



FORMAL INSPECTION OF 1 X COMMON BEECH (T284)

AT: Keymer Road,
Burgess Hill,
West Sussex,
RH15 0EG

CLIENT: Burgess Hill Girls School



PRODUCED BY: Vincenzo De Iacovo *BSc (Hons) MA ArborA*

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1 Introduction

1.1 Following an initial tree survey carried out by MJC Tree Services Ltd, in 2005, which identified a pathogenic fungus *Kreuzschmaria deusta*, on beech tree (tree no. T284), Vincenzo De Iacovo was instructed by Broadleaf Tree Services, on behalf of Burgess Hill Girls School:

- Visit Burgess Hill Girl's School, Keymer Road, Burgess Hill, West Sussex RH15 0EG.
- Carry out internal decay investigation a Common Beech (T284), on the front lawn of the school.
- provide a report commenting on the findings of the internal decay investigation and to make recommendations for management works.

1.2 Vincenzo De Iacovo inspected the tree on Thursday, the 28th August 2025. The findings are discussed within this report.

2 Report limitations

2.1 The tree was not climbed.

2.2 Trees are dynamic organisms which undergo structural and physiological change as they continue to grow, age, in response to changes in their local environment; therefore the findings of the tree survey cannot be fully relied upon after 12 months from the date of survey or after any significant changes to the tree's environment, which includes (but not limited to); construction pressures (e.g. soil compaction, damage to tree parts, root severance), significant weather events and changes to soil levels or water drainage patterns.

2.3 Detailed ecological considerations are beyond the scope of this report. UK and European wildlife legislation may affect the timing and even prohibit the enhancement of works and operations described in this report. Most of the information regarding wildlife can be found in the Wildlife and Countryside Act 1981 (as amended). It is recommended that consideration is given to the requirement for ecological surveys. Bats in particular are afforded particular protection and a specialist may be required to determine if bats are present or can be affected when carrying out tree works.



2.4 All rights in this report are reserved. No part of it may be reproduced or transmitted, in any form or by any means, or stored in any retrieval system of any nature, without our written permission. Its content and format are for the exclusive use of the addressee in dealing with this tree. It may not be sold, lent, hired out or divulged to any third party not directly involved with this site without the written consent of Vincenzo De Iacovo or the client.

3 Legal Liability

3.1 In England and Wales the owners or occupiers of land have a duty of care to take reasonable steps to minimise or prevent the risk of injury or damage to people or property arising from the presence, breakage or uprooting of any tree. This duty is defined in law by the Occupiers' Liability Acts of 1957 and 1984.

3.2 This duty of care has also been a consideration in several court cases concerning damage or injury caused by trees. Rylands v. Fletcher (1863) established that an owner is absolutely liable if he allows a dangerous article to escape from his land; Quinn v. Scott (1965) found that an owner can be found negligent if he or she has failed in this duty of care; and Solloway v. Hampshire County Council (1981) established that negligence depends on the foreseeability of damage or injury, and on whether the owner has taken reasonable steps to prevent it.

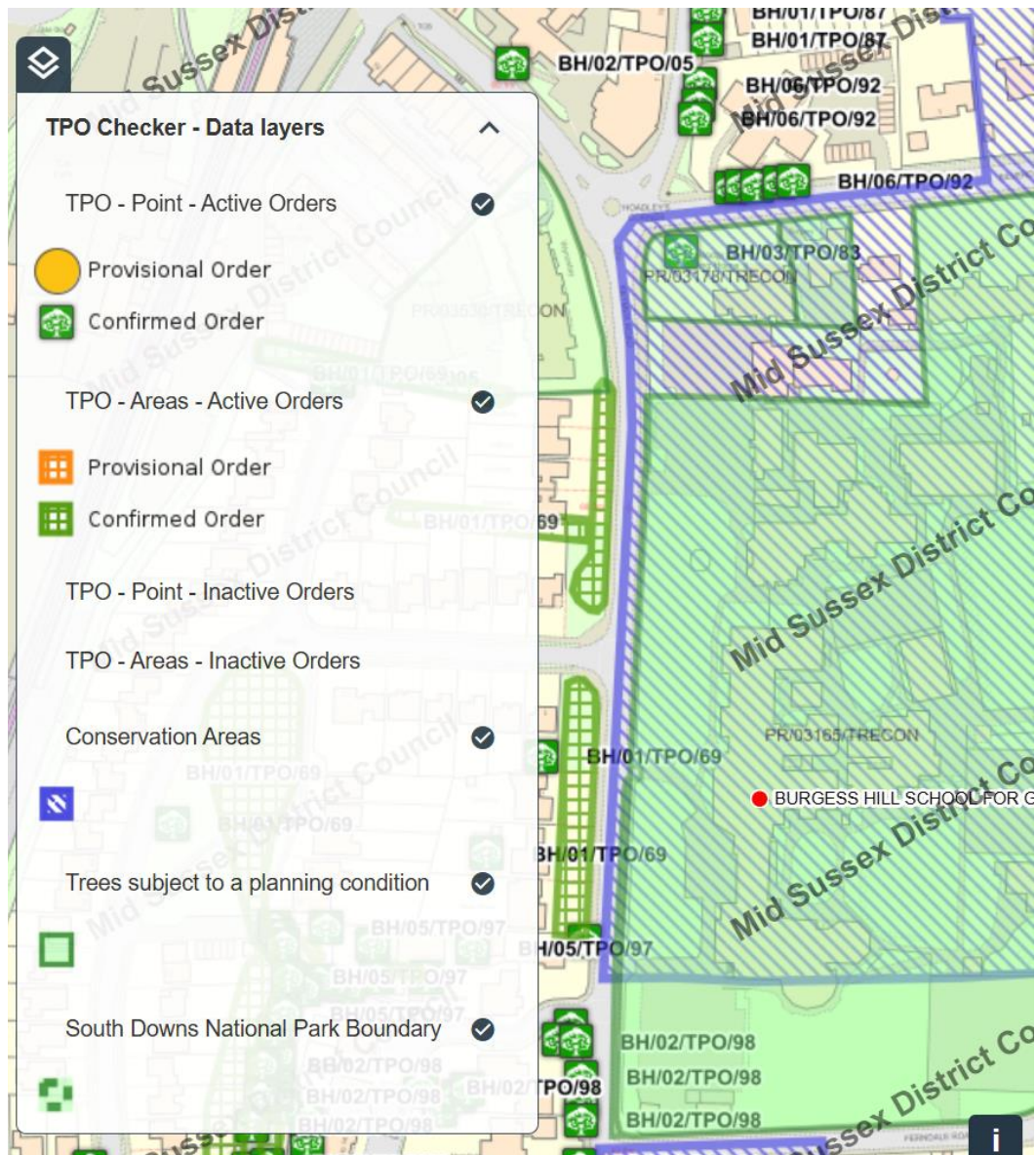
3.3 In instructing an Arboricultural Consultant to carry out this investigation the owner of this tree is going some way to meet his/her duty of care. However, the owner of this tree has a legal obligation to act on any recommendations made within this report. Failure to do this may lead to a claim of negligence should any part of the tree break and cause damage or injury.



