



# SJ Stephens Associates

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## Arboricultural Impact Assessment

- Tree Survey
- Tree Protection Plan
- Arboricultural Method Statement

### For:-

Widening of Footpath 51 to three  
metres, along with appropriate  
lighting, guard railing and other  
features to enable use by cyclists

### At:-

Langstone Technology Park  
2B Langstone Road  
Havant  
PO9 1SA

### On behalf of:-

XLB Property Ltd  
Silver House  
2<sup>nd</sup> Floor  
31-35 Beak Street  
London W1F 9DP

### Prepared by:

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Survey Dates: 7<sup>th</sup> June 2021 &  
12<sup>th</sup> November 2021  
Report Date: 12<sup>th</sup> September 2024  
Project no: 1746

## **CONTENTS**

- 1 BACKGROUND**
- 2 SURVEY DETAILS AND SCOPE**
- 3 SURVEY LIMITATIONS**
- 4 LEGAL PROTECTION OF TREES**
- 5 ARBORICULTURAL METHOD STATEMENT**
- 6 ARBORICULTURAL IMPACT ASSESSMENT**
- 7 REFERENCES**

## **Appendices**

- A Tree Protection Plan: drawing no: 1746-04**
- B Tree Schedule**
- C BS 5837:2012 - Trees in relation to design, demolition and construction, Table 1**
- D Tree Protection Fencing Detail**
- E Site photos**
- F Proposed General Arrangement Plan**
- G Decay Detection Report**

## **1 BACKGROUND**

- 1.1** Outline planning permission has been received for phased demolition of existing buildings and the erection of new flexible use employment floorspace (use Classes E(g)(ii)/E(g)(iii)/B2/B8 and ancillary uses (Use Classes E(b) and E(d); and associated works. All matters reserved except Access. The planning permission is subject to compliance with conditions. Condition 3 is that the development shall be carried out in accordance with the approved plans/documents, which include the Arboricultural Impact Assessment prepared by S J Stephens Associates, dated 7<sup>th</sup> January 2022. Condition 23 is that the final details of the pedestrian and cycle link between Langstone Road and Footpath 51 shall be submitted to and approved by the Local Planning Authority.
- 1.2** This Arboricultural Impact Assessment has been instructed by Stantec, on behalf of XLB Property Ltd to specify tree protection measures and to assess the arboricultural impact of the proposed widening of footpath 51 to three metres along with appropriate lighting, guard railing and other features to enable use by cyclists.
- 1.3** Trees were surveyed, with findings shown in the Tree Schedule in Appendix B and plotted on the Tree Protection Plan in Appendix A. This also shows tree protection measures, which are specified in the Arboricultural Method Statement in section 5 below. The arboricultural impact is assessed in section 6, which assumes that these measures are followed.

- 1.4** The tree survey was undertaken, and this report has been prepared, by Catherine Fforde HND Hort, Dip Arb L4(ABC), MCIHort, MArborA and approved by Simon Stephens MA Oxon, Dip Arb (RFS), MArborA, C Env, MICFor a Registered Consultant with the Arboricultural Association, with over 20 years relevant experience.
- 1.5** This survey and report have been prepared in accordance with the recommendations of BS 5837:2012, Trees in relation to design, demolition and construction - Recommendations.
- 1.6** Documentation supplied:
- Topographical Survey
  - SJ Stephens Associates, Arboricultural Impact Assessment, dated 04.02.22
  - Motion, Section 278 Highway Works Footpath 51 Works General Arrangement: drawing no: 2305047-S278-0101 P02
  - Neos Networks, letter dated 31<sup>st</sup> August 2023 and apparatus plan.
  - Atworth Arboriculture, Decay Detection report, dated 13<sup>th</sup> August 2024

## 2 SURVEY DETAILS AND SCOPE

- 2.1 The site survey included trees and shrubs, within influencing distance of the proposed development, with a stem diameter over 75mm at 1.5m height, as shown located on the Tree Protection Plan, included as Appendix A.
- 2.2 Tree inspection took place from ground level with the use of binoculars, sounding hammer and metal probe using the Visual Tree Assessment method (Mattheck & Breloer 1994). The presence and condition of bark and stem wounds, cavities, decay, fungal fruiting bodies and any structural defects that could increase the risk of structural failure were noted.
- 2.3 Tree diameters were measured using a girthing tape and tree heights were measured using a hypsometer. Where use of a tape was restricted by site factors, diameters were estimated, with the diameter recorded in the tree schedule preceded by the word “est”.
- 2.4 At the time of the survey, the weather was overcast, but with no restrictions to visibility. Broadleaf trees were in leaf. In places, ivy restricted visibility of tree stems.
- 2.5 The suitability of trees for inclusion in the future development was considered, in particular considering the safe useful life expectancy, and sustainability, of trees on the site after development is completed.
- 2.6 Tree details are shown on the Tree Protection Plan included as Appendix A. Tree locations have been taken from the topographical survey provided. Where not included on the topographical survey, they have been determined by measuring distances from features shown on the plan, using a laser measuring device. The following information was recorded for each tree, and is shown in the Tree Schedule included as Appendix B:
  - **Number:** an identity number for each tree, prefixed with a “T”, which cross references locations shown on the plan with the schedule in Appendix B. Where a number of trees are located close together and are similar in character and management requirements, they have been treated as a Group under a single number, prefixed with a “G”.
  - **Species:** common name.
  - **Tree height:** approximate height in metres.
  - **Stem diameter:** diameter in millimetres, taken at 1.5m above ground. Where there are a number of stems, stem diameters are recorded in the condition column.
  - **Branch spread:** approximate spread in metres to N,S,E and W of the trunk. The approximate branch spread is drawn on the plan.
  - **Canopy clearance:** approximate height of the canopy above ground. Where a significant, low lateral branch is present, its height and direction of growth is included in the Condition column.
  - **Age class:** Young, Semi-mature, Early mature, Mature, Over-mature, Veteran.
  - **Condition:** features that affect the safe useful life expectancy and amenity of the tree, including the presence of decay or any physical defect.

- **Management Recommendations:** recommendations to ensure the health and safety of the tree, within the future development.
- **Estimated Remaining Contribution:** <10 years, 5-15 years, 10-20 years, 15-30 years, 20-40 years, >40 years.
- **Category grading:** tree classification taken from BS 5837:2012, Trees in relation to design, demolition and construction (see Appendix C for details), as follows:
  - Category U: Unsuitable for retention, trees with less than 10 years life expectancy, normally recommended for removal (Red)
  - Category A: high quality trees, able to make a substantial contribution for at least 40 years, normally retained unless there is an over-riding reason for removal and appropriate mitigation. (Green)
  - Category B: moderate quality trees, able to make a significant contribution for at least 20 years, normally retained. (Blue)
  - Category B/C: an intermediate category between categories B and C (not specifically described in BS5837). Trees, which should be retained wherever possible, providing retention does not unreasonably constrain the layout. (Blue)
  - Category C: low quality, in adequate condition to remain for at least 10 years, or young trees <150mm stem diameter. Trees which can be removed to allow the desired layout or new planting. (Grey)

For category A, B and C trees, a subcategory has been allocated, providing information on the reasons for selection of a specific category, as follows:

- Subcategory 1: mainly arboricultural values.
- Subcategory 2: mainly landscape values.
- Subcategory 3: mainly cultural values, including conservation.
- Trees have been classified irrespective of the possible proximity to future construction. The BS 5837 category is colour coded, as indicated above, on the plan included as Appendix A.
- **Protection Distance:** the protection distance in metres required to provide the Root Protection Area recommended in BS 5837, assuming a circular area centred on the tree.
- **Root Protection Area (RPA):** the area in m<sup>2</sup>, as recommended in BS 5837, to provide sufficient rooting area to ensure tree survival and which, in most situations, should be fenced off to prevent root damage from construction activities.

### **3 SURVEY LIMITATIONS**

- 3.1** No internal decay devices, or other invasive tools to assess tree condition, were used during the tree surveys carried out by S J Stephens Associates.
- 3.2** No soil excavation or root inspection was carried out.
- 3.3** This survey has not considered the effect that trees or vegetation may have on the structural integrity of future building through subsidence or heave.
- 3.4** The tree survey has been undertaken for planning purposes. Although any obvious structural defects have been noted, a Tree Hazard Assessment has not been carried out. Mature trees close to highly populated areas or public highways should normally be checked for safety annually, by a suitably qualified person.

## **4 LEGAL PROTECTION OF TREES**

- 4.1 The Havant Borough Council My Maps web page was viewed on 12.09.2024, which showed that the footpath site does not contain any Tree Preservation Orders, nor does it fall within a Conservation Area.
- 4.2 The presence of Planning Conditions currently attached to the site, was not checked.

## **5 ARBORICULTURAL METHOD STATEMENT**

### **5.1 Site Overview**

- 5.1.1 The proposal is for the widening of footpath 51 to three metres, along with appropriate lighting, guard railing and other features to enable use by cyclists. The route is to be adopted by Hampshire County Council and as such is designed in line with their requirement, including width and gradient requirements. The proposed general arrangement plan is included as Appendix F and has been added to the survey drawing, along with tree details, to create the Tree Protection Plan attached as Appendix A.
- 5.1.2 The widening of footpath 51 forms part of a package of works that will provide a continuous cycle route between Havant and Hayling Island, in line with the approved plans associated with the outline permission (APP/22/00172). The route is considered by Hampshire County Council to serve a locally strategic function, providing a safe and suitable route for cyclists travelling between Hayling Island and the wider local network. As such it is considered essential that a direct, high quality route is delivered which Hampshire County Council can manage in perpetuity.
- 5.1.3 The existing footpath runs in close proximity to four trees, T58, T59, T60 and T61. Photos of the trees are included in Appendix E. Decay detection testing has been carried out on T60 and T61, with results and recommendations set out in the report prepared by Atworth Arboriculture attached as Appendix G. Removal of T58, T59, T60 and T61 is necessary to facilitate the widening of the footpath.
- 5.1.4 A grass covered bund runs along the west side of the footpath for the majority of its length. To the east side, there is a watercourse with a relatively narrow grass strip and then a downward sloping bank between the grass strip and the watercourse. An underground services route extends along the length of the footpath.
- 5.1.5 Re-profiling of the bund is proposed to facilitate the widening of the footpath. Two trees, T62 and T63, are located on the western side of the bund at the southern end. The re-profiling will necessitate excavation at the edge of the root protection area of T63.

