

HAMBLETON DISTRICT COUNCIL

Report To: Planning Committee
24 May 2012

Form: Head of Regulatory Services

Subject: **HAMBLETON DISTRICT COUNCIL (AISKEW) TREE PRESERVATION ORDER
2012 No. 3**

Bedale Ward

1.0 PURPOSE AND BACKGROUND

1.1 The purpose of this report is to inform the Planning Committee of objections to the making of provisional TPO No. 2012/3 at land adjacent to 70 Bedale Road, Aiskew; representations received in support of the Order and for the Committee's decision whether to confirm the Order.

1.2 On the 3 March 2012 the Council was alerted to the fact that an oak tree on land adjacent to 70 Bedale Road, Aiskew was about to be felled. An immediate Tree Preservation Order was made and served to protect the tree which is deemed to have high amenity value.

1.3 An objection to the making of the Order has been received together with a number of representations in support of the Order.

2.0 DECISIONS SOUGHT

2.1 To confirm TPO 2012/3 in respect of the oak tree, T1, as shown on the plan accompanying the provisional Tree Preservation Order, attached as Annex 1, following the consideration of objections and comments received.

3.0 LINK TO CORPORATE PRIORITIES

3.1 There are no links in this case.

4.0 RISK ASSESSMENT

4.1 The risk is that if the TPO is not confirmed the tree will be felled to the detriment of the visual amenity of the area.

5.0 FINANCIAL IMPLICATIONS AND EFFICIENCIES

5.1 There are none in this case.

6.0 LEGAL IMPLICATIONS

6.1 The general purpose of a TPO is to protect the character and amenity of the area. A TPO may prohibit the unauthorised cutting down, lopping, uprooting, wilful damage, or wilful destruction of trees.

6.2 The effect of confirming a TPO is to make unlawful any actions referred to in the TPO.

- 6.3 Following confirmation of a TPO an application can be made to the Local Authority for consent to carry out works on the tree (including cutting it down). If the Local Authority refuses the application for consent the applicant has a right of appeal to the Secretary of State.
- 6.4 In certain limited circumstances (e.g. where the tree is causing damage to the applicant's property) the applicant may make a claim for compensation for any loss or damage suffered as a result of the refusal to grant consent. This is limited however to damage that was reasonably foreseeable when the application was made.
- 6.5 If the claim for compensation is refused by the Local Authority, or the level of compensation offered is disputed, the applicant has a right to appeal to the Lands Tribunal for determination.

7.0 SECTION 17 CRIME AND DISORDER ACT 1998

- 7.1 None relevant in this case.

8.0 EQUALITY/DIVERSITY ISSUES

- 8.1 There are none relevant in this case.

9.0 OBJECTIONS TO THE TPO

- 9.1 John G. Hills, Chartered Surveyors, on behalf of the landowner, Sir Henry Beresford-Peirse has made the following representations:

“As a result of your correspondence, we commissioned Barnes & Associates, independent arboricultural consultants, to review the condition of the oak tree both in terms of its amenity value but more importantly its stability. The tree is showing clear signs of having significant areas of decay which will affect the tree's stability. We would therefore question whether the mere presence of significant decay and fungal attack mean that the provisional Tree Preservation Order should be confirmed at all.

It is also noted from the report that within the central canopy, there are a series of stubs and branch tears indicating that the tree has suffered regular branch failures. Its visual amenity is therefore limited.

Importantly, the tree directly impacts on access into site BH2, identified as “Pig Farm, Aiskew” (1.1 ha) and which is allocated for residential development. This is one of three strategic sites off Bedale Road identified for development within Hambleton District Council's recently adopted Allocations Development Plan Document. The allocation specifies access off the A684 directly at the point where the tree is situated and has therefore clearly been considered by the Council as part of the allocations procedure which has now been formally adopted.

Therefore, our objection to the provisional Tree Preservation Order is twofold. First and foremost, the tree has stability issues, is suffering from significant decay and is under fungal attack. It has limited amenity value given that it is prone to branch failure, as a result of which the canopy has already been disrupted and is not particularly attractive. Secondly, it has always been envisaged as a result of the strategic allocation of site BH2 that the tree would be removed to facilitate access off the A684 as evidenced by the diagram BH2/BH3/BM2 on page 28 of the Hambleton Local Development Framework Allocations DPD December 2010. It is also the case that a considerable amount of tree planting and structural landscaping is envisaged as part of this strategic allocation which will comprehensively mitigate the loss of this single tree.”

