

Tree Surveys

BS5837 – Pre Planning – Mortgage – Risk Management

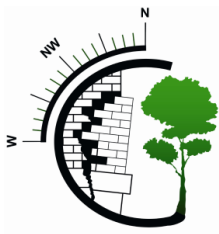
VISUAL TREE ASSESSMENT AND DECAY DETECTION UPON AN OAK TREE LOCATED BETWEEN 9 & 10 BRADLEY DRIVE



**Prepared for:
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BS5837 – Pre Planning – Mortgage – Risk Management & Prediction

Bramley House
Newnham Bridge
Tenbury Wells
WR15 8NX

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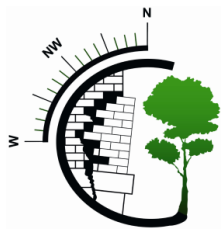
APPENDIX

1. Resi PD400 Results

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1. Instructions.

- 1.1 Tree Surveys was instructed by Mike Pearce, Team Leader, Operational Tree Management, Wokingham Borough Council, Civic Offices, Shute End, Wokingham, RG40 1BN to conduct a level three inspection upon one oak tree situated between 9 and 10 Bradley Drive, Finchampstead, Wokingham.
- 1.2 We are further instructed to provide a summary report with management recommendations based upon the outcome of our investigations.
- 1.3 We have no personal connections with any of the parties involved in this case that could influence the opinions expressed in this report.

2. Scope.

- 2.1 The survey is concerned with the arboricultural aspects of the site only.
- 2.2 The decay detection was undertaken in accordance with the manufacturer's instructions for the Resi PD400 micro drill. The aerial inspection of the cavities was undertaken from a rope and harness by Alex Parker ArbL4 (ABC).
- 2.3 Please note: all abbreviations introduced in brackets are used throughout the report.

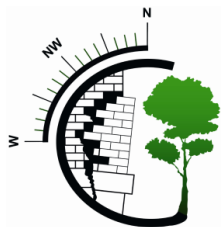
3. Background.

- 3.1 We have previously inspected this tree in December 2014 and August 2022 and written reports were issued along with copies of the decay detection results.
- 3.2 The site visit was undertaken by Simon Holmes, MSc of Tree Surveys and Alex Parker (climber) on Tuesday 26 August 2025.
- 3.3. Wokingham Borough Council last inspected this tree on 11 July 2025 following failure of a lower lateral branch.

4. Method.

- 4.1 The tree was assessed using the same methodology that we undertook during the previous assessments whereby an IML Resi PD400 decay detecting drill was used in selected locations to provide information about the extent of decay in the stem close to ground level and adjacent to the stem cavities, on this occasion at 4.5 metres and 8 metres above ground level (AGL).

The locations chosen for the decay detection (micro drilling) enabled us to provide an assessment of the extent of decay in the main stem close to ground level, beneath the first fork adjacent to an old pruning wound/cavity that had previously had fruiting bodies of *Laetiporous sulphureus*, (chicken of the woods) and at 8 metres AGL.



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5. Decay Detection Overview. Resi PD400 micro drill.

- 5.1 The Resi is a mechanical drilling machine with a constant drive, which measures the drilling resistance and rotational speed along a needle, when inserted into the tree. The result is displayed on a digital panel and stored electronically at a scale of 1:1, measurement is in metric units. We normally only show the drilling resistance graph as it clearly records decay, cavity or cracks and the rotational graph may only serve to confuse the reader if they are unfamiliar with the subtle changes it records. The main reason for the two graphs is to separate the shaft friction from the drill motor, allowing the feed motor to be approximately 30 times more sensitive than the old Resi F series machines which had one motor doing both functions.
- 5.2 The drilling rate may be varied for hard or softwoods. The drilling resistance is correlated with the mechanical properties, and the defective areas that have developed within the tree may be detected and assessed. We conducted 8 tests on the oak tree to assess the wood density. Copies are included at Appendix 1.
- 5.3 Examples of defects detected by the Resi may be dysfunctional areas such as internal cracks, areas of decay and hollows. Remaining wall thickness may be determined to a depth of 400 millimetres. The instrument is adept at detecting the early stages of decay in white rots as well as detecting brown rots at an early stage.
- 5.4 The drilling needle is specially formed, and the tip is only 3 millimetres wide with a shaft diameter of 1.5 millimetres, thereby keeping internal damage to a minimum and reducing the risk of further fungal infection.

6. Findings and Observations.

- 6.1 The tree is a mature specimen of significant landscape merit. It is situated within falling distance of the adjacent footway, 9 and 10 Bradley Drive and the access to 197 Finchampstead Road.

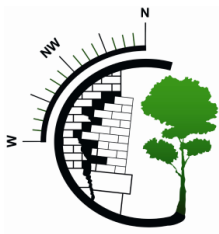
The dimensions of the tree were recorded with the aid of a TruPulse™ hypsometer and rounded down diameter tape. The results are recorded in Table 1 below.

Table 1.

