further to the south alongside Rickman's Lane
- The tree sits atop the bank, which drops down to Common House Road with a height difference of c.90cm; the gap between the hedgerow has been filled with a dead hedge
- The tree has deeply fluted buttress roots around its lower stem, which forks at c.3m to form the main crown structure
- On the north side of the stem from c.1.1m up to c.2.7m is an area of moribund bark. Also, on the north side at c.80cm is a bark wound with an exudate
- On the east side of the stem from c.1m up to c.2.7m is a further area of moribund bark
- The southern buttress roots emitted a dull tone when assessed with the nylon headed sounding mallet
- On the southwest side of the stem attachment points of the decay fungus *Pseudoinonotus dryadeus* were noted, from ground level up to c.1.4m; desiccated fruiting bodies were also noted in the hedgerow adjacent to the area
- The area around the attachment points emitted a change in tone when assessed with a nylon headed mallet
- On the west side of the stem is a further area of moribund bark, from c.70cm up to c.1.1m
- The upper crown is showing early signs of decline

[1] www.calcmaps.com

3.3 Decay Evaluation

- To confirm the extent of any decay on the lower stem, the PiCUS 3 Sonic Tomography (SoT) unit and the PiCUS 2 Electrical Resistance Tomography (ERT) unit were used c.80cm above ground level (north side of the stem) with 30 and 24 measuring points (MP). MP 1 was placed at north for reference purposes – please see below:



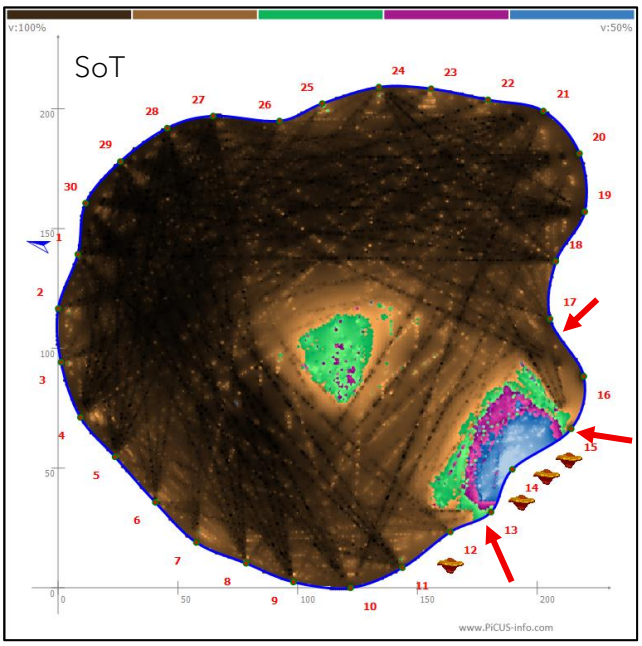
View from the west side of the tree

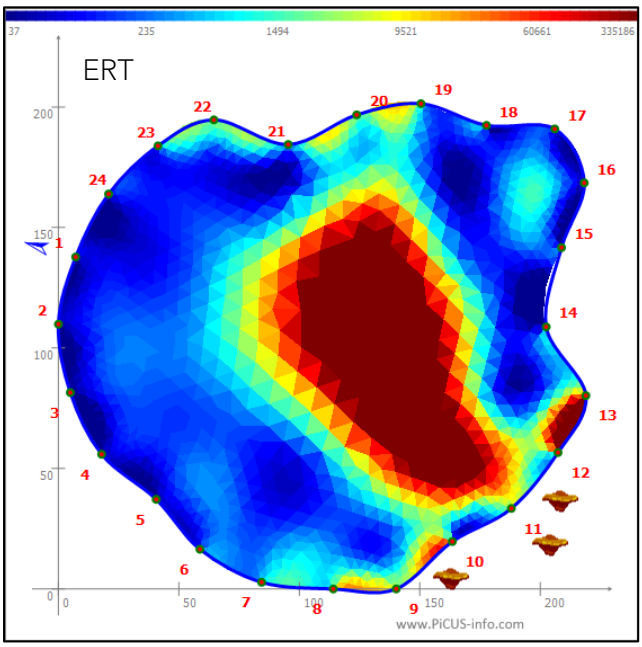
Height of assessment c.80cm above ground level