9.2 The applicant has supplied further information. Annex 2 is a report from an arboricultural consultant, Barnes & Associates, prepared for the owner of the tree. The report indicates that a very thorough and scientific assessment of the tree has been undertaken. The tree is clearly an 'old' tree, age range late mature/veteran, and as such is showing signs of disease and decay. However, the report notes (page 8) that the decayed element is not affecting the tree's stability and indeed there is evidence of new growth strengthening the stem of the tree.

9.3 The report identifies that work to the canopy of the tree is required. It makes further comments that:

The management of such a tree typically needs to strike a balance between the risk offered to site users and the benefits offered. Management generally falls into 4 main types:-

1. Undertake no management, restrict access to the tree and allow nature to take its course.
2. Undertake moderate canopy remodelling to limit the wind and mechanical loading and maintain the tree as a smaller canopy.
3. Significantly reduce / remove the canopy, retaining the stem for habitat.
4. Remove the tree in its entirety.

The removal of the tree will offer the greatest improvement in safety and would typically be the most cost effective solution to the management of the site in the short term.

If, however, the retention of the tree is the preferred option in light of it having a relatively low potential for harm and having wide ranging environmental benefits, the following management options will help improve its chances of survival. The tree can be improved through a series of works which will help to improve the condition of the tree, whilst helping to reduce the risk. Generally, works to reduce the canopy to lessen the loading on the stem and remove the immediate defective material in the canopy need to be considered.

10.0 SUPPORT FOR THE TPO

10.1 Aiskew Parish Council:

- Support the Order
- Express concern the tree is under threat
- Tree contributes visually to the environment
- Wish the Order to be confirmed

10.2 Neighbours: 3 letters of support for continuing protection of the tree on the grounds that:

- The tree is a local landmark that should be preserved
- The only remaining oak in Aiskew
- Whilst requiring some sympathetic surgery the tree appears in good health

11.0 COMMENTS

11.1 It is clear that the tree has high amenity value. It is a prominent landmark in the local scene contributing to both the amenity of local residents and to the large daily volume of passing motorists. These views are clearly supported by local residents and the Parish Council.

- 11.2 The objections to the confirmation of the Order relate to two separate points. Firstly, the health of the tree and secondly, the location of the tree given its relationship to adjoining land allocated for development in the Local Development Framework.
- 11.3 It is clear from the applicant's own arborist that the tree has a relatively low potential for harm and has wide-ranging environmental benefits, notwithstanding the fact that it is currently showing some signs of disease. As such, there are no compelling grounds in respect of the health or safety of the tree that warrants its removal.
- 11.4 In relation to the second point, attached as Annex 3 is a plan of the allocated sites in Aiskew from the Local Development Framework (LDF). The tree sits on the piece of land between the A684 and the area shown as 1 in allocation BM2. This allocation relates to a mixed use development in Phase 2 (2016 – 2021) for retail, employment and community uses. In respect of access to the site there is reference only to the fact that 'suitable access being gained from the A684 for all purposes'. The plan does not specify at which point on the A684 access should be gained into the site.
- 11.5 At this point in time there is no requirement for this tree to be felled to meet the requirements of the LDF. There are a number of options for access and it could well be that this tree is not required to be felled. Nonetheless, if that situation did arise, Members are aware that a planning permission which includes the felling of a protected tree overrides the Tree Preservation Order.
- 11.6 In conclusion, whilst the long term retention of the tree remains in some doubt for both health reasons and future potential development, the threat is just that, in the future. As such, there are no compelling arguments to allow the felling of this tree at this point in time.

12.0 RECOMMENDATION

- 12.1 Due to the contribution to the visual amenity of the locality around 70 Bedale Road, Aiskew, it is recommended that the Tree Preservation Order 2012/3 be confirmed.

