

ARBORICULTURAL REPORT

*Mechanical Decay Detection — Sonic Tomography & Resistograph Drilling
Quantitative Tree Risk Assessment (QTRA) | BS 5837:2012*

108 CROUCH HILL

108 Crouch Hill, Crouch End, London, N8 9DY

Client	<i>Luton Airport Accommodation Ltd. (C/o George Kiernan)</i>
Report To	<i>Luton Airport Accommodation Ltd., 14 Arthur Road, London, N7 6DR (C/o George Kiernan)</i>
Report Title	<i>TCR/1107 — 108 Crouch Hill Mechanical Decay Detection Report 2026</i>
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Reviewed By	<i>Leonie Kammeijer — Company Secretary</i>
Survey Dates	<i>16 August 2026</i>

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Disclaimer

This report and the site assessments carried out by RH Tree Consultants Ltd. on behalf of the client are in accordance with the agreed terms of contract. The services were performed with the skill and care ordinarily exercised by a reasonable Arboricultural Consultant at the time of provision, considering the limits of the scope of works, timescale, and agreed resources.

This report is produced exclusively for Luton Airport Accommodation Ltd. (C/o George Kiernan). RH Tree Consultants Ltd. does not authorise reliance upon this report by any party other than the client. Any such reliance is made wholly at that party's own risk. This report is based on site conditions and tree condition at the time of survey. Tree conditions change over time and findings should be reviewed following any significant storm events or after no more than 18 months, whichever is sooner. Given the rate of decline identified in this report, a substantially shorter re-inspection interval is recommended for T001 — see Section 5.1.

RH Tree Consultants Ltd. accepts no responsibility for the accuracy of third-party data used in this report.

Version	Date	Prepared By	Description
V1.0	16/08/2026	Rory Hobbs	Update to TCR/853 (April 2025) — urgent re-inspection following observed rapid decline of T001

Executive Summary

RH Tree Consultants Ltd. (RH Trees) has been commissioned by Luton Airport Accommodation Ltd. (C/o George Kiernan), the owner of the site, to undertake a targeted mechanical decay detection survey for one tree (T001, common ash) at 108 Crouch Hill, Crouch End, London, N8 9DY. This is an update to report TCR/853 (April 2025) and follows two earlier rounds of mechanical decay detection (September 2024 and March 2025). This further round of testing was instructed after the tree was observed to have declined significantly since the last inspection, with a substantial proportion of the crown now dead.

The site was visited by Rory Hobbs (Senior Arboricultural Consultant, QTRA Registered User No. 7711) on 16 August 2026. Sonic tomography was undertaken using a PiCUS 3 system and Resistograph drilling was completed using an IML PD-500 microdrill at five measuring points (MP1–MP5) around the stem and root collar. Both instruments were calibrated by Sorbus International prior to use and were in good working order throughout the survey. The Quantitative Tree Risk Assessment (QTRA) system was applied to the tree inspected.

T001 is a mature common ash (*Fraxinus excelsior*) with a long-recorded history of basal decay associated with *Ganoderma* spp. and historic fire damage, together with *Armillaria* (honey fungus) rhizomorphs recorded elsewhere in the garden. Data obtained on this visit confirms that internal dysfunction has progressed materially since the March 2025 survey. Critically, approximately half of the crown — the northern and western portion, corresponding to the aspect of the stem showing the greatest internal dysfunction — has now died back, indicating a significant, ongoing loss of vascular function. This represents a marked and rapid decline from the condition recorded in TCR/853.

A discrepancy was noted between the two decay-detection methods used on this visit: at four of the five Resistograph measuring points (MP2, MP3, MP4 and MP5), the drilling data indicated a materially greater extent of internal dysfunction than was suggested by the sonic tomography. Only at MP1 did the Resistograph data corroborate the tomography. This is consistent with the known limitation of sonic tomography, whereby the technique can under-represent the true extent of decay in certain decay patterns and species, and it is the Resistograph data — supported by the observed canopy dieback — that is considered the more reliable indicator of the current structural condition of T001. This discrepancy, and its implications, is discussed further in Section 3.

A desktop search of the Haringey Council website confirms that the site lies within the Crouch End Conservation Area and that T001 is subject to a Tree Preservation Order (TPO).

Given the combination of (i) advanced and progressing internal dysfunction confirmed by two independent testing methods, (ii) approximately 50% crown dieback that has developed since the last inspection, (iii) an overall condition now assessed as Poor (correcting a transcription error in the Tree Survey Schedule, which had recorded this as Fair), and (iv) the tree's proximity to multi-occupancy residential buildings, a busy public highway and footpath (Cecile Park), and a car park, T001 is now considered to present a significant and urgent level of risk. Two urgent recommendations have been made for T001 (see Section 4): felling and replacement, or reduction to a low monolith for habitat retention. No further recommendations are made for other trees, as this survey was limited to T001. This report fulfils the Client's duty of care under the Occupiers' Liability Act 1957 and the Highways Act 1980.

1. Introduction

1.1 Location

RH Tree Consultants Ltd. has been commissioned to undertake a targeted mechanical decay detection survey and associated arboricultural assessment of one tree (T001) at 108 Crouch Hill, Crouch End, London, N8 9DY. The trees on site are managed by the Client. The location of the site and T001 is shown in Figure 1.



Figure 1: Site Location and Risk of Harm (RoH) Plan — 108 Crouch Hill. Scale 1:552 at A4. © 2026 Airbus, Maxar Technologies; Map data © 2026 Google.

1.2 Tree Designations

A desktop search of the Haringey Council planning portal (www.haringey.gov.uk) confirms that the site is located within the designated Crouch End Conservation Area. T001 is subject to a Tree Preservation Order (TPO), as confirmed by the TPO mapping extract below.

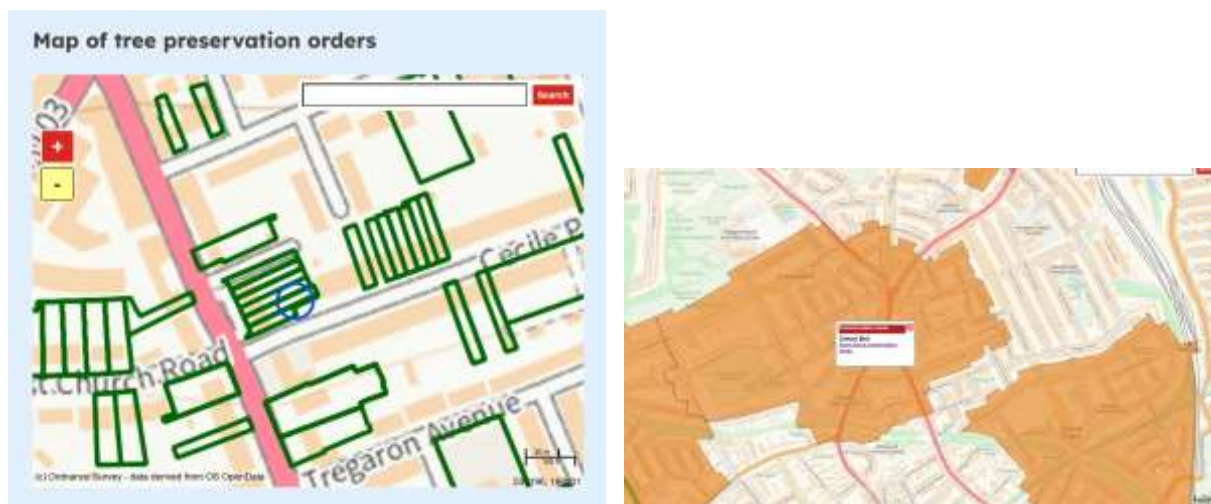


Figure 2: Tree Preservation Order mapping (left) and Conservation Area mapping (right) — Haringey Council. T001 is confirmed as TPO-protected and located within the Crouch End Conservation Area.