Tree Species	Height (m)	Diameter (mm)	Crown Spread metres (m)	Age Class
Oak	17.6	1150	14.5 Average	Mature

Key: m = metres; mm = millimetres

- 6.2 There have been no significant changes to the surroundings, with the ground adjacent to the main stem remaining eroded and compacted on the northern side from pedestrian traffic. The base of the main stem was inspected visually and sounded with a wooden mallet. There were no significant hollow intonations. The main stem at ground level is otherwise unremarkable and the bark was true to type and firmly attached.



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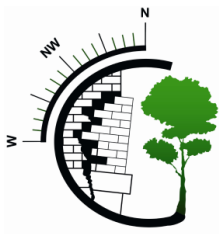
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- 6.3 The large cavity observed during the 2014 and 2022 inspection appears to have changed very little, on this occasion, no fungal fruiting bodies were visible. It was probed and was 85cm wide from front of the cavity and decay was detected down to 55cm. There is a new tear out wound following the recent failure of a lateral branch below the cavity at 2.4 metres AGL, see Figure 1 below.

Figure 1. Tear out wound. Oak at 9 & 10 Bradely Drive 26.08.2025



- 6.4 The main stem becomes co-dominant above a large cavity at 4.5 metres AGL. The co-dominant stems form from a tensile union and the northern stem has a cavity at 5.6 metres AGL (see Figure 2 on page 6) and the southern stem has a cavity adjacent to a lateral limb on the eastern side of the stem, this can be seen from the access to 197 Finchampstead Road, see Figure 3 on page 6. The cavity at 8 metres AGL observed during the 2014 and 2022 inspection now has *Laetiporous sulphureus*, (chicken of the woods) visible (see Figure 3 on page 6), highlighted in green.
- 6.5 The physiological characteristics of the canopy (secondary branch structure, twig density, extension growth and wound wood) do not appear to exhibit any signs of stress or decline and the canopy reduction undertaken in August 2022 has not resulted in any significant decline.
- 6.6 The results from the ground level Resi drilling did not detect any significant decay or defect and the control test at 1.5 metres AGL also did not detect any significant defects.
- 6.7 The results from the northern stem perpendicular to the cavity detected advanced decay from 21cm.
- 6.8 The results from the southern stem with cavity at 8 metres AGL indicates advanced decay from 18cm.



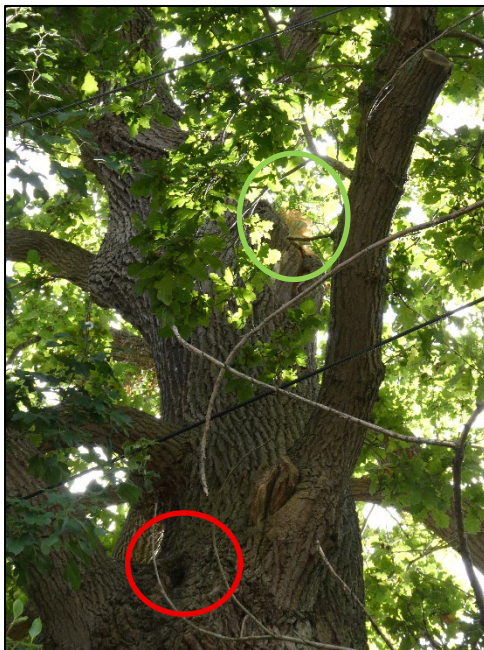
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Figure 2. Cavity on northern stem. Oak at 9 & 10 Bradely Drive 26.08.2025

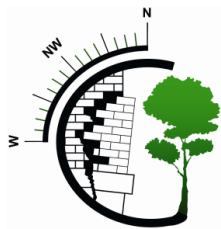


Figure 3. Cavity on southern stem and FFB. Oak at 9 & 10 Bradely Drive 26.08.2025



7. Conclusions.

- 7.1 The main issues for consideration are the significance of the cavity on the main stem below the first fork and cavities in both co-dominant stems along with the trees' location to 9 and 10 Bradely Drive, a public right of way and access to 197 Finchampstead Road.
- 7.2 The cavity at 4.5 metres AGL is located beneath the main fork and the extent of decay recorded manually and with the Resi drill indicates there is extensive decay at the test location, and this is likely to extend above and below the test location.