MAURICE CANN

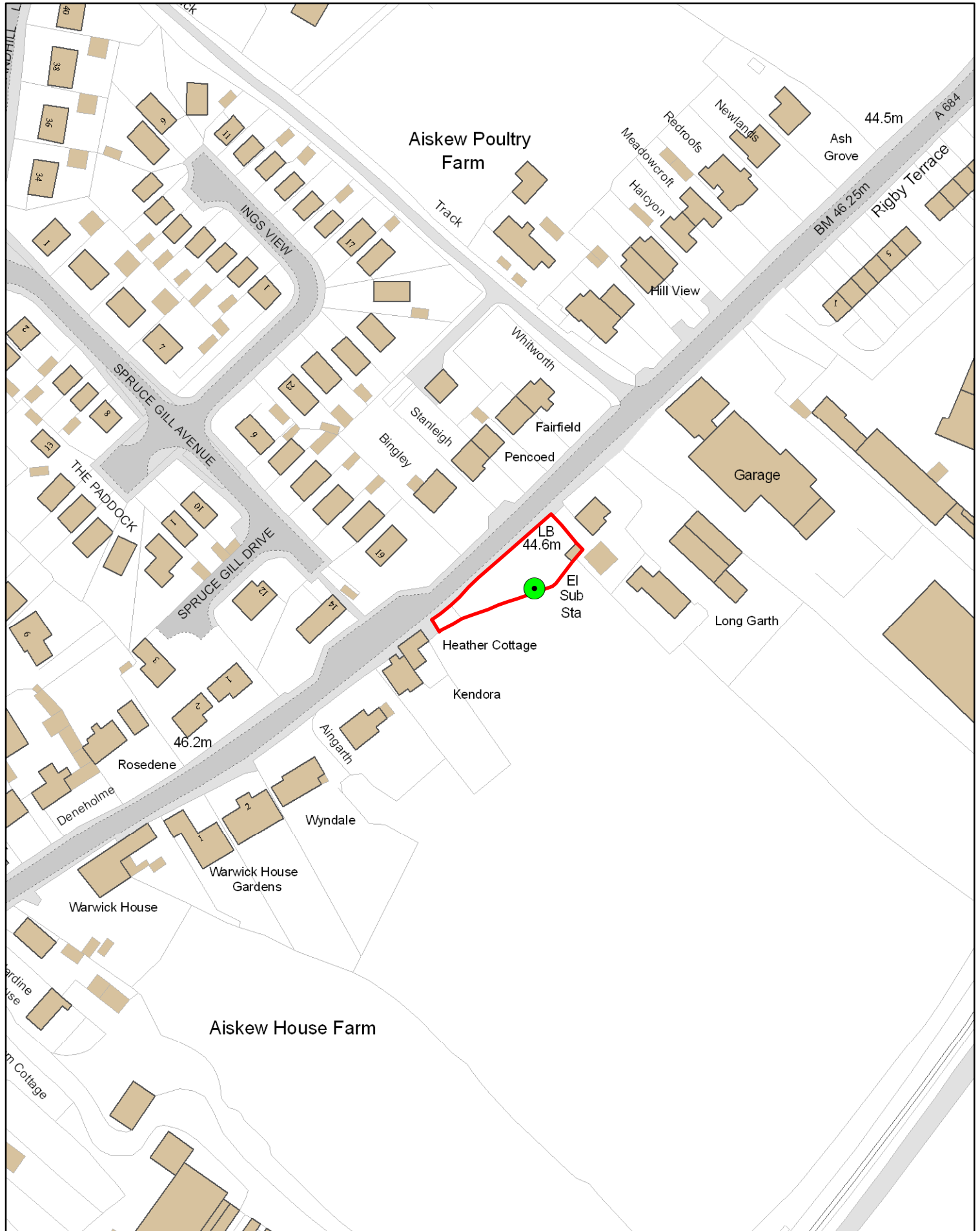
Background papers:

Response from John G. Hills
Report from Barnes & Associates
Parish Council response
Neighbour responses

Author ref:

MC
Maurice Cann
Head of Regulatory Services

Maurice.cann@hambleton.gov.uk
01609 767115





Rachael J Sunter
John G Hills FRICS
Chartered Surveyors
The Estate Office
Leyburn
North Yorkshire
DL8 5EW

Our Ref. BA3521.2

Date. 11/04/2012

Dear Rachael,

Re: ASSESSMENT OF OAK TREE AT AISKEW, BEDALE

Please find my assessment of the mature Oak located close to the southern boundary of the triangular paddock located to the west of Morpeth House and adjacent to the busy A684 as shown in the photograph opposite.



INTRODUCTION

This assessment is based upon visual assessment of the tree and the use of Sonic Picus Tomography (SOT), Electronic Impedance Tomography (EIT) and Thermal imaging (TI) to assess the internal condition of the tree and to identify the position / extent of colonised / decayed wood within the stem following a recent visual assessment.

Qualifications and experience: I have based this report on my site observations; I have come to conclusions in light of my experience. I have experience and qualifications in arboriculture and list the details in Appendix 1.

The Terms of Reference: This assessment is based upon a ground based visual assessment of the tree and a detailed assessment of the main stem using Thermal imaging, Sonic Tomography and Electrical Resistance Tomography.