## **5.2 Tree Work**

- 5.2.1 Details of proposed tree works are included in the Tree Schedule included as Appendix B.
- 5.2.2 Four trees are proposed for removal, as detailed in section 6.1 below.
- 5.2.3 All tree work must be undertaken to the standards set out in BS 3998:2010 Tree work – Recommendations.

## **5.3 Root Protection Areas**

- 5.3.1 Root Protection Areas are shown for all trees in the Tree Schedule included as Appendix B. They are also shown for all retained trees, as circular areas centred on the trunk, on the Tree Protection Plan included as Appendix A. Where there are physical obstructions to root growth the Root Protection Area should be shown as an equivalent area that is more likely to reflect actual root growth. The Root Protection Area shows the area around a tree in which all construction activity must normally be excluded, unless appropriate protection measures are implemented.

## **5.4 Tree Protection Fencing**

- 5.4.1 Tree Protection Fencing must be erected where shown on the Tree Protection Plan, included as Appendix A. This will provide full protection of the Root Protection Areas of all retained trees within the site, other than for:
  - area shaded cyan on the Tree Protection Plan, indicating a Ground Protection Area, where roots must be protected, as described in section 5.5 below.
  - area shaded red on the Tree Protection Plan, where there will be excavation at the edge of a Root Protection Area, but where supervised excavation must be used, as described in section 5.6, to minimise potential root damage.
- 5.4.2 Tree works can be completed before Tree Protection Fencing is erected, however no contractors plant or vehicles must be allowed to track within the Root Protection Areas unless ground protection panels are laid.
- 5.4.3 Tree Protection Fencing must be from weldmesh panels, at least 2m high, securely fixed, with wire or scaffold clamps, to a rigid framework. This framework must be constructed from scaffold tubes with vertical tubes, at a maximum interval of 3m and driven into the ground at least 0.6m. The structure must be well braced to resist impacts, constructed as per Figure 2 of BS5837:2012, which is reproduced in Appendix D. Alternatively, weldmesh panels can be supported on blocks, providing the blocks are pinned to the ground with road pins, or similar,

and the panels are braced, as per Figure 3 of BS5837:2012, which is also reproduced in Appendix D.

- 5.4.4 After erection of Tree Protection Fencing, two days' notice must be given to the local planning authority before any work starts on site.
- 5.4.5 Tree Protection Fencing must be maintained and retained for the duration of the works, or until such time as agreed in writing with the local planning authority.
- 5.4.6 Weatherproof notices must be fixed to the Tree Protection Fencing, and maintained, stating:-

**TREE PROTECTION AREA**

**KEEP OUT**

TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS  
CONTRAVENTION MAY LEAD TO CRIMINAL PROSECUTION  
THE FOLLOWING MUST BE OBSERVED BY ALL PERSONS:

- The Protection Fence must not be moved
- No person or machine must enter the area
- No materials or spoil must be deposited
- No excavation must be permitted

ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN  
PERMISSION OF THE LOCAL PLANNING AUTHORITY

## **5.5 Ground Protection Area**

- 5.5.1 The Ground Protection Area, which is shaded cyan on the Tree Protection Plan, contains hard surfacing which is protecting any underlying roots and which must stay in place during the construction period unless further protection measures are implemented.

## **5.6 Supervised Excavation Area**

- 5.6.1 An excavator must only be used for the re-profiling of the bank within the Root Protection Area of T63, if it can work only from outside the Root Protection Area. The excavator must be fitted with a smooth edged, grading bucket in order to minimise damage from tearing or pulling of roots. A banksman must be present during this operation and excavation must go no deeper than absolutely necessary for the re-profiling of the bund. Once works have been completed in the Root Protection Area, any exposed roots must be covered with a 50mm deep layer of topsoil, using good quality topsoil supplied to BS3882:2015, in order to prevent damage from desiccation or frosting.
- 5.6.2 In the event that large roots are found, in excess of 25mm diameter, then the works must be temporarily stopped and the arboricultural consultant must be contacted for advice. During this period exposed roots must be covered with hessian to prevent damage from desiccation or frosting.

## **5.7 General measures**

- 5.7.1 No construction activity whatsoever, including routing of underground services, storage of materials or on-site parking, must be allowed within Root Protection Areas, other than that specifically described above.
- 5.7.2 No mixing or storage of cement, concrete, oil, fuel, bitumen or other chemicals must be permitted within 10m of the trunk of any retained trees, nor in any position where the slope of the ground could lead to contamination of the Root Protection Area.
- 5.7.3 Fires must not be lit in a position where their flames could extend to within 10m of foliage, branches or trunk.
- 5.7.4 Landscape works carried out within Root Protection Areas must be undertaken with great care so as not to damage shallow roots. Tractor mounted rotovators or other heavy mechanical cultivation must not be used within the Root Protection Areas.
- 5.7.5 If any tree shown for retention is removed, uprooted or destroyed, another tree must be planted in the same location, at a size and species to be agreed in writing with the Local Planning Authority.
- 5.7.6 A copy of this report and the Tree Protection Plan must be kept on site and must be fully understood by the Site Agent.

## **5.8 Bat roosts**

- 5.8.1 The current legislation makes it a criminal offence to disturb, damage or destroy any bat roost or hibernation area. Contractors must be reminded of their responsibilities and should contact the relevant authorities if any signs of bats are found.

## **5.9 Birds**

- 5.9.1 The current legislation makes it a criminal offence to disturb nesting birds. The nesting season is generally assumed to be from 1<sup>st</sup> March to 31<sup>st</sup> July, however this can vary depending on species and location. During these months a careful inspection must be made before work commences and works must be postponed if active nests are found.

## **5.10 Arboricultural Supervision**

- 5.10.1 A qualified Arboricultural Consultant must be retained during the period of construction to carry out the following:
- to meet with/ liaise with the contractor, prior to work starting on site, to ensure this Arboricultural Method Statement is fully understood and can be complied with in full. If any revisions are required, a revised Arboricultural Method Statement must be approved by the local planning authority, prior to work starting on site.
  - to inspect Tree Protection Fencing, prior to works starting on site.
  - as necessary, to advise on any issues at the request of the local planning authority, the developer, architect or contractor.

The details of each site visit must be recorded using a site visit proforma, with copies circulated to the contractor, developer and the local authority tree officer within three working days of the visit.

## 6 ARBORICULTURAL IMPACT ASSESSMENT

6.1 The following trees, categorized as per BS 5837 (see Appendix C for details), are proposed for removal:

- Category U – unsuitable for retention: Two trees – T60 and T61.
- Category B – moderate quality: Two trees:-
  - T58 – a 13m, mature Norway maple.
  - T59 – a 20.5m, mature white willow.

6.2 The white willow, T60 and T61, are decaying and are at risk of future failure which presents a risk to users of the footpath; their removal is recommended irrespective of the proposed widening of the footpath. Due to site restrictions it is not possible to create a 3m wide path without removal of the Norway maple T58 and the white willow T59. The white willow are in prominent view in their location close to the access road for Langstone Technology Park, and at the edge of a public footpath. The Norway maple is in prominent view from the footpath. The removal of the trees will result in a loss of amenity value and loss of habitat benefits. New tree planting is proposed as part of the wider development of the business park however the loss of trees for the widening of the footpath was not considered at the outline planning stage. These further tree removals must be mitigated by additional tree planting. Ideally, replacement trees should be planted in similarly prominent locations, with species selected to provide an equivalent amount of canopy cover at maturity and to provide a range of habitat benefits for wildlife. New tree planting positions have not been specified in this report as it is necessary to further investigate site constraints, including the exact location of underground services, before determining the tree positions.

6.3 Protection measures have been specified to protect the Root Protection Area of all retained trees, other than for:-

- T63, where there will be excavation with root loss of approximately 6m<sup>2</sup>, or <5 % of the Root Protection Area.

The amount of projected root loss is too small to produce a noticeable adverse impact. Supervised excavation has been specified in order to minimise the amount of root loss and to prevent unnecessary damage. Following completion of the works roots will be able to regenerate in the bunded area.

6.4 Provided the recommendations in this report are followed, the arboricultural impact of this development on existing tree cover is considered acceptable. Arboricultural supervision has been included to assist with tree protection measures and a landscape plan, including new tree planting can be conditioned.

## 7 REFERENCES

- *BS5837:2012 Trees in relation to design, demolition and construction – Recommendations.*
- *BS3998:2010 Tree Work. Recommendations.*



