Fulford-Dobson Associates Ltd
ARBORICULTURAL CONSULTANCY

TREE REPORT

Relating to a large mature oak at: -

10 Buckhurst Grove
Wokingham
Berkshire
RG40 2JR

December 2025

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Project no.	FDA1484
Client	Mr Gursubir Bal
Survey date	08.12.25
Issue date	17.12.25
Author	Jasper Fulford-Dobson

Executive Summary

Tree Condition & Decay
The mature pedunculate oak (approx. 150 years old) at 10 Buckhurst Grove has extensive and progressive basal decay/hollowing caused by *Ganoderma resinaceum*, with tomograms indicating about 70% internal decay and the residual wall breached in three places. This is consistent with visual observation, manual sounding and probing.

Risk Assessment
Quantified Tree Risk Assessment (QTRA) categorizes the tree as presenting an unacceptable risk of harm if no action is taken, due to its compromised structural integrity and proximity to the house.

Management Options
Further crown reduction (15–30%) could temporarily reduce wind-load but would involve large pruning wounds, high costs, and accelerate decline. Felling and replacement planting is considered more sustainable and cost-effective long-term.

Life Expectancy
Even if additional pruning was preferred, the tree's useful life expectancy is estimated at no more than 15 years, given the progressive nature of the decay and potential physiological impact of the amount of pruning needed to manage the risk.

Recommendation
Submit a protected tree work application and proceed with felling and replacement planting (subject to consent) within the next six months to eliminate risk and ensure long-term canopy succession.

1. Introduction

1.1 Instruction and background

I have been instructed by Mr Gursubir Bal to carry out wood decay mapping, a detailed risk assessment and provide recommendations for the future management of a large mature oak tree in the rear garden of his property at 10 Buckhurst Grove. The tree is colonised by the common wood decay fungi *Ganoderma resinaceum* and has a history of past crown containment pruning. It is also protected by a Tree Preservation Order (TPO).

Upon recent purchase of the property, Mr Bal is in receipt of a previous report on the tree by PBA Consulting Solutions, dated 5th March 2020 and entitled "Tree*Radar* GPR Stem Decay Investigation". The results of the Tree*Radar* scans suggest that there was some central decay developing upwards from 0.2m - 1m above ground level but that the remaining residual wall thickness of solid wood was generally within accepted thresholds (i.e. greater than 1/3 stem radius). The cross-sectional imaging in the report does not provide any cardinal points, so it is not possible to compare them with the visual features of the tree. The report recommended two options: - crown reduce by 30% (6m) to decrease loading (followed by future monitoring) or complete removal (felling) of the tree with replacement planting to mitigate the loss.

A protected tree work application was subsequently submitted by PBA Consulting Solutions (on behalf of the previous owner) to Wokingham Borough Council for the removal of the tree. This application was refused on the grounds that the accompanying report concluded that the decay was within accepted thresholds, the tree had been given a useful life expectancy of 20-40 years and crown reduction was provided as an option that would enable continued retention/preservation of the tree. Consent was granted for the pruning option, which was subsequently carried out.

1.2 Methodology

I visited the site on the 8th of December 2025 during wet weather conditions. My initial visual inspection of the tree and its surroundings was followed by sounding of the lower trunk with a nylon hammer and probing with a 60cm long steel road. Decay mapping was then conducted using acoustic tomography. This was followed by a desk-top risk assessment using Quantified Tree Risk Assessment [1], of which I am a trained and licenced user.

I use the Fakopp ArborSonic 3D acoustic tomograph. 12 sensors were attached around the trunk with steel nails through the bark up to a maximum depth of 2cm into the water conducting outer sapwood. Sensor number 1 was attached at the north cardinal point. The distance between each sensor was measured with Bluetooth enabled electronic callipers to map the entire cross section of the trunk at the level of testing. Three tests were taken at 20cm, 65cm and 120cm above ground level (AGL).

Each sensor was linked via an amplifier box to the main Bluetooth transmitter unit and a portable hand-held computer and once the measurements had been calibrated each sensor was then tapped with a small steel hammer. The unit measures the travel time of the sound wave generated by the hammer tap between each sensor. If there is a hole, crack, or hollow area present, the sound wave must travel around it and therefore takes more time to reach the other sensors.

1.Quantified Tree Risk Assessment - *QTRA* (see description of risk thresholds in appendix 2)

1.3 Limitations

The copyright of this document resides with Fulford-Dobson Associates Ltd unless assigned in writing by the company. It is for the sole use of the named client and relates only to the defined scope and subject tree.

Trees are living organisms subject to continual change by a host of biotic and abiotic factors. This report is based on the condition of the subject tree(s) at the time of the assessment, and its authority ceases when any site conditions change or pruning or other works unspecified in the report are carried out to or affecting the subject tree(s), whichever is the sooner.

The statements made in this report do not take account of the effects of vandalism or accident, whether physical, chemical or fire. I cannot therefore accept any liability in connection with these factors, nor where prescribed work is not carried out in a correct and professional manner in accordance with current good practice.

1.4 The author

I am a Fellow and Registered Consultant of the Arboricultural Association and a Chartered Environmentalist with over 34 years' experience of working with trees and wooded landscapes. I hold the National Diploma and Technician's Certificate in Arboriculture, the LANTRA Professional Tree Inspection certificate and I am a trained and licenced user of Quantified Tree Risk Assessment. I also hold the Bond Solon (Cardiff University) expert witness certificate.

I have worked in principal roles for both local government and commercial contracting firms in the UK and USA and my independent consultancy work includes being English Heritage's appointed tree and woodland inspector for 15 years, covering over 100 historic sites across the Eastern, London and Southern regions. My experience also includes over 250 wood decay mapping exercises over a seventeen year period using acoustic tomography and/or resistance microdrilling on high value, notable, veteran and ancient trees, collated into a comprehensive dataset.