The permission of the local planning authority must be sought before any works are carried out to TPO-protected trees. Potentially unlimited fines can be imposed for carrying out unauthorised works to such trees.

Reference to the Multi-Agency Geographical Information for the Countryside (MAGIC) website indicates that no Ancient Woodland is present within a 15.0 m buffer of the site.

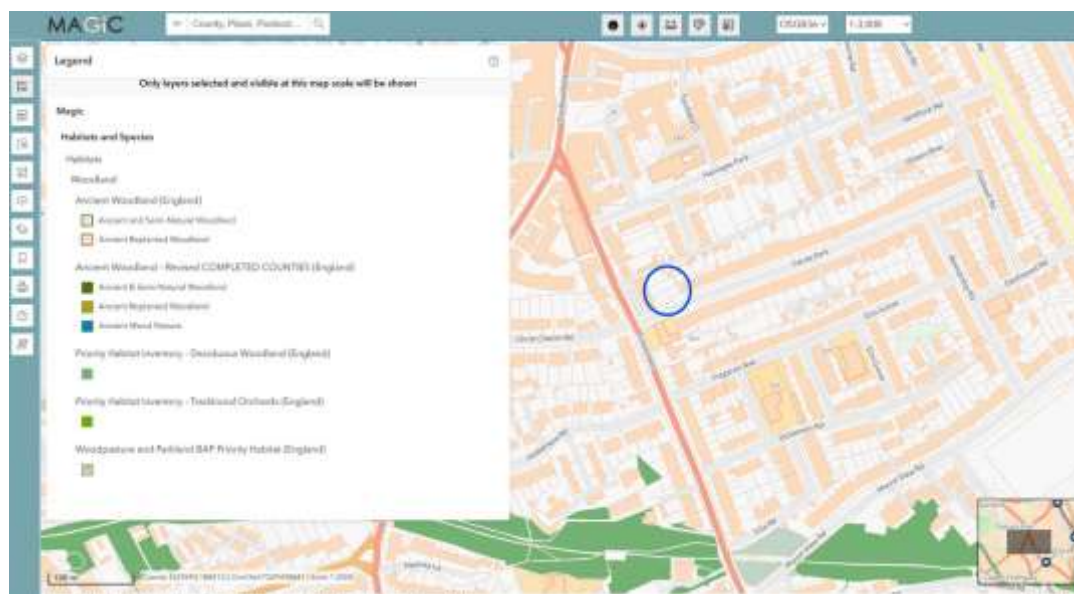


Figure 3: MAGIC Ancient Woodland Mapping — no Ancient Woodland designations within a 15 m buffer of the site.

1.3 Protected Species

Bats

Mature trees, particularly those of the type found at 108 Crouch Hill, can contain cavities, crevices, and loose bark providing potential roosting habitat for bats. Bats and their roost sites receive protection under The Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981 (as amended). Damage to or destruction of a roost constitutes a criminal offence. Given the extent of decay and cavity formation identified in T001 (see Section 3), a precautionary approach to bat roosting potential is particularly important should felling or monolithing works proceed.

Should evidence of bat activity be noted during tree works, an appropriately licensed bat ecologist must be contacted for guidance before works proceed.

Birds

T001 and the surrounding garden trees provide potential nesting habitat for a range of bird species protected under the Wildlife and Countryside Act 1981. All tree works should ideally be completed outside the peak nesting season (generally March to August inclusive). If works must proceed during this period, a pre-commencement nesting bird check by a suitably experienced ecologist is required. Where active nests are found, works in the affected area must be suspended until the young have fully fledged.

2. Tree Survey Methodology

2.1 Site Survey

RH Trees undertook this targeted mechanical decay detection survey and associated arboricultural assessment in accordance with industry best practice, QTRA system training, and the established protocols for the use of PiCUS 3 sonic tomography and IML PD-500 Resistograph testing. The survey was carried out by Rory Hobbs (Senior Arboricultural Consultant, QTRA Registered User No. 7711) on 16 August 2026, when the tree was in full leaf, allowing the extent of crown dieback to be clearly assessed.

This visit was instructed following the Client's report, and the surveyor's own observation, that the tree had declined markedly since the March 2025 mechanical decay detection survey and the April 2025 re-inspection (TCR/853), with a substantial proportion of the crown now dead. Only T001 was included in this survey; the tree has been plotted on site mapping and included in the survey schedule at Appendix 3.

The scope of this survey comprised:

- A ground-based visual inspection of T001, assessing overall condition, crown form, structural defects, extent of crown dieback, and the presence of fungal or other pathogens
- Sonic tomography using a PiCUS 3 system to produce a colour-coded cross-sectional image of internal wood condition at the stem base/root collar
- Resistograph drilling using an IML PD-500 microdrill at five measuring points (MP1–MP5), to measure drilling resistance through the stem and root collar and identify cavities and zones of reduced wood density
- An integrated assessment of sonic tomography, Resistograph data, and visual findings — including consideration of the discrepancy between the two testing methods — to inform tree risk assessment and management recommendations
- A tree risk assessment using the QTRA system, based on targets, identified defects, and assessed probability of failure
- A schedule of recommended management works with a prioritised timescale

Both the PiCUS 3 and IML PD-500 instruments had been recently calibrated by Sorbus International and were in good working order throughout the survey.

2.2 Parameters Recorded

- Species
- Description and targets
- Number of stems
- Estimated height (m)
- Stem diameter at 1.5 m above ground level (mm)
- Crown spread (m) — N, E, S, W
- Age class
- Failure indicators observed on visual inspection
- QTRA parameters: Target range, Size range, Potential of failure, Risk of Harm

- Physiological, structural, and overall condition
- Wildlife and amenity value
- Results of sonic tomography and Resistograph testing
- Recommendations and prioritised timescale

2.3 Limitations of the Survey

- This survey covered only T001. It does not constitute a comprehensive survey of all trees at 108 Crouch Hill and should not be interpreted as such.
- Mechanical decay detection using sonic tomography and Resistograph drilling provides a cross-sectional assessment at the height(s) tested. Internal conditions above or below the test plane(s) may differ and are not captured by this survey. The extent of any decay may be greater or lesser than indicated by the data obtained.
- Resistograph drilling provides data along a single drill path of up to 500 mm in length. Dense sound wood can mask drops in drilling resistance due to shaft drag. The drill will not advance through a cavity greater than approximately 50 mm in width and will retract on contact with wood on the far side; cavity widths may therefore be underestimated.
- Sonic tomography produces a relative velocity map of a single cross-section. The colour coding indicates relative sound velocity as a proxy for wood condition rather than a direct measurement of decay. Interpretation requires professional judgement and contextual understanding of the species and its structural characteristics. As set out in Section 3.3, the tomography undertaken on this visit is considered to have underestimated the true extent of internal dysfunction relative to the Resistograph data and the observed crown dieback.
- Trees are living organisms subject to ongoing change. The findings of this report are valid as at the survey date of 16 August 2026. Given the rate of decline observed, these findings should be regarded as time-critical and should not be relied upon beyond a short interval — see Section 5.1.
- The survey was carried out in August, when the tree was in full leaf, allowing crown condition to be clearly assessed alongside the mechanical decay detection data.