| Tree/<br>Group<br>No. | Species      | Height<br>(m) | Stem<br>Diam. at<br>1.5m<br>(mm) | Branch Spread (m) |     |     |     | Canopy<br>Clearance<br>(m) | Age<br>Class    | Observations                                                                                                                                                                      | Management<br>Recommendations                  | Estimated<br>Remaining<br>Contribution<br>(years) | BS 5837<br>Category<br>Grading | Protect-<br>ion<br>Distnce<br>(m) | Root<br>Protect.<br>Area<br>(m2) |
|-----------------------|--------------|---------------|----------------------------------|-------------------|-----|-----|-----|----------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|---------------------------------------------------|--------------------------------|-----------------------------------|----------------------------------|
|                       |              |               |                                  | N                 | S   | E   | W   |                            |                 |                                                                                                                                                                                   |                                                |                                                   |                                |                                   |                                  |
| T56                   | Thorn        | 6             | 230                              | 4                 | 4   | 4   | 4   | 1.8                        | Early<br>mature | On steep bank. Approx 8 stems at 1.5m, average 80mm.                                                                                                                              |                                                | 15-30                                             | B-C2                           | 2.8                               | 24                               |
| G57                   | Shrubs       | 1 - 1.2       | 25 - 125                         |                   |     |     |     | 0.0                        | Early<br>mature | Isolated, tightly clipped shrubs. Species including hazel, thorn, berberis, rose and cherry plum. All low quality.                                                                |                                                | 5-15                                              | C2                             | 1.5                               | 7                                |
| T58                   | Norway maple | 13            | 810                              | 7                 | 8   | 8   | 6.5 | 2.5                        | Mature          | Four main stems from 1.2m - 350, 410, 420 & 430mm, with further decaying stem 180mm. Decay point at 1.2m to east. Occasional deadwood and foliage damage but a reasonable tree.   | Remove to facilitate construction of new path. | 15-30                                             | B2                             | 9.7                               | 297                              |
| T59                   | White willow | 20.5          | 1200                             | 9.5               | 7   | 8   | 8   | 3.0                        | Mature          | Multiple stems from 2m. Minor deadwood throughout crown, showing some sign of decline.                                                                                            | Remove to facilitate construction of new path. | 20-40                                             | B2-3                           | 14.4                              | 651                              |
| T60                   | White willow | 16            | 1110                             | 4.5               | 3.5 | 6   | 4.5 | 3.0                        | Mature          | Stems leans to east. A number of large stems previously broken out but now with fresh growth. Dieback in upper crown.                                                             | Remove to alleviate risk from future failure.  | <10                                               | U                              | 13.3                              | 557                              |
| T61                   | White willow | 14            | 1280                             | 6                 | 6   | 7   | 6   | 4.0                        | Mature          | Multiple stems from 2.5m. Large stem removed from 2m to southeast, with large area of decay extending down to base. Previously crown reduced. One main stem reduced to approx 6m. | Remove to alleviate risk from future failure.  | <10                                               | U                              | 15.4                              | 741                              |
| T62                   | Lime         | 9.5           | 480                              | 4.5               | 4   | 4.5 | 4.5 | 2.0                        | Early<br>mature | Four stems from 0.6m - 200, 230, 250 & 270mm - tight forks. Crossing fused stems. Poor form and structure. Low limbs removed.                                                     |                                                | 15-30                                             | B-C2                           | 5.8                               | 104                              |
| T63                   | Lime         | 13.5          | 530                              | 5                 | 5   | 5   | 5   | 2.5                        | Early<br>mature | Three stems from 0.9m - 270, 300 & 350mm. Low limbs removed with badly executed pruning cuts. Poor basal structure.                                                               |                                                | 15-30                                             | B-C2                           | 6.4                               | 127                              |

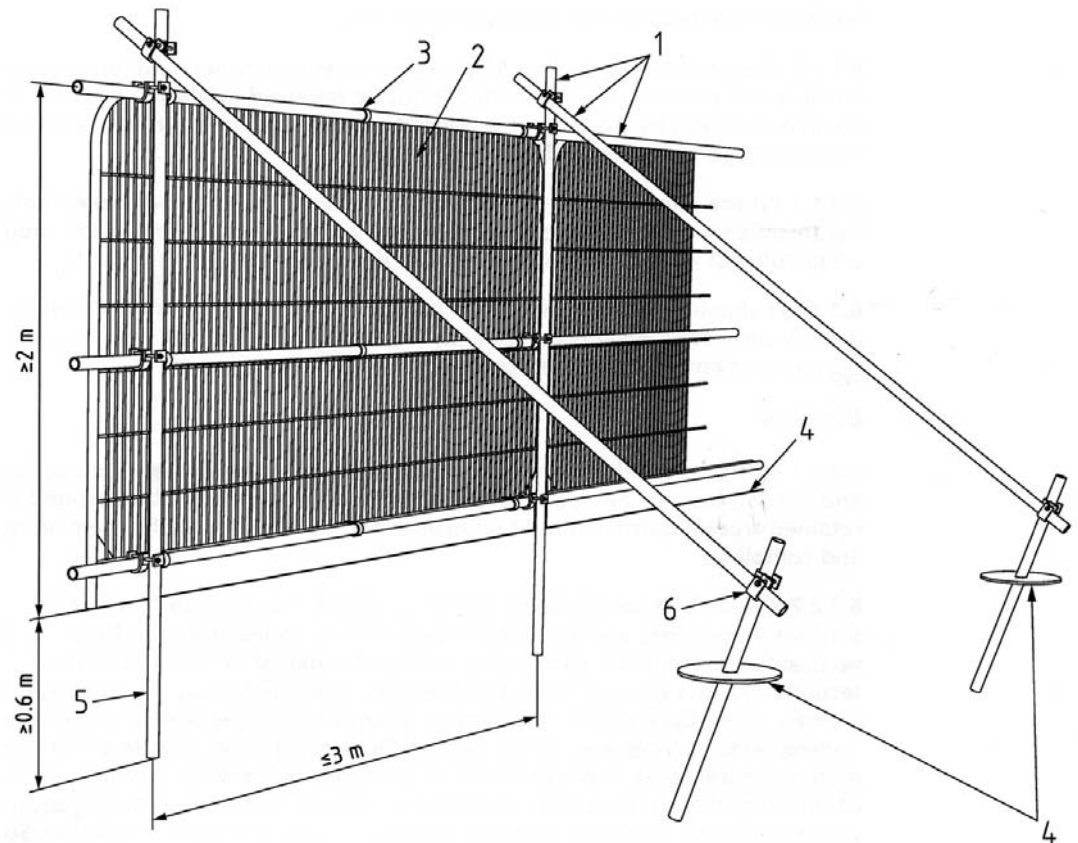
BS 5837:2012, Table 1 Cascade chart for tree quality assessment

| Category and definition                                                                                                                                                   | Criteria (including subcategories where appropriate)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                   |                                                                                                                                       | Identification on plan |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Trees unsuitable for retention (see Note)                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                   |                                                                                                                                       |                        |
| <b>Category U</b><br>Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years | <ul style="list-style-type: none"><li>Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)</li><li>Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline</li><li>Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality</li></ul> <p><i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i></p> |                                                                                                                                                                                                                                                                   |                                                                                                                                       | See Table 2            |
|                                                                                                                                                                           | 1 Mainly arboricultural qualities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2 Mainly landscape qualities                                                                                                                                                                                                                                      | 3 Mainly cultural values, including conservation                                                                                      |                        |
| Trees to be considered for retention                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                   |                                                                                                                                       |                        |
| <b>Category A</b><br><b>Trees of high quality</b> with an estimated remaining life expectancy of at least 40 years                                                        | Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features                                                                                                                                                            | Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture) | See Table 2            |
| <b>Category B</b><br><b>Trees of moderate quality</b> with an estimated remaining life expectancy of at least 20 years                                                    | Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation                                                                                                                                                                                                                                                                                                                                                                                                            | Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality | Trees with material conservation or other cultural value                                                                              | See Table 2            |
| <b>Category C</b><br><b>Trees of low quality</b> with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm       | Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits                                                              | Trees with no material conservation or other cultural value                                                                           | See Table 2            |

Figure 2

**Key**

- 1 Standard scaffold poles
- 2 Heavy gauge 2 m galvanised tube and welded mesh infill panels
- 3 Panels secured to uprights and cross-members with wire ties
- 4 Ground level
- 5 Uprights driven into the ground until secure (minimum depth 0.6 m)
- 6 Standard scaffold clamps



**Examples of above-ground stabilising systems**

Figure 3a

Stabiliser strut with base plate secured with ground pins

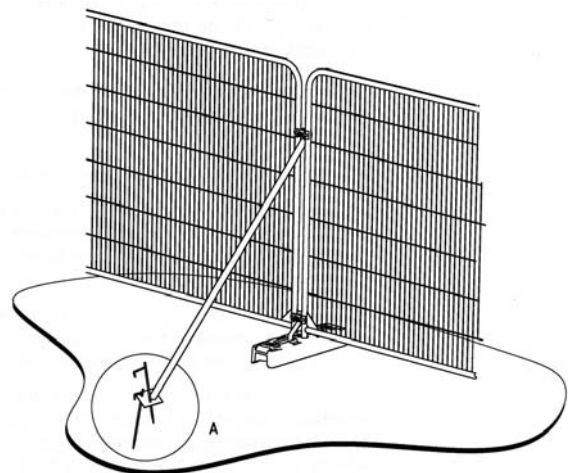
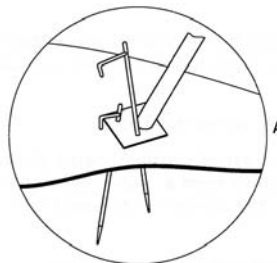
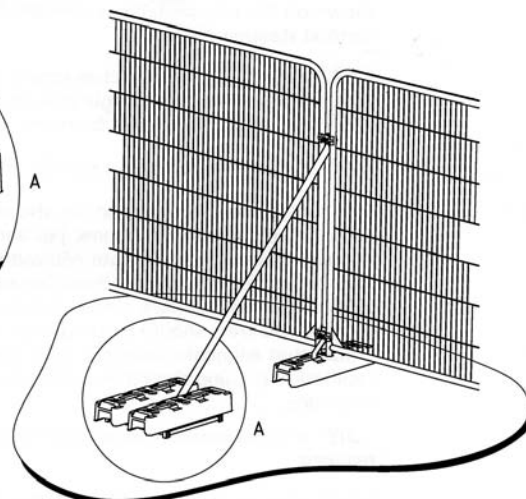
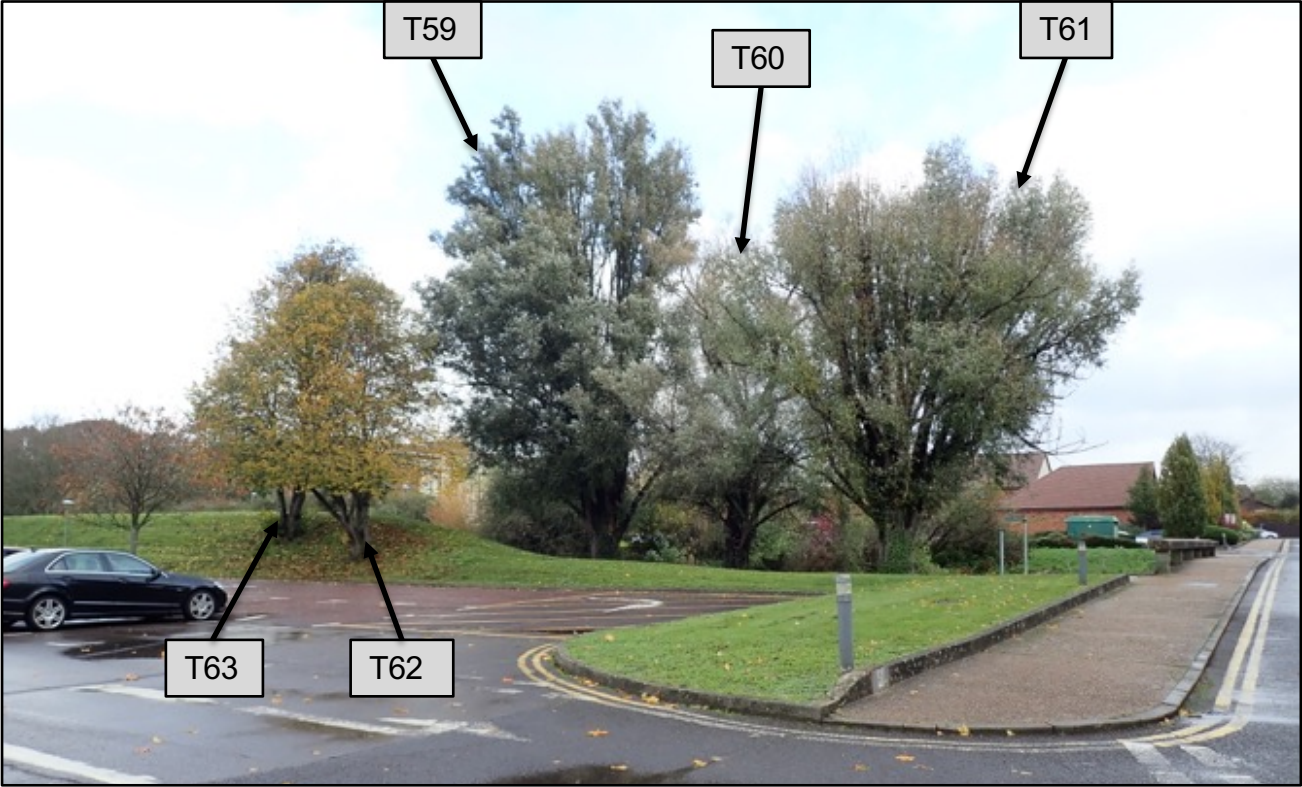