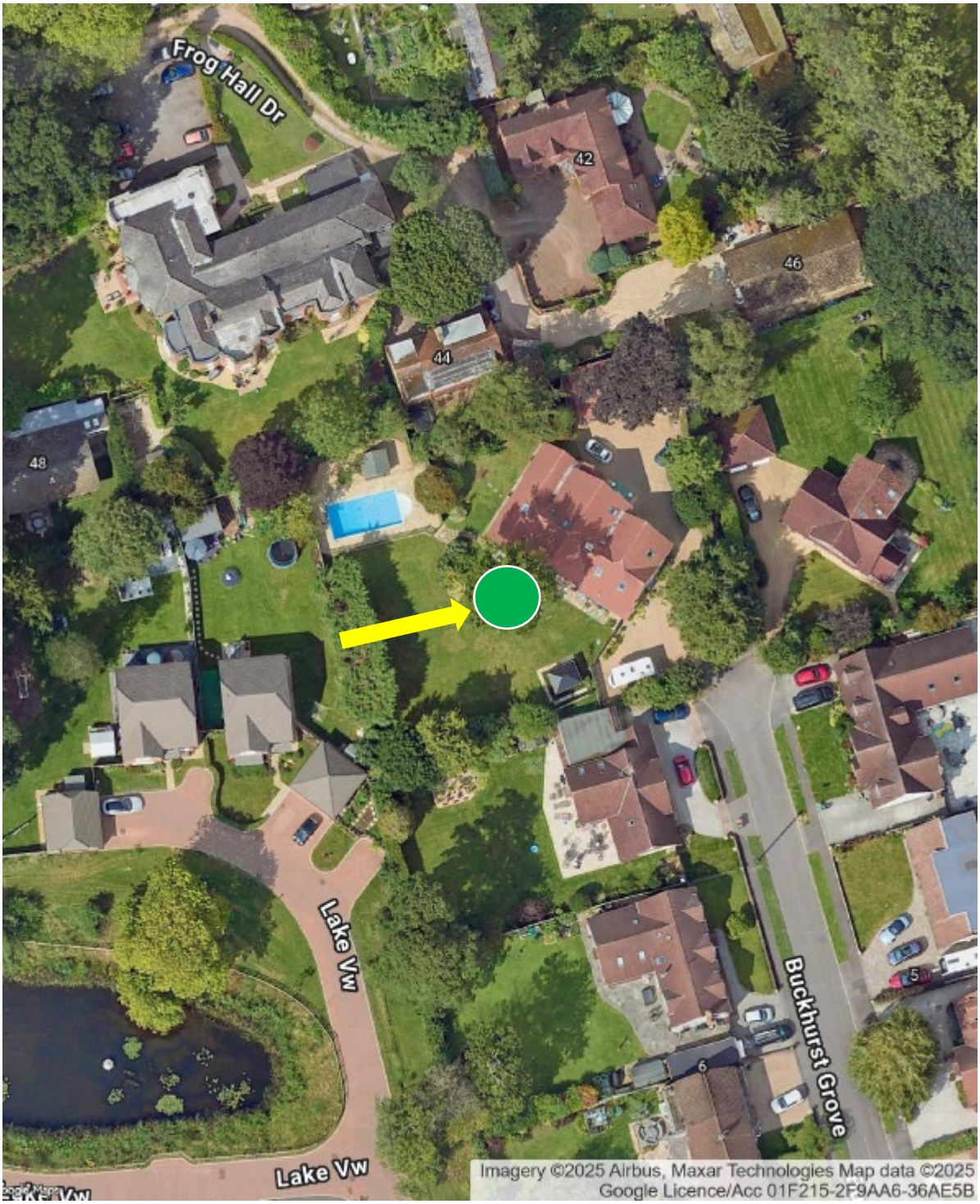
2. The tree

Species	Pedunculate oak *(Quercus robur)*
Dimensions	Height = 19m (clinometer) Trunk diameter at 1.5m = 121cm (tape) Radial crown spread (paced out) N = 5m E = 5m S = 6m W = 5m
Estimated age	150 years old [2]
Typical life expectancy of species	250-350 years [3]
Vigour (physiological health)	Declining
Observations	Large stand-alone specimen tree on edge of patio close to (within falling distance of) the house. Extensive past pruning in the form of major low branch removal and crown lifting (no significant branches below 8m). Previous crown reduction – most recently by 30% (6m). Regrowth is limited to new shoots of approximately 50cm long, with some pruning points not producing any significant new growth. A large fruiting bracket of *Ganoderma resinaceum* is attached to the trunk base on the south side, with remnants of another bracket on the north-north-east side. There is a small opening that leads into a void on the west side – the 60cm steel probe can be inserted almost to its full depth here. Manual sounding produces differing resonance around the trunk base, with audible decay and hollowing particularly evident where the fruiting brackets are noted.
Legal protection	Tree Preservation Order number T34 of 4/1960 - administered by Wokingham Borough Council.

[See tree location plan and photos on the following pages]

2. Estimating the age of a tree, page 25 of *Trees of Britain & Northern Europe*. Alan Mitchell 1974 (reprinted 1994).

3. Arboricultural Association Guidance Note 4: *Visual Amenity Valuation of Trees and Woodlands – The Helliwell System.* (R. Helliwell 2008).



Tree location plan

Ganoderma resinaceum bracket on the south side.

60cm long steel probe inserted into void on the west side.