MP1 located on the north side of the stem

Note the attachment points of the decay fungus *Pseudoinonotus dryadeus*

- The tomogram indicates an area of high sonic velocity, and as such sound wood, across the level of assessment as shown by the brown colour present
- However, the area of blue adjacent to MP13, 14 and 15 shows an area of low sonic velocity, and as such decay; the green colouration in the centre of the stem shows an area of decay developing
- Please note, the fungal symbols reference the location of the *Pseudoinonotus dryadeus* brackets, and the tomograms have been rotated to match Photo 1





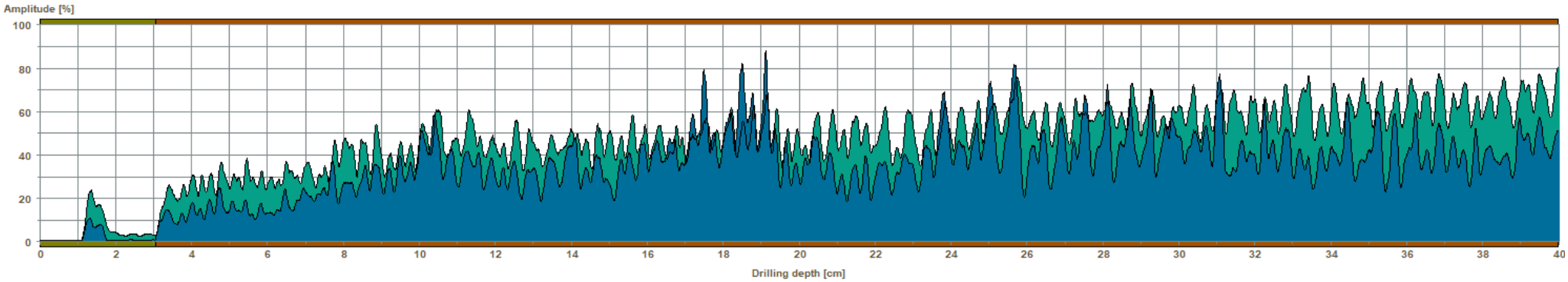
- The ERT result shows an area of reduced electrical resistance, as shown by the red colouration, within the central area of the stem which extends outwards towards the southwest side of the stem; this suggests an area of decay/dysfunction is present

- To confirm the tomogram, the Resi PD400 was used in three locations at the level of assessment – please see the red arrows on the SoT result on the previous page and the drill traces overleaf
- A further two drill assessments were performed on the southern buttress root