3. Tree Survey Results

3.1 General Site Description

The site is a garden area with restricted public access. It shares a boundary with residential properties to the north, east and west and a public highway (Cecile Park), associated footpath and a private car parking area to the south. T001 is visible from adjacent residential properties and from Cecile Park, and stands within a group of trees in the neighbouring gardens which shows evidence of historic removals.

Significant targets associated with T001 include multi-occupancy residential buildings, a car park, the busy public highway of Cecile Park with its associated footpath, and the garden itself, as identified in the Tree Survey Schedule at Appendix 3. The combination of these people- and property-occupied targets in close proximity to the tree is a material factor in the risk assessment at Section 3.2.

The underlying bedrock geology is mapped as London Clay Formation (clay, silt and sand), which has a high shrink/swell potential. BRE and NHBC guidance should be followed in respect of this ground type in the event of any new planting, replacement planting or development at the site.

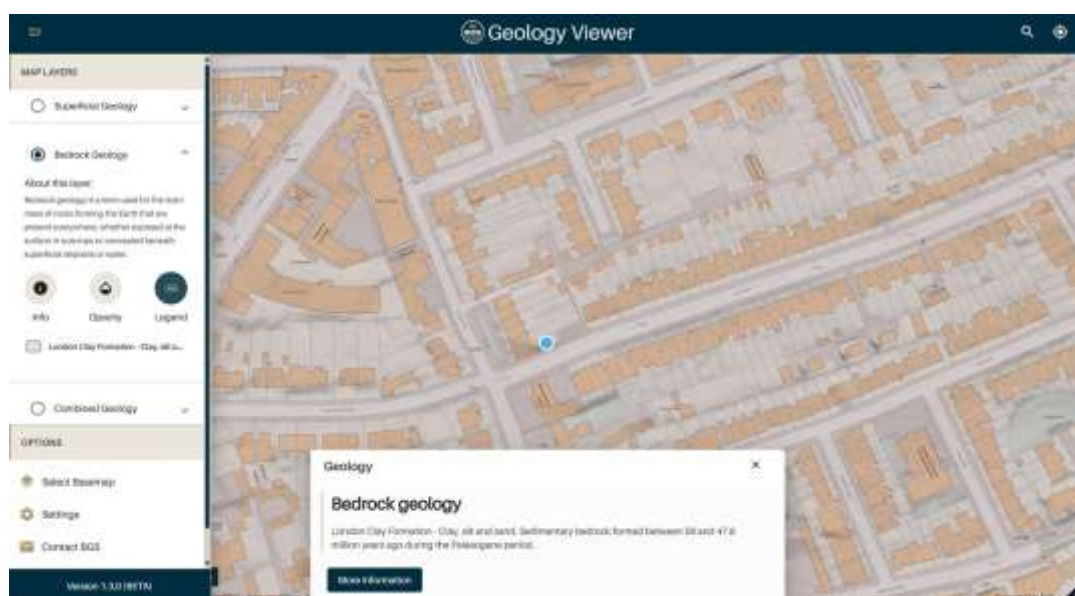


Figure 4: BGS Geology Viewer — Bedrock Geology at 108 Crouch Hill (London Clay Formation).

No wider biosecurity issues were noted on this visit beyond the fungal pathogens already associated with T001 and discussed below.

3.2 Results of Tree Survey

The Tree Survey Schedule at Appendix 3 details the full results of the survey including all measurements, condition assessments, QTRA values, and management recommendations. The schedule should be read in conjunction with this section and the site photographs at Appendix 2.

T001 — Common ash (*Fraxinus excelsior*)

T001 is a mature common ash, approximately 18 m in height with an 8 m crown radius and a DBH of approximately 60 cm, situated within the fence line at the rear of the garden. Identified targets include multi-occupancy residential buildings, a car park, and the busy public highway and footpath of Cecile Park.

Honey fungus (*Armillaria mellea*) has historically been recorded at the base of the tree on the south-west aspect, and rhizomorphs have also been recorded more widely in the adjacent garden, including in high volume in a wood stack approximately 15 m from the base of T001. A large historic area of decay is present at the base of the stem to approximately 1 m on the north-west aspect, in association with *Ganoderma* spp.; this dysfunction is believed to originate from historic fire damage. Fruiting bodies of *Daldinia concentrica* (King Alfred's cakes) have also been recorded at this basal defect. Significant adaptive (buttress) growth has developed around the base of the stem in response to this historic dysfunction.

At the time of the March 2025 mechanical decay detection survey, good residual wood volume was recorded on the eastern aspect of the stem. Data obtained on 16 August 2026 shows that this residual sound wood volume has now significantly reduced. Most significantly, approximately 50% of the crown is now without leaf, with the dead portion concentrated in the north-western half of the canopy — mirroring the location of the principal area of stem dysfunction. This pattern is consistent with a progressive, ongoing loss of vascular function through the decayed portion of the stem, and represents a marked deterioration since the last full inspection.

Sonic tomography (PiCUS 3) and Resistograph drilling (IML PD-500, five measuring points — MP1–MP5) were undertaken on this visit; the results are presented in full in Section 3.3. In summary, the Resistograph data indicated a materially greater extent of internal dysfunction than the sonic tomography at four of the five measuring points (MP2, MP3, MP4 and MP5), with only MP1 corroborating the tomography. Combined with the visual evidence of advanced crown dieback, this indicates that the sonic tomography obtained on this occasion has under-represented the true extent of internal decay, and that the Resistograph data provides the more reliable picture of the current structural condition of the stem.

QTRA parameters recorded for T001 are summarised below:

Parameter	Value
Target Range	Property (2) — £200,000 to £20,000
Size Range	Property; Reduce mass to 100%
Potential of Failure (PoF)	PoF (4) — 1/1K to 1/10K
Risk of Harm (RoH)	1/30K
Public Amenity Value	Good
Overall Residual Risk	High

While the calculated numeric RoH value of 1/30K sits within the 'Above 1/1M' banding shown on the Risk of Harm Plan at Figure 1 (a moderate QTRA band), it should be noted that QTRA calculates probability of harm over a standard one-year reference period and is not, of itself, designed to capture an actively and rapidly deteriorating condition of the kind identified in this report. In the surveyor's professional judgement, and consistent with BS 5837:2012 guidance that QTRA outputs should always be considered alongside professional judgement, the rate of decline evidenced by the crown dieback, the corroborating Resistograph data, and the known association with *Ganoderma* spp. and *Armillaria* together justify an urgent priority for management action, notwithstanding the calculated RoH banding. This is reflected in the recommendations at Section 4.

The overall condition of T001 is assessed as Poor. This corrects a transcription error in the Tree Survey Schedule at Appendix 3, which records the overall condition as 'Fair' — that figure should be disregarded and Poor treated as the correct assessment. This reflects the Physical Defect noted, the extent of advanced

and progressing basal and stem decay confirmed by mechanical decay detection, and the substantial recent loss of crown volume described above.

Taken together, T001's poor overall condition, the rate of decline recorded since the last inspection, and the tree's proximity to multiple targets — including multi-occupancy residential buildings, the busy public highway and footpath of Cecile Park, and a car parking area — indicate a significant and urgent level of risk. This is considered by the surveyor to be more severe than the calculated numeric RoH banding alone would suggest, for the reasons set out above, and underpins the urgent recommendations at Section 4.