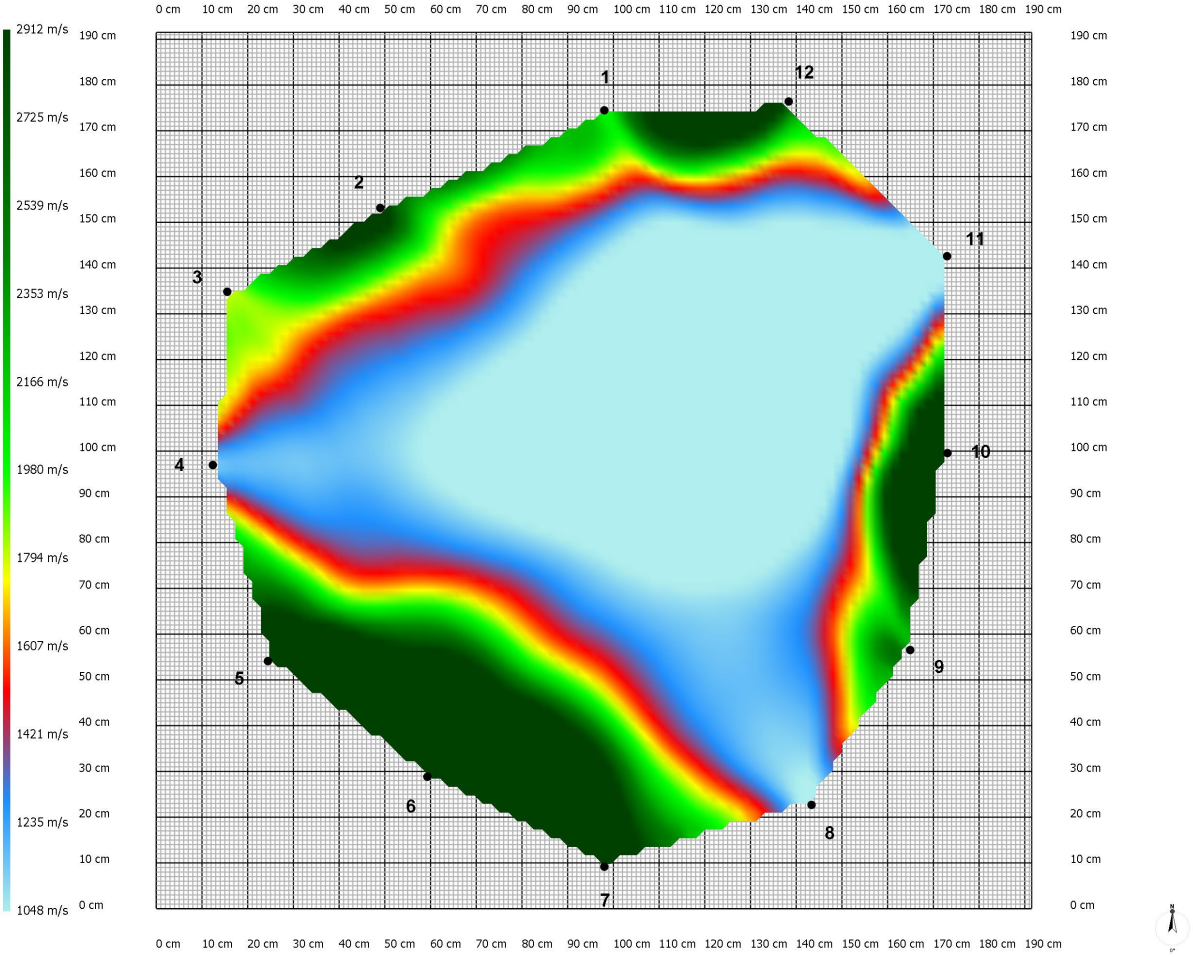
Attachment point of another fungal bracket (removed by others prior to this assessment) – north-east corner

3. Decay mapping

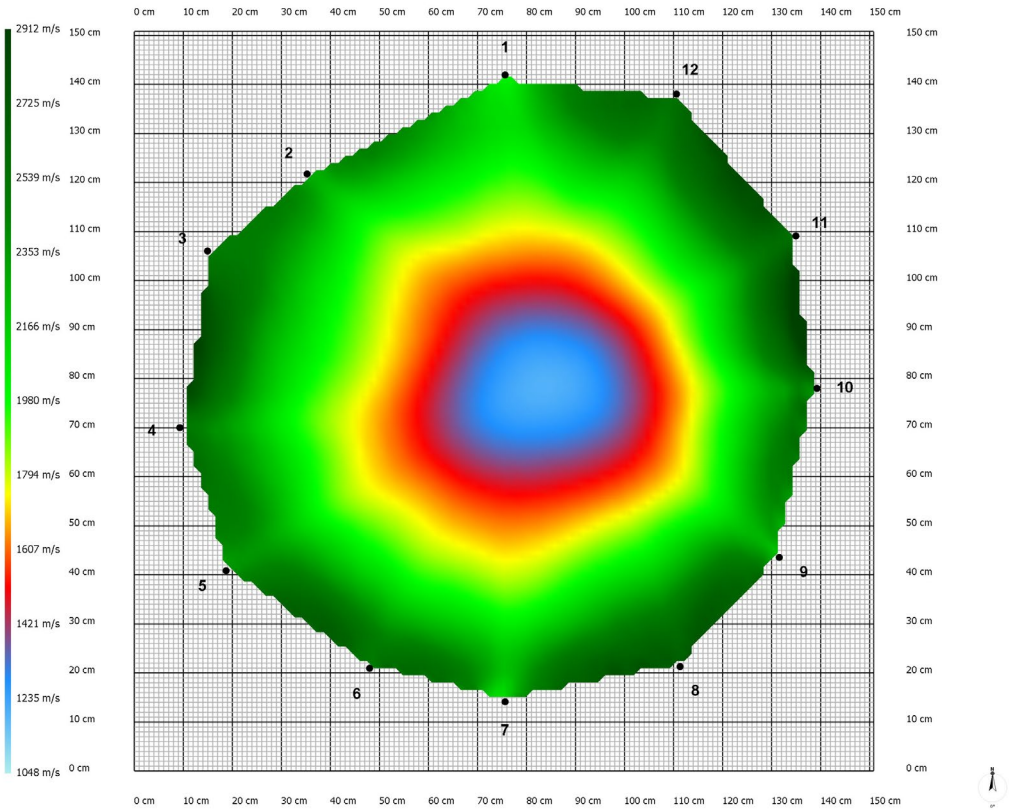
3.1 Simplified interpretation of the colours in the tomograms: -