4 Statutory tree protection and legal

4.1 The screen shot below was taken from the Mid Sussex Local Authority Website (accessed 05.09.25) shows that the site is within the Silverdale / Birchwood Grove Road Conservation Area.

4.2 The beech tree is not formally protected by Area Tree Preservation Order (TPO) Ref: 14/A6.



4.3 Any tree works (e.g. tree removal or pruning) recommended within the report will require approval by the Local Planning Authority.



5 Site details and tree location

5.1 Burgess Hill Girls School has been at its current location since 1928 and has expanded with demand on various occasions. It comprises of older (circa late 1800's and more moderns school buildings throughout the site. The site is within the Silverdale and Birchwood Grove Road Conservation Area. There are residential boarding properties within large Victorian dwellings on the south side of Silverdale Road and on either side of Glendale Road, abutting the school. Other large private dwellings are found on all other compass cardinal points around the school grounds. The beech tree is in a prominent position, being on the front lawn, adjacent on the west boundary of the school and visible from the public highway.

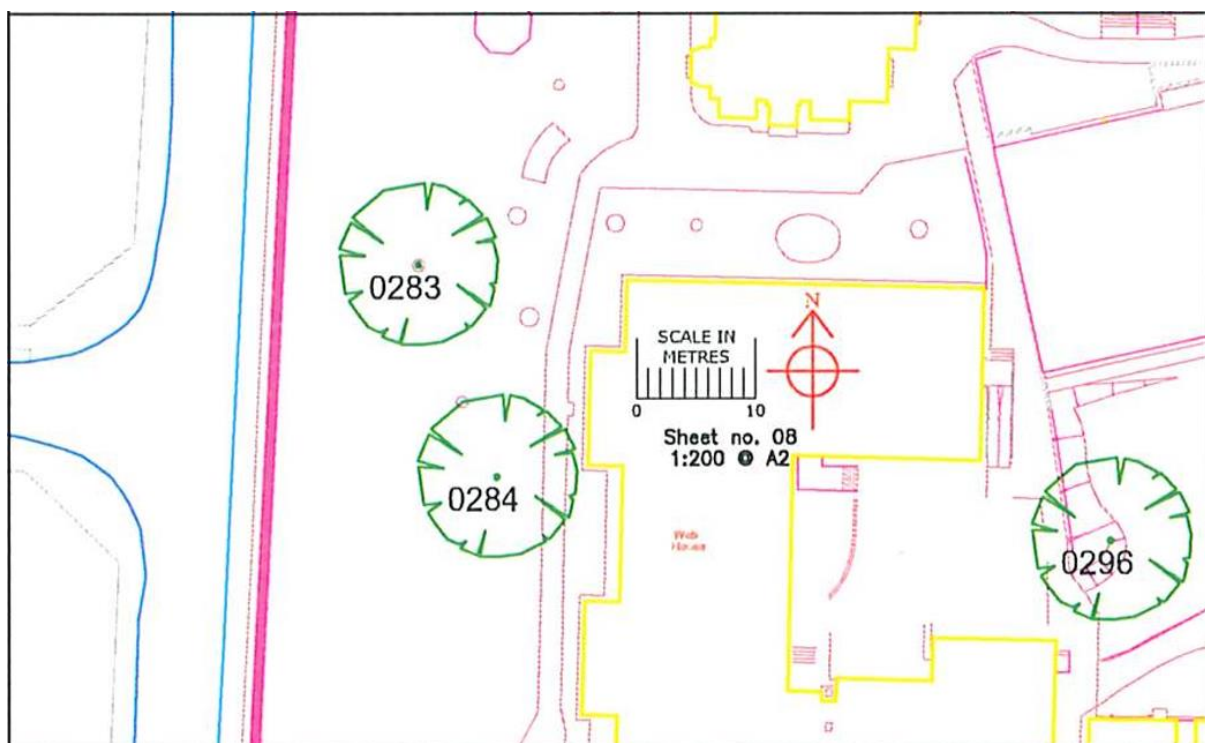


Figure 1 – Showing the location of the beech tree (T284).



6 Tree details

6.1 The tree is a mature purple beech (*Fagus sylvatica 'Purpurea'*), a photograph of the tree is shown below. It is a significant component of the landscape and easily visible from the public highway.