3.3 Mechanical Decay Detection Data

The following pages present the sonic tomography cross-section and the five Resistograph traces obtained for T001 during the 16 August 2026 survey. The tomogram shows the relative sonic velocity distribution across the stem/root collar cross-section, annotated with the location of each Resistograph measuring point (MP1–MP5). The colour legend (reproduced in Appendix 7) indicates: brown = healthy wood; orange = beginning to soften; dark green = softened significantly; pink = softened dramatically; dark blue = dead wood; white/light blue = cavities. Each Resistograph trace shows drilling resistance (green trace) against drilling depth in cm, together with the surveyor's assessment of the wood condition along the drill path and a comment on the relationship between that measuring point and the corresponding tomography data.

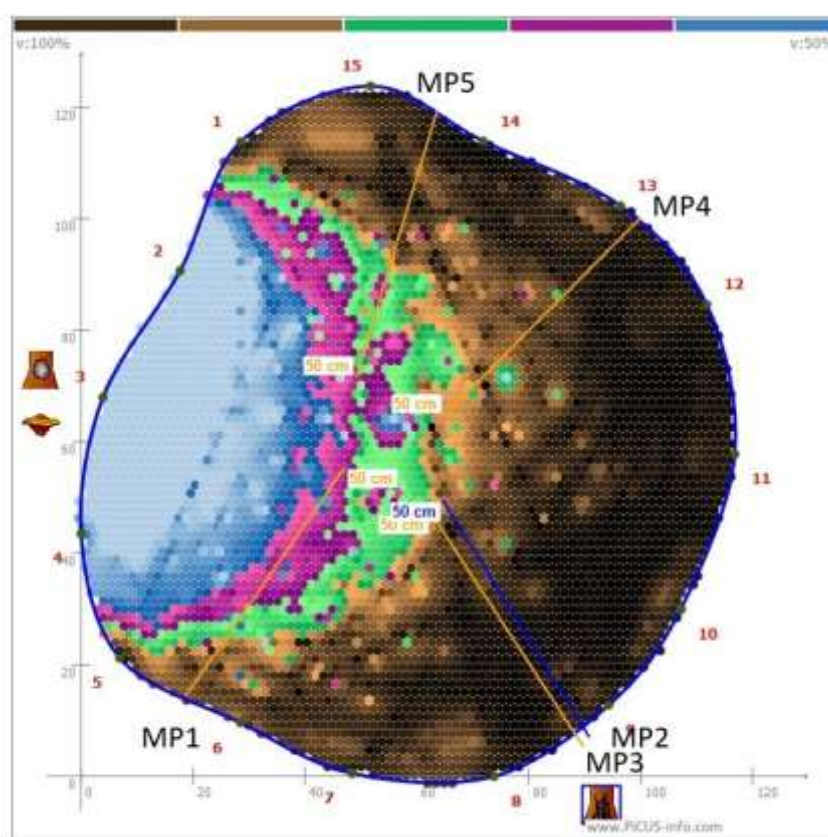


Figure 5: T001 Sonic Tomogram at approximately 0.5–0.6 m, annotated with Resistograph measuring point locations MP1–MP5. The tomogram shows a substantial zone of reduced sonic velocity (green/pink/blue shading) affecting the western half of the cross-section, with brown (apparently sound) wood recorded across the eastern half. As set out below, the Resistograph data indicates that this tomogram under-represents the true extent of internal dysfunction at four of the five measuring points.



Figure 6: PiCUS 3 sensor array installed on T001 prior to sonic tomography (left), and the PiCUS 3 display showing the tomogram being captured in real time on site (right), 16 August 2026. Numbered sensor pins correspond to the positions shown in Figure 5.

MP1 — Stem, 0.5 m, SW aspect

Species	Location	Drilling depth	Assessment (bark to full depth)
Common ash	Stem, 0.5 m, SW aspect	50.00 cm	0.00–2.00 cm: Decay 2.00–6.50 cm: Reaction wood 6.50–50.00 cm: Decay

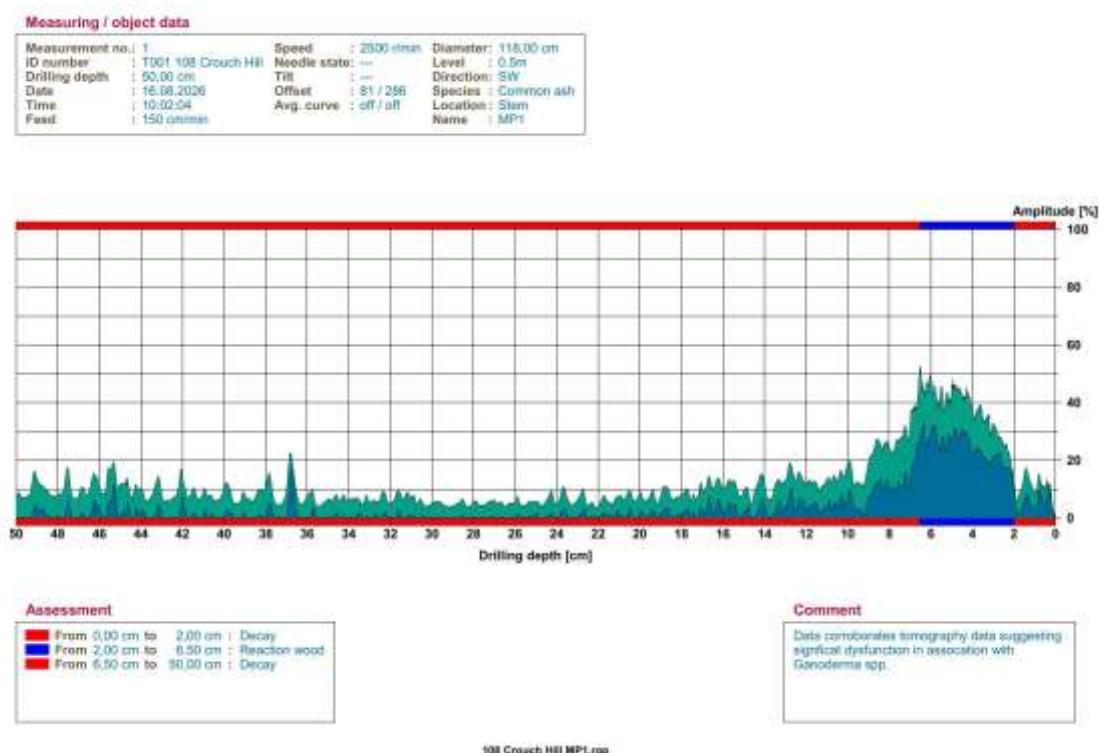


*Figure 7: T001 Resistograph Trace — MP1 (Stem, 0.5 m, SW aspect). Data corroborates the tomography data, suggesting significant dysfunction in association with *Ganoderma* spp. This is the only measuring point at which the Resistograph and tomography data are in agreement.*



Figure 8: Resistograph drilling in progress in the vicinity of sonic tomography sensor pins 5–9, adjacent to the MP1 test location. (16 August 2026).