- GREEN = areas of high density, indicating solid/healthy wood.
- RED & YELLOW = varying according to the defect. Usually depicting the area between solid/healthy and damaged/decayed wood. Can indicate early fungus infection.
- BLUE & **WHITE** = representing areas of slower sound velocity or low density (i.e., advanced decay or hollowing).

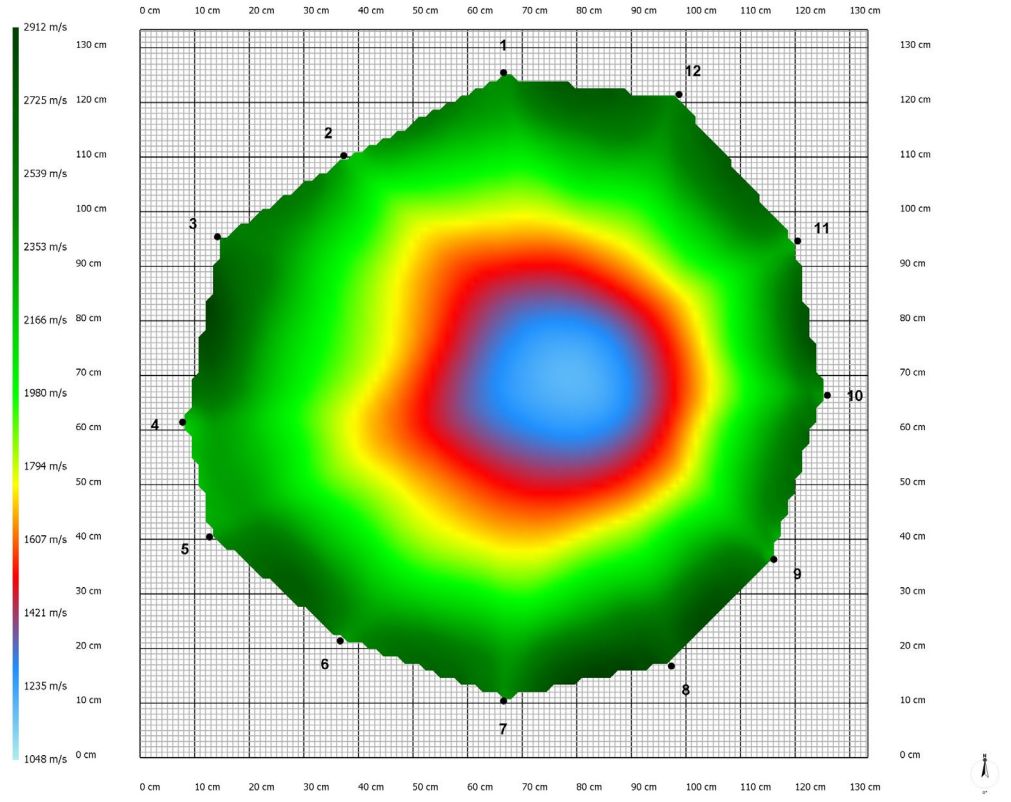
3.2 Tomograms



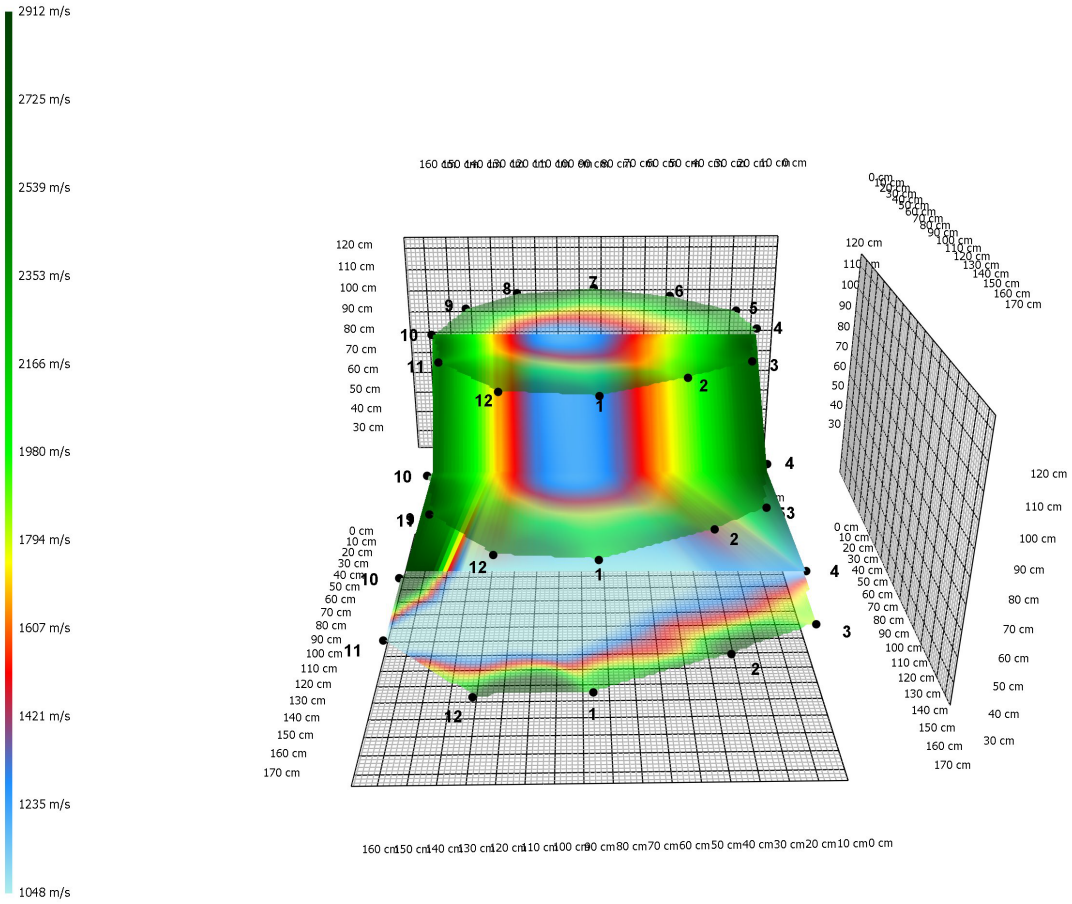
Layer 1 at 20cm AGL