Figure 3b

Stabiliser strut mounted on block tray



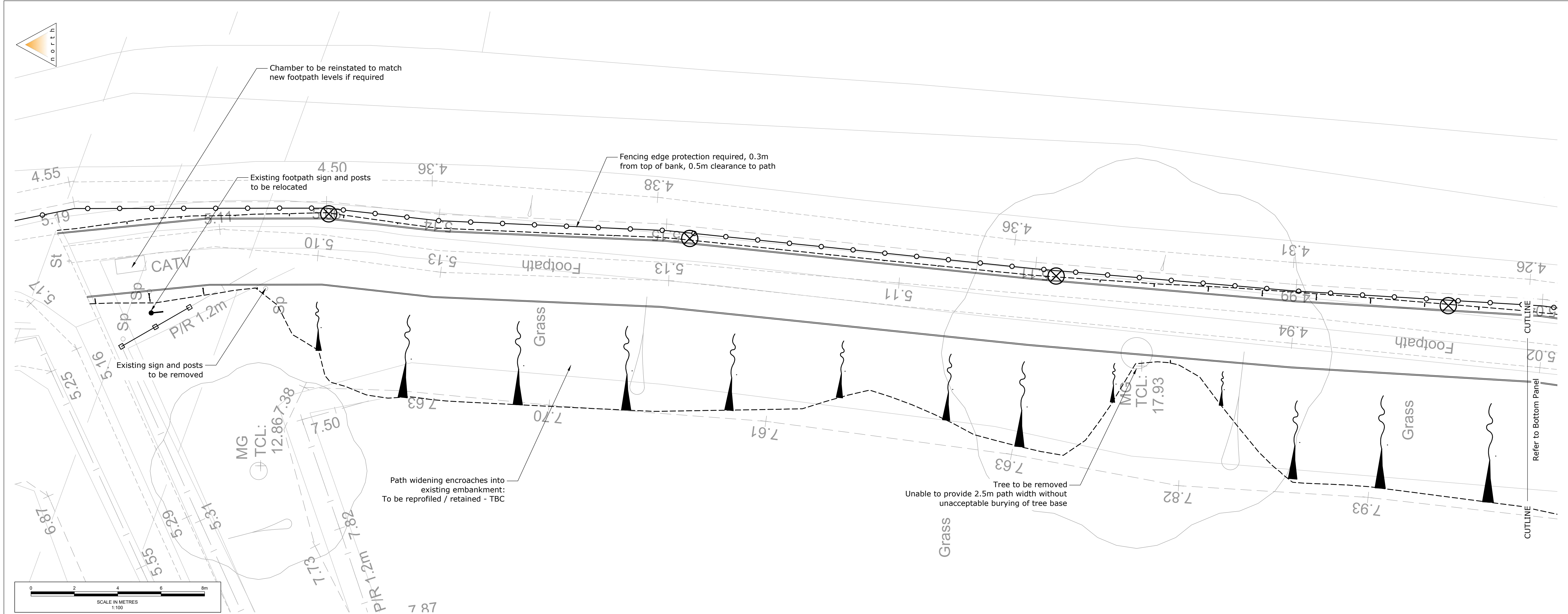


T59, T60 and T61 proposed for removal to allow widening of footpath.





T58 proposed for removal to allow widening of footpath and the associated re-profiling of the grass covered bund.

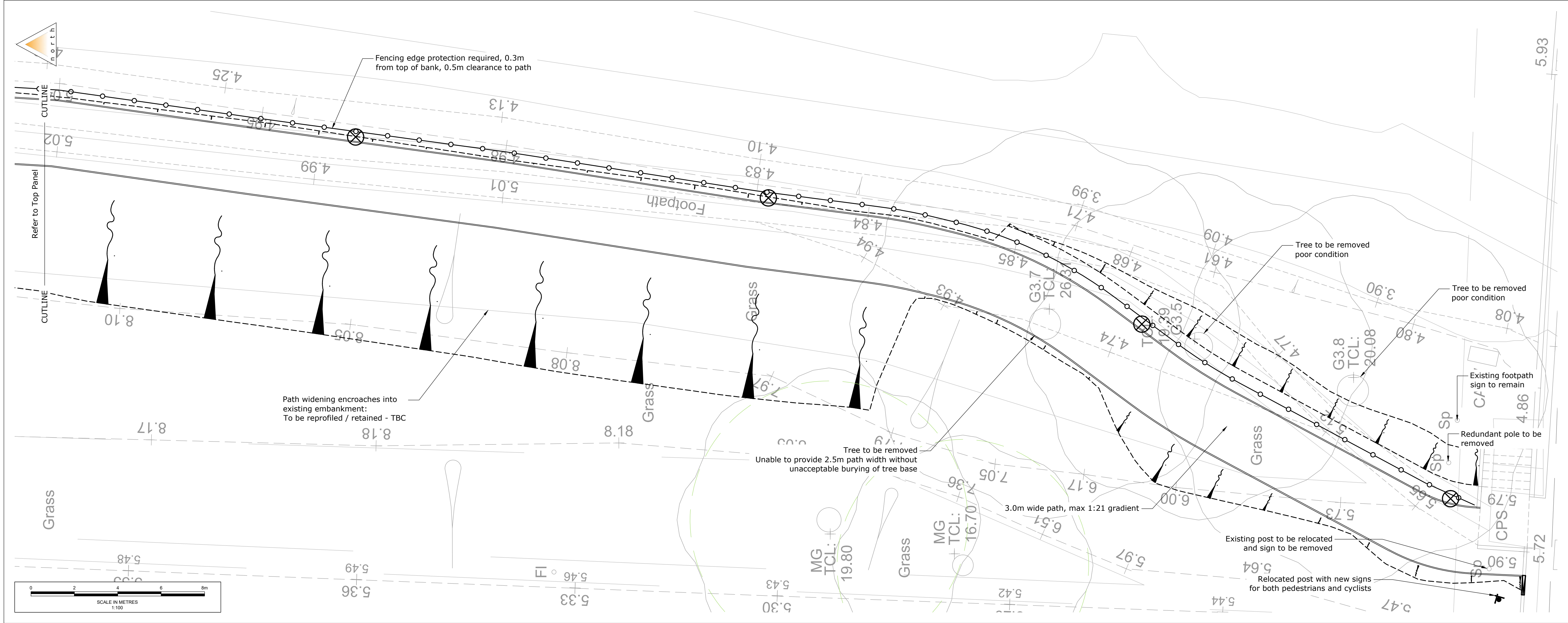


**Notes**

- Do not scale
- All levels and dimensions are to be checked on site before any work commences. All dimensions are in metres unless stated otherwise.
- This drawing has been based upon survey information supplied by Greenhatch Group Ltd and Motion cannot guarantee the accuracy of the data provided.
- Any discrepancies should be reported to the engineer immediately, so that clarification can be sought prior to the commencement of works.
- This drawing should be read in conjunction with all other relevant engineering details, drawings and specification.
- All works to be in accordance with the Specification for Highway Works.
- All works are to be carried out in accordance with Hampshire County Council Highway Design Guide and Design Manual for Roads and Bridges (DMRB).
- Refer to Statutory Undertakers records for details of apparatus present within the construction areas. Chambers are to be adjusted where required to match new levels. The main contractor is to coordinate all diversionary works.
- The contractor is to complete the Section 278 Works within the existing highway boundary. There is no agreement with adjacent landowners for use of their property.
- On completion the contractor is required to carry out an as-built survey of the completed highway works.

**Legend**

- Existing Highway Boundary
- New Timber post and rail to HCC specification
- Section of existing fence to remain
- New Street Lighting column by others. Refer to Watkins Payne drawing 5490-WPL-XXX-100-DR-EL-54012



**Location Plan 1:2500**

Top Panel

Bottom Panel

**Notes**

P02 Notes amended ST CM AU 11/09/2024

P01 First Issue ST CM SC 28/08/2024

Rev. Description Dm Chk App Date

**DRAFT**

**NOT FOR CONSTRUCTION**

**motion**

Guildford - Reading - London

[www.motion.co.uk](http://www.motion.co.uk)

Client:

**xl**

Project:

Langstone Park, Havant

Title:

Section 278 Highway Works

Footpath 51 Works

General Arrangement

Scale: 1:100 (@ A1)

Drawing:

2305047-S278-0101

Revision:

P02



**DECAY DETECTION ON 2 WILLOW TREES AT LANGSTONE  
TECHNOLOGY PARK, HAVANT.**



**Prepared for:**

XLB Property.

