

Harraway Trees

Tree Management and Training

Tree Inspection Report



39 Brook Street, London W1

February 2017

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Member of the Expert Witness Institute

TREE INSPECTION REPORT

Client: Grosvenor London
Location: 39 Brook Street, London, W1K 4JE
Date of inspection: 16 February 2017
Inspector: J. Harraway F Arbor A, MICFor, Dip Arb (RFS)
Our reference: TIR/0217/3

Instructions received:

I am instructed by Andrew Maskell CMLI, C Hort, Head of Landscape and Management for Grosvenor, to carry out an inspection and decay evaluation on a mature tree within the curtilage of 39 Brook Street and report on its current condition.

Tree species: Indian Bean Tree (*Catalpa bignoniodes*)

General description:

The tree rises to an approximate height of 15 metres (exact measurement with a clinometer was impracticable due to the limited space in which the tree is sited). The lower stem is recumbent and rests on paving adjacent a rectangular pond, currently drained. The main stem divides into two at approx. two metres and a steel cable has been inserted some metres above, as a precaution against possible fracture at the union.

The tree is located in a paved courtyard completely enclosed by the main dwelling on two sides and high boundary walls on the other two. The property currently stands empty, presumably pending re-development.