View from the south side of the tree

Locations of the two drill assessments on the southern buttress root

Reference Curve at c.1.5m on the northwest side of the stem



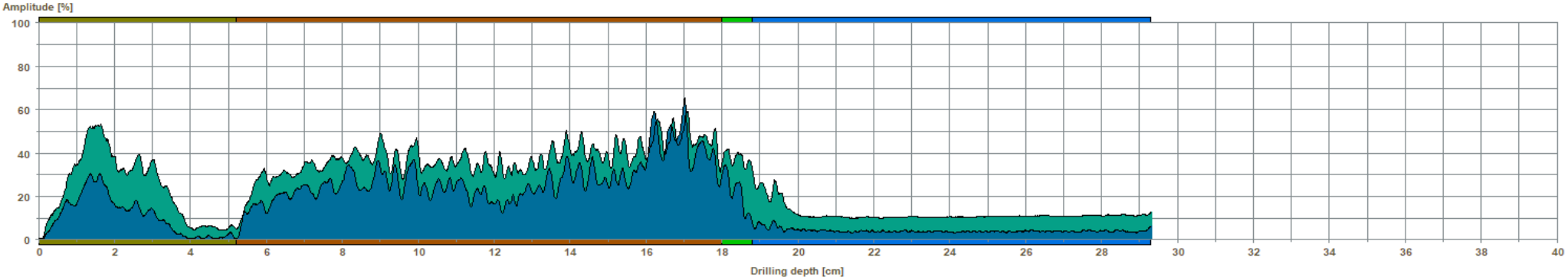
Assessment

From 0,00 cm to 3,05 cm : Bark/Sapwood
From 3,05 cm to 40,00 cm : Soundwood

Comment

T30/530 Reference Curve

Drill Trave 1 – MP13



Assessment

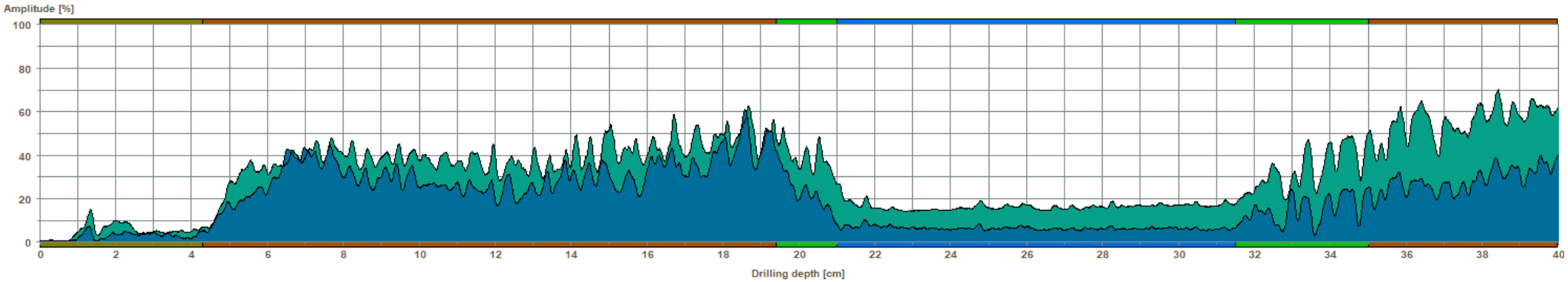
From 0,00 cm to 5,20 cm : Bark/Sapwood
From 5,20 cm to 18,00 cm : Soundwood
From 18,00 cm to 18,80 cm : Early decay
From 18,80 cm to 29,30 cm : Decay/Hollowing

Comment

T30/530 MP13

Resi PD400 automatic needle drill retraction feature triggered at c.29.3cm

Drill Trace 2 – MP15



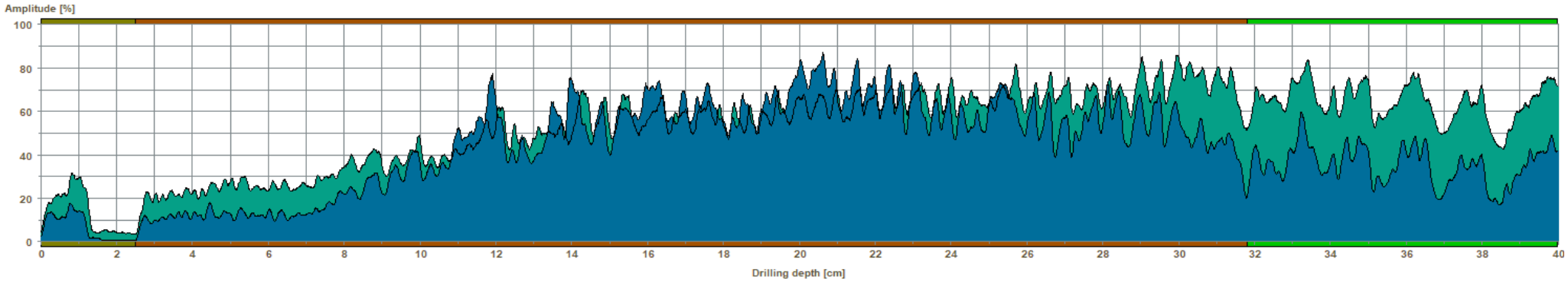
Assessment

From	0,00 cm to	4,30 cm :	Bark/Sapwood
From	4,30 cm to	19,40 cm :	Soundwood
From	19,40 cm to	21,00 cm :	Early decay
From	21,00 cm to	31,50 cm :	Decay/Hollowing
From	31,50 cm to	35,00 cm :	Early decay
From	35,00 cm to	40,00 cm :	Soundwood