MP2 — Root collar, 0.1 m, SE aspect (45°)

Species	Location	Drilling depth	Assessment (bark to full depth)
Common ash	Root collar, 0.1 m, SE aspect (45°)	46.77 cm	0.00–1.70 cm: Bark 1.70–15.00 cm: Sound wood 15.00–24.00 cm: Reaction wood 24.00–44.00 cm: Decay 44.00–44.50 cm: Needle exit

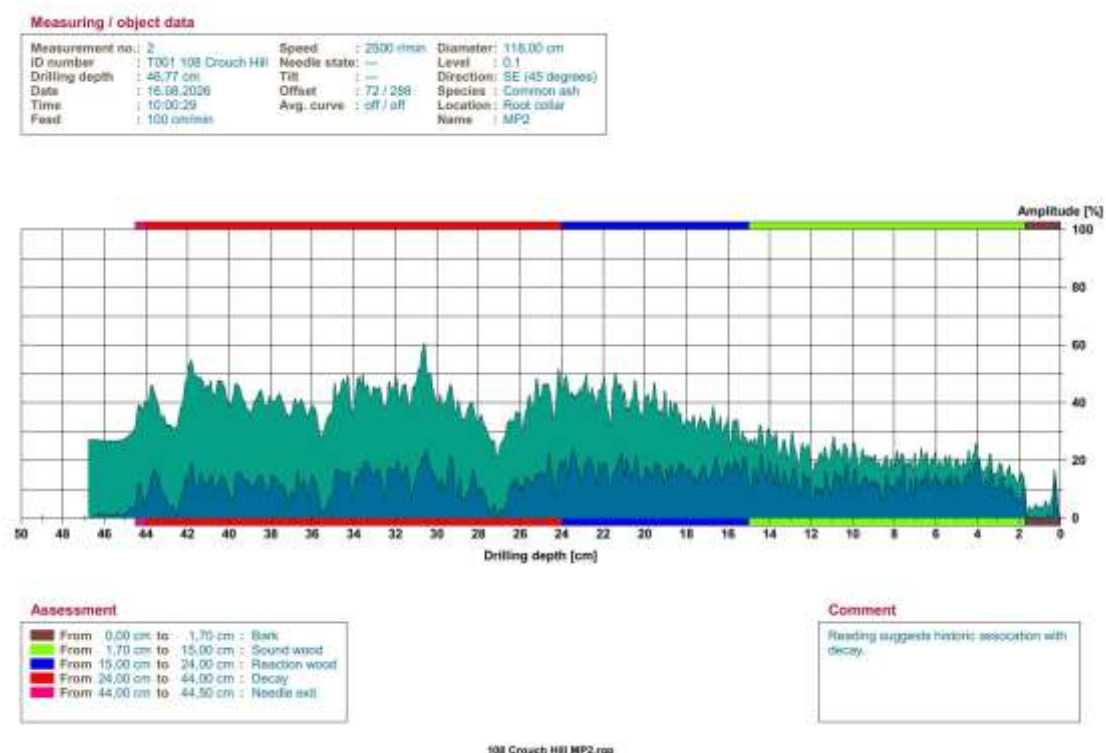


Figure 9: T001 Resistograph Trace — MP2 (Root collar, 0.1 m, SE aspect (45°)). Reading suggests a historic association with decay at the root collar. The extent of decay recorded (a 20 cm zone from 24–44 cm depth) is greater than would be inferred from the tomography data alone.



Figure 10: Resistograph drilling in progress in the vicinity of sonic tomography sensor pins 7–9, adjacent to the MP2/MP3 (SE aspect) test locations. (16 August 2026).

MP3 — Stem, 0.5 m, SE aspect

Species	Location	Drilling depth	Assessment (bark to full depth)
Common ash	Stem, 0.5 m, SE aspect	50.00 cm	0.00–1.00 cm: Bark 1.00–12.00 cm: Sound wood 12.00–14.00 cm: Cavity 14.00–50.00 cm: Decay

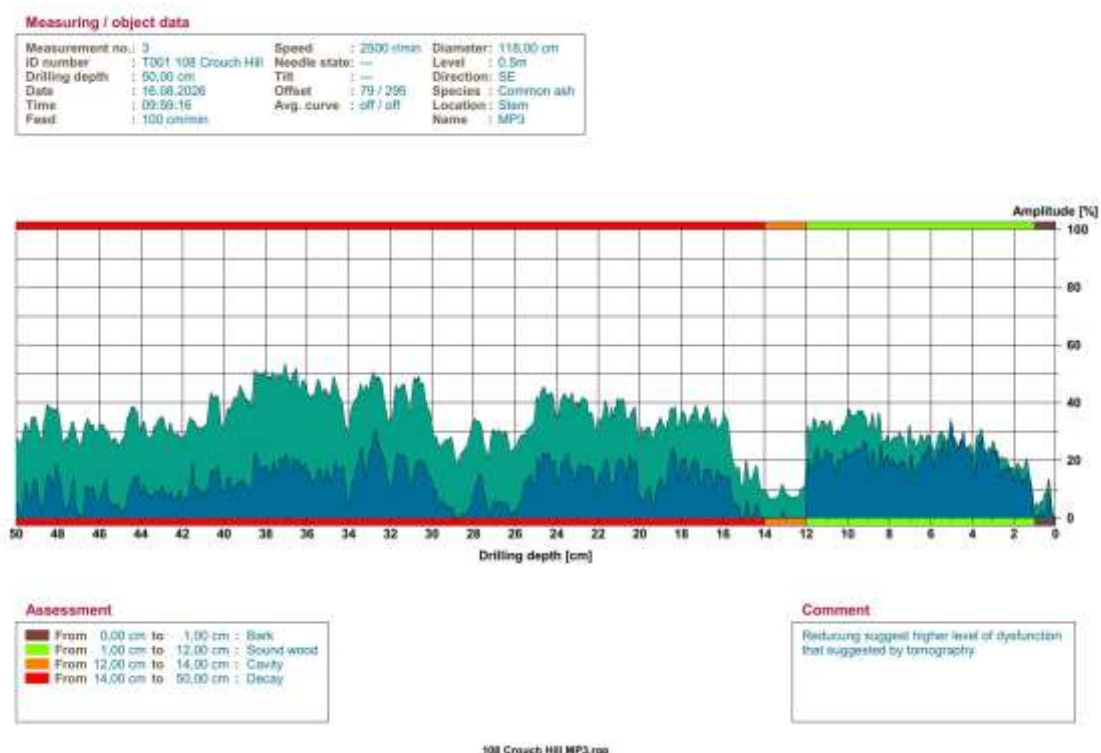


Figure 11: T001 Resistograph Trace — MP3 (Stem, 0.5 m, SE aspect). Reading suggests a higher level of dysfunction than indicated by the tomography, with a sound wood shell of only approximately 12 cm before a cavity and extensive decay are encountered.



Figure 12: Resistograph drilling in progress in the vicinity of sonic tomography sensor pins 7–9, adjacent to the MP2/MP3 (SE aspect) test locations (same photograph as MP2, above). (16 August 2026).