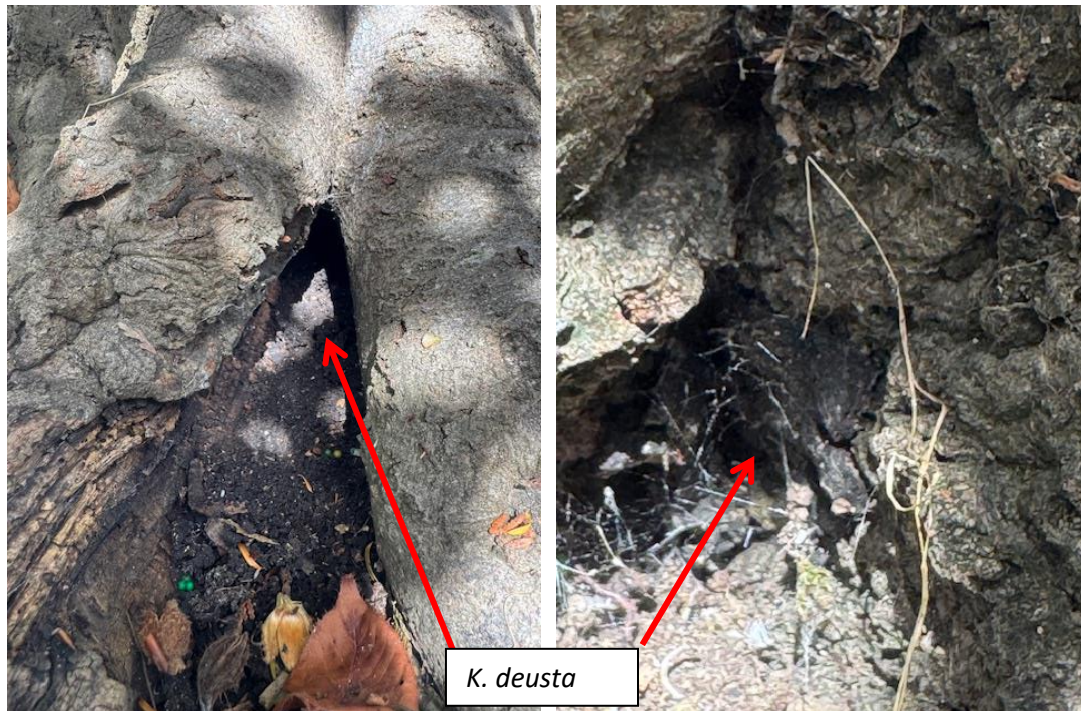


Photograph 1

6.2 The tree is 15 metres tall, with a trunk diameter of 810mm measured at root flare at approximately 300mm above ground level.



6.3 A survey conducted by MJC Tree Services Ltd in 2025, which identified numerous fruiting bodies of pathogenic decay fungus *Kretzschmaria deusta*, at the tree's base. The full results from this survey can be found by contacting MJC Tree Services Ltd.



Photographs 2a – 2b.



7 Methods

7.1 The decay fungus (*Kretschmaria deusta*) is primarily a root and basal decay fungus and as the decay fungus was found at the tree's base, this was the targeted investigation area.

7.2 Initially, suitable microdrill sites were identified during a brief walk-a-round the tree's base, their locations were recorded and entered into IML the Resi PD400 microdrill prior to testing. These positions selected are summarised in the table 1, below.

Table 1 – Showing the locations of all investigation sites.

Investigation number	Height above ground level (cm)	Cardinal points
Control	1.5m	N
1	1	N
2	1	E
3	1	SE
4	1	S
5	1	SW
6	1	NW
7	1.5m	S

7.3 The internal decay investigation was carried out using an IML RESI PD 400, predominantly at ground level or as close to ground level as possible.

7.4 A control measurement was taken at 1.5metres above ground level on the north side of the tree's trunk, away from the investigation area, to be used as a comparison with the base (the affected area).

7.5 All the microdrill investigation holes were marked with a blue Posca pen (see examples in the Appendix 2, Site photographs below).



8 Results and Interpretation

8.1 Several cardinal positioned microdrill samples points, of the suspected infected area, were designated at ground level and as close to ground level as could be accessed by the IML Resi microdrill in between the tree's buttresses. A control investigation was successfully taken at 1.5 metres, on the north side, away from the area of investigation.

8.2 Below are the images generated by the PD-tool Pro software. The readings are read from right to left, using the numbered scale at the bottom of the graph (0 – 40 centimetres). The data was analysed by the author and interpreted using a colour coded system, which can be found on both the top and bottom of the graphs below. The colour codes highlight the changes as the microdrill passes through the wood. The legend for the colour codes is found in the table at the bottom left of the image.

8.3 The graph shows two curves, the drill curve (green) and the feed curve (blue), to aid a more comprehensive assessment of the wood integrity.

8.3.1 The drill curve or drill resistance curve (green), shows the force required to rotate the drill as it passes through the investigation area.

8.3.2 The feed curve (blue) shows the force required to push the drill as it passes through the investigation area.

Table 2 Showing the control assessment carried out at 1.5m on north side of trunk..

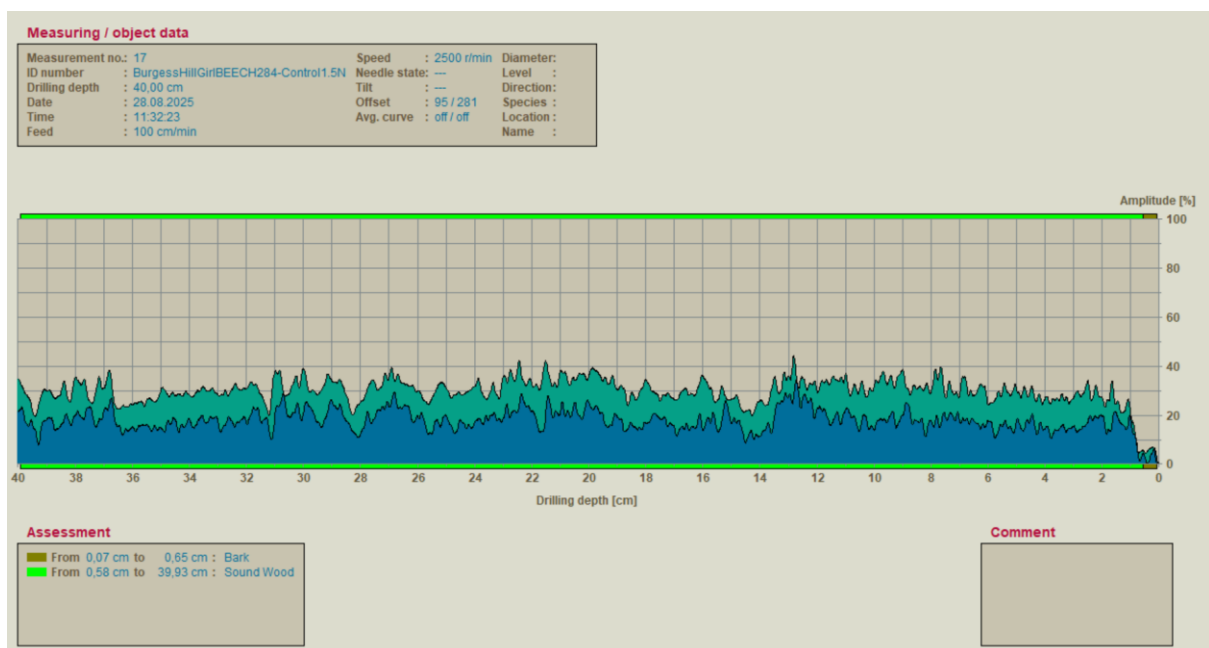




Table 3 - Showing the assessment carried out at ground level on the north side.

