

# *Harraway Trees*

*Tree Management and Training*

## **Tree Inspection Report**



**Lancing College Preparatory School  
Hove**

**April 2019**

# Harraway Trees

## Tree Management and Training

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### TREE INSPECTION REPORT

**Client:** David Archer Associates (DAA), for their clients

**Location:** The Droveaway, Hove, BN3 6LU

**Date of inspection:** 4 April 2019

**Inspector:** J. Harraway F Arbor A, MICFor, Dip Arb (RFS)

**Our reference:** TIR/0419/1

#### Instructions received:

I am instructed by David Archer of DAA to carry out decay evaluations on three selected trees at the above location and report on the structural condition of their lower stems.

**Tree species:** Each of the trees assessed was a type of Elm (*Ulmus spp.*)

#### General description:

The site serves as a preparatory school for younger children and contains a number of buildings used by the school, set in extensive gardens containing a number of mature trees.

The trees that are the subject of this report are all located within an irregular row adjacent the boundaries of the site on the north and west sides; each tree has been identified during a recent survey of all trees on site carried out by DAA as exhibiting external indications of possible decay or hollowing.

#### Method of inspection:

Following initial visual assessment, the base of each tree was further investigated using a Picus 3 sonic tomography unit; an IML Resi decay detecting drill was also used on two of the trees to provide additional information about the depth of residual wood surrounding internal deterioration. Brief details of the operating systems of these instruments are included at the end of the report for information (page 12).

The trees are identified within this report using numbers ascribed to them during the recent survey by DAA. The results of each assessment are shown on individual record sheets; a summary of the results and any recommendations for their continued management is included on page 11.

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Document reference: TIR/0419/1*

### Decay Evaluation Record

Tree No: 1                      Location: north boundary, adjacent main vehicular entrance

Date: 4 April 2019                      Species: Elm (probably *Ulmus 'Sarniensis'*)

Tree height: c. 18 metres                      Stem diameter at test level: 95cm

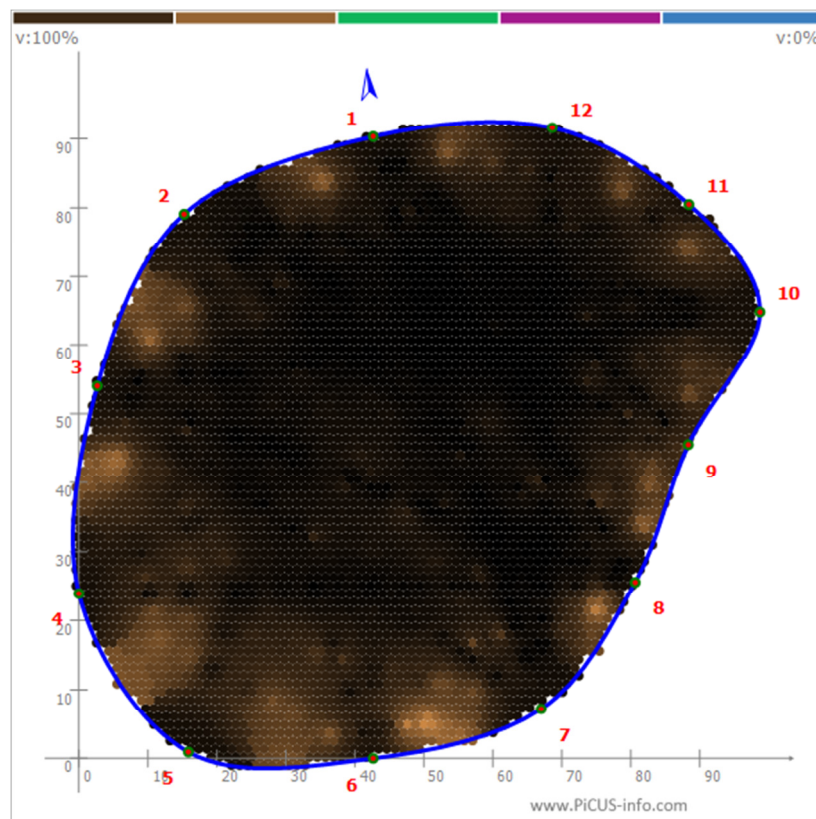
Height of measurement (above ground level): 10cm

#### Notes:

The crown has been reduced previously but subsequent regrowth has produced a natural-looking upright crown, typical of this species. No external indications of dysfunction were apparent at the time of inspection but the previous survey report noted a change in resonance when the east side of the stem was tapped using a nylon-headed hammer.