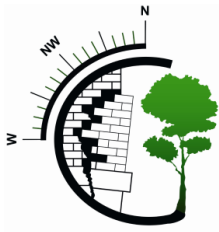
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- 7.3 The tear out wound at 2.4 metres AGL has left a superficial wound that resembles those following an included branch union failure and no significant decay was observed at this location.
- 7.4 The cavity on the northern stem at 5.6 metres has good callous growth an indicator of tree vitality and when probed as 15cm deep with the Resi drilling indicating advanced decay that is probably tracing the branch geometry, this is the normal route for decay pathogens as the tree attempts to compartmentalise any decay.
- 7.5 The wound at 8 metres AGL had previously been colonised by *Polyporus squamosus* (Dryad's saddle) and this appears to have been replaced by *Laetiporous sulphureus*, (chicken of the woods). The decay is probably tracing the branch geometry, as the stub adjacent to it decays and the tree attempts to compartmentalise any decay.
- 7.6 *Laetiporous sulphureus* is a species of bracket fungus (or polypore) thought to occur on a range of different broadleaved tree species in the UK, including oak, sweet chestnut, ash, cherry, and even yew. It's one of the key engineers of hollowing in veteran and ancient trees, particularly British species of oak, a role that creates microhabitats booming with biodiversity. The fungus finds its way to the centre of trees to decompose the heartwood, the non-functional wood that sapwood converts to as it senesces. A suite of enzymes is released by the fungus which modifies the lignin in the wood cell walls, allowing the decay of cellulose in a process called 'brown-rot'. The wood becomes brown, brittle and cracked and can be easily broken down further by mechanical processes or weathering, this can be seen on the surface of the wound.
- 7.7 *L. sulphureus* affects the stem and scaffold branches, it also occurs on wounds and may occasionally be found in cavities. A mainly saprotrophic fungi (a recycler) whose impacts are infrequently associated with the failure of branches or stem collapse: failure is likely more frequent on hosts with a weaker natural wood strength. The stem cross section is extensively decayed from ground level to 1.8 metres AGL and is hollow to 2.8 metres AGL.
- 7.8 The tree is within falling distance of the adjacent properties, public right of way and access to 197 Finchampstead road. The cavity at the base of the main union is of structural significance as it increases the likelihood of failure. The tree has undergone previous reduction pruning (2022) and has responded well to this work, however it remains hazardous, and the risk of partial failure will increase as the main stem and scaffold stems decay, and the canopy dimensions increase leading to an increase in biomechanical loading. Risk reduction must include a combination of crown pruning and increased frequency of inspection.
- 7.5 The physiological indicators and new regrowth following the reduction indicate the tree has a normal level of vitality.

8. Recommendations.

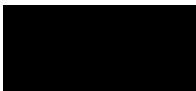
- 8.1 In preparing these recommendations we have considered the target area, risk and past remedial management (crown pruning).



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- 8.2 The canopy should be reduced in height by 3 metres to leave a final height of 14 metres +/- 0.5 metres and the lateral branches pruned to leave a maximum canopy spread of 9.5 metres +/- 0.5 metres allowing for some future development whilst balancing the visual characteristics, the work should be undertaken within 6 months of the date of this report.
- 8.3 The tree work must be undertaken to British Standard (BS3998:2010) and industry best practice.
- 8.4 The tree must be subject to regular visual inspection in particular after any severe weather event for example storm force winds. The next regular visual inspection should be conducted in October 2026.



Simon P Holmes MICFor. M Arbor A. CEnv.
Chartered Arboriculturist
Tree Surveys



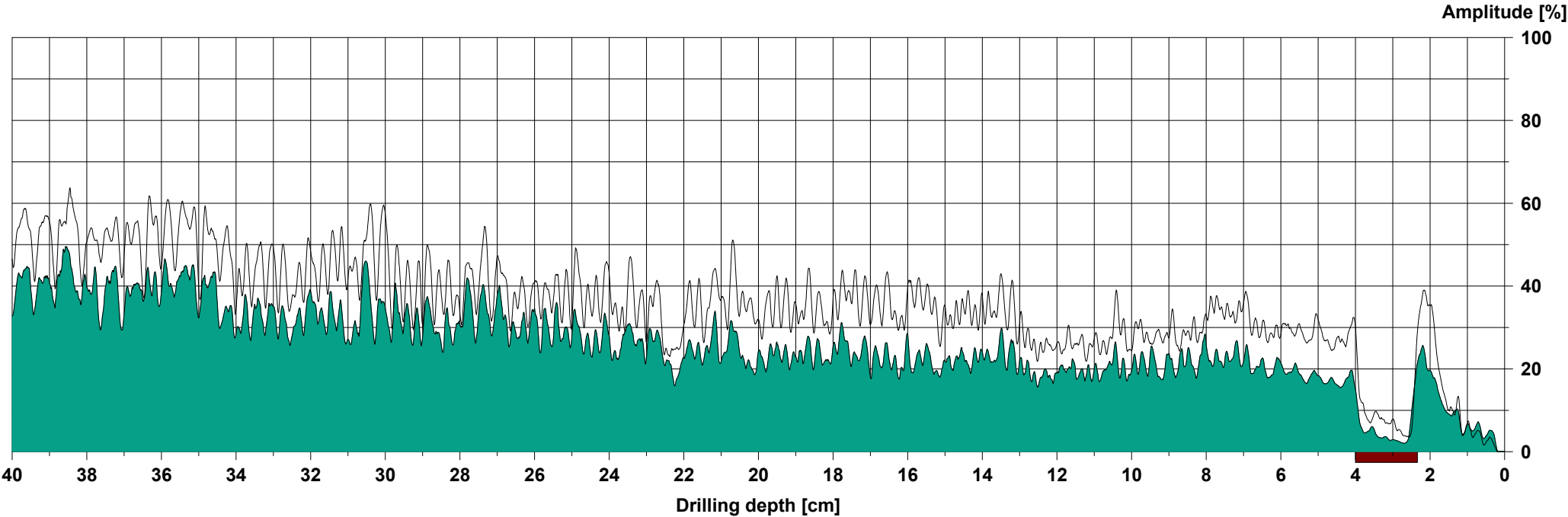
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APPENDIX 1