Comment

T30/530 MP15

Drill Trace 3 – MP17



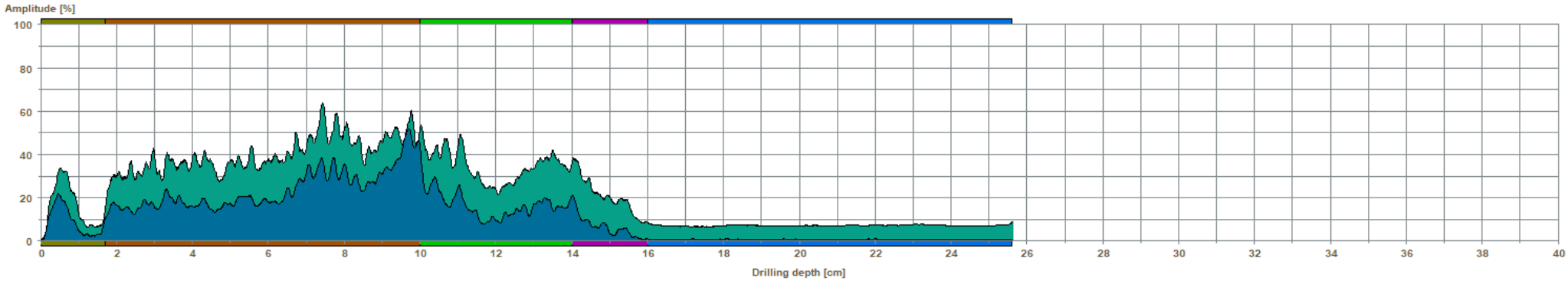
Assessment

From	0,00 cm to	2,50 cm :	Bark/Sapwood
From	2,50 cm to	31,80 cm :	Soundwood
From	31,80 cm to	40,00 cm :	Early decay

Comment

MPT30/530 MP17

Drill Trace 4 – southern buttress root c.60cm below MP16 (SoT) MP13 (ERT) angled at -30^0 into the buttress root



Assessment

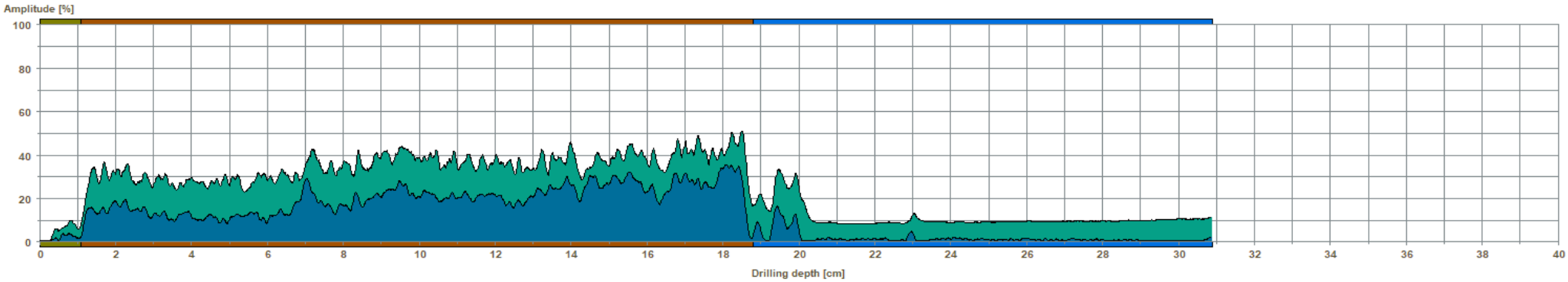
From	0,00 cm to	1,70 cm :	Bark/Sapwood
From	1,70 cm to	10,00 cm :	Soundwood
From	10,00 cm to	14,00 cm :	Early decay
From	14,00 cm to	16,00 cm :	Developing Decay
From	16,00 cm to	25,60 cm :	Decay/Hollowing

Comment

South Buttress Root 60cm below MP16

Resi PD400 automatic needle drill retraction feature triggered at c.25.6cm

Drill Trace 5 – southern buttress root c.85cm below assessment level and angled at -35^0 into the buttress root



Assessment

From	0,00 cm to	1,10 cm :	Bark/Sapwood
From	1,10 cm to	18,80 cm :	Soundwood
From	18,80 cm to	30,90 cm :	Decay/Hollowing