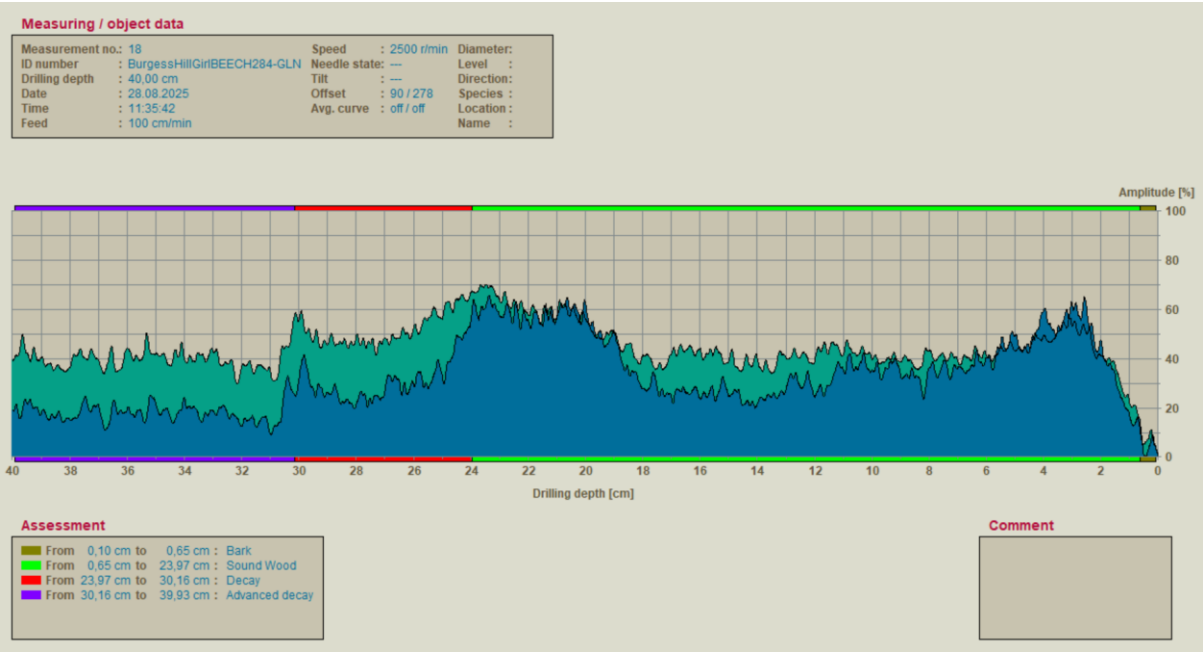


Table 4 - Showing the assessment carried out at ground level on the east side.

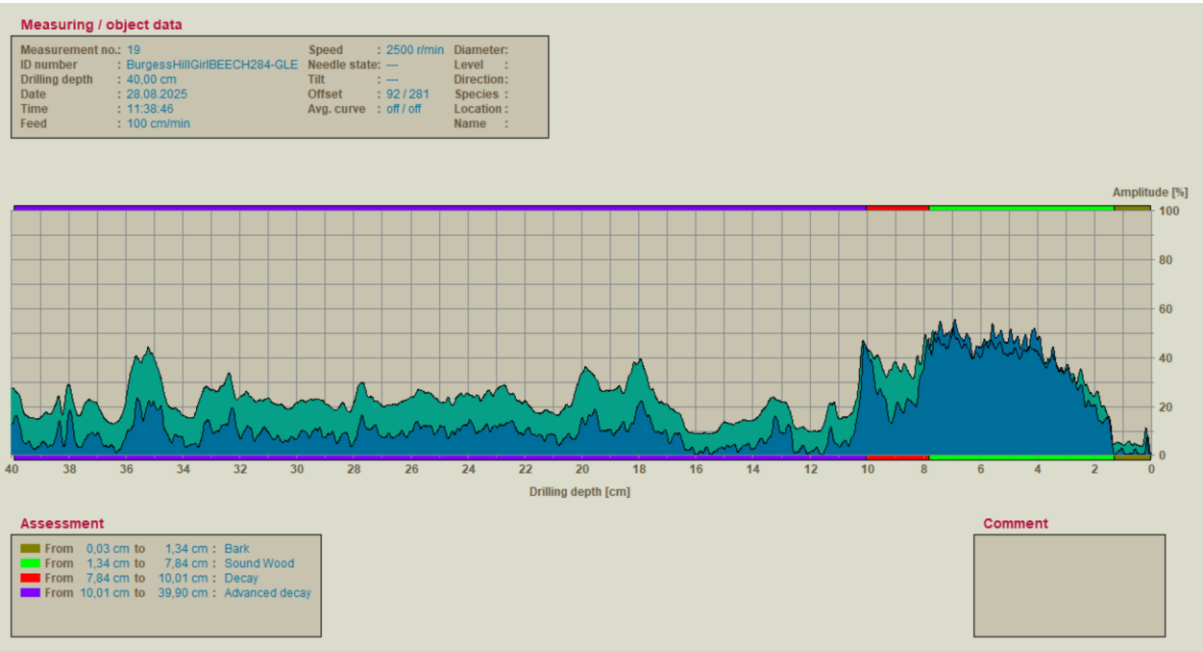




Table 5 - Showing the assessment carried out at ground level on the south-east side. NB needle auto retracted at 30cm.