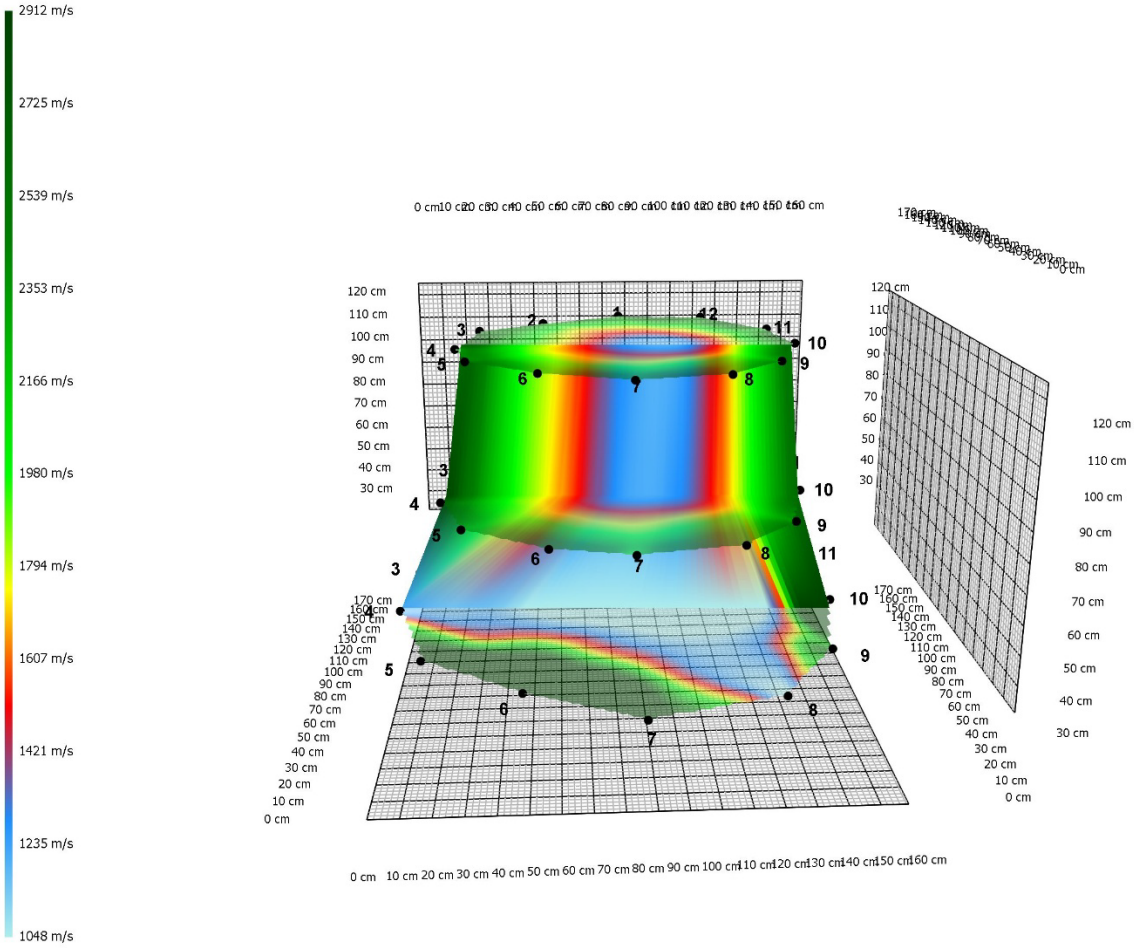
Layer 2 at 65cm AGL



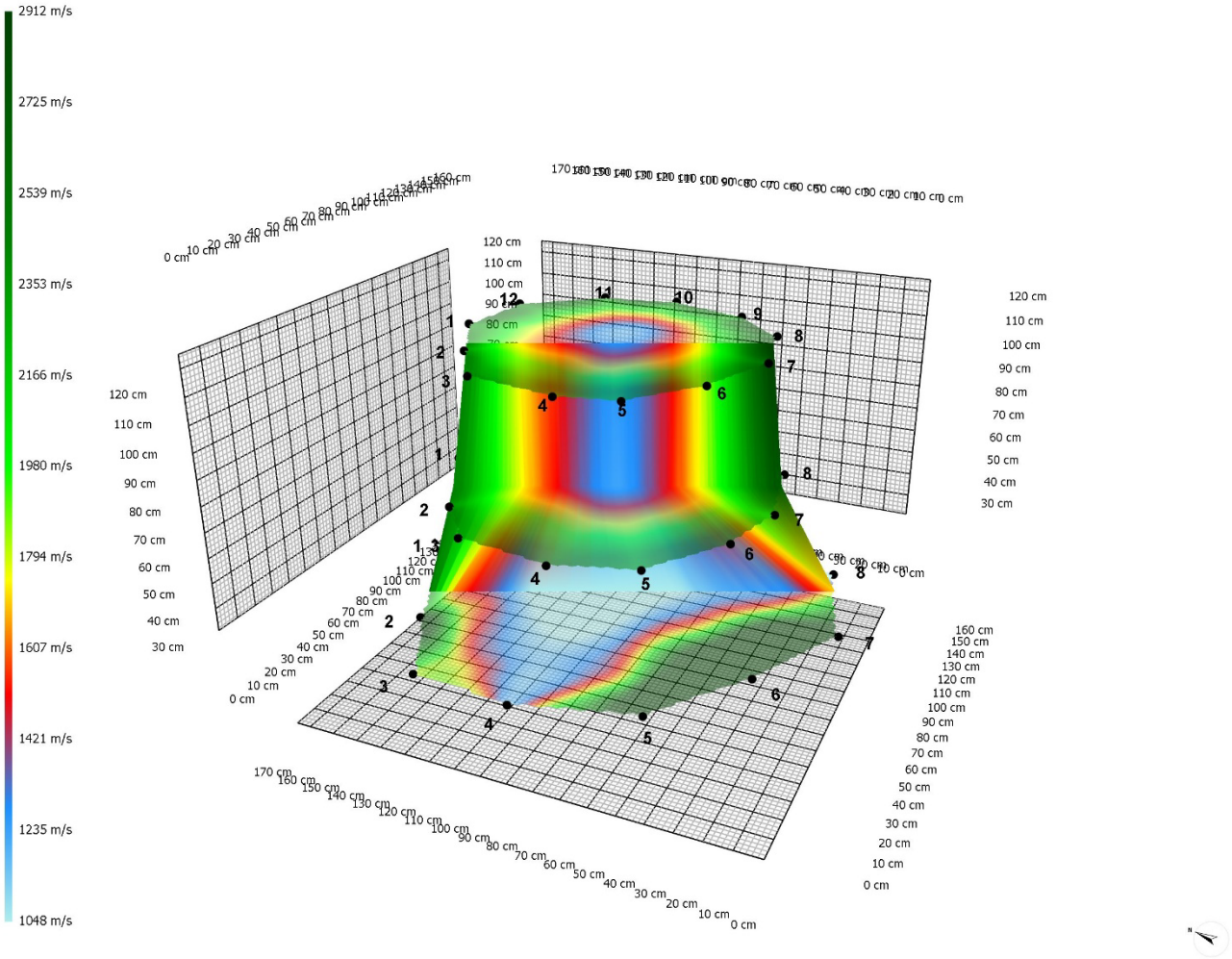
Layer 3 at 120cm AGL



North side (sensors 12 -2)



South side (sensors 6-8)

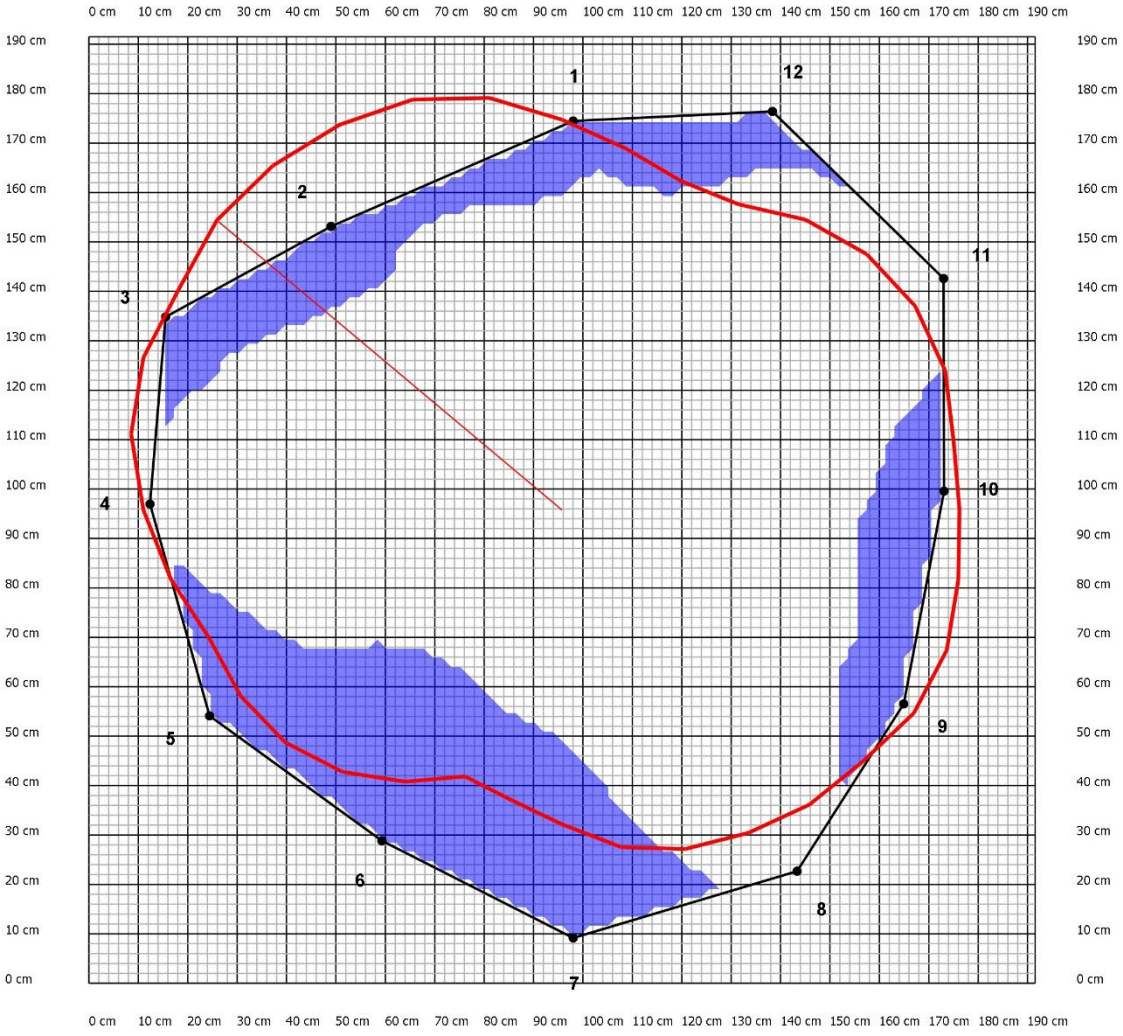


West side (sensors 3-6)