Comment

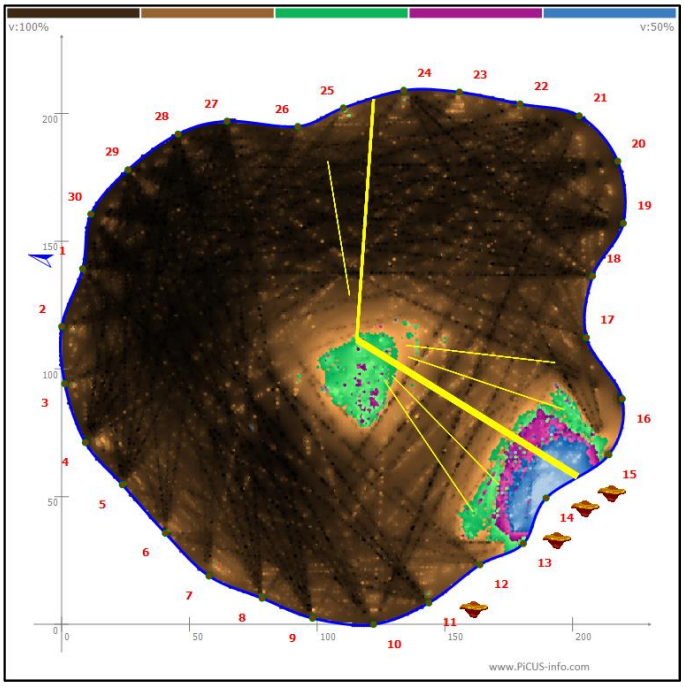
South Buttress Root 85cm below assessment level

Resi PD400 automatic needle drill retraction feature triggered at c.30.9cm

4.0 Summary of Results

- The decay fungus *Pseudoinonotus dryadeus* forms a selective delignification white rot where the lignin is removed in preference to the cellulose which eventually leads to hollowing
- The tree can stand for many years on the 'stilts' that are formed by the intact buttress roots, giving it its common name of Eiffel Tower Bracket, and when confined to the centre of the tree, failure seldom occurs

- The PiCUS 3 sonic tomography unit works by timing how long it takes for sound waves from one measuring point to reach the other measuring points with the resultant tomogram being an interpretation of those times
- The sound waves can be slowed and disrupted not only by wood exhibiting areas of decay, dysfunction or hollowing but also by deeply fluted and included buttress roots where the two opposing faces of bark act as a barrier; cracks and other internal features within the wood structure can also impede the sound waves. These areas are identified by yellow lines on the tomogram – see below:



- With its ability to assess above and below the SoT assessment plane, the PiCUS 2 Electrical Resistance Tomography unit produces an electrical current to assess the condition of the wood
- Changes in the water content, cell composition and chemical elements will change according to the condition of the wood. Tree species will also heavily influence the electrical current as will deeply included buttress roots
- The assessment height of c.80cm was chosen to avoid, as far as practicable, the deeply included buttress roots, however on the tomogram below, it is clear that some were present

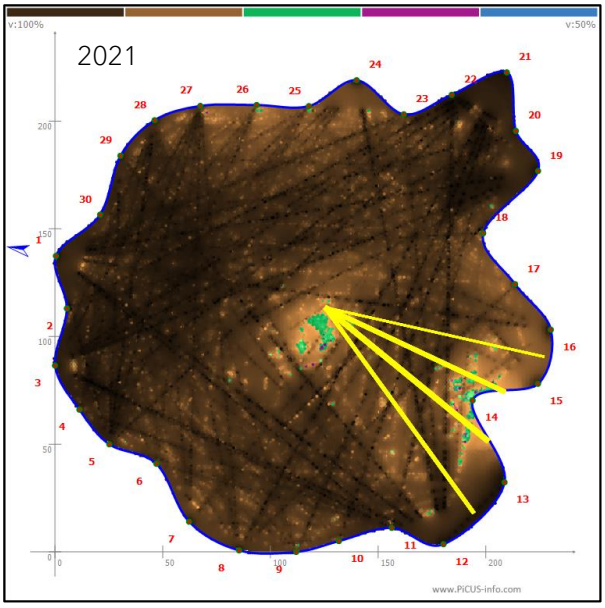
- The SoT assessment used 30 measuring points, but due to the ERT system being limited to 24 measuring points, there is a slight change in its shape compared to the SoT