Measuring / object data

Measurement no.:	29	Speed	: 2500 r/min	Diameter:	115,00 cm
ID number	: BRADLEY DRIVE	Needle state:	---	Level	: 150cm AGL
Drilling depth	: 40,06 cm	Tilt	: 0°	Direction:	North
Date	: 26.08.2025	Offset	: 72 / 250	Species	: Oak
Time	: 13:00:20	Avg. curve	: off / off	Location	: Bradley Drive
Feed	: 100 cm/min	Name	: WBC		



Assessment

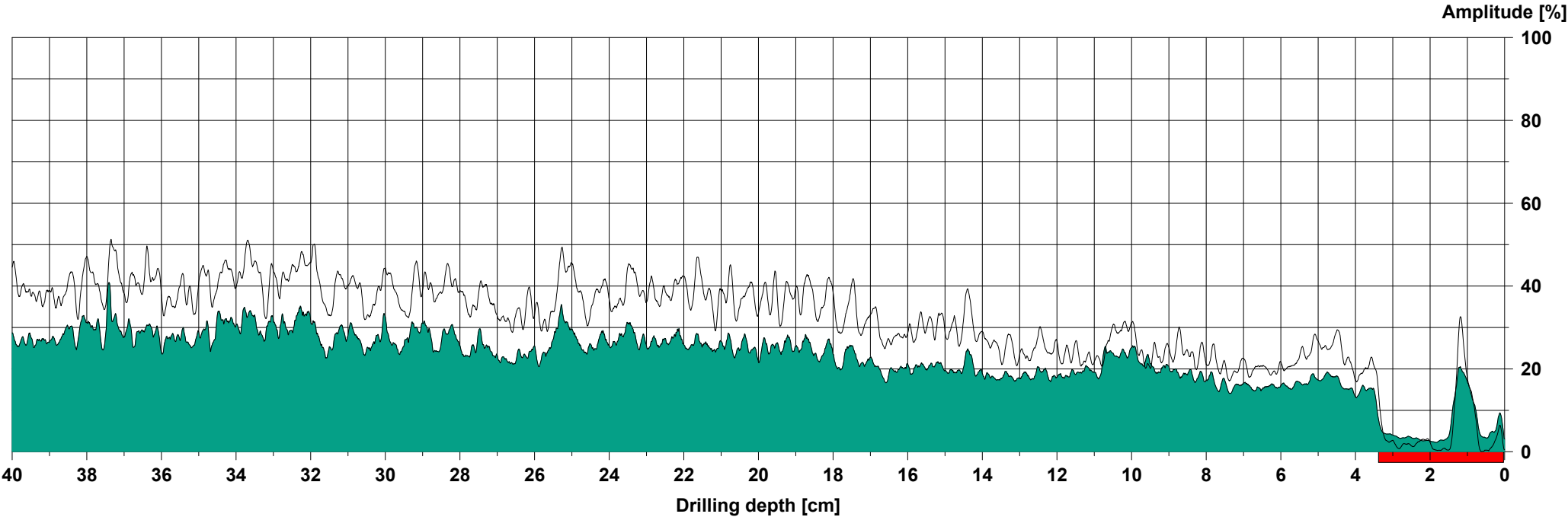
From 2,34 cm to 4,00 cm : Decay

Comment

Control test at 1.5m AGL north side. Small isolated area of decay behind bark.

Measuring / object data

Measurement no.:	26	Speed	: 2500 r/min	Diameter:	115,00 cm
ID number	: BRADLEY DRIVE	Needle state:	---	Level	: 20cm AGL
Drilling depth	: 40,11 cm	Tilt	: 0°	Direction:	East
Date	: 26.08.2025	Offset	: 90 / 256	Species	: Oak
Time	: 12:55:30	Avg. curve	: off / off	Location	: Bradley Drive
Feed	: 100 cm/min			Name	: WBC