3.3 Layer map

Blue = refers to wood capable to hold the loads (based upon estimated tree dimensions).

White = the areas where the sound velocity is under the average of minimum and maximum values; this refers to damaged, decayed wood which has lost its load bearing capacity.



3.4 Biomechanics

The Arborsonic software has an inbuilt biomechanics function, which calculates a "Safety Factor" for each test layer. However, it has limitations as follows…….

> Safety factor is only applicable for the trunk at the measured layer heights. The model requires an intact ring of tree material along the trunk; in any case of splitting (caused by wound, fungus, etc.) the safety factor is not applicable!

Since the tomogram for Layer 1 shows a breach of the sapwood region at sensors 4, 8 and 11 (where the small opening/void and fungal brackets are located respectively), the biomechanic calculated safety factor is not applicable in this case.

3.5 Interpretation

A commonly accepted safety factor for hollow trees is a residual wall thickness (t) of solid wood measuring at least 0.30-0.35 of the stem radius (R) for full crown trees ($t/R \geq 0.3$)[4]. However, empirical studies by many practitioners over many years have demonstrated that in some cases the residual wall thickness can be as little as 5-10% and still provide reasonable support, especially where the crown has been reduced as a form of risk control and the tree is laying down compensatory adaptive wood around the area of decay.

Layer 1 shows significant internal decay/hollowing, consistent with visual observation, fungal bracket locations, manual sounding and probing with the 60cm steel rod. The Arborsonic software has calculated the decayed area to be 69% of the total cross-sectional area with an average thickness of the residual shell of solid wood equal to 17cm ($t/R = 0.2$). However, the decay/hollowing appears to have breached the residual shell of solid wood at sensors 4 (void), 8 (bracket) and 11 (absent bracket attachment point).

The tomograms are also consistent with the impact of advanced decay caused by *Ganoderma resinaceum*, whose brackets typically fruit in the same location each year and where the decay (selective white rot) is normally confined to the stem base and buttress roots. There is some difference of opinion in published material as to this fungus's ability to act parasitically, but it is generally agreed that extensive and advanced decay leads to compromised structural stability that is more sever than that of other *Ganoderma* species.

The blue and white "layer" map is of notable concern, suggesting that the structural condition of the stem base is quite severely compromised.

The fungus has been present since at least 2020 (probably much longer), when it was established by the Tree*Radar* that decay/hollowing was present in the stem base. The above tomograms demonstrate extensive and progressive decay at 20cm AGL with an average $t/R < 0.2$, but where the decay has breached the residual wall in three places. There is no known chemical or biological treatment or cure and the decay/hollowing is expected to further progress over time.

4. Risk assessment

Quantified Tree Risk Assessment

Target range (1-6)	Size range (1-4)	Probability of failure (1-7)	Risk of harm	Advisory risk threshold	
				Description	Action
1	1	4	1:300	**Unacceptable** Risks will not ordinarily be tolerated	Control the risk

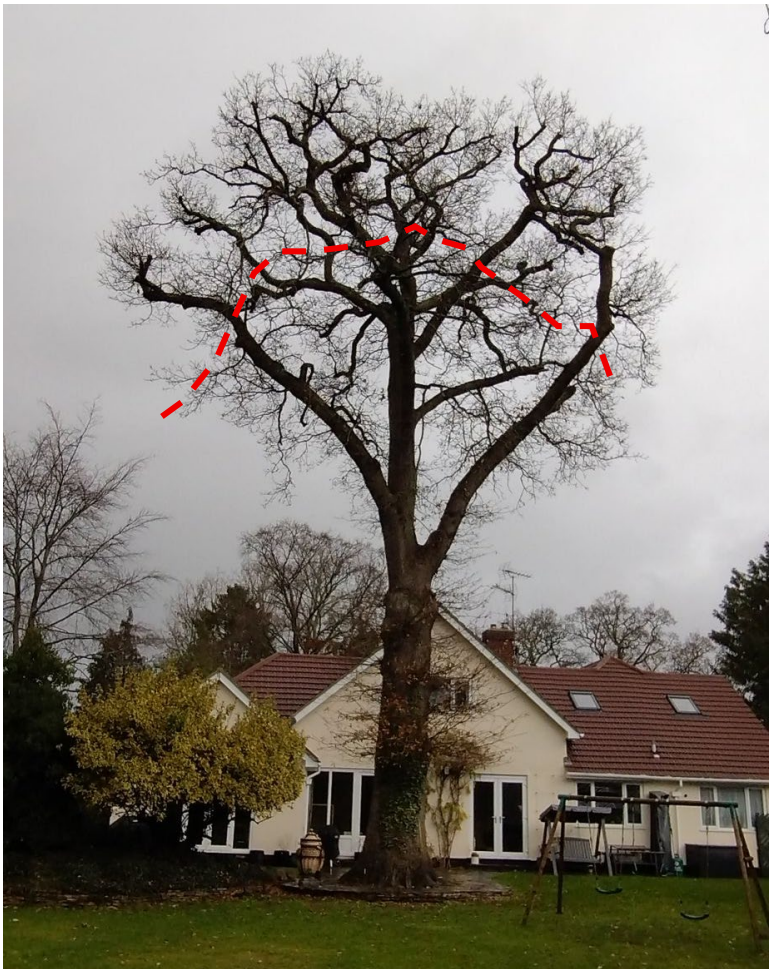
4. *The Body Language of Trees*. Matteck & Breloer (1994)

5. Management options

5.1 As the tree provides some amenity and biodiversity value, it is worth first considering retention/preservation by way of pruning above removal/felling to mitigate the currently "unacceptable" risk.