#### Decay evaluation:

The Picus was used with 12 measuring points (MP) close to ground level; MP number one was placed on the north side of the stem on this and each subsequent assessment:



No decay is indicated on the tomogram.

Comments:

In view of the result no further investigation was undertaken and no other action appears necessary in relation to the lower stem at present.



Base of tree east side,  
showing the level of  
assessment (red dotted  
line)

### Decay Evaluation Record

Tree No: 27      Location: west boundary, adjacent neighbouring dwelling

Date: 4 April 2019      Species: Elm (prob. *Ulmus* 'Vegeta')

Tree height: c 19m      Stem diameter at test level: 110cm

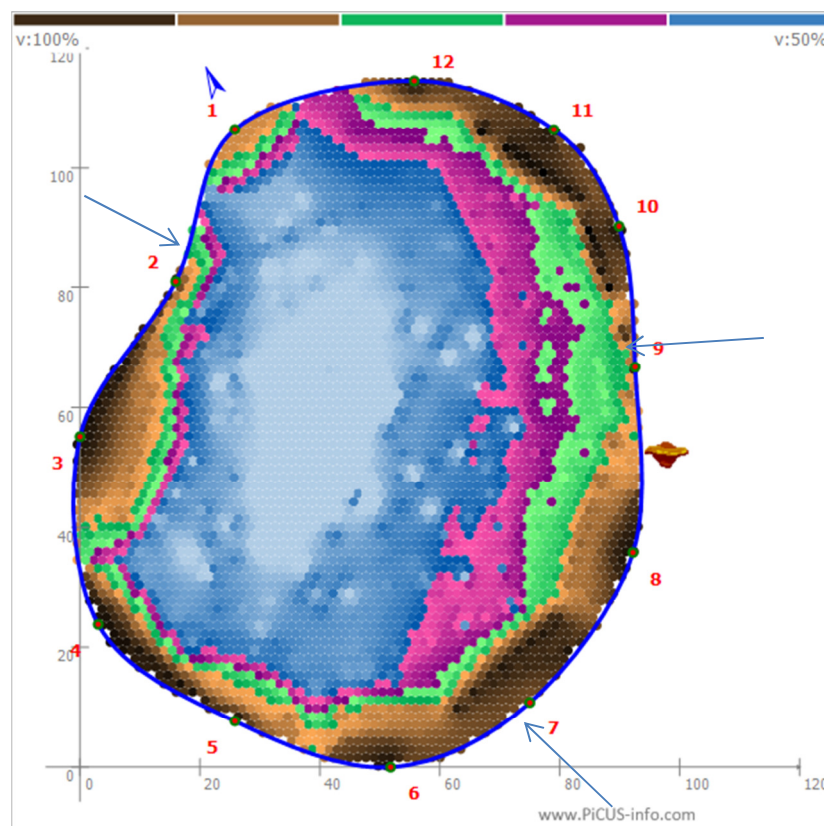
Height of measurement (above ground level): 10cm

#### Notes:

The crown has been heavily reduced previously; visual assessment of the base revealed a fungal bracket on the east side, indicating colonisation with *Rigidoporus ulmarius*, a common cause of extensive 'brown rot' and possible hollowing on older trees of this species. A small basal wound was also noted on the north side, containing fungal mycelium. An occluding pruning wound at 2.5 metres on the south east side also exhibited a fungal fructification, although positive identification was not possible due to its advanced state of deterioration.