Assessment

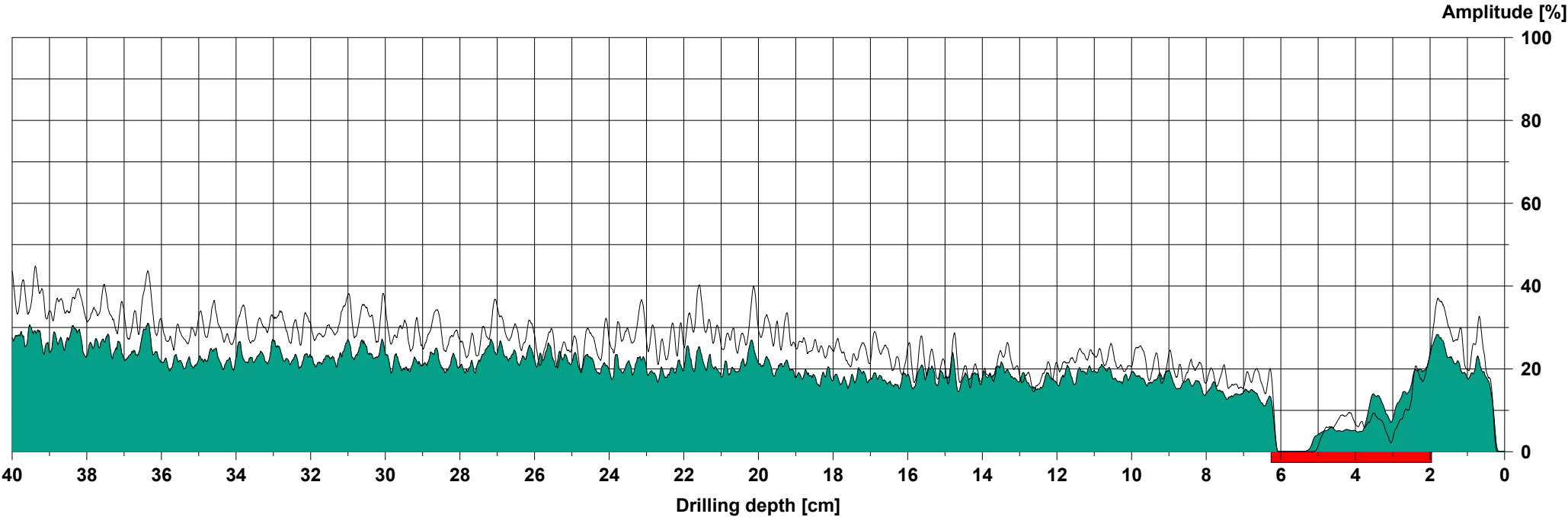
From 0,03 cm to 3,38 cm : Decay

Comment

Test east side. Low amplitude due to bark with isolated area of decay between 1 and 3 cm.

Measuring / object data

Measurement no.:	25	Speed	: 2500 r/min	Diameter:	115,00 cm
ID number	: BRADLEY DRIVE	Needle state:	---	Level	: 20cm AGL
Drilling depth	: 40,09 cm	Tilt	: 0°	Direction:	North
Date	: 26.08.2025	Offset	: 105 / 260	Species	: Oak
Time	: 12:54:28	Avg. curve	: off / off	Location	: Bradley Drive
Feed	: 100 cm/min			Name	: WBC



Assessment

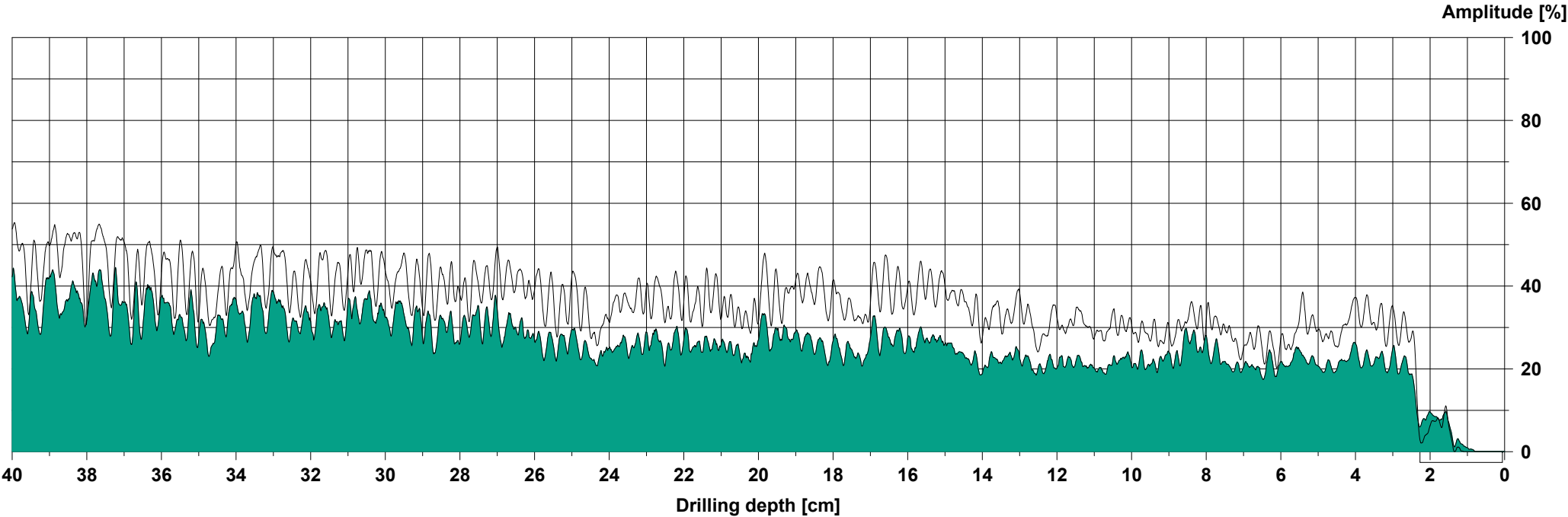
From 1,96 cm to 6,26 cm : Decay

Comment

Test north side. Isolated decay between 2 and 6cm.