**The statements in this Report do not take account of the effects of extremes of climate, vandalism or accident, whether physical, chemical or fire (Atworth Arboriculture Ltd) 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.**

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**Site Address:** Langstone Technology Park, Langstone Road, Havant, PO9 1SA.

**Client:** XLB Property

**Instruction:** Carry out decay detection tests on the main stem of 1 tree at the address above. The inspections were carried out on the 12<sup>th</sup> August 2024 by Vince Cainey BSc of Atworth Arboriculture Ltd. The weather conditions were sunny and hot.

**Tree:1**      white Willow      *Salix alba*      Diameter 1115mm      Height 15.5m

**General Observation:**

This tree is the middle of 3 willow trees on the southern boundary of the Technology Park. A footpath is 1m east and the Lang Brook 4m east. The tree leans significantly to the east. On the stem and up into the crown there is dense ivy. Lots of limbs have been removed from the stem and into the crown leaving stubs. Some heartwood has been exposed where the bark is coming away, mainly to the east. The crown looks poor with significant die back dead limbs and major (over 75mm diameter) dead wood (Picture 2).

Picture 2

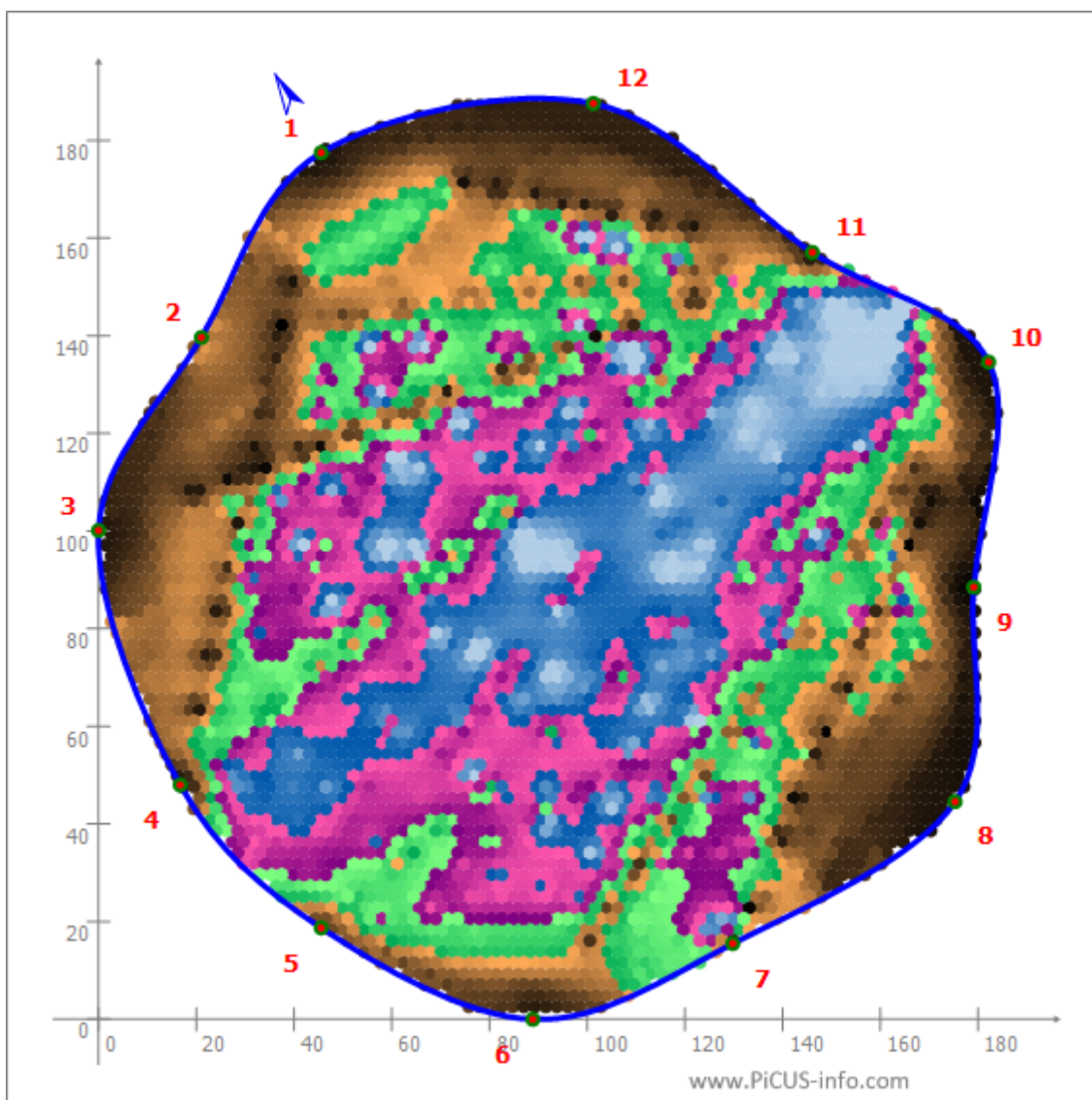


## Picus Sonic Tomography

The Picus Sonic Tomograph is made by a German company called Argus-Electronic-GmbH. It is a specialised electronic instrument which can 'look' internally into a branch or tree trunk and display a computer-generated image of its condition. It achieves this by measuring the speed that sound travels through the wood in a number of different positions and directions. Sound travels fastest through solid wood. Decayed wood will slow its path. By measuring the *speed* that sound takes to pass through a tree, an idea of its condition can be obtained.

The PICUS Sonic Tomograph consists of 8 to 14 sonic sensors. These sensors are spaced out evenly around the circumference of the trunk. They detect stress waves induced by manual impact propagated through the wood. Time-of-sound-transmissions are used to generate two-dimensional pictures that document decay and cavities.

The sounds are generated manually by tapping on a number of metal nails with a hammer. Special sensors fixed around the stem read the interval the sound takes to travel through the wood. Once all nails have been tapped, and recordings taken, the computer software works out a visual image that requires professional assessment to assess decay.



Reading taken at 20cm above ground level (agl).

### **Resistograph Tests:**

The Resistograph is a Drilling instrument that probes the tree with a micro drill with a 3mm tip and a 1.5mm x 400mm shaft; this can penetrate to a depth of 40cm. As the probe advances it measures the resistance encountered and feed rate of the needle. Good healthy wood gives a high reading and poor dysfunctional wood, or cavity gives a lower reading. The readings are presented in Appendix 1 at the foot of the report.

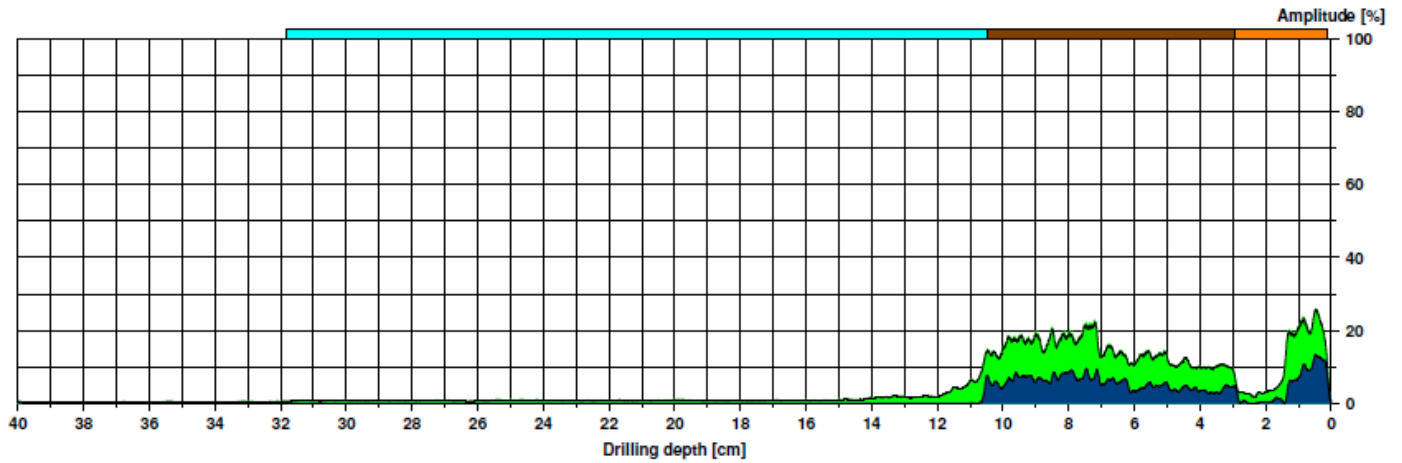
The instrument used was the IML Resistograph PD400 which has far more capability than earlier models. There are 5 different speed settings, and the data is recorded electronically. The readings show the measured resistance as a black line and the feed rate of the needle as a blue colour. It is useful to have the 2 settings as with the F400 friction on the needle would give you a false high graph. Although there is still friction on the needle with the PD400 the feed rate will change as decay is encountered.