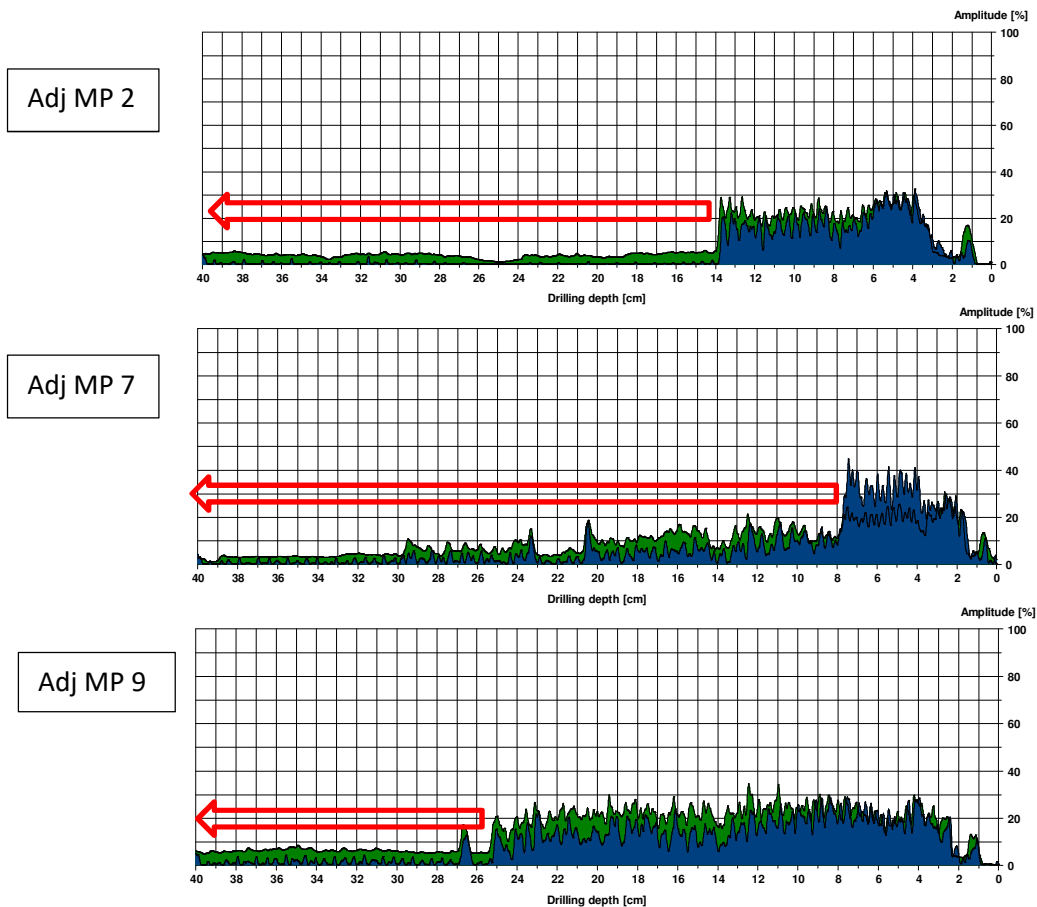
#### Decay evaluation:

The Picus was used with 12 MP close to ground level; the location of the basal fungal bracket is identified by a small symbol:



The tomogram appears to indicate extensive decay/hollowing within the stem (area coloured maroon/blue).

In view of the result with the Picus the Resi decay detecting drill was used in three selected locations to provide additional confirmation of the extent of deterioration within the stem; these locations are also indicated by small arrows around the edge of the sonic tomogram:



Advanced decay and hollowing is indicated on each measurement with the Resi (highlighted with a red arrow). Depths of residual wood at each point are 14, 8 and 25cm respectively, including the initial bark layer of approximately 2cm.