Measuring / object data

Measurement no.:	27	Speed	: 2500 r/min	Diameter:	115,00 cm
ID number	: BRADLEY DRIVE	Needle state:	---	Level	: 20cm AGL
Drilling depth	: 40,10 cm	Tilt	: -1°	Direction:	South
Date	: 26.08.2025	Offset	: 82 / 258	Species	: Oak
Time	: 12:57:02	Avg. curve	: off / off	Location	: Bradley Drive
Feed	: 100 cm/min	Name	: WBC		



Assessment

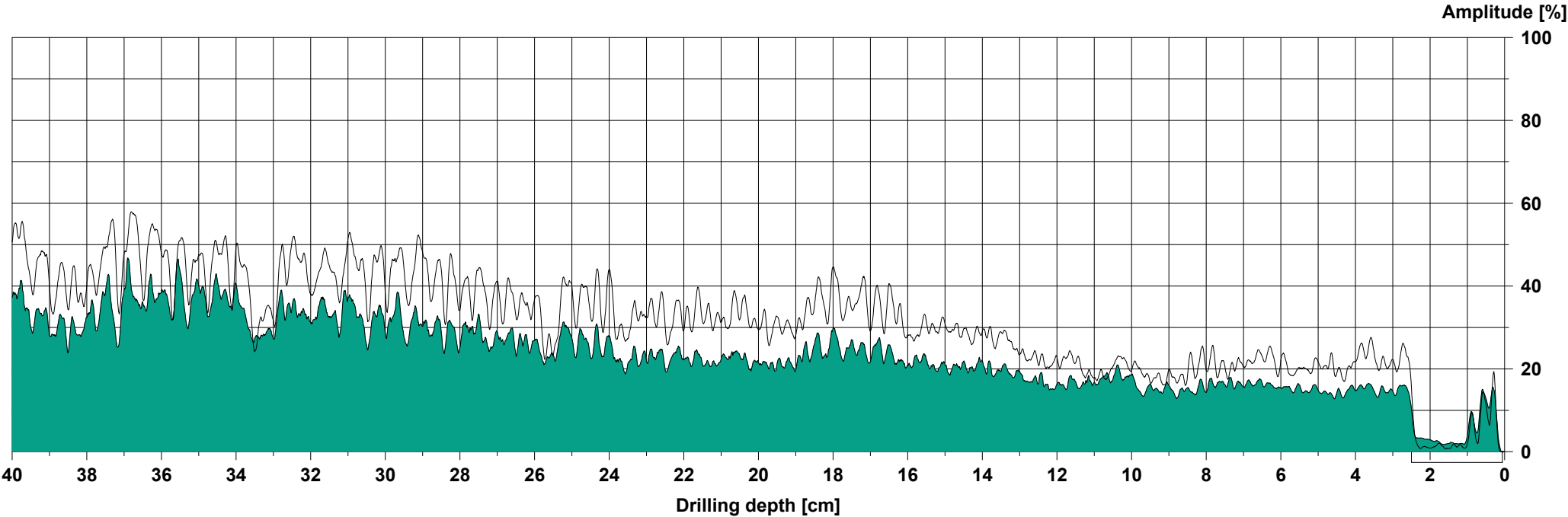
From 0,06 cm to 2,27 cm : Bark

Comment

Test south side. Low amplitude due to bark from 0 to 2cm.

Measuring / object data

Measurement no.:	28	Speed	: 2500 r/min	Diameter:	115,00 cm
ID number	: BRADLEY DRIVE	Needle state:	---	Level	: 25cm AGL
Drilling depth	: 40,09 cm	Tilt	: 0°	Direction:	West
Date	: 26.08.2025	Offset	: 80 / 250	Species	: Oak
Time	: 12:59:02	Avg. curve	: off / off	Location	: Bradley Drive
Feed	: 100 cm/min			Name	: WBC