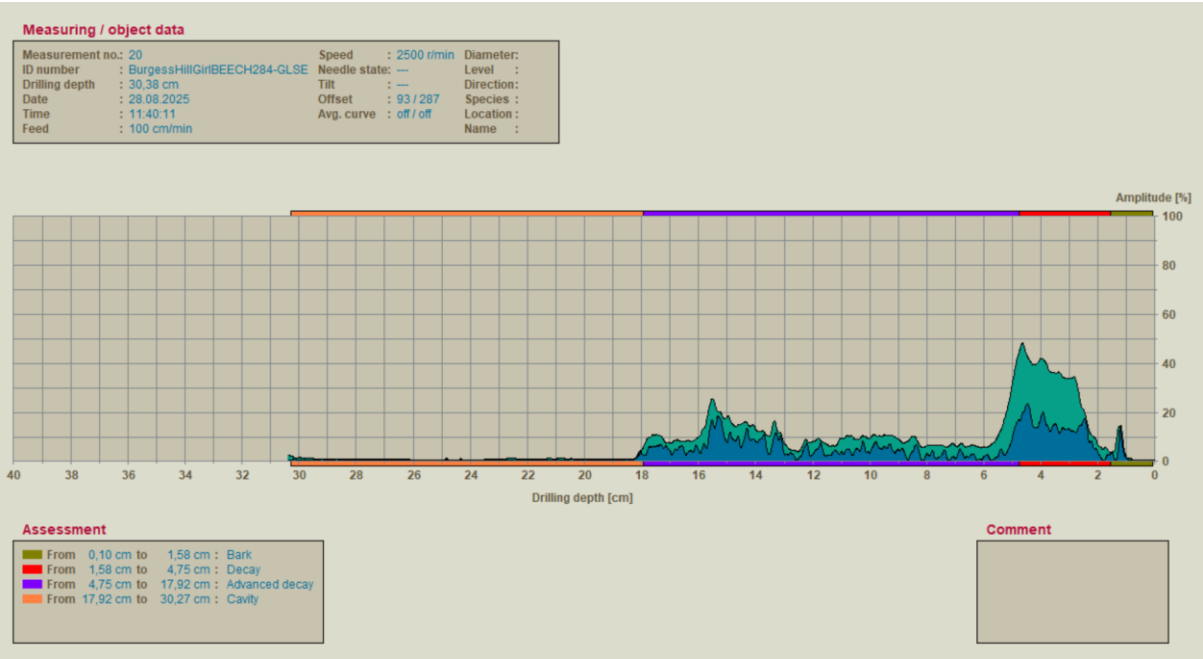


Table 6 - Showing the assessment carried out at ground level on the south side.

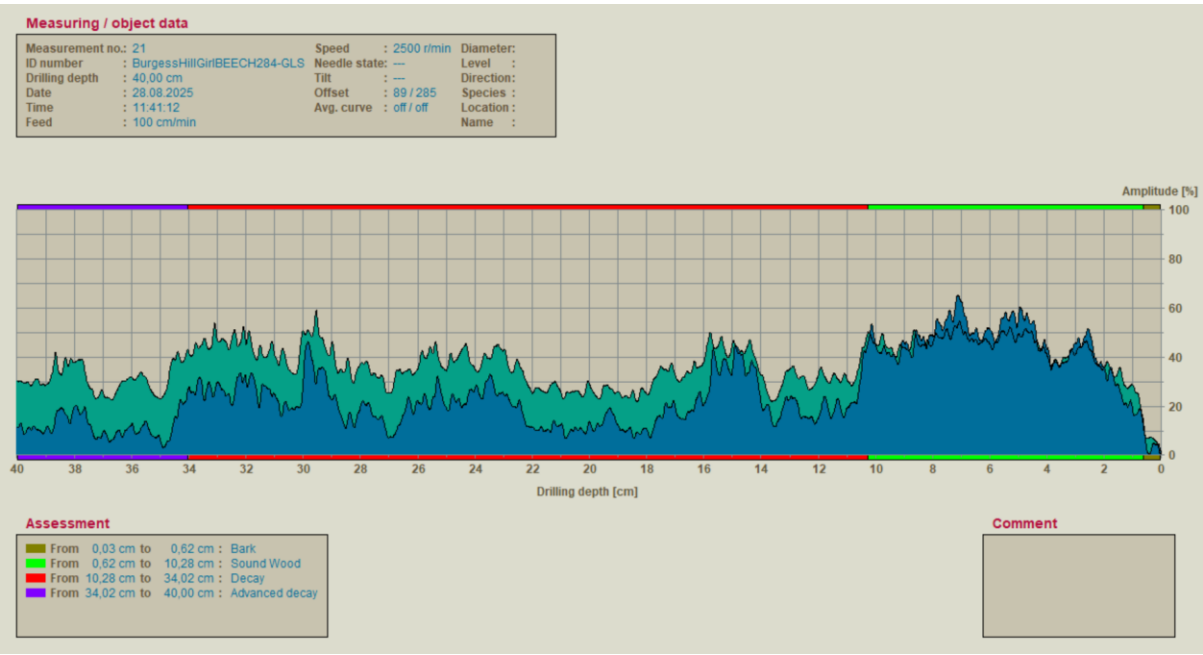




Table 7 - Showing the assessment carried out at ground level on the south-west side.