Documents and information provided: Written instructions to report.

Scope of this report: This assessment is principally concerned with the extent of decay within the main stem, in addition to an appraisal of the trees general stability and safety.

Assessment of the potential influence of trees, upon buildings or other structures resulting from the effects of trees upon shrinkable load bearing soils is excluded from this assessment.

The Terms of Reference: This report is based on Visual Tree Assessment (VTA) methodology, as devised by Mattheck (1993) in addition to Hazard Evaluation devised by Matheny & Clark (1993). Guidance is also taken from Lonsdale (1999) Principles of Tree Hazard Assessment and Management and Sterken (2005) A Guide for Tree-Stability Analysis.

Duration of validity: The statements made in this report do not take account of the effects of extremes of climate, vandalism or accident, whether physical, chemical or fire. Barnes & Associates 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. The authority of this Report ceases at any stated time limit within it, or if none stated after two years from the date of the survey or 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.

Reasonable risk management generally aims to provide trees that can be regarded stable in a normal / foreseeable, storm event. I have included further general information upon the Risk Management of trees in Appendix 2.

SITE VISIT AND OBSERVATIONS

Date of Assessment: 10th April 2011

Assessment Methods: The assessment of the stem was undertaken from the ground, specific heights are provided in the individual assessments below. The height of the tree was measured using a clinometer. Where possible the canopy is measured using a measuring wheel or fabric tape from the centre of the stem, where access to the full canopy is not possible I estimate the dimensions.

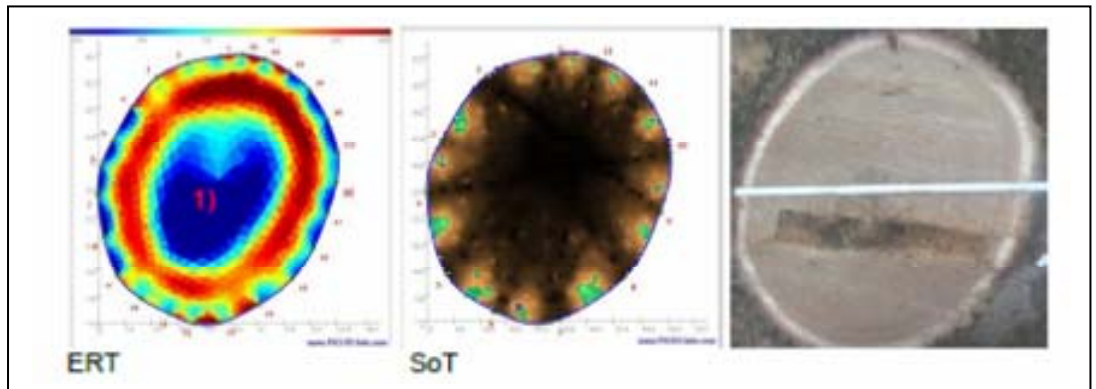
Internal assessment of stems was undertaken to quantify the extent and quality of retained wood, which helps to identify regions that have normal appearance versus areas that have structural defects such as cracking or hollow sections or have been colonised and altered by fungal activity. Assessments are undertaken using various methods that can test different properties of wood and provide an insight into wood quality. The methods of assessment used on site are detailed below:-

Picus Sonic Tomography (SOT) : This is a non-invasive tool for assessing decay in trees. It works on the principle that sound waves passing through decay move more slowly than sound waves traversing solid wood. The Picus sends sound waves from a number of points around a tree trunk to the same number of receiving points, the relative speed of the sound can be calculated, and a two-dimensional image of the cross-section of the tree, 'a tomogram', can be generated. Using the differences in the transit times between each pair of sensors, the Picus analysis software constructs a two-dimensional picture (acoustic tomogram), which show zones of differing sound transmission properties within the stem. These zones are colour-coded, so that intact wood is shown as brown, slight degradation as green, moderate degradation as violet and advanced degradation / hollow as blue. The (Picus) Sonic Tomography gives valuable density information about the trees. The density strongly correlates with the soundness of the wood. This is very useful to assess the stability of the tree. In some situations the sonic investigation is interfered with by the internal structure of the wood. In particular circular cracks and star shaped cracks which can interfere with the sonic measurement.