4 Resistograph test were carried out.

| <b>Direction</b> | <b>Height</b> | <b>Results</b>                             |
|------------------|---------------|--------------------------------------------|
| North            | 5cm           | Good to 16cm, decay-20cm, remainder cavity |
| East             | 10cm          | All decay                                  |
| South            | 5cm           | Good – 16cm, remainder cavity              |
| West             | 5cm           | Good – 16cm, remainder Cavity              |

### Measuring / object data

|                  |                   |               |              |            |                  |
|------------------|-------------------|---------------|--------------|------------|------------------|
| Measurement no.: | 14                | Speed         | : 2500 r/min | Diameter:  | 115,00 cm        |
| ID number        | : Langstone T1 W5 | Needle state: | ---          | Level      | : 0              |
| Drilling depth   | : 40,06 cm        | Tilt          | : ---        | Direction: | West             |
| Date             | : 12.08.2024      | Offset        | : 91 / 254   | Species    | : Willow         |
| Time             | : 10:53:50        | Avg. curve    | : off / off  | Location   | : Langstone Park |
| Feed             | : 150 cm/min      |               |              | Name       | : Vince Cainey   |



### Assessment

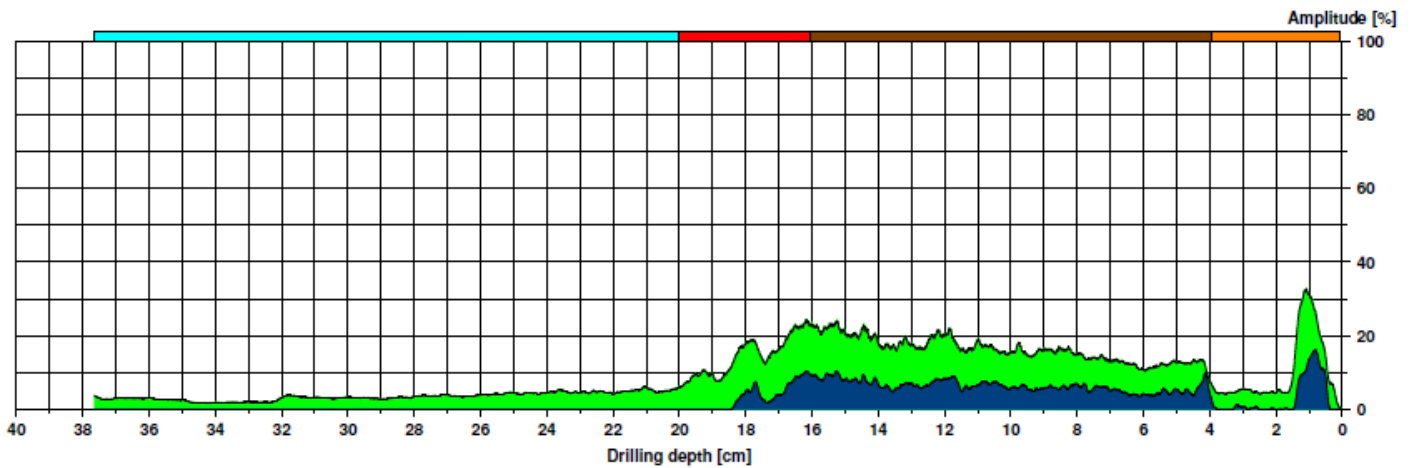
|      |          |    |          |   |           |
|------|----------|----|----------|---|-----------|
| From | 0,13 cm  | to | 2,96 cm  | : | Bark      |
| From | 2,96 cm  | to | 10,50 cm | : | Good Wood |
| From | 10,50 cm | to | 31,82 cm | : | Cavity    |

### Comment

Langstone T1 W5M014

### Measuring / object data

|                  |                   |               |              |            |                  |
|------------------|-------------------|---------------|--------------|------------|------------------|
| Measurement no.: | 13                | Speed         | : 2500 r/min | Diameter:  | 115,00 cm        |
| ID number        | : Langstone T1 N5 | Needle state: | ---          | Level      | : 0              |
| Drilling depth   | : 37,64 cm        | Tilt          | : ---        | Direction: | North            |
| Date             | : 12.08.2024      | Offset        | : 104 / 258  | Species    | : Willow         |
| Time             | : 10:52:46        | Avg. curve    | : off / off  | Location   | : Langstone Park |
| Feed             | : 150 cm/min      |               |              | Name       | : Vince Cainey   |



### Assessment

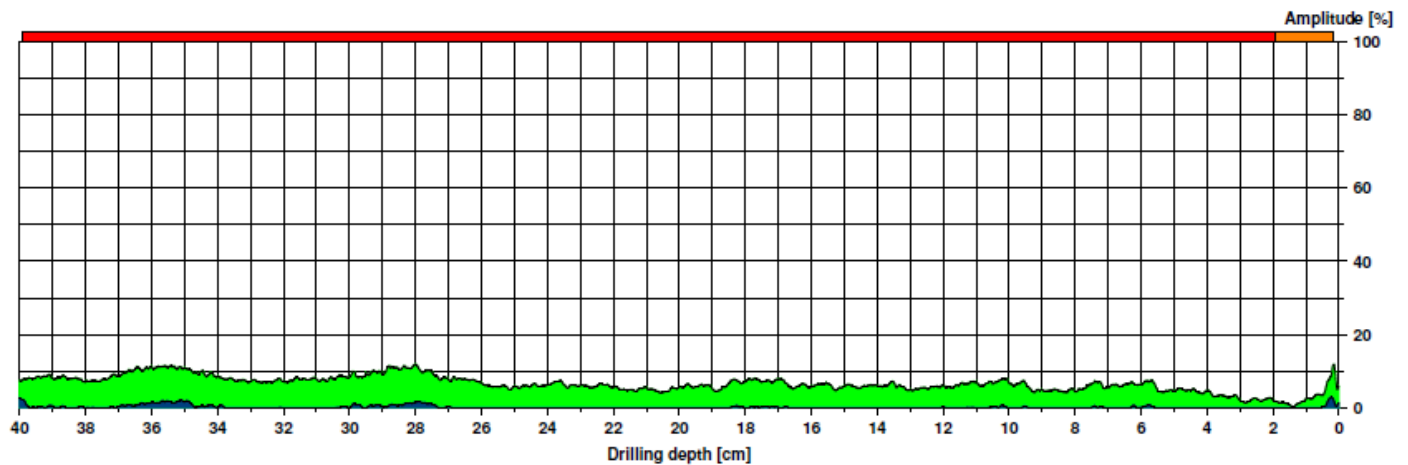
|      |          |    |          |   |           |
|------|----------|----|----------|---|-----------|
| From | 0,10 cm  | to | 3,96 cm  | : | Bark      |
| From | 3,96 cm  | to | 16,04 cm | : | Good Wood |
| From | 16,04 cm | to | 20,00 cm | : | Decay     |
| From | 20,00 cm | to | 37,65 cm | : | Cavity    |

### Comment

Langstone T1 N5M013

### Measuring / object data

|                  |                   |               |                |            |                  |
|------------------|-------------------|---------------|----------------|------------|------------------|
| Measurement no.: | 12                | Speed         | : 2500 r/min   | Diameter:  | 115,00 cm        |
| ID number        | : Langstone T1 E0 | Needle state: | ---            | Level      | : 0              |
| Drilling depth   | : 40,06 cm        | Tilt          | : ---          | Direction: | East             |
| Date             | : 12.08.2024      | Offset        | : 116 / 311    | Species    | : Willow         |
| Time             | : 10:52:01        | Avg. curve    | : off / off    | Location   | : Langstone Park |
| Feed             | : 200 cm/min      | Name          | : Vince Cainey |            |                  |



### Assessment

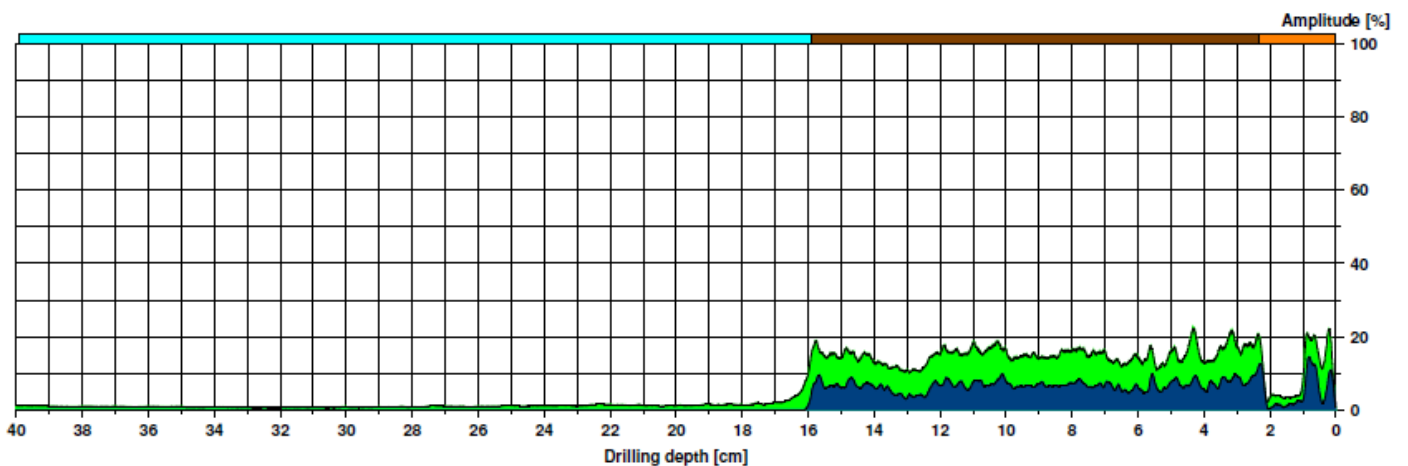
From 0,16 cm to 1,93 cm : Bark  
From 1,93 cm to 39,90 cm : Decay

### Comment

Langstone T1 E10M012

### Measuring / object data

|                  |                   |               |                |            |                  |
|------------------|-------------------|---------------|----------------|------------|------------------|
| Measurement no.: | 11                | Speed         | : 2500 r/min   | Diameter:  | 115,00 cm        |
| ID number        | : Langstone T1 S0 | Needle state: | ---            | Level      | : 0              |
| Drilling depth   | : 40,06 cm        | Tilt          | : ---          | Direction: | South            |
| Date             | : 12.08.2024      | Offset        | : 102 / 309    | Species    | : Willow         |
| Time             | : 10:51:03        | Avg. curve    | : off / off    | Location   | : Langstone Park |
| Feed             | : 150 cm/min      | Name          | : Vince Cainey |            |                  |



### Assessment

From 0,03 cm to 2,32 cm : Bark  
From 2,32 cm to 15,88 cm : Good Wood  
From 15,88 cm to 39,90 cm : Cavity

### Comment

Langstone T1 S10M011

## **Conclusion.**

The Picus Tomograph shows that some of the centre of the stem is cavity coloured blue with some advanced decay coloured pink and early decay coloured green. The Resistograph readings were taken at closer to ground level and show an even greater extent of the decay. This level of decay and cavity is sufficient to affect the structural integrity of the tree. The target area should the tree fail is high.

## **Recommendations:**

There is enough decay and cavity for me to recommend removal of the tree as the target area is high. This work to be carried as soon as practically possible by a fully qualified and insured tree surgeon to BS3998 (2010), Tree work.