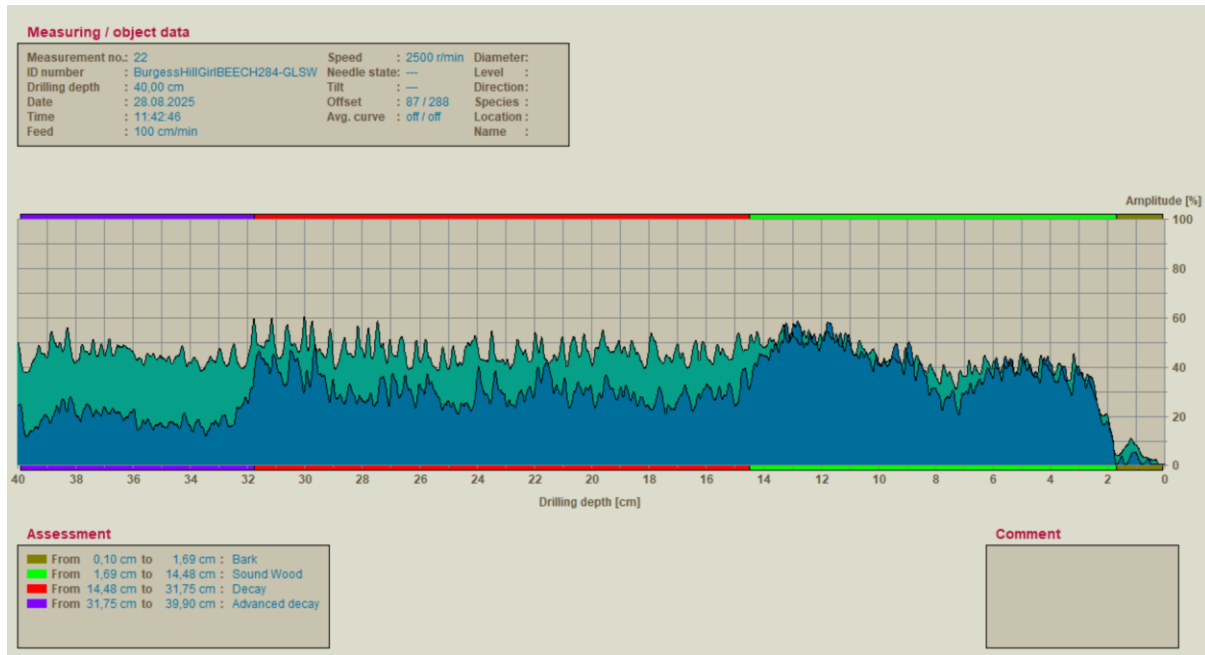


Table 8 - Showing the assessment carried out at ground level on the north-west side.

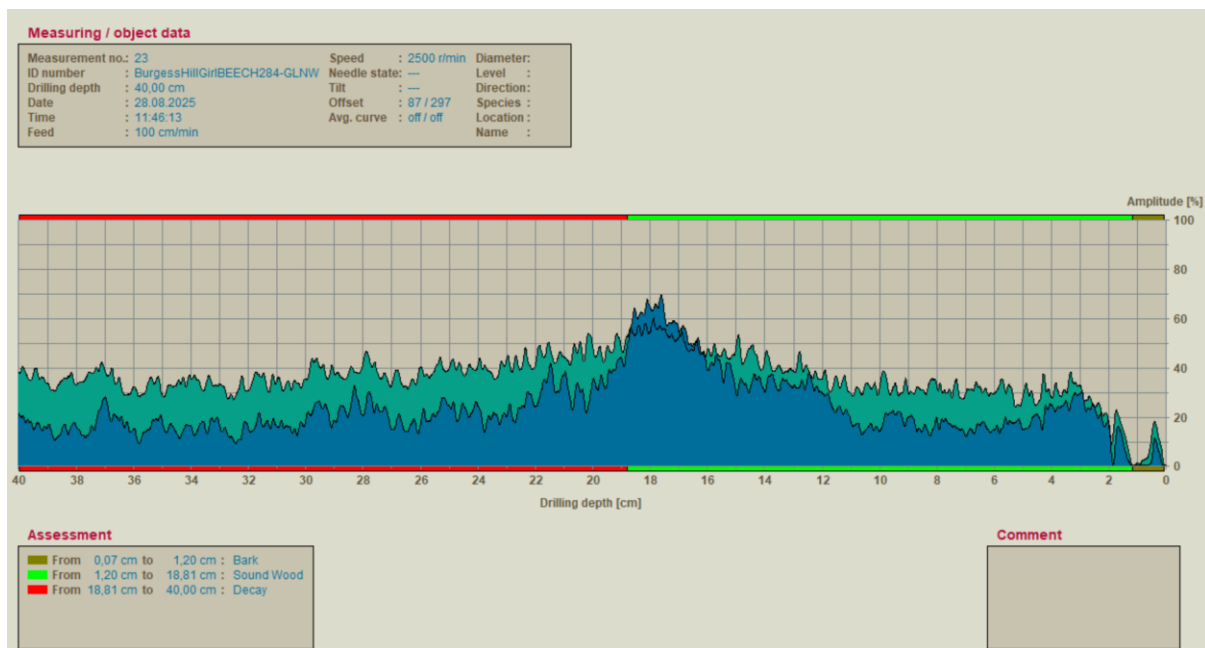
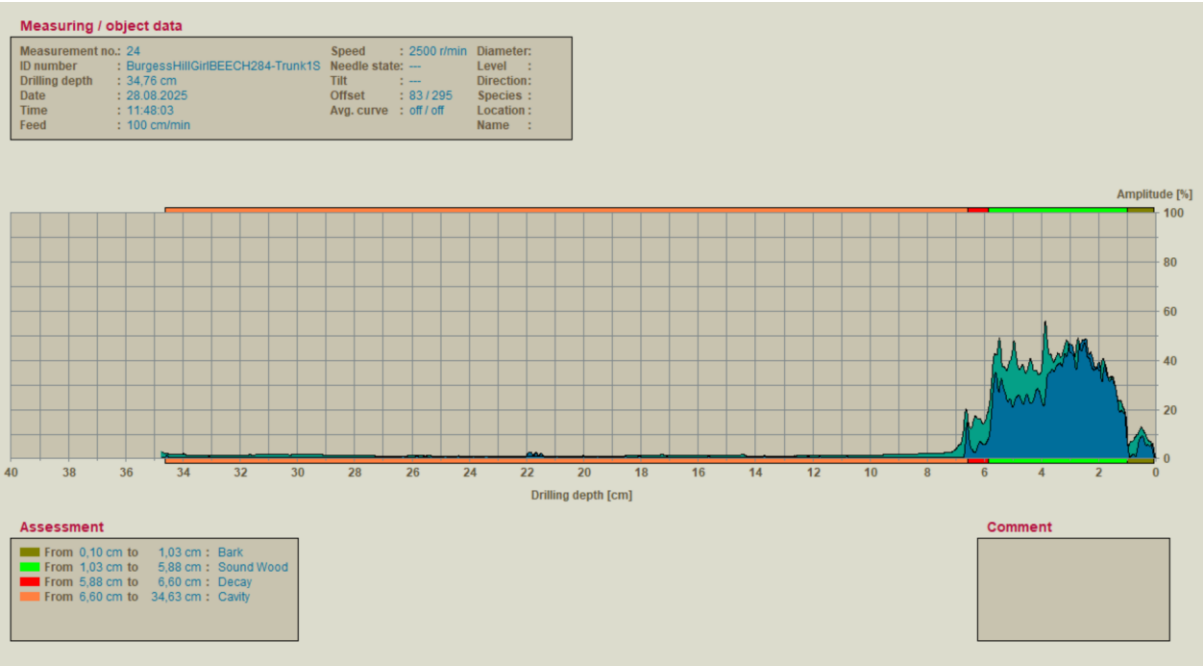