Picus Electrical Resistance Tomography (ERT), gathers chemical information about the wood such as water and/or ion concentration. The electrical resistivity or its reciprocal, the electrical conductivity, is a physical property that provides information about the internal condition of the stem. This determines the spatial resistivity distribution in a non-destructive

way. Low resistivity can identify increased moisture content, whereas hollowed structures cause increases in observed resistivities. The measurement uses point-like electrodes (nails) that are attached to the tree just below the bark and a current is generated. The resulting electric field depends on the resistivity distribution and is measured using the other electrodes to obtain a potential difference (voltage). After collecting all the measurements the reconstruction of the resistivity distribution is carried out. The model can be displayed in the form of a coloured distribution plan for analysis as shown in figure below.

Figure 1- The typical output of ERT & SOT for a sound Oak stem.



Thermal Imaging Camera (TIC), produce Thermal Images, or **thermograms**, are actually visual displays of the amount of infrared energy emitted, transmitted, and reflected by an object. Because there are multiple sources of the infrared energy, it is difficult to get an accurate temperature of an object using this method. A thermal imaging camera is capable of performing algorithms to interpret that data and build an image. Although the image shows the viewer an approximation of the temperature at which the object is operating, the camera is actually using multiple sources of data based on the areas surrounding the object to determine that value rather than detecting the actual temperature. When the tissues of the wood or bark are altered or destroyed by physical actions or pathogens their heat holding properties are changed. This in turn alters the amount of heat that is emitted from the surface. As a result, cooler areas appear at the surface that is associated with the altered or destroyed tissues below the surface. Warmer areas can be interpreted as being associated with healthy tissues and cooler areas can be interpreted as being associated with altered or destroyed tissues. When dead tissues are close to the surface they become superheated (they retain heat above ambient air temperature) if they are heated directly by the sun (on the South side of the tree) or heat is trapped when a large area of dead wood is heated but covered by small amounts of living tissue. This can also lead to temperature inversion warmer areas indicate decay, cooler areas indicate small amounts of healthy tissues. This is common when over 80% of the wood is dead but is not fully decayed.

TREE ASSESSMENT

Tree Species: Oak

Mean Height: 15.5m

Height to Canopy: 2m

Stem Diameter: 970mm

Canopy average radius:

