

Gale Tree Consultancy

Tree Condition Report

Wild Brook House, RH20 2AD

February 2024

Ref: TCR/510/24

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Summary

- A mature tree located within a wooded strip of ground to the north of an access drive that serves three properties
- The recent failure of the upper section of a tertiary stem section prompted the aerial assessment
- Extensive hollowing found following an assessment with a Resi PD400 microdrill
- Recommendation to either:

    a) Remove the affected stem section
    b) Reduce the affected stem section by c.50%

- Reassess in two years to allow for the inspection of the upper crown and areas of moribund bark and exudations identified



1.0 Introduction

1.1 Client and Address

- Mr & Mrs Comyn, Wild Brook House, Rectory Lane, Pulborough RH20 2AD

1.2 Site Address if Different from the Above

- As above

1.3 Date of Inspection

- 5th February 2024

1.4 Name of Inspector

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

1.5 Our Reference

- TCR/510/24

1.6 Instructions Received

- I have been instructed by Mr & Mrs Comyn to perform an aerial inspection of the upper area of the primary and secondary stem sections of a mature tree along the drive to the 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 two 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 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		
/	Sycamore	*Acer pseudoplatanus*	21.0	6.0	7.5	8.0	7.0	M	FAIR

3.2 General Description

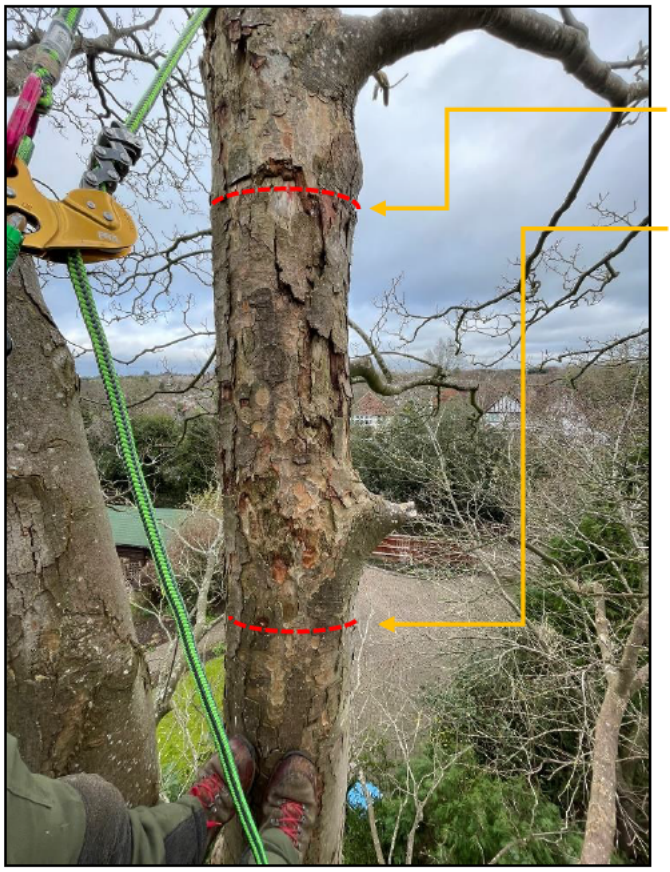
- The tree is situated in a narrow strip of land to the north of the access drive that serves the client's property plus a further two properties. To the north of the tree is a further property
- The position is elevated and exposed to the prevailing winds
- The main stem forks at c.2.5m forming four primary stem sections (PSS) in a north, east, south and west arrangement
- The four PSS fork further into secondary stem sections (SSS) and tertiary stem sections (TSS), with branches forming from these
- The union between the east and south PSS has a long inclusion[1] whilst the remaining unions between the PSS are developing good unions
- Emanating from c.2.0m on the south side of the tree, a secondary stem section (SSS) heads over the access drive, the unions is good with a small cup forming between the two stems, c.10cm deep
- Throughout the crown, patches of moribund bark and exudations were noted along with deadwood, with diameters greater than 50mm
- Old pruning wounds, some of which have fully occluded, were noted throughout the crown, the majority of which were recorded on the north PSS
- The north PSS forks to form two SSS in a northeast to southwest arrangement, after which the northeast SSS forks once again to from two TSS in an east to west arrangement
- The west TSS has failed at c.11.5m where a cavity had formed; the inner wood was soft suggesting a wood decay fungus is active
- On the east side of the SSS at c.11.2m, a cavity was recorded with a depth of c.24cm where the stem diameter was c.32cm; the opening of the cavity measures 6x8cm (HxW). A squirrel exited the cavity when the stem area was assessed with the nylon headed mallet – see Appendix 1 Method of Inspection suggesting the cavity is deep. The audible change in tone heard suggests this to be the case
- Further cavity was noted on the north side of the north PSS at c.9.0m
- The northern PSS exhibited very poor bud growth and distribution
- Photos of the above features can be found in Appendix 4 – Site Photos