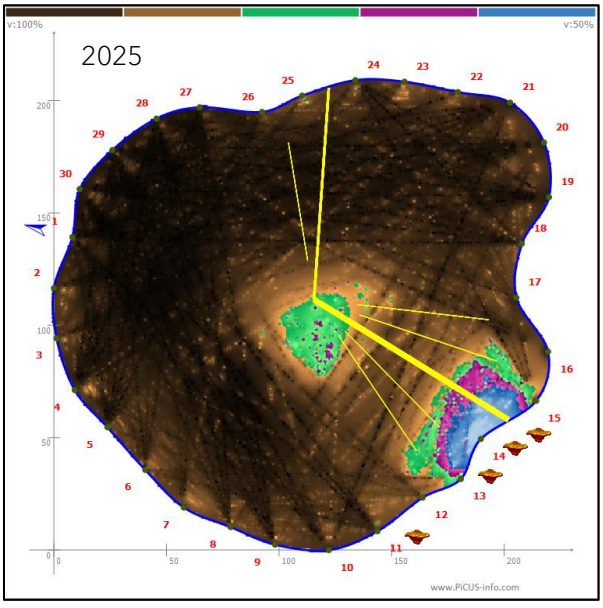
- The SoT result shows an area of low sonic velocity, and as such decay, on the southwest side of the stem, consistent with the locations of the *Pseudoinonotus dryadeus* attachment points; it also shows an area of decay beginning to establish within the central region of the stem
- The ERT result confirms this but also shows this to be larger with a wider area of decay and dysfunction within the central region of the stem – this is to be expected considering its ability to assess beneath the SoT plane and the mode of the fungus

- The reference curve is used to establish a baseline of what the sound wood looks like as a drill trace, and it shows a steady and increasing resistance to the needle drill confirming sound wood
- Drill Trace 1 shows the depth of sound wood is c.18cm before the drill enters an area of decay and hollowing. The unit's automatic needle drill retraction feature was triggered at c.29.3cm which occurs when either the drill has experienced no resistance for 15cm, or it has reached the opposite side of the cavity and begun to bend
- The drill trace shows a very slight increase at c.29.3cm which would suggest the needle drill began to bend and withdrew to reduce the risk of it snapping; this implies the cavity depth at this point is c.11.3cm
- Drill Trace 2 shows sound wood either side of the decay/hollowing at c.21cm-31.5cm whilst Drill Trace 3 shows early decay forming at c.31.8cm
- Drill Traces 4 and 5 were performed on the southern buttress root and both show sound wood is present prior to the needle drill encountering drops in resistance and eventually decay and hollowing

5.0 Conclusion

- The average diameter of the stem at the assessed level is c.225cm, with well-developed and heavily fluted buttress roots
- The two tomograms show decay is developing with the ERT result showing a larger area forming in the central area of the stem. This type of decay development is consistent with *Pseudoinonotus dryadeus* with the buttress roots remaining intact whilst the centre is decayed
- Compared to the 2021 assessment, the area of decay/hollowing has increased in size, but despite this, I do not consider the current extent is likely to affect the tree's structural condition and as such, it does not appear to require any further investigation at present





- I will however recommend the tree is reassessed in three years from the reports date so any further increase in the decay/hollowing can be mapped

6.0 Recommendations

- Reassess in three years of the report's 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

This concludes my report.

Signed:

Andrew Gale.