**Tree 2:** White Willow    Height 12m Diameter 1145mm



## **General observations:**

This tree is 7m south of T1. A footpath is 50cm west, the brook 5m east, Langstone Road and bridge are 6m south of this tree. Around the base from south to northwest are extensive brackets of the fungus *Ganoderma applanatum/adspersum* (Picture 4). The stem is covered in dense ivy. The crown breaks at 3m above ground level. To the east from 20cm agl to the crown break is a crack with exposed, decayed heart wood. A large branch has been removed at 2m agl. The crown has been pollarded and there is extensive die back and major dead wood.

Picture 4

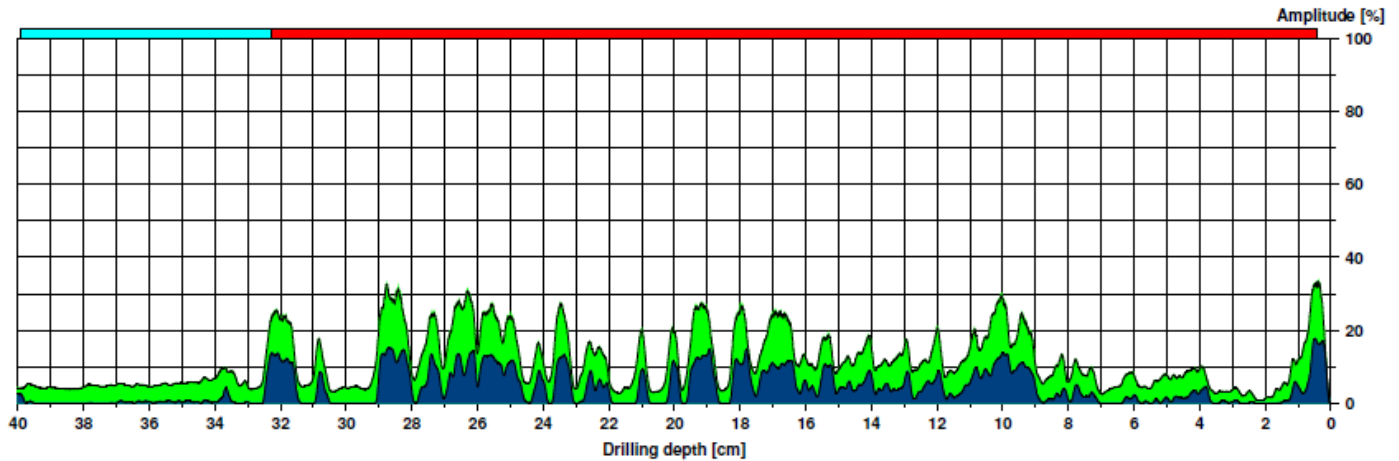


6 Resistograph test were carried out at 2 levels

| Direction | Height | Results                                                      |
|-----------|--------|--------------------------------------------------------------|
| South     | 5cm    | Good to 21cm, crack-22cm, good – 33cm, remainder early decay |
| West      | 10cm   | Decay – 32cm, remainder good wood                            |
| North     | 5cm    | Good – 31cm, remainder decay                                 |
| East      | 5cm    | All good                                                     |
| East      | 110cm  | Good – 13cm, decay -29cm, remainder good                     |
| Southeast | 110cm  | Decay – 33cm, remainder cavity                               |

### Measuring / object data

|                  |                      |               |              |            |                  |
|------------------|----------------------|---------------|--------------|------------|------------------|
| Measurement no.: | 20                   | Speed         | : 2500 r/min | Diameter:  | 114,00 cm        |
| ID number        | : Langstone T2 SE110 | Needle state: | ---          | Level      | : 110cm          |
| Drilling depth   | : 40,06 cm           | Tilt          | : ---        | Direction: | Southeast        |
| Date             | : 12.08.2024         | Offset        | : 86 / 241   | Species    | : White Willow   |
| Time             | : 11:14:48           | Avg. curve    | : off / off  | Location   | : Langstone Park |
| Feed             | : 150 cm/min         |               |              | Name       | : Vince Cainey   |



### Assessment

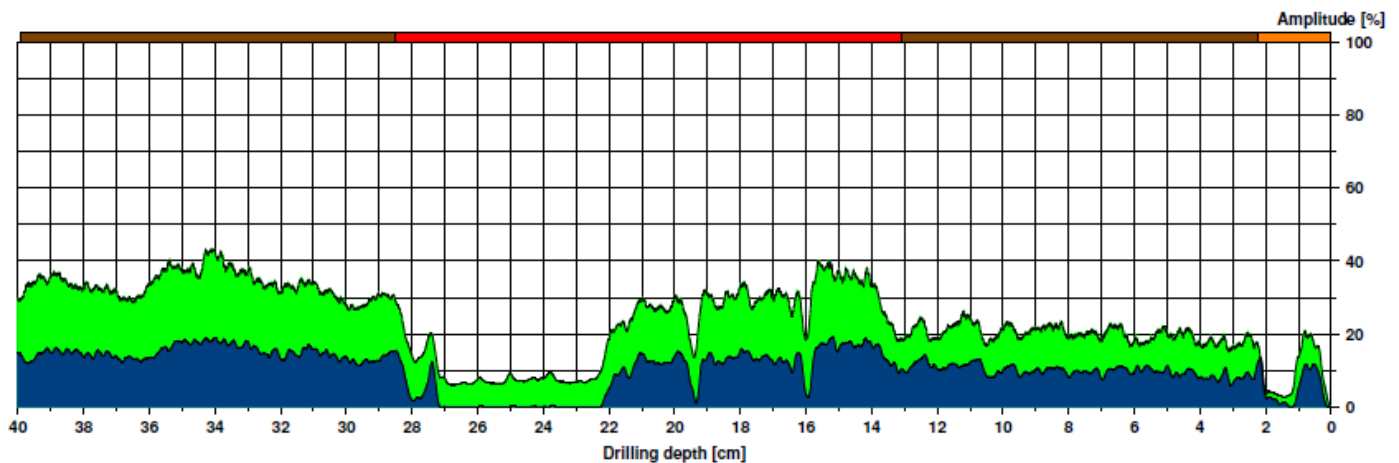
From 0,42 cm to 32,27 cm : Decay  
From 32,27 cm to 39,90 cm : Cavity

### Comment

Langstone T2 SE110M020

### Measuring / object data

|                  |                     |               |              |            |                  |
|------------------|---------------------|---------------|--------------|------------|------------------|
| Measurement no.: | 19                  | Speed         | : 2500 r/min | Diameter:  | 114,00 cm        |
| ID number        | : Langstone T2 E110 | Needle state: | ---          | Level      | : 110cm          |
| Drilling depth   | : 40,07 cm          | Tilt          | : ---        | Direction: | East             |
| Date             | : 12.08.2024        | Offset        | : 94 / 244   | Species    | : White Willow   |
| Time             | : 11:13:51          | Avg. curve    | : off / off  | Location   | : Langstone Park |
| Feed             | : 150 cm/min        |               |              | Name       | : Vince Cainey   |



### Assessment

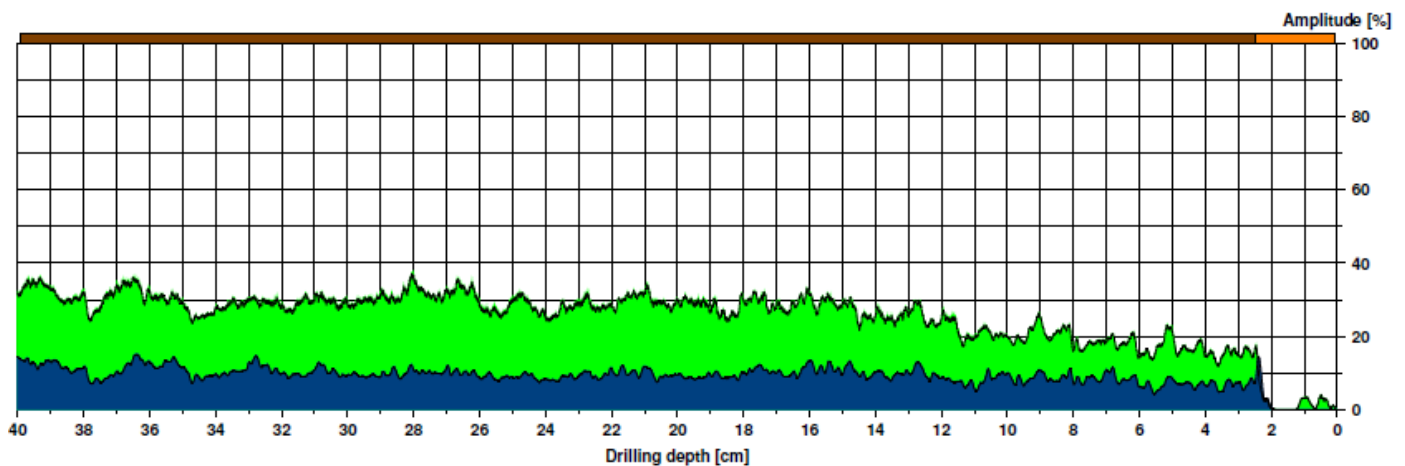
From 0,03 cm to 2,22 cm : Bark  
From 2,22 cm to 13,08 cm : Good Wood  
From 13,08 cm to 28,50 cm : Decay  
From 28,50 cm to 39,94 cm : Good Wood

### Comment

Langstone T2 E110M019

### Measuring / object data

|                  |                   |               |              |            |                  |
|------------------|-------------------|---------------|--------------|------------|------------------|
| Measurement no.: | 18                | Speed         | : 2500 r/min | Diameter:  | 114,00 cm        |
| ID number        | : Langstone T2 E5 | Needle state: | ---          | Level      | : 5cm            |
| Drilling depth   | : 40,09 cm        | Tilt          | : ---        | Direction: | East             |
| Date             | : 12.08.2024      | Offset        | : 94 / 542   | Species    | : White Willow   |
| Time             | : 11:06:43        | Avg. curve    | : off / off  | Location   | : Langstone Park |
| Feed             | : 150 cm/min      |               |              | Name       | : Vince Cainey   |