N: 9.2m, **S:** 7.7m, **E:** 6.8m, **W:** 7.8m,

Age Range: Late Mature / Veteran

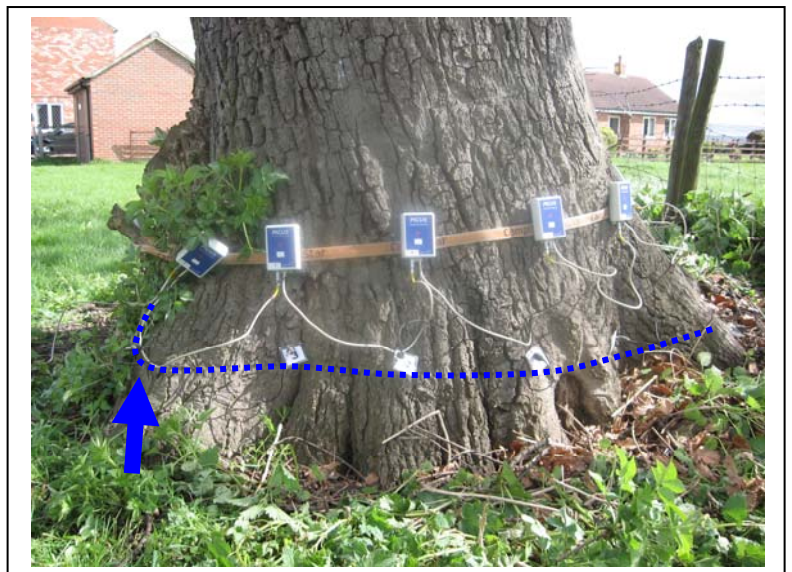


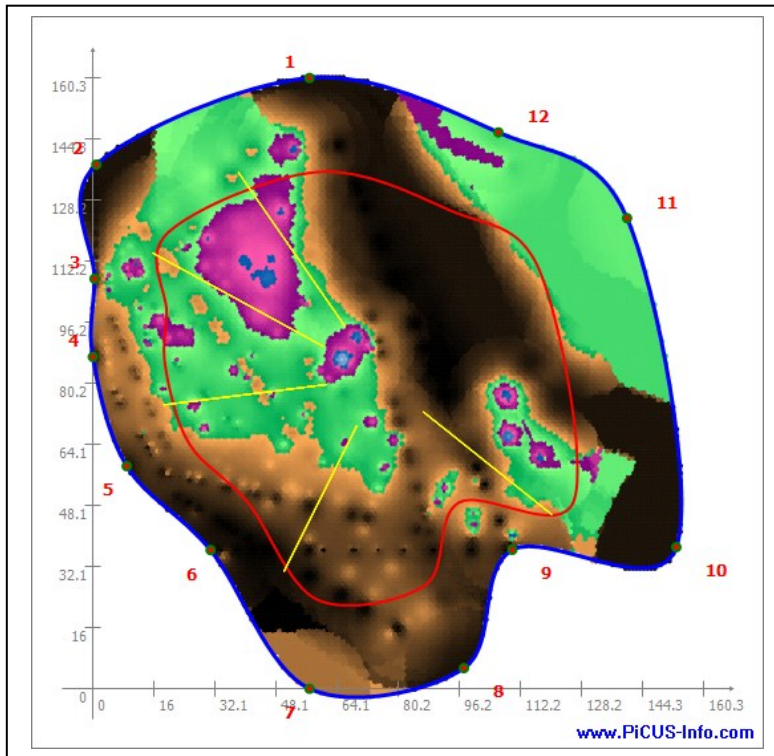
Comments: The tree is located within a regularly maintained grass paddock with grassed pasture to the south.



A number of dead branches were stacked against the southern face of the tree and the barbwire boundary fence. The loose branches were removed to give access, exposing a longitudinal wound on the south western face of the main stem which extends from ground level to roughly 1.3 metres above ground level as indicated by the red arrow on the photograph opposite.

The sonic assessment was undertaken at 250mm above ground, indicated by the blue dotted line on the photograph below; the blue arrow shows the position of Sensor 2.



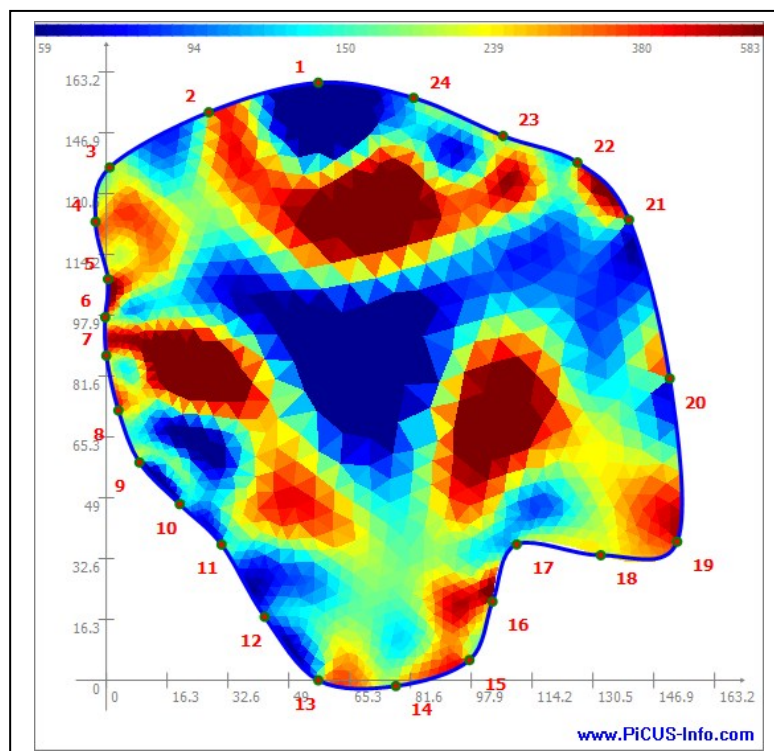


The results of the Sonic Tomography are shown opposite. This Tomograph indicates that the stem has undergone significant alteration indicated by magenta areas, showing the areas where sound propagation has been restricted.

The green area indicates that the surrounding wood is undergoing early stage fungal colonisation with early stage limitation of the sound signal.

The brown areas represent the better quality sections of wood which are unlikely to be affected by fungal activity at the current time.

In addition to the decayed sections the tree is affected by a series of radial cracks that are indicated by the yellow lines on the image above, these are a relatively common feature on this species in this region and not expected to relate to the trees stability.



The extent of significantly decayed wood is close to and in some areas the inner red line, which represents the typically accepted safe limit of hollowing within a stem.