#### Comments:

The combined results confirm the presence of extensive internal decay and hollowing in the lower stem of this tree; significant crown reduction has already been recommended in the recent report by DAA but in view of the results of this investigation and the tree's proximity to a neighbouring residence, removal may be appropriate.

Photos showing features referred to in the text are included on the following page:



Tree's location adjacent neighbouring residence



Fungal bracket east side of base



Deteriorating basal wound north side

### Decay Evaluation Record

Tree No: 29      Location: west boundary, adjacent neighbouring residence

Date: 4 April 2019      Species: Elm (prob. *Ulmus* 'Vegeta')

Tree height: c 20 metres      Stem diameter at test level: 145cm

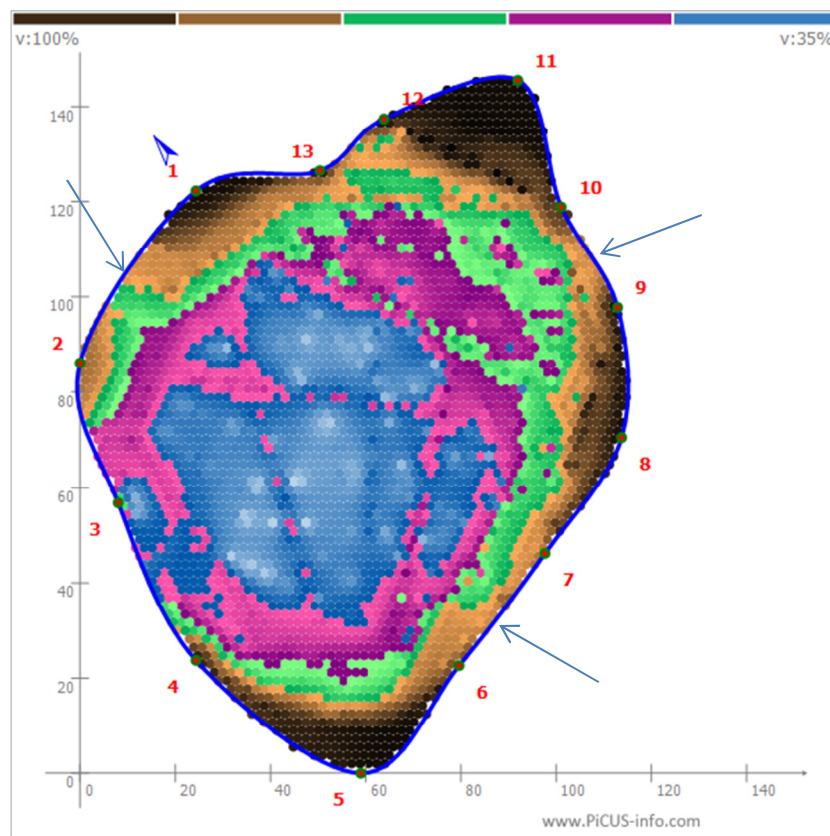
Height of measurement (above ground level): 20cm

#### Notes:

The tree occupies a similar position to T27 immediately adjacent the west boundary of the site; the crown has also been significantly reduced some years ago, although regrowth since that time has been vigorous. Initial inspection revealed the presence of a small basal wound and cavity on the west side; tapping with a nylon hammer also revealed an altered resonance around the base, suggesting internal deterioration.