Assessment

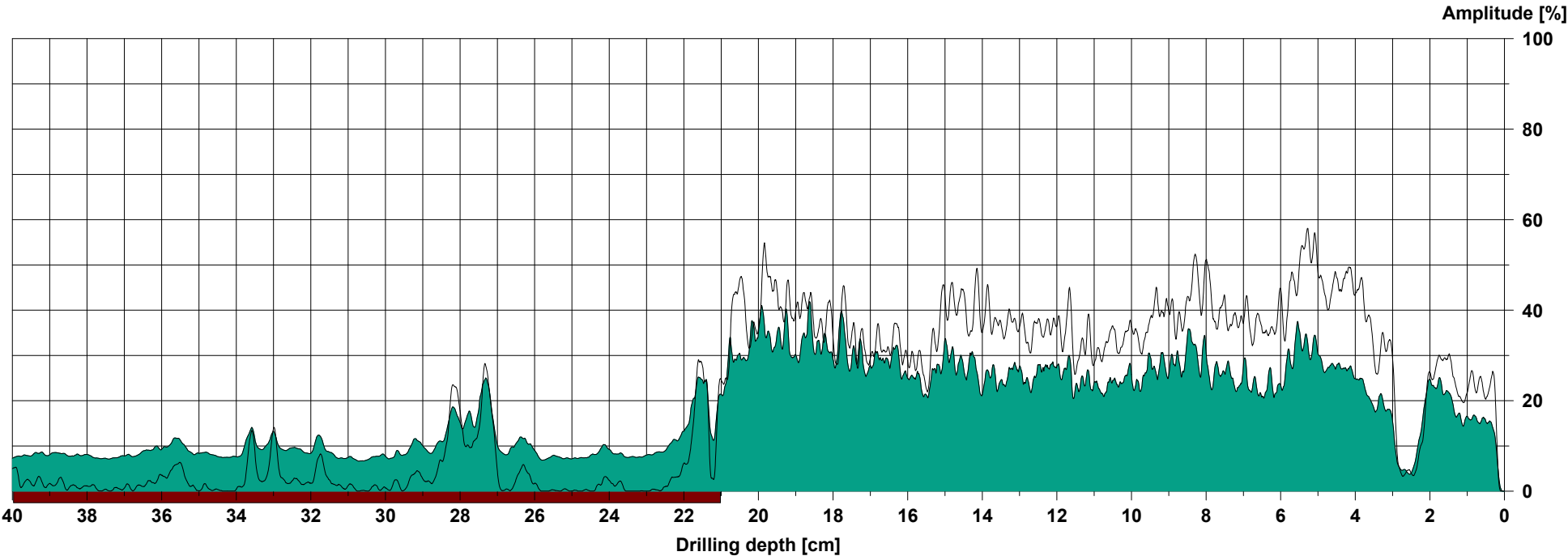
From 0,06 cm to 2,50 cm : Bark

Comment

Test west side. Low amplitude due to bark from 0 to 2.5cm.

Measuring / object data

Measurement no.:	31	Speed	: 2500 r/min	Diameter:	115,00 cm
ID number	: BRADLEY DRIVE	Needle state:	---	Level	:
Drilling depth	: 40,06 cm	Tilt	: 0°	Direction:	:
Date	: 26.08.2025	Offset	: 79 / 242	Species	: Oak
Time	: 14:07:06	Avg. curve	: off / off	Location:	Bradley Drive
Feed	: 100 cm/min			Name	: WBC



Assessment

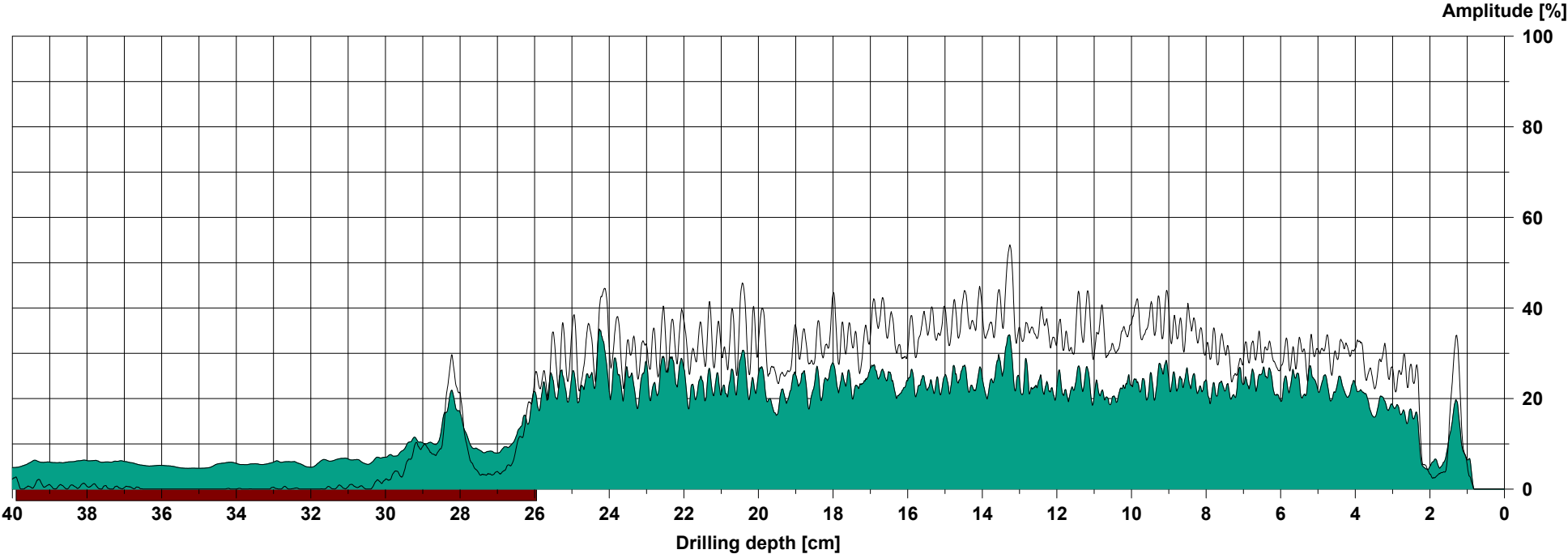
From 21,02 cm to 39,97 cm : Decay

Comment

North east side of northern stem opposite side to cavity. Advanced decay starts 21cm.