Table 9 - Showing the assessment carried out at 1.5m on south side of trunk. NB drill auto. retracted at 35cm.





9 Discussion

9.1 Pathogenic decay fungus *Kretzschmaria deusta* was visually identified at various locations at the base of the tree. This particular fungus is known to be a particularly dangerous decay fungus, due to the type of decay it causes. The decay starts as a soft rot of wood progressing in later-stages to a white rot, which reduces the strength of the tree. The decay can extend up the stem, as well as into the roots. Eventually the tree can succumb to windthrow.

9.2 The control showed consistent drill and feed resistance (see Table 2, in the results above), suggesting a uniform wood density throughout and is considered a good comparative control against other investigations carried out at the tree's base.

9.3 In most of the microdrill investigations (see tables 3, 6, 7 & 8, in the results above) there were areas where the wood integrity appeared evidently compromised, this is demonstrated by a clear reduction in both the microdrill's feed and drill resistance throughout each investigation. These samples were taken from various locations at the trees base, suggesting that most of the tree's base is affected by internal decay.

9.4 Most significantly, investigations carried out at the base on south-east side and another at 1.5 metres from ground level on the south side of the trunk clearly shows an internal decay cavity (see tables 5 & 9, in the results above). Note that the microdrill automatically retracted, as a safety precaution to prevent damage to the equipment.

9.5 The sound side was tapped with an acoustic hammer and there were significant differences in tone heard, particularly on the south side of the tree's trunk.

9.6 During the survey it was noted that the tree's crown showed obvious signs of stress, with crown sparsity and smaller than usual leaf size throughout its crown.

9.7 The tree is located on the front boundary of the main school building, on the west side of the school. The main footpath leading to the school's reception, from the car park is directly adjacent to the tree. If it were to fail, it could fall toward the school building or footpath.



9.8 Usual management options for trees in this condition are entire removal. Below is the discussion for removal rather than repeated pruning:

- **Repeated pruning**

By pruning the canopy, wind and mechanical loading will be maintained at a reduced level (as opposed to a tree with a full crown); however, this will be a repeated cost (every 3 to 5 years) and will not prevent the spread of decay. It can be argued that by pruning this mature individual, can cause the tree to be physiologically weaker due to the loss of photosynthetic area, aiding the fungus.

If the tree is to be retained it will require an excessive amount of crown reduction and continuous monitoring to ensure it is in a safe condition. Beech trees are known to respond poorly to crown reductions and are both susceptible to frost damage at pruning points if carried out in winter or leaf scorch and drought stress if carried out in summer. This can be further exacerbated by *Kretzschmaria deusta* being more virulent during times of drought.

The option to prune may allow the tree to be retained for the short term but it is unlikely that this approach will prevent the need for removing the tree in the medium term. Costs will include repeated pruning, regular risk assessments by an arboricultural consultant with monitoring of decay (detailed internal investigations), and the final cost of removal, which can be considered financially unreasonable.

Significantly crown reduction work, will have a significant detrimental effect on the tree's amenity value.

- **Removal**

Immediate removal; will be a one-time cost that will also remove the risk to the client's property, neighbouring properties or highway users.



10 Conclusion & recommendation

10.1 **Conclusion:** The crown of the tree shows physiological stress, with crown sparsity. Basal decay likely caused by pathogenic decay fungus *Kretzschmaria deusta* and an internal decay cavity extending up the tree's trunk indicating the tree is also structurally compromised. The species is known to respond poorly to pruning and a substantial crown reduction may bring the demise of this mature beech tree. If the tree were to fail it is within reach of the school building and site main footpath.

10.2 **Recommendation:** Fell the tree and as close to ground level as possible and plant a replacement tree.

- 1 x *Fagus sylvatica* 'Dawyck Purple'
- Heavy standard (12 to 14 cm girth at 1m)
- To be planted in accordance with BS 8545 (2014): Trees: from nursery to independence in the landscape – Recommendations



APPENDIX 1: GLOSSARY OF GENERAL ARBORICULTURAL TERMS

Adaptive growth. In tree biomechanics, the process whereby the rate of wood formation in the cambial zone, as well as wood quality, responds to gravity and other forces acting on the cambium. This helps to maintain a uniform distribution of mechanical stress

Adventitious shoots. Shoots that develop other than from apical, axillary or dormant buds; see also 'epicormic'

Anchorage. The system whereby a tree is fixed within the soil, involving cohesion between roots and soil and the development of a branched system of roots which withstands wind and gravitational forces transmitted from the aerial parts of the tree

Bacteria. Microscopic single-celled organisms, many species of which break down dead organic matter, and some of which cause diseases in other organisms

Bark. A term usually applied to all the tissues of a woody plant lying outside the vascular cambium, thus including the phloem, cortex and periderm; occasionally applied only to the periderm or the phellem

Bracing. The use of rods or cables to restrain the movement between parts of a tree

Branch:

- **Primary.** A first order branch arising from a stem
- **Lateral.** A second order branch, subordinate to a primary branch or stem and bearing sub-lateral branches
- **Sub-lateral.** A third order branch, subordinate to a lateral or primary branch, or stem and usually bearing only twigs

Buckling. An irreversible deformation of a structure subjected to a bending load

Cambium. Layer of dividing cells producing xylem (woody) tissue internally and phloem (bark) tissue externally