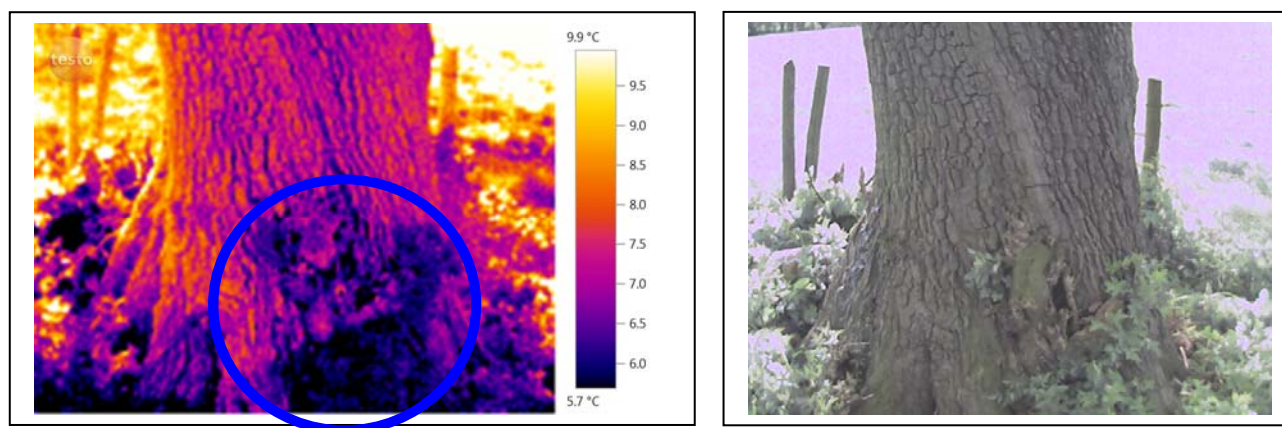
To get a better understanding of the stem characteristics a second assessment using ERT was undertaken at the same location as the sonic assessment, this is shown in the tomogram below.

The results show the tree to have areas of high resistance in the areas indicated red. In the outer stem areas of low moisture are present as the sap flow is restricted in relation to localised root damage or early stage vascular dysfunction.

The central stem shows signs of localised drying out of the wood as the fungi begins alter the internal humidity of the wood to meet its own requirements, this is assumed to be the area of greatest fungal activity.

This tomography aligns reasonably well with the sonic results showing the stem and its internal defences which have been breached, and are altering the normal moisture distribution pattern.

In addition to the assessment of the internal condition I undertook an assessment of the trees lower stem by means of a thermal imaging camera to identify alterations in the temperature distribution on the trees stem.



The above thermogram shows that the northern face of the stem has a distinct cooler area in the central lower section within the blue ring. This shows an area of dysfunction in the vessels which has restricted sap flow limiting the heat distribution between the SOT sensor points 1 & 2.

Conclusion: The results of the Tomography & Thermal Imaging align well with the visual assessment of the tree, which show that the buttress and lower stem have a significant area of decay, which in time can be expected to affect the trees stability.

The internal assessments indicate that the colonised area has in places breached the normal safe limits. In addition to this internal physical barriers normally initiated by trees as part of their defence appear to have been breached indicated by the lack of a distinct

radius showing a sudden change from affected wood to sound wood along a recognisable line.

At the current time the decayed element does not appear to have colonised a sufficient volume of the stem cross section to affect the trees stability.

Visual Assessment: In addition to the internal assessments I carried out a brief ground based visual assessment.

A section of a partially decayed fruiting body was found on the decay section of root below sensors 7 & 8. The fungus found around the base of the tree was fully degraded making a precise identification impossible. However, in light of the species producing an annual fruiting body, being located close to ground, being found on oak and fruiting during the summer and occasionally attached to the tree by a stalk I would suggest that the decay is most likely **The Eiffel Tower Bracket** (*Inonotus dryadeus*). Alternatively, it could in theory be the **Lacquered Bracket** (*Ganoderma lucidum*) which is regarded as rare in the British Isles and can be confused with the closely related species (*Ganoderma resinaceum*) which confusingly often is referred to by the same common name of Lacquered Bracket.

All these species are noted as being species that affect the base of tree stems buttress and roots through their action of white rot. This can affect both heart woods and breach into the sapwood leading to ductile fracture, root and stem fracture & wind throw. Ideally the tree should be re-assessed in late summer to confirm the species of decay fungi involved which can have a marked difference to the rate and extents of the decay on the tree.

At the current time the tree appears relatively vigorous it is expected that the stem will continue to develop at and should lay down new wood that could strengthen the stem, though it is difficult to quantify the rate at which this process will occur until the precise fungi can be identified.