MP4 — Stem, 0.5 m, NE aspect

Species	Location	Drilling depth	Assessment (bark to full depth)
Common ash	Stem, 0.5 m, NE aspect	50.00 cm	0.00–1.00 cm: Bark 1.00–21.50 cm: Sound wood 21.50–29.00 cm: Reaction wood 29.00–50.00 cm: Decay

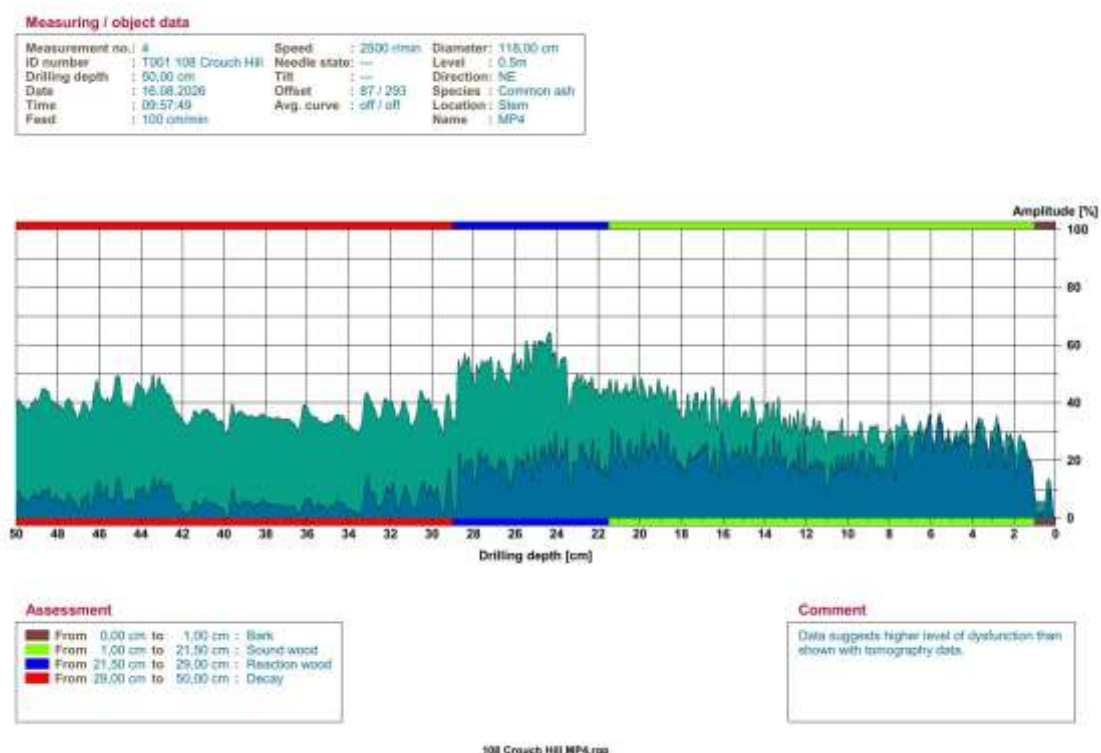


Figure 13: T001 Resistograph Trace — MP4 (Stem, 0.5 m, NE aspect). Data suggests a higher level of dysfunction than shown by the tomography data at this location.



Figure 14: Resistograph drilling in progress in the vicinity of sonic tomography sensor pins 12–13, adjacent to the MP4 (NE aspect) test location. (16 August 2026).

MP5 — Stem, 0.5 m, NW aspect

Species	Location	Drilling depth	Assessment (bark to full depth)
Common ash	Stem, 0.5 m, NW aspect	50.00 cm	0.00–0.30 cm: Bark 0.30–23.00 cm: Sound wood 23.00–50.00 cm: Decay

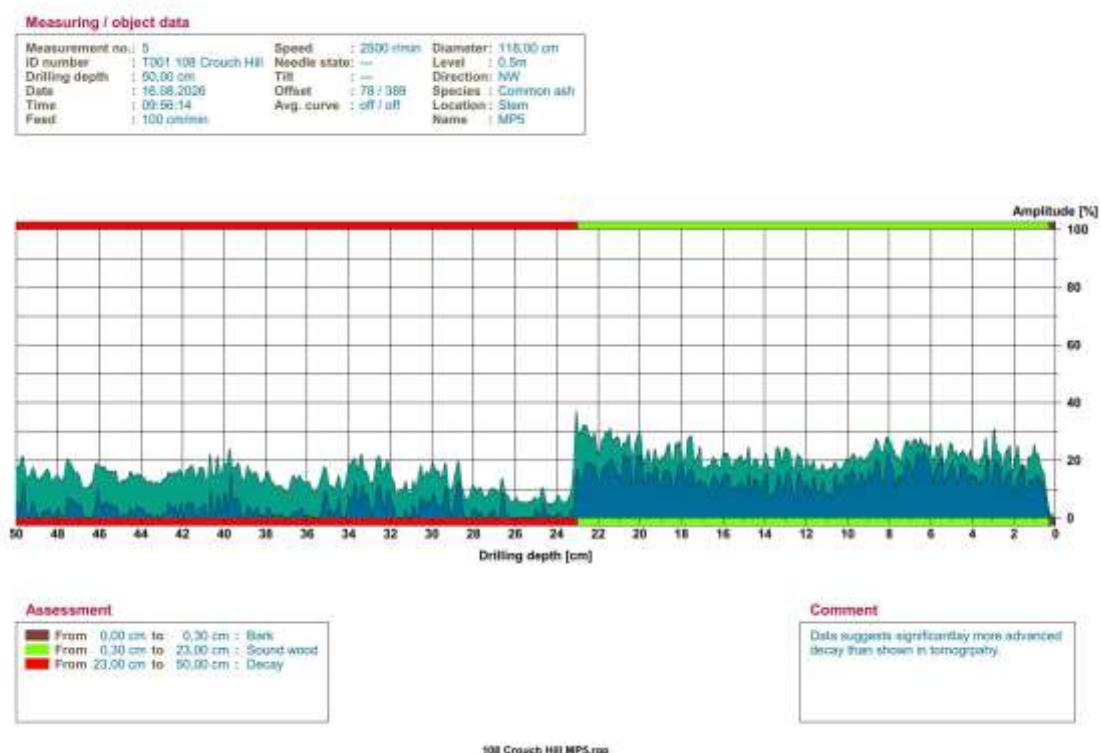


Figure 15: T001 Resistograph Trace — MP5 (Stem, 0.5 m, NW aspect). Data suggests significantly more advanced decay than shown in the tomography at this location — the NW aspect corresponds with the area of the crown that has died back.



Figure 16: Resistograph drilling in progress in the vicinity of sonic tomography sensor pins 14–15, adjacent to the MP5 (NW aspect) test location. (16 August 2026).

4. Recommendations

4.1 Present Requirements

Works required to establish acceptable levels of risk and to maintain the trees in accordance with good arboricultural management are listed below in priority order. All works should be completed within the indicated timescales. Given the findings set out in Section 3, works to T001 are required urgently and should not be delayed.

Timescale	No. of Recommendations	Trees Affected
Urgent (immediate)	2	T001
Total	2	

4.2 Detailed Recommendations Schedule

Two alternative urgent options are set out below for T001. Only one of these two options should be implemented; the choice between them is a matter for the Client, informed by the guidance below and, if desired, further discussion with RH Trees.