[1] Included unions – develops when two or more stems grow closely together causing weak, under supported branch angles. This results in a weakness due to the lack of a woody union and subsequently, any increase in lateral movement can result in the union failing



3.3 Decay Evaluation

- To assess the quality of the north PSS wood structure, the Resi PD400 was used in a total of four locations, twice at two levels, please see below:



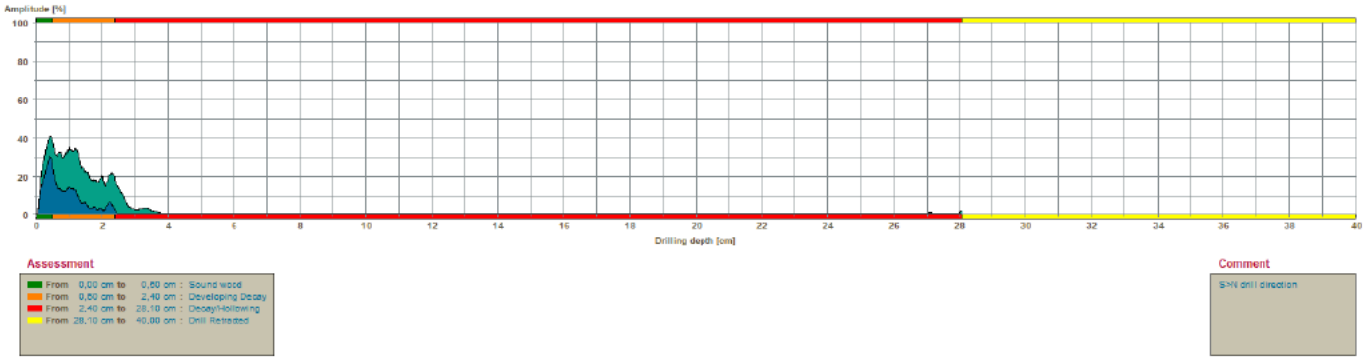
View of north PSS looking north

Assessment Level 1 – c.10m above ground level

Assessment Level 2 – c.9.0m above ground level

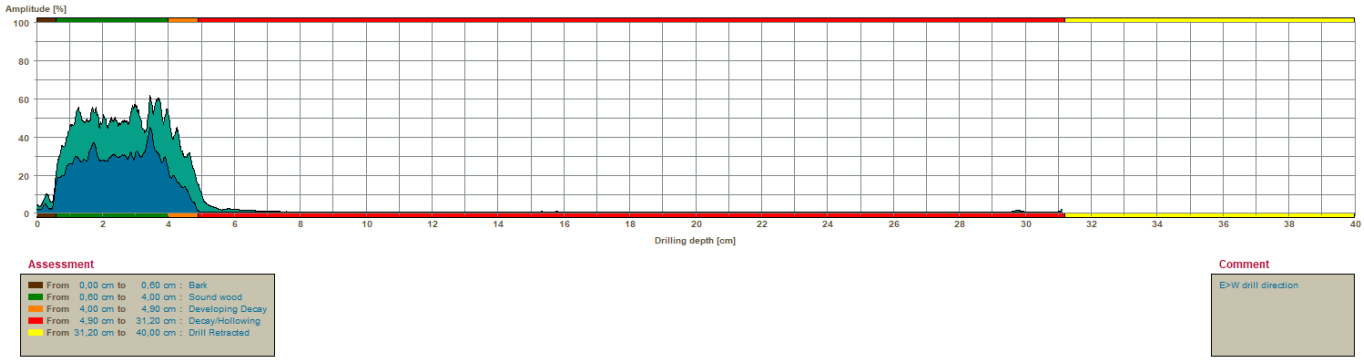
Assessment Level 1, stem diameter c.36cm