#### Decay evaluation:

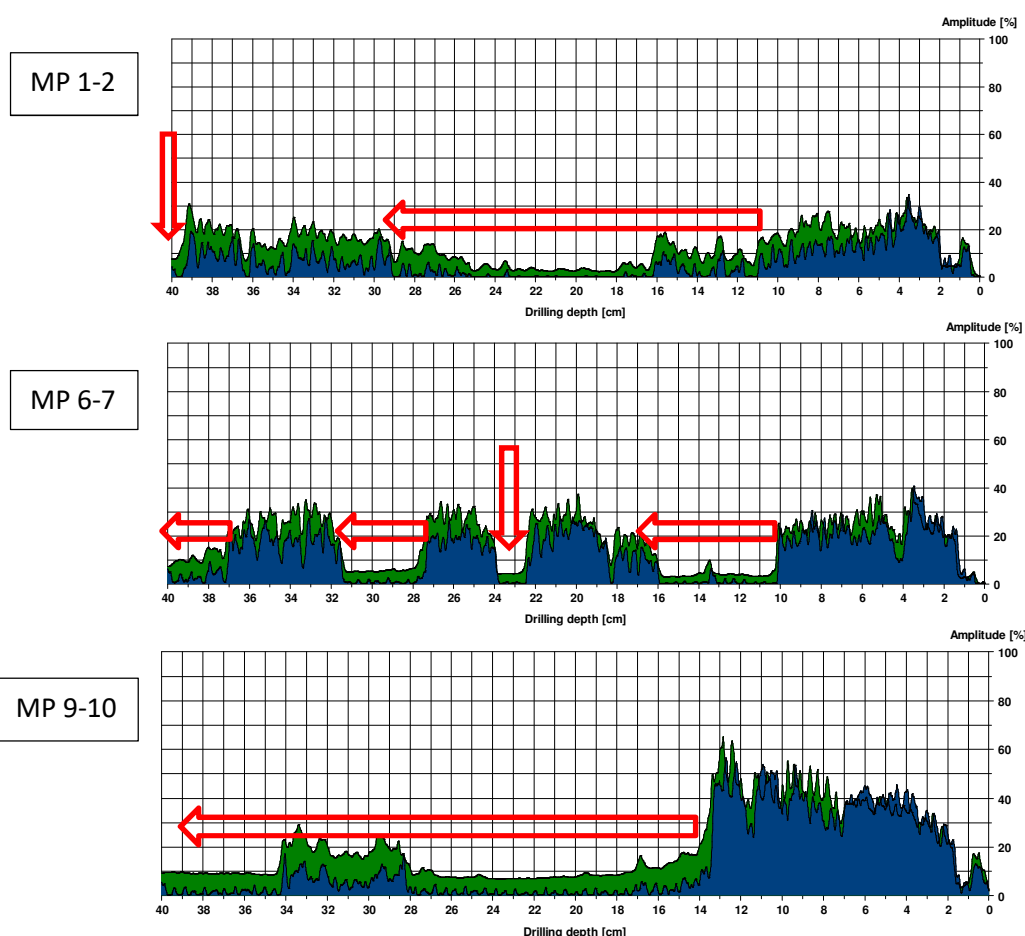
The Picus was used with 13MP at the lowest practicable level on the stem:



The tomogram again indicates low sonic velocity across much of the stem; the basal wound is located between MP 3-4.



In view of the apparent extent of deterioration, the Resi decay detecting drill was again used in three locations, equivalent to MP 1, MP 6-7 and MP 9-10. The drill traces are shown below in this order:



Each of the measurements records the presence of decay, although drilling resistance was erratic on the first two drillings, probably due to the probe passing through small 'islands' of less decayed wood. Drilling resistance drops to the base line on both of these drillings just before the maximum drilling depth of 40cm, and presumably further into the stem. Decay commences at a depth of just 14cm on the final drilling at MP 9-10.

In addition to these indications of decay it was also possible to insert a long screwdriver into the base of the stem just below the level of Picus assessment on the south side, suggesting that deterioration is more extensive below ground level (see photo overleaf).

Comments:

It is apparent from the combined results that extensive internal deterioration is present in the base of this tree, presumably associated with the wound on the west side of the stem. Crown reduction is again recommended in the DAA report but in view of these results it may be prudent to consider complete removal.