Ref.	Species	Measurements	Priority	Recommended Works	Due
T001	Common ash (<i>Fraxinus excelsior</i>)	H: 18 m CR: 8 m DBH: 60 cm Mature	Urgent	Option A: Fell tree and provide a suitable replacement. Sectional dismantling will be required given the proximity of the dwelling, car park and footpath targets.	Immediate
T001	Common ash (<i>Fraxinus excelsior</i>)	H: 18 m CR: 8 m DBH: 60 cm Mature	Urgent	Option B: Reduce to a monolith at approximately 5 m, retained in situ for habitat value, removing all unstable upper crown material.	Immediate

Both options are recorded as urgent, with works due to commence without delay. Should the Client wish to retain deadwood habitat value on site (see Section 1.3 regarding bat and bird considerations), Option B may be preferred, subject to a further specific assessment confirming that a 5 m monolith would not present an unacceptable risk to the dwelling, car park and footpath targets identified at Appendix 3. In light of the extent of basal and lower-stem decay recorded at MP1–MP3, this assessment should be carried out by a suitably qualified arboricultural consultant before monolithing proceeds, and may conclude that Option A (felling) is the only appropriate course of action if the retained monolith cannot be shown to be stable given the targets present.

4.3 Tree Pruning Specification

All pruning and felling works shall be carried out in accordance with BS 3998:2010 Tree Work — Recommendations by a suitably qualified and insured arboricultural contractor holding current NPTC/Lantra qualifications and valid public liability insurance (minimum £5 million).

- Felling: Given the proximity of the dwelling, car park and Cecile Park footpath/carriageway, sectional felling is required. A method statement and site-specific risk assessment must be prepared and agreed prior to works commencing.
- Monolithing (if Option B is selected): The retained monolith should be reduced to approximately 5 m, removing all deadwood, loose bark, and any structurally unstable material likely to fail within the retained section. Given the extent of decay recorded at the base and lower stem, the works should be specified and supervised on site by a suitably qualified arboricultural consultant.
- Stump treatment: Given the association with *Ganoderma* spp. and *Armillaria mellea*, stump grinding should be undertaken if the tree is felled (Option A) to reduce the residual fungal inoculum source in the garden and facilitate any replacement planting.
- Deadwood removal: All deadwood overhanging the identified targets should be removed as part of either option; deadwood not overhanging a target may be retained for wildlife value where safe to do so.

Where replacement planting is undertaken following the removal of T001, the 5-10-20-30 species diversity formula should be applied to any new planting scheme on the site. Tree planting and establishment should be in accordance with BS 8545:2014 Trees: from nursery to independence in the landscape.

5. Other Considerations

5.1 Re-Survey Frequency and Zoning

Given the rate of decline recorded between the March/April 2025 and August 2026 inspections, and the proximity of T001 to a dwelling, car park and footpath, no further period of visual monitoring is recommended in place of the urgent works set out in Section 4. Should there be any delay in implementing either Option A or Option B, RH Trees recommends that the tree be re-inspected at intervals of no more than one month until works are completed, and immediately following any significant wind event.

Zone	Trees / Location	Frequency	Rationale
High priority	T001, rear garden (fence line)	Monthly, pending urgent works	Rapid recent decline, TPO/Conservation Area status, and proximity to dwelling, car park and footpath targets
Post-works	T001 (if Option B retained)	Annual	Ongoing monitoring of monolith stability and any further decay development

5.2 Safety

All arboricultural works shall be carried out by a suitably qualified and insured arboricultural contractor. Operatives must hold current NPTC/Lantra qualifications appropriate to their work activities and must operate under a valid health and safety policy, including a site-specific risk assessment and method statement for each work operation. Given the confirmed presence of extensive internal decay, contractors should be made aware of the mechanical decay detection findings in this report prior to works commencing, and should assess the tree for climbing suitability accordingly — aerial access using MEWP or crane-assisted sectional dismantling may be preferable to climbing given the condition of the stem.

6. Glossary of Selected Terms

Term	Definition
Sonic Tomography	Non-invasive decay detection technique using a PiCUS 3 system. Sound waves are passed between sensors placed around the tree stem; relative velocities are mapped to produce a colour-coded cross-sectional image indicative of wood condition.
Resistograph	Invasive decay detection technique using an IML PD-500 microdrill. Drilling resistance of a fine rotating probe is measured and plotted, with significant drops indicating cavities or decay.
Adaptive Growth	In tree biomechanics, the process by which wood formation is influenced in quantity and quality by gravitational forces and mechanical stresses, often visible as asymmetric thickening around areas of dysfunction.
Ganoderma spp.	A genus of bracket fungi responsible for white rot decay. Association typically causes progressive softening and structural weakening of the heartwood and sapwood, particularly in the butt and lower stem.
Armillaria mellea	Honey fungus — a root-infecting fungus that spreads via rhizomorphs and can cause root and butt decay, structural weakening, and tree mortality.
Daldinia concentrica	King Alfred's cakes — a saprotrophic fungus commonly associated with ash, often indicative of significant existing decay or dead wood at the point of attachment.
White Rot	A form of wood decay in which fungi degrade both the lignin and cellulose components of wood, resulting in a bleached, fibrous, soft residue. Associated with Ganoderma spp. and many other decay fungi.
QTRA	Quantitative Tree Risk Assessment — a risk management system that calculates the probability that a tree will cause harm to a person or property within a one-year reference period, expressed as a Risk of Harm (RoH) value.
Monolith	A tree retained in a substantially reduced, standing dead or structurally simplified form, typically to provide deadwood habitat value while managing the risk posed by the original crown.
SULE	Safe Useful Life Expectancy — an assessment of the length of time a tree can be retained safely with appropriate management.
Ancient Woodland	Land that has been continuously wooded since at least 1600 AD (England/Wales). Subject to statutory protections under the NPPF and associated planning guidance.

Appendix 1: Qualifications and Experience of the Surveyor

Rory Hobbs — Senior Arboricultural Consultant, RH Tree Consultants Ltd.

Rory Hobbs has worked in arboriculture for over 20 years, initially as Operations Manager for a large AA-approved contractor, and subsequently as Arboricultural Lead for Kier Highways on the Highways England Area 6 and Area 8 Contract, responsible for the management and inspection of over 7 million roadside trees. RH Tree Consultants Ltd. was established in 2018 and has since delivered the full range of arboricultural consultancy services to clients including Highways England, Anglian Water, Thames Water, Historic Royal Palaces, Forestry England, the Ministry of Defence, and a wide range of commercial estate and equine clients.

Date	Board	Qualification
09.11.07	City & Guilds	CS30.1
09.11.07	City & Guilds	CS30.2
09.11.07	City & Guilds	CS31
08.06.08	City & Guilds	CS39
24.09.09	City & Guilds	CS40
24.09.09	City & Guilds	CS41
20.03.15	IPAF	MEWP 1b (Renewal)
10.06.17	LANTRA	BS:8586 2015 Surveying Bats in Trees and Woodland (Renewal)
21.02.18	SWQR	S1 Monitoring Signing, Lighting and Guarding
10.04.18	CSCS	Skilled Worker
22.10.18	ABC	Emergency First Aid at Work + F
08.08.18	NCC	Ash Dieback Seminar
12.02.19	LANTRA	Professional Tree Inspection
04.06.19	AA	BSS837: Tree Surveying and Categorisation
01.10.19	Sorbus International	PiCUS Sonic Tomography Refresher Course
23.10.19	AA	East Anglian Autumn Seminar
24.11.20	AA	Getting to Grips with Subsidence
14.12.20	AA	Subsidence Investigation
27.11.24	QTRA	QTRA Registered User (no. 7711)
09.07.25	Treelife Arboricultural Training Ltd	Mortgage Report Writing Online

Appendix 2: Site Photographs

The photographs below were taken on site on 16 August 2026 and illustrate the current condition of T001, in particular the extent of crown dieback and the basal cavity/decay referred to in Section 3.2. Photographs specific to the sonic tomography and Resistograph fieldwork are presented alongside the corresponding data in Section 3.3.