5.2 In considering how much pruning is needed for a specific wind-load reduction, I make reference to Frank Rinn's theory [5], which suggests a factor of 2:1 (if tree height is reduced by 10% wind-load is reduced by approximately 20%).

Since PBA Consulting Solutions and Wokingham Borough Council's Trees and Landscape Team Manager agreed that a 30% reduction was suitable in 2020, a further 30% reduction feels like a sensible starting point – albeit where a percentage is open to interpretation (of height/dimensions, crown area or foliage-bearing branches??). A 30% height reduction (which equates to 5.7m), would bring about a 60% wind-load reduction and leave a final post-pruning height of just over 13m. This would cost somewhere in the region of £1500, result in excessively large pruning wounds of around 20cm diameter (contrary to best practice), have a significantly detrimental impact on amenity value and could trigger a further spiral of physiological decline.



The visual appearance of an approximate 30% height reduction

5. Frank Rinn. *How much pruning is needed for a specific wind-load reduction*? Western Arborist (Spring 2014)

5.3 A lesser height reduction of say 15% would equate to a 30% reduction of wind-loading and leave a post-pruning height of just over 16m. This would still however remove much of the outer crown and leave large pruning wounds contrary to best practice, together with further costs towards continued monitoring, re-assessment and either more pruning or inevitable felling and replacement planting further down the line – not to mention continued safety concerns for the occupiers of the surrounding target zone (house, patio and lawn).

5.4 Sustainable tree management has to consider the balance of cost over benefit. Felling and replacement planting would likely cost in the region of £2000, be 100% effective in terms of permanently remove the risk of this tree and enable replacement planting for long-term mitigation and canopy succession. A replacement tree could take about ten years to start providing visual impact but would then, in principle, live for at least another 250-300 years.

6. Conclusions and recommendations

6.1 The subject tree has significant basal decay and hollowing (c70%) such that its structural integrity is compromised and the QTRA calculation has resulted in the tree presenting an unacceptable risk of harm if no action is taken.

6.2 Further crown reduction might be effective for anywhere between 3-8 years. Even then, concerns would remain for the residents during storm force winds and gusting conditions. Or it could be felled, which would be 100% effective and enable replacement planting for long-term mitigation and canopy succession.

6.3 Considering the particular wood decay fungi and its inevitable progressive nature, I anticipate that this tree has a useful life expectancy of no more than 15 years, even with further crown reduction. Therefore, on balance I consider that retention would be a false economy and that felling and replacement planting within the next 6 months is the more prudent and sustainable option. This part of Wokingham has good canopy cover and the resulting impact to the local landscape and wider amenity will be minimal and relatively short-term.

6.4 A protected tree work application will need to be submitted to Wokingham Council and their consent granted before carrying out any work.

16th December 2025

Jasper Fulford-Dobson FArborA, CEnv
Arboricultural Association Registered Consultant

APPENDIX I

Quantified Tree Risk Assessment (description of risk thresholds)

What is Quantified Tree Risk Assessment?

A Non-technical Summary

Tree safety management is a matter of limiting the risk harm from tree failure while maintaining the benefits conferred by trees. Although it may seem counter intuitive, the condition of trees should not be the first consideration. Instead, tree managers should first take account of the usage of the land on which the trees stand, which in turn will inform the process of assessing the trees.

The Quantified Tree Risk Assessment (QTRA) system applies established and accepted risk management principles to tree safety management. Firstly, the targets (people and property) upon which trees could fail are assessed and quantified, thus enabling tree managers to determine whether to assess trees and to what degree of rigour a survey or inspection of the trees is required. Where necessary, the tree is then considered in terms of both size (potential impact) and probability of tree or branch failure. Values derived from the assessment of these three components (target, size and probability of failure) are combined to calculate the probability of significant harm occurring.

The system moves the management of tree safety away from labelling trees as either 'safe' or 'unsafe' and requiring definitive statements of tree safety from either tree surveyors or tree managers. Instead, QTRA quantifies the risk of harm from tree failure in a way that enables tree managers to balance safety with tree value and operate to predetermined risk thresholds.

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QTRA risk threshold	Thresholds	Description	Action
Quantified Tree Risk Assessment advisory risk thresholds, based on scores and calculations of target, impact and probability of failure (that the tree or branch will fail within the coming year).	<1/999	Unacceptable – risk will not ordinarily be tolerated.	Control the risk.
	1/1k	Unacceptable (where imposed on others) – risks will not ordinarily be tolerated.	i) Control the risk ii) Review the risk
		Tolerable (by agreement) – risks may be tolerated if those exposed to the risk accept it, or the tree has exceptional value	i) Control the risk unless there is broad stakeholder agreement to tolerate it, or the tree has exceptional value ii) Review the risk
	1/10k	Tolerable (where imposed on others) – risks are tolerable if *"as low as reasonably practicable"*.	i) Assess costs and benefits of risk control ii) Control the risk only where a significant benefit might be achieved at reasonable cost iii) Review the risk
	1/1m	Broadley acceptable - risk is already *"as low as reasonably practicable"*	i) No action currently required ii) Review the risk