Cavity. Hole in a woody part of a tree caused by decay or damage

Co-dominant stem/branch. Upward growing stem/branch with a similar height and disposition as another stem/branch

Compartmentalisation. The confinement of disease, decay or other dysfunction within an anatomically discrete region of plant tissue, due to passive and/or active defences operating at the boundaries of the affected region

Compression strength. The ability of a material or structure to resist failure when subjected to compressive loading; measurable in trees with special drilling devices

Compressive loading. Mechanical loading which exerts a positive pressure; the opposite to tensile loading

Condition. An indication of the physiological vitality of the tree. Where the term 'condition' is used in a report, it should not be taken as an indication of the stability of the tree

Crown/Canopy. The main foliage bearing section of the tree

Crown lifting. Removal of lower branches to achieve a stated vertical clearance above ground level or other surface

Crown reduction. Operation that results in an overall reduction in the height and/or spread of the crown of a tree by means of a general shortening of twigs and/or branches, whilst retaining the main framework of the crown.

Crown spread. Branch spread in metres taken at the four cardinal points to derive an accurate representation of the crown.

Crown thinning. Removal of a proportion of small, live branches from throughout the crown to achieve an even density of foliage around a well-spaced and balanced branch structure

Deadwood. Branch or stem wood bearing no live tissues. Retention of deadwood provides valuable habitat for a wide range of species and seldom represents a threat to the health of the tree. Removal of deadwood can result in the ingress of decay to otherwise sound tissues and climbing operations to access deadwood can cause significant damage to a tree. Removal of deadwood is generally recommended only where it represents an unacceptable level of hazard

- **Minor deadwood.** Deadwood of a diameter less than 25mm and or unlikely to cause significant harm or damage upon impact with a target beneath the tree
- **Medium deadwood.** Deadwood of a diameter between 25mm and 100mm or likely to cause some harm or damage upon impact with a target beneath the tree
- **Major deadwood.** Deadwood of a diameter above 100mm or likely to cause significant harm or damage upon impact with a target beneath the tree

Defect. In relation to tree hazards, any feature of a tree which detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment

Dieback. The death of parts of a woody plant, starting at shoot-tips or root-tips

Disease. A malfunction in or destruction of tissues within a living organism, usually excluding mechanical damage; in trees,



usually caused by pathogenic micro-organisms

Dormant bud. An axial bud which does not develop into a shoot until after the formation of two or more annual wood increments; many such buds persist through the life of a tree and develop only if stimulated to do so

Dysfunction. In woody tissues, the loss of physiological function, especially water conduction, in sapwood

Epicormic shoot. A shoot having developed from a dormant or adventitious bud and not having developed from a first year shoot

Habit. The overall growth characteristics, shape of the tree and branch structure

Hazard. "A hazard is the disposition of a thing, a condition or a situation to produce injury" (Health and Safety Executive 1995). A tree-failure hazard is present when a tree has potential to cause harm to people or property.

Hazard beam. An upwardly curved part of a tree in which strong internal stresses may occur without being reduced by adaptive growth; prone to longitudinal splitting.

Heartwood. Dead or predominantly dead central wood of tree species whose sapwood has a finite and pre-determined lifespan NOTE In some species heartwood is highly durable because it contains pre-formed defensive substances. In certain others, it remains chemically reactive when exposed to air and/or fungal colonization. It is sharply delineated from the sapwood because the sapwood–heartwood conversion involves the death of most of the sapwood cells at about the same time. It can be harder than the sapwood and/or distinctly coloured.

Inherent Risk. The exposure arising from a specific risk before any action has been taken to manage it.

Incipient failure. In wood tissues, a mechanical failure which results only in deformation or cracking, and not in the fall or detachment of the affected part

Included bark (ingrown bark). Bark tissue lodged in the union between a branch and the parent stem, in the crotch of two branches, or between the bases of co-dominant stems, indicating potential weak attachment

Infection. The establishment of a parasitic micro-organism in the tissues of a tree or other organism.

Lapsed coppice/lapsed pollard. Tree that has been coppiced/pollarded but has not been maintained by cycles of cutting

Loading. A mechanical term describing the force acting on a structure from a particular source; e.g. the weight of the structure itself or wind pressure

Longitudinal. Along the length (of a stem, root or branch)

Lopping. A term often used to describe the removal of large branches from a tree, but also used to describe other forms of cutting

Occluding tissues. A general term for the roll of wood, cambium and bark that forms around a wound on a woody plant (cf. woundwood)

Occlusion. The process whereby a wound is progressively closed by the formation of new wood and bark around it

Pathogen. A micro-organism which causes disease in another organism

Pollard. Tree that has formed a crown consisting of numerous branches arising from the same height on a main stem or principal branches.

NOTE. This can be by natural process or by pollarding.

Pollarding. Cutting a tree so as to encourage formation of numerous branches arising from the same height on a main stem or principal branches.

NOTE 1. This process is initially carried out on trees that have not yet reached maturity. The form of the tree can then be maintained by cycles of cutting. This is not the same as topping.

NOTE 2. The pollard heads collectively, and the framework of a pollarded tree, are both known as the bolting.

Primary branch. A major branch, generally having a basal diameter greater than 0.25 x stem diameter

Priority. Works may be prioritised, 1. = high, 5. = low

Probability. A statistical measure of the likelihood that a particular event might occur

Pruning. The removal or cutting back of twigs or branches, sometimes applied to twigs or small branches only, but often used to describe most activities involving the cutting of trees or shrubs

Reactive Growth/Reaction Wood. Production of woody tissue in response to altered mechanical loading; often in response to internal defect or decay and associated strength loss (cf. adaptive growth)

Residual wall. The wall of non-decayed wood remaining following decay of internal stem, branch or root tissues

Residual Risk. The exposure arising from a specific risk after action has been taken to manage it and making the assumption that the action is effective.

Risk Assessment. The evaluation of risk with regard to the impact if the risk is realised and the likelihood of the risk being realised.



Risk Management. All the processes involved in identifying, assessing and judging risks, assigning ownership, taking actions to mitigate or anticipate.

APPENDIX 2: SITE PHOTOGRAPHS