### Assessment

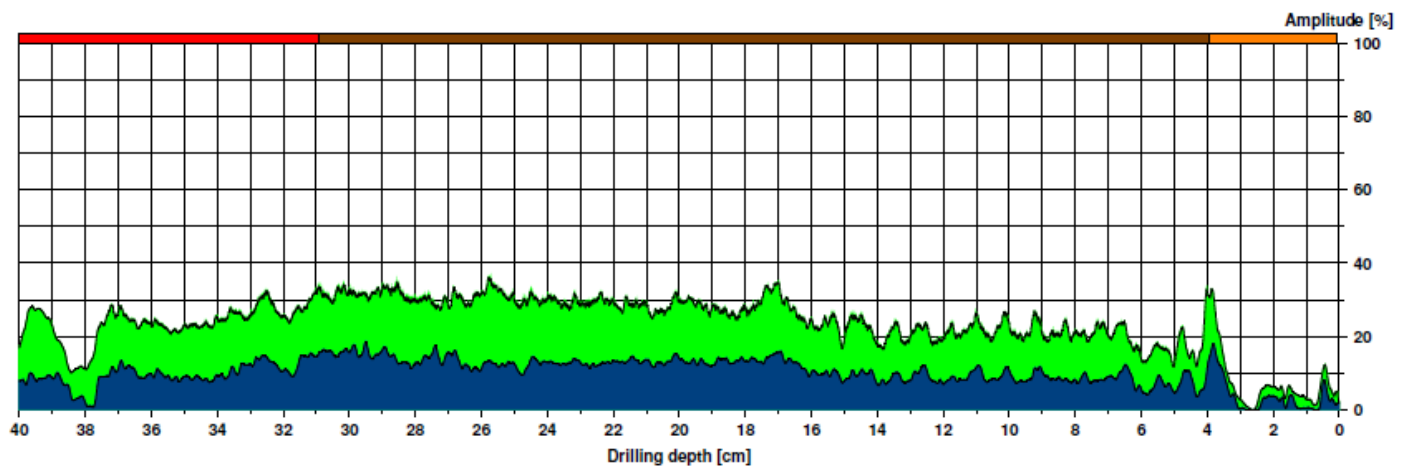
From 0,10 cm to 2,48 cm : Bark  
From 2,48 cm to 39,90 cm : Good Wood

### Comment

Langstone T2 E5M018

### Measuring / object data

|                  |                   |               |              |            |                  |
|------------------|-------------------|---------------|--------------|------------|------------------|
| Measurement no.: | 17                | Speed         | : 2500 r/min | Diameter:  | 114,00 cm        |
| ID number        | : Langstone T2 N5 | Needle state: | ---          | Level      | : 5cm            |
| Drilling depth   | : 40,07 cm        | Tilt          | : ---        | Direction: | North            |
| Date             | : 12.08.2024      | Offset        | : 91 / 540   | Species    | : White Willow   |
| Time             | : 11:05:57        | Avg. curve    | : off / off  | Location   | : Langstone Park |
| Feed             | : 150 cm/min      |               |              | Name       | : Vince Cainey   |



### Assessment

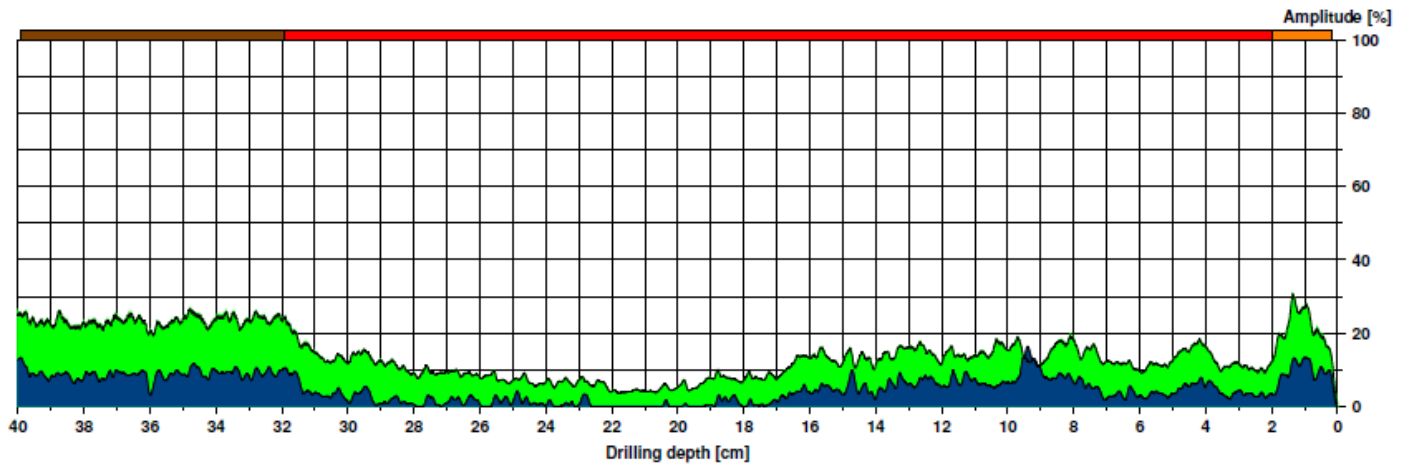
From 0,10 cm to 3,96 cm : Bark  
From 3,96 cm to 30,92 cm : Good Wood  
From 30,92 cm to 40,00 cm : Decay

### Comment

Langstone T2 N5M017

### Measuring / object data

|                              |                        |                           |
|------------------------------|------------------------|---------------------------|
| Measurement no.: 16          | Speed : 2500 r/min     | Diameter: 114,00 cm       |
| ID number : Langstone T2 W10 | Needle state: ---      | Level : 10cm              |
| Drilling depth : 40,07 cm    | Tilt : ---             | Direction: West           |
| Date : 12.08.2024            | Offset : 91 / 304      | Species : White Willow    |
| Time : 11:05:08              | Avg. curve : off / off | Location : Langstone Park |
| Feed : 150 cm/min            |                        | Name : Vince Cainey       |



### Assessment

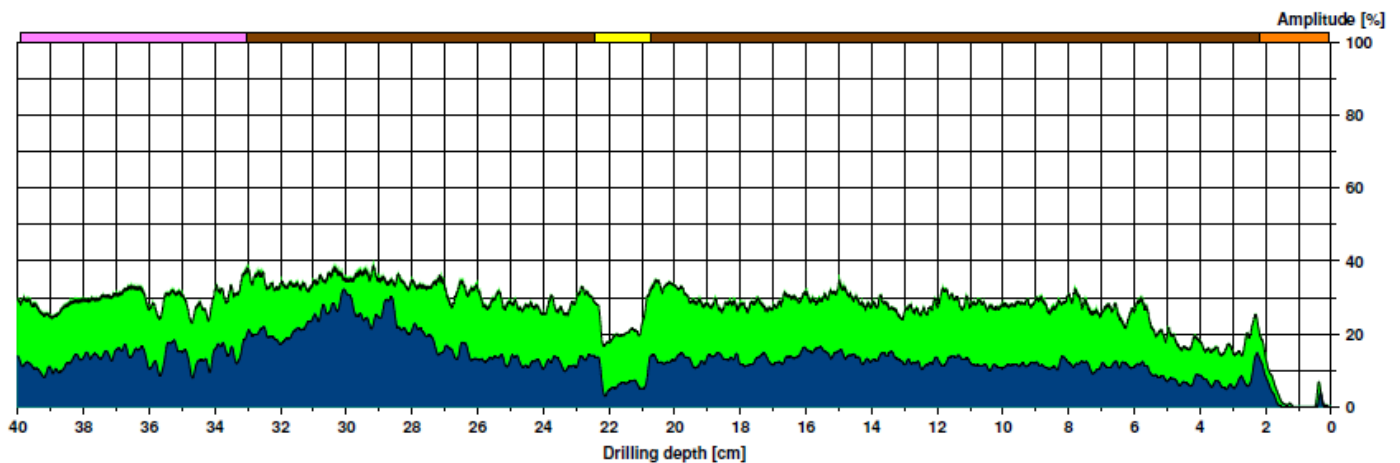
|                             |           |
|-----------------------------|-----------|
| From 0,19 cm to 2,00 cm :   | Bark      |
| From 2,00 cm to 31,92 cm :  | Decay     |
| From 31,92 cm to 39,90 cm : | Good Wood |

### Comment

Langstone T2 W10M016

### Measuring / object data

|                             |                        |                           |
|-----------------------------|------------------------|---------------------------|
| Measurement no.: 15         | Speed : 2500 r/min     | Diameter: 114,00 cm       |
| ID number : Langstone T2 S5 | Needle state: ---      | Level : 5cm               |
| Drilling depth : 40,08 cm   | Tilt : ---             | Direction: South          |
| Date : 12.08.2024           | Offset : 91 / 254      | Species : White Willow    |
| Time : 11:04:18             | Avg. curve : off / off | Location : Langstone Park |
| Feed : 150 cm/min           |                        | Name : Vince Cainey       |



### Assessment

|                             |             |
|-----------------------------|-------------|
| From 0,06 cm to 2,19 cm :   | Bark        |
| From 2,19 cm to 20,71 cm :  | Good Wood   |
| From 20,71 cm to 22,42 cm : | Crack       |
| From 22,45 cm to 33,04 cm : | Good Wood   |
| From 33,04 cm to 39,94 cm : | Early decay |

### Comment

Langstone T2 S5M015

## **Conclusions:**

Resistograph readings were taken at the base of the tree and either side of the crack and exposed heart wood. The readings at the base show extensive decay to the south and west, The readings at 110cm, either side of the crack show decay also. The fungus brackets are around 50% of the base. The heavy die back ad dead wood in the crown indicate that the roots are affected by decay, being next to the busy footpath adjacent to the brook makes the target area high should the tree fail. Willows are renowned for catastrophic failure.

## **Recommendations:**

There is enough decay and cavity for me to recommend removal of the tree as the target area is high. This work to be carried as soon as practically possible by a fully qualified and insured tree surgeon to BS3998 (2010), Tree work.

A handwritten signature in blue ink, appearing to read 'V. Cainey', on a light-colored background.

**Vince Cainey BSc**  
**13th August 2024.**