Plate 1: T001 in context, 16 August 2026, showing the approximately 50% crown dieback affecting the northern/eastern portion of the canopy (right of image) against the remaining live foliage (left of image).



Plate 2: Dead scaffold branches within the crown, against live foliage below

Plate 3: Crown detail showing a mix of live foliage and dieback

Plate 4: Main scaffold branch union, showing crown structure



Plate 5: Basal cavity and decayed wood at the historic fire-damage site, consistent with the dysfunction identified at MP1/MP5 and by the tomography



Plate 6: Further detail of the basal cavity and decayed/charred wood at the base of the stem

Appendix 3: Tree Survey Schedule

The full tree survey schedule is attached as a separate document (Appendix_3_108_Crouch_Hill_Tree_Survey_Schedule_2026.xlsx). The schedule should be read in conjunction with this report and the site location plan at Appendix 4.

Appendix 4: Tree Location Plans

The site location plan showing the position of T001 and the Risk of Harm (RoH) banding at 108 Crouch Hill is provided below.



Figure 12: 108 Crouch Hill — Risk of Harm (RoH) Plan showing T001 position. Scale 1:552 at A4.

Appendix 5: Quantitative Tree Risk Assessment — Overview



RH Tree Consultants Ltd. is a registered QTRA organisation. Rory Hobbs holds QTRA Registered User No. 7711.

QTRA (Quantitative Tree Risk Assessment) is a risk management system developed by Barrell Tree Consultancy to objectively calculate the probability that a tree or part of a tree will cause harm during a one-year reference period. It combines three assessed probabilities: Target (the likelihood that a person or object is present within the falling zone at the time of failure), Size (the likelihood that a failure of the assessed dimension will cause harm), and Potential of Failure (the assessed probability of failure during the reference period). The resulting Risk of Harm (RoH) value provides a transparent, auditable, and defensible basis for prioritising management decisions.

Appendix 6: Resistograph Testing — An Introduction

Resistograph testing was completed using an IML Resi PD-500 microdrill. The microdrill detects decay and cavities in standing trees by measuring the drilling resistance of a fine rotating probe (1.5 mm diameter) to a maximum depth of 500 mm through the trunk, roots, or larger branches.

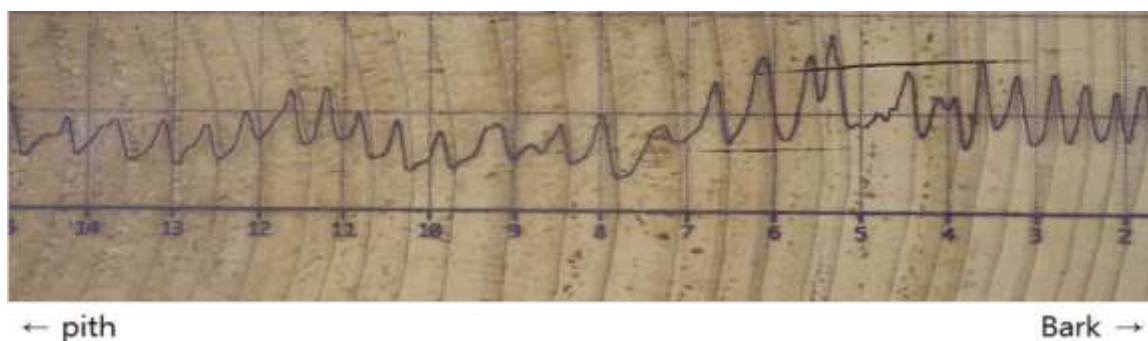


Figure 13: Resistograph trace example showing decay zone (significant drop in resistance at approximately 21 cm drilling depth).

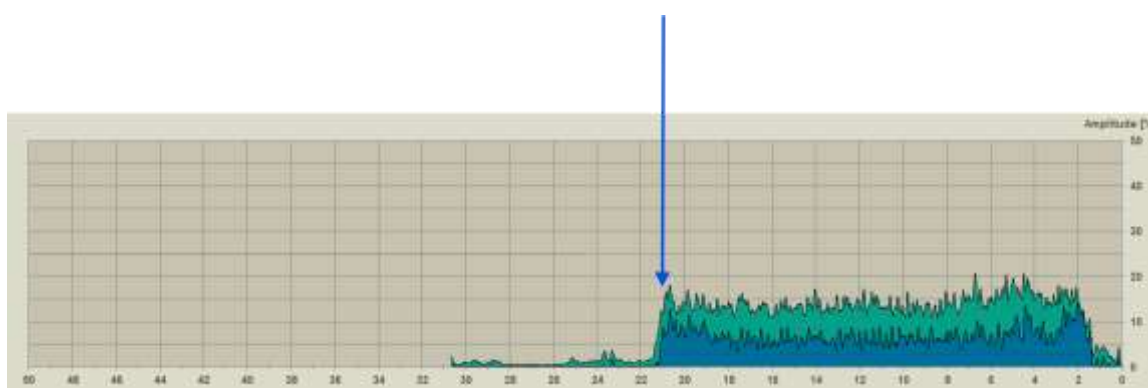


Figure 14: Example Resistograph output. The green trace shows torsional (rotational) drilling resistance; the blue trace shows forward resistance. Significant drops in both traces indicate cavities or severely decayed wood.

Significant drops in drilling resistance indicate cavities or zones of structural decay. In some instances, dense sound wood can cause shaft drag that partially masks drops in resistance; the IML PD-500 records both forward and torsional resistance to mitigate this effect, making occluded decay visible even where shaft drag is present.

Limitations specific to Resistograph testing are noted in Section 2.3 of this report.

Appendix 7: Sonic Tomography — An Introduction

Sonic tomography was completed using a PiCUS 3 system. The PiCUS Sonic Tomograph detects decay and cavities in standing trees non-invasively by tracking the propagation speed of sound waves through the timber cross-section. The velocity of sound in wood depends on the modulus of elasticity (MOE) and the density of the wood. Damage, disease, and decay cause fractures, cavities, and reductions in wood density and elasticity, which reduce sound velocity. The PiCUS system uses relative velocities, auto-calibrating to each individual tree cross-section.



Figure 15: PiCUS 3 Sonic Tomograph in situ on a tree stem. Sensors are connected to small pins inserted into the bark at strategic intervals around the circumference.

A set of sensors (typically 6 to 14) is placed at strategic points around the stem circumference, connected to small pins (0.8–2 mm diameter) inserted with a pin hammer. By tapping each sensor in turn with a small hammer, sound waves are induced and their travel times between sensors recorded. From these times, the relative sound velocities across the full cross-section are calculated and a colour-coded tomogram is produced.



Figure 16: PiCUS Sonic Tomography colour legend. Colours represent relative sound velocity as a proxy for wood condition: brown = healthy wood; orange = beginning to soften; dark green = softened significantly; pink = softened dramatically; dark blue = dead wood; white/light blue = cavities.

Limitations specific to sonic tomography are noted in Section 2.3 of this report. As discussed in Section 3.3, on this occasion the sonic tomography obtained for T001 is considered to have underestimated the true extent of internal dysfunction relative to the Resistograph findings and the observed crown condition. All conclusions are based on the professional experience and judgement of the surveyor.

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