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

Date: 25th June 2025

Arboricultural ASSOCIATION Professional Member

7.0 Appendix 1

Method of Inspection Visual Tree assessment – VTA

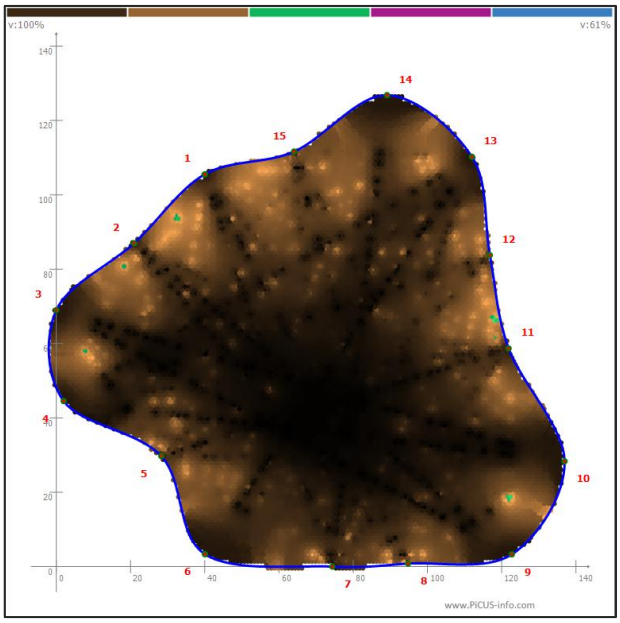
- A nylon headed mallet is used to sound the stem as an initial indication of the presence of decay
- Dull tones indicate areas of lifted and moribund bark, and areas where decay is forming within the main body of the stem
- A thin steel rod is used, where necessary, to assess the depth of any decay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

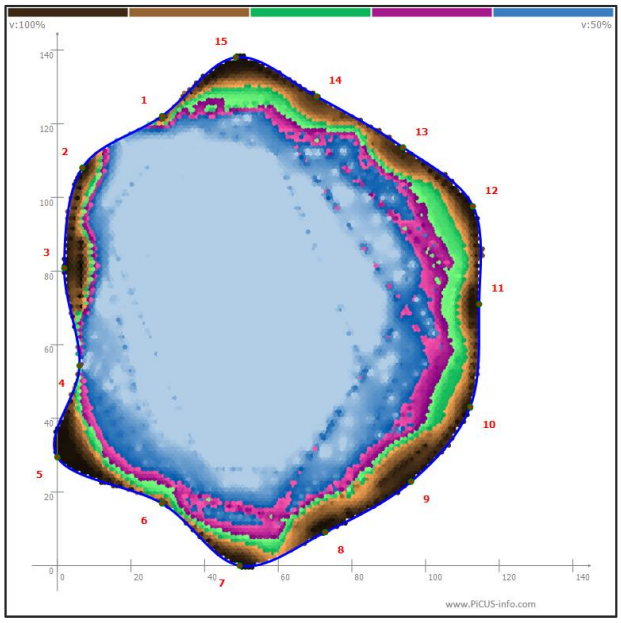
Detailed Decay Evaluation

- PiCUS 3 Sonic Tomography (SoT) unit uses the relative velocity of sound waves induced across the stem to produce a colour shift image where dark browns represent wood with higher velocities and as such sound wood
- Lower sound speeds caused by decay or hollowing are represented by lighter colours with blue/white indicating significant decay/hollowing
- A representation of the colour differences between sound wood and decaying wood

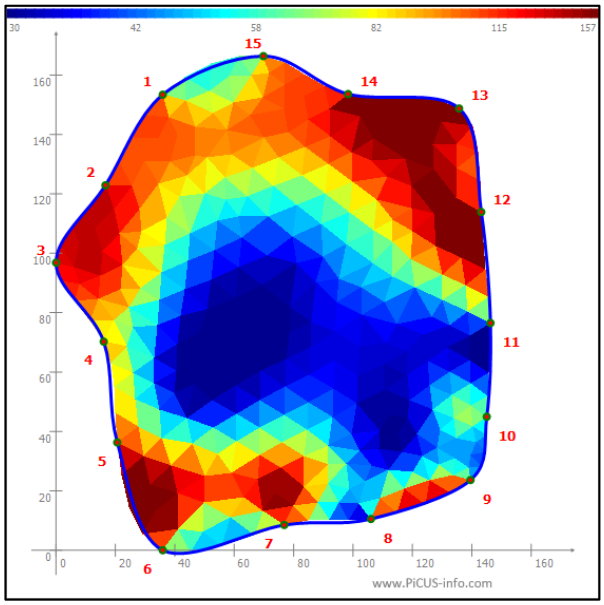
HIGHERVELOCITYTOLOWERVELOCITY
Indicating
SOUNDWOODTODECAYEDANDHOLLOWINGWOOD