Drill Trace 1 – South-to-North drill direction



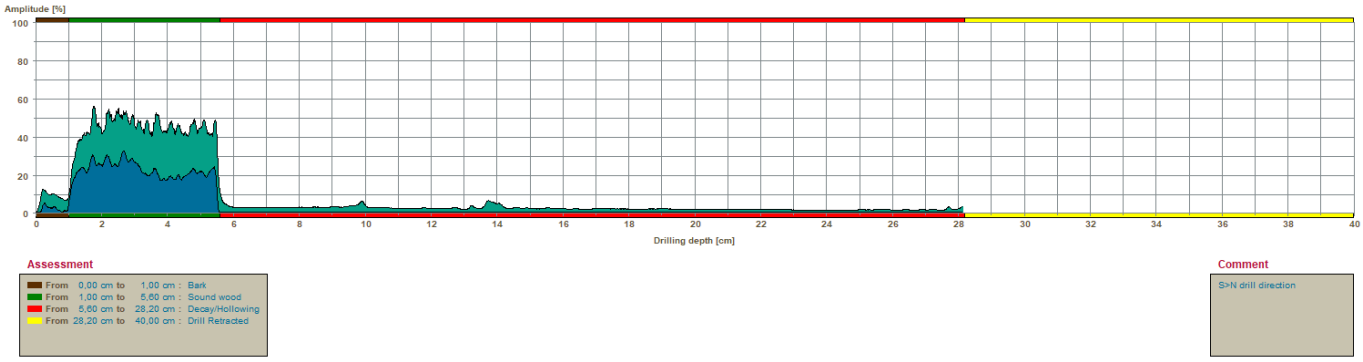


Drill Trace 1 – East-to-West drill direction

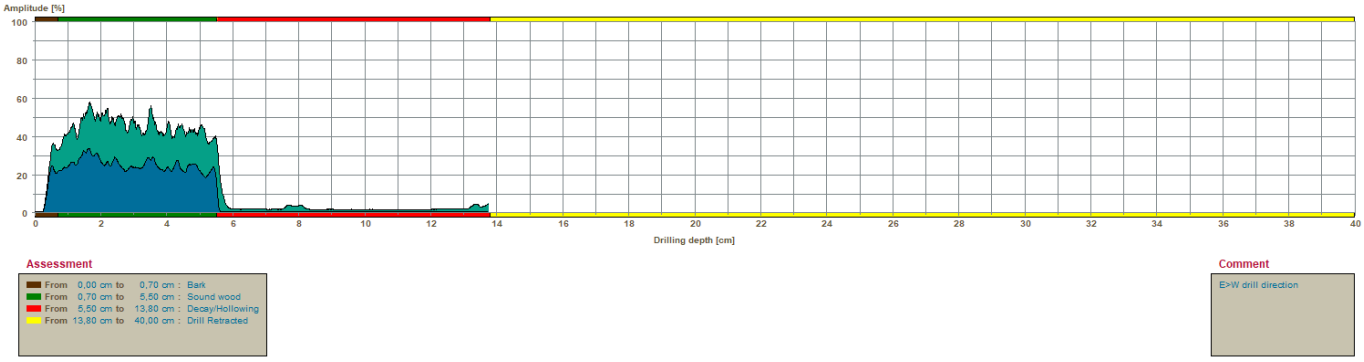


Assessment Level 2, stem diameter c.39cm

Drill Trace 3 – South-to-North drill direction



Drill Trace 4 – East-to-West drill direction



- The automatic needle retraction feature, as shown by the yellow line on the drill traces, was activated when the drill reached the opposite side of the cavity and began to bend. To remove the risk of needle drill breaking in the stem, the feature retracts the drill