Tree canopy showing vigorous regrowth since last reduction



Basal wound on west side between MP 3-4

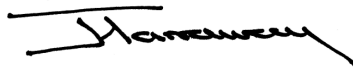
Screw driver inserted into base of stem adjacent MP 7



**Summary of recommendations:**

- Elm 1: no decay identified in lower stem and no further action appears necessary in this respect at present
- Elm 27: significant decay identified at base of stem and in view of the tree's location removal should be considered as an alternative to crown reduction
- Elm 29: significant deterioration confirmed in base of stem; it appears likely that decay extends into the root system and in view of the tree's sensitive location removal may now appears appropriate

Signed:



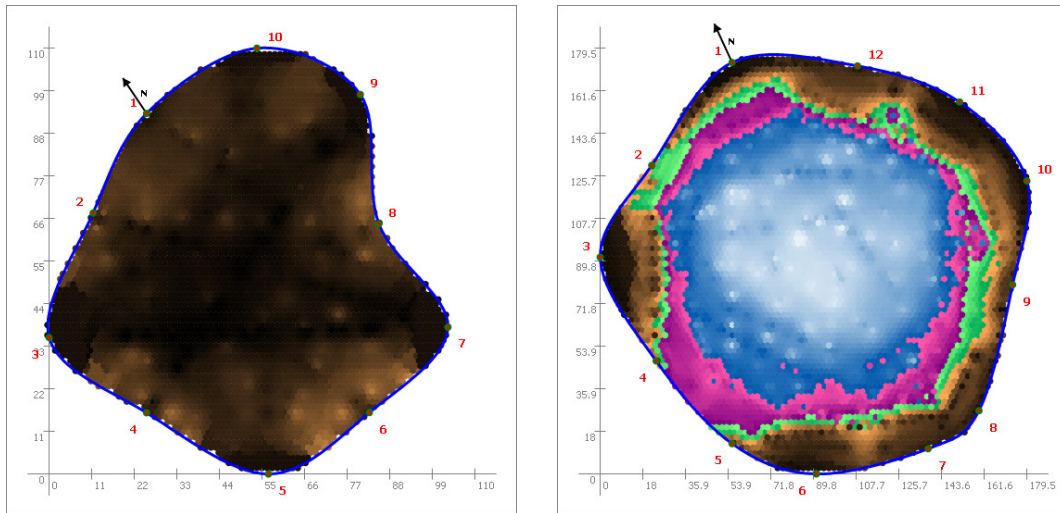
John Harraway *Chartered Arboriculturist*

Date:

9 April 2019

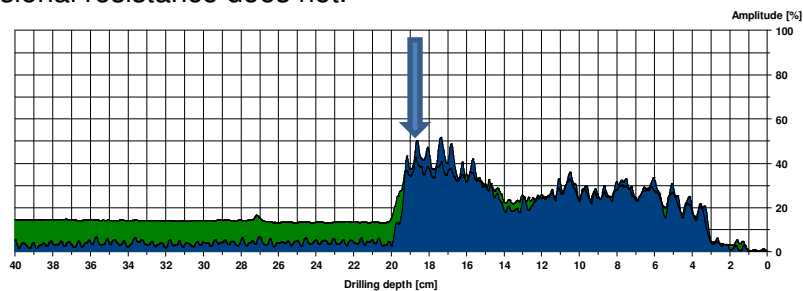
## Decay Evaluation in Standing Trees

The Picus sonic tomography unit uses the relative velocity of sound waves induced across the stem to compose a colour-shift image. Dark areas correspond to higher velocities and, hence, denser wood. Decay (or hollowing) results in lower sound speeds and a shift to lighter colours, with maroon and blue/white indicating more significant decay. Examples of a sound tree (on the left) and one with significant decay/hollowing are shown below:



The latest version of the Picus in use at the base of a London plane tree

The IML Resi PD400 measures the drilling resistance of a very fine drill bit (to a maximum depth of 40cm). Significant drops in drilling resistance are indicative of decay. On the example below decay is indicated at a drilling depth of 20cm. Note the difference between the resistance to forward motion (blue) and drilling resistance (green). In some instances dense wood can mask drops in drilling resistance because of the shaft dragging in sound wood. This version of the Resi makes such decay visible as resistance to forward motion will drop even if torsional resistance does not.



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