- On the examples below, the tomogram on the left indicates a sound tree and the tomogram on the right, a tree with significant decay or hollowing:



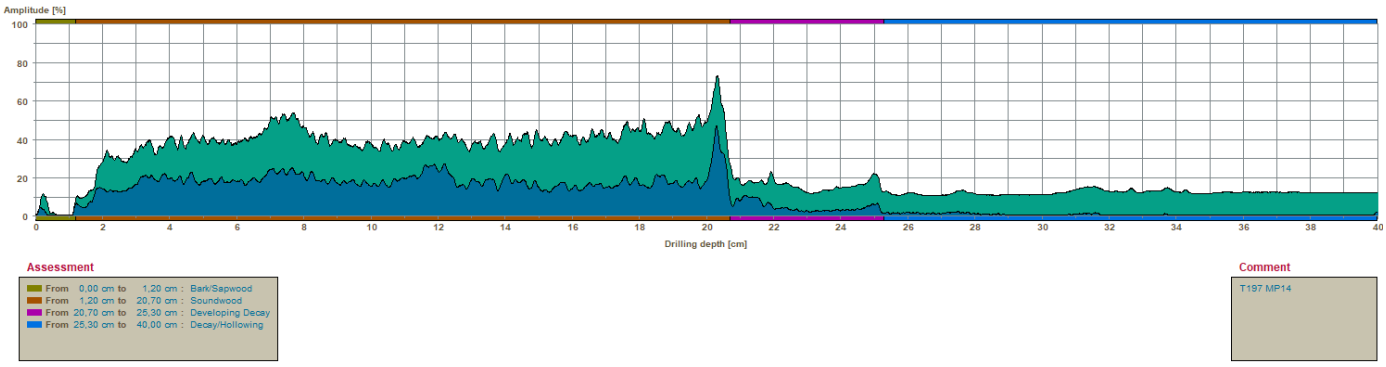


- A further assessment using the PiCUS 2 Electrical Resistance Tomography unit (ERT) can be used



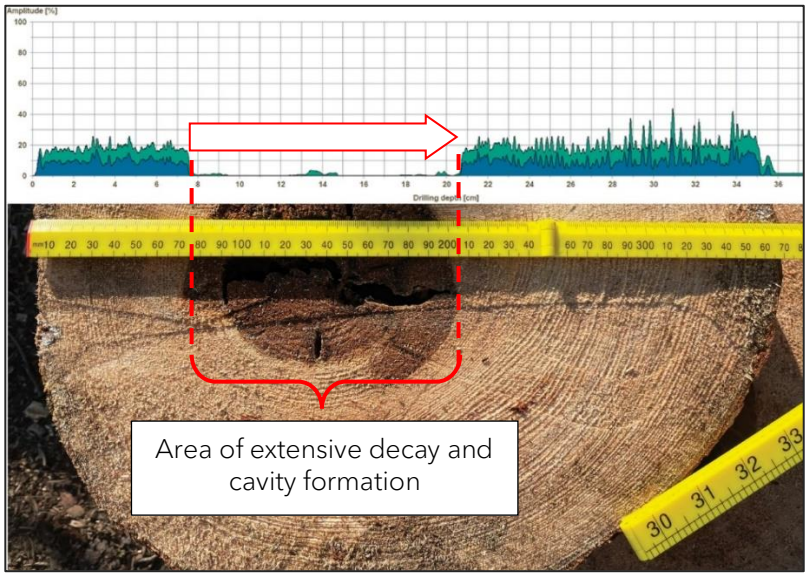
- The PiCUS 2 ERT unit produces an electrical current to assess the condition of the wood within the tree. Changes in the water content, cell composition and chemical elements will change according to the condition of the wood – see to the left
- The blue colouration in the tomogram indicates an area of high conductivity suggesting advancing decay
- The ERT system can test below the assessed plane which helps with the early diagnosis of changes to the wood structure

- 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, sound wood is present to a depth of c.20.7cm before the needle drill enters an area of developing decay; at c.25.3cm the needle drill enters a cavity which extends 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 below, 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	