4.0 Summary of Results

- The nature of the decayed wood at the point of failure on the western TSS shows a white rot fungi is active within stem section
- The most likely fungi would be *Cerioporus sqaumosus* (Dryad's saddle) as it is commonly found on the host tree and causes cavities in advance cases
- The drill traces show that the column of decay is extensive descending down the stem from the point of failure to c.9.0m – bees emerged from the cavity during the assessment
- The lower section of the north PSS was assessed with the nylon headed mallet which did not yield any change in tone; however, it could be assumed that decay is forming within its central column



View of north PSS from the north

Assessment Level 1 – c.10m above ground level

Assessment Level 2 – c.9.0m above ground level

- To reduce the risk of a further failure I believe there are two options available:

Option 1

- Remove the TSS down to the next fork below
- The wound will be large and will inevitably lead to further decay forming as the newly exposed wood will be open to the elements and unlikely to occlude



Option 2

- Reduce the SSS by half
- This will reduce its length whilst retaining a section of stem which will negate the need to create a large wound
- Will retain the habitat for the bees
- There will be a risk that the remaining stem section could fail as the wood structure degrades, so to mitigate against this, a bracing system could be installed to act as a 'catcher' in this event

- Any branches heading northwest to northeast, that have now become exposed to wind loads due to the failure of the TSS should be shortened to bring them in line with the remaining crown shape and form
- Remove deadwood with a diameter greater than 50mm from the crown where its failure would result in it reaching the access drive or neighbouring property
- The cause of the moribund bark and exudations is unclear but could be related to the presence of the wood decay fungi
- I therefore recommend a further inspection in two years from the reports date so an assessment of the development of the moribund bark and exudations can be made

5.0 Recommendations

- Implement the tree work
- Reassess in two 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:

[redacted]

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

Date: 13th February 2024

Arboricultural ASSOCIATION Professional Member



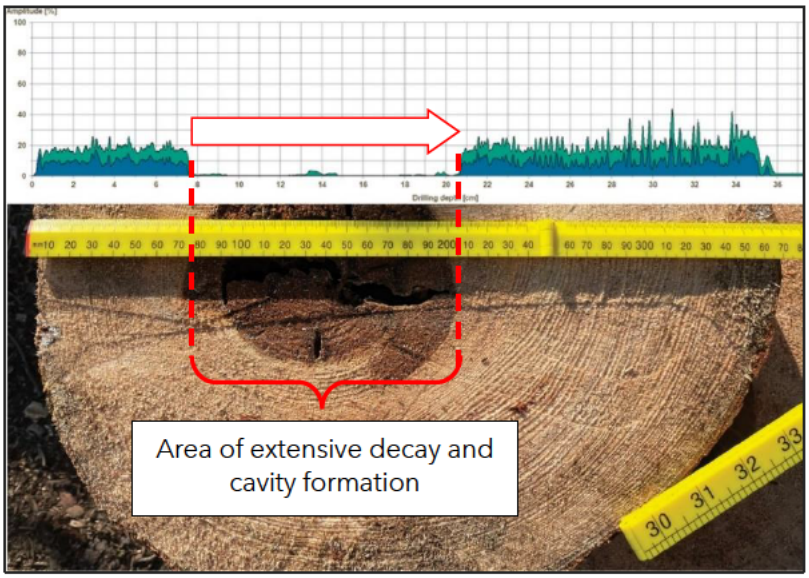
6.0 Appendix 1

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 and changes in resonance indicate areas of lifted and moribund bark, and areas where decay is forming within the man 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
- A pair of binoculars are used to inspect features within the upper crown, such as extension growth, bud size and distribution and cracks and splits in the structural branching
- A magnifying glass can be used to assess beetle emergence holes, and other microscopic details that would otherwise be too small to assess with the naked eye

IML Resi PD400 Microdrill

- An IML Resi PD400 microdrill measures the resistance of a very fine drill bit to a depth of 400mm and is used for further confirmation. Significant drops in drilling resistance are indicative of decay or hollowing
- 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



- Please note, 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



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	



Appendix 4

Site Photos



Secondary stem section heading over access drive

Four primary stem sections forming the main structural crown form
Note the long included union between the east and south PSS



Patch of moribund bark and exudation

Deadwood greater than 50mm in diameter over the access drive



Failed upper section of the north TSS, the white colouration is the fibrous fungal mycelium within the wood structure





Cavities on the north PSS; the upper home to a squirrel and the lower to bees