Within the central canopy, there are a series of stubs and branch tears indicating the tree has suffered regular branch failures, typically this is associated with high end loading or changes within the internal wood hydrology affecting the wood flexibility.

Within the outer canopy of the tree the northern canopy has a significant asymmetry which can be expected to affect both the wind loading and so in turn the mechanical loading within the supporting branches.

The current canopy form does suggest that the tree is prone to branch failure.

Recommendations: At the current time the tree offers a slightly elevated risk to site users through an increased potential of the stem to fail at the base during extreme weather compared to a sound trees.

In addition to this the imbalanced canopy does suffer from high loading on a number of the main branches. This risk is expected to increase over time unless intervention pruning can be undertaken.

The management of such a tree typically needs to strike a balance between the risk offered to site users and the benefits offered. Management generally falls into 4 main types:-

1. Undertake no management, restrict access to the tree and allow nature to take its course.
2. Undertake moderate canopy remodelling to limit the wind and mechanical loading and maintain the tree as a smaller canopy.
3. Significantly reduce / remove the canopy, retaining the stem for habitat.
4. Remove the tree in its entirety.

The removal of the tree will offer the greatest improvement in safety and would typically be the most cost effective solution to the management of the site in the short term.

If however the retention of the tree is the preferred option in light of it having a relatively low potential for harm and having wide ranging environmental benefits, the following management options will help improve its chances of survival.

The tree can be improved through a series of works which will help to improve the condition of the tree, whilst helping to reduce the risk. Generally, works to reduce the canopy to lessen the loading on the stem and remove the immediate defective material in the canopy need to be considered.

The short term safety of the tree can be improved through a combination of pruning to reduce the loading on the canopy, in addition to works to improve the trees growing conditions.

Works to help maintain the tree would broadly need to include:-

1. Assessment during the late summer to identify the fungal species associated in the decay of the main stem and buttress.
2. Assuming this is a less aggressive species and the retention of the tree is required the overall height of the canopy and the spread of the northern canopy would need to be initially reduced, in addition to reducing the canopy imbalance in the northern canopy, further ongoing reductions to retrench the tree overall will also be required, I have provided general details in Appendix 4.
3. Ideally the root zone should closely mimic the conditions found in a woodland by the removal of the existing grass/ surfacing. The exposed soil should be covered with a thin layer (15mm to 20mm) of very well composted organic material, I have included details in Appendix 3.
4. The condition of the tree and its internal condition should be reassessed on a regular basis to assess the trees response to works and to identify any alteration in fungal activity ideally the next assessment should be undertaken in 24 months to enable a comparison with the current findings.

Other works to help stabilise the tree could be considered, such as the provision of additional supports, please feel free to contact me if these are of interest.

OTHER CONSIDERATIONS

If required, I can prepare a detailed breakdown of the works for tendering purposes. Works schedules can also be supplied including an appropriate technical specification for the various arboricultural and horticultural operations. Additionally, I can offer contract management, site meetings and follow up inspections if required.

You should ensure that any contractor employed for the above works is suitably qualified and experienced, familiar with current best practice and covered by current public, products and employee liability insurance, to an adequate level. Contractors

must also abide by all relevant legislation for health and safety including highway requirements.

All tree works must be carried out in accordance with BS3998 – 2010 – Recommendations for Tree Works, and or the European Tree Pruning Guide - European Arboricultural Council (English Version) though in strict accordance with current arboricultural best practice ensuring that any pruning works accord with current target pruning methodology.

Contractors must be fully conversant with current arboricultural best practice and adhere to all relevant legislation including the New Road & Street Works Act 1991 for works in proximity of highways, and The Working at Heights Regulation 2004.

Works should be planned to avoid times when birds are nesting, and be aware that a bat survey may be needed on significant tree hollows. There are thought to be 17 species of bat breeding in the UK and a number of additional species considered to be migrants, found in Britain, these are fully protected under Schedule 8 of the Wildlife and Countryside act (as amended) 1981 and the Conservation (Natural Habitats) Regulations 1994.

Trees subject to statutory controls: The above outline options for work are necessary from the point of safety and for reasonable management and are suggested to provide the best chance of the trees retention without the tree suffering branch failure and becoming a nuisance and therefore should be acceptable to interested parties. Should you require any further information please contact me at the office above.

Yours Sincerely



Ian Barnes HND Arb, F.Arbor.A, ND Ht/Arb Tech.Cert (Arbor.A), MI Hort, C.Env
Arboricultural Association Registered Consultant
Chartered Environmentalist
International Society of Arboriculture Certified Arborist