Measuring / object data

Measurement no.:	32	Speed	: 2500 r/min	Diameter:	115,00 cm
ID number	: BRADLEY DRIVE	Needle state:	---	Level	:
Drilling depth	: 40,06 cm	Tilt	: 0°	Direction:	:
Date	: 26.08.2025	Offset	: 76 / 240	Species	: Oak
Time	: 14:11:01	Avg. curve	: off / off	Location	: Bradley Drive
Feed	: 100 cm/min			Name	: WBC



Assessment

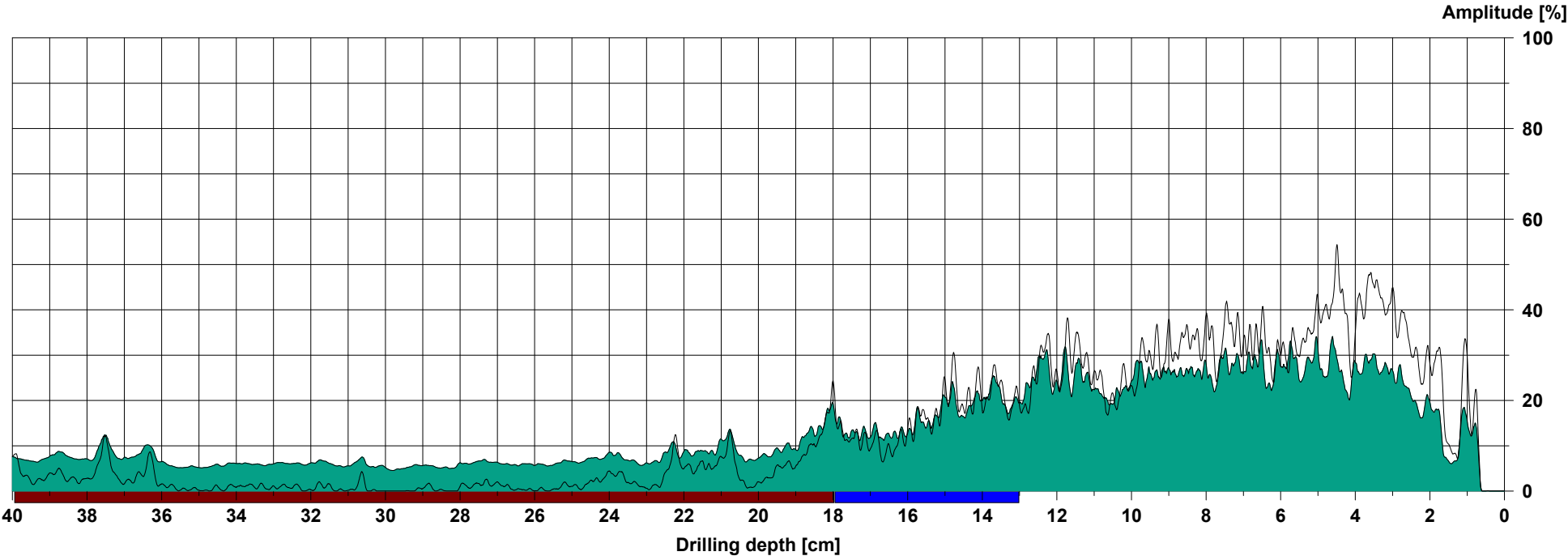
From 25,95 cm to 39,90 cm : Decay

Comment

Main stem with cavity at 4.5m AGL. Test undertaken opposite side to cavity opening. Advanced decay starts 26cm and is consistent with the visual and manual inspection.

Measuring / object data

Measurement no.:	30	Speed	: 2500 r/min	Diameter:	115,00 cm
ID number	: BRADLEY DRIVE	Needle state:	---	Level	:
Drilling depth	: 40,06 cm	Tilt	: 0°	Direction:	:
Date	: 26.08.2025	Offset	: 74 / 239	Species	: Oak
Time	: 14:02:29	Avg. curve	: off / off	Location	: Bradley Drive
Feed	: 100 cm/min			Name	: WBC



Assessment

- From 13,02 cm to 17,95 cm : Incipient decay
- From 17,98 cm to 39,94 cm : Decay

Comment

Southern stem with cavity at 8m AGL. Test undertaken perpendicular to the cavity. Amplitude starts to drop around 12.5cm with advanced decay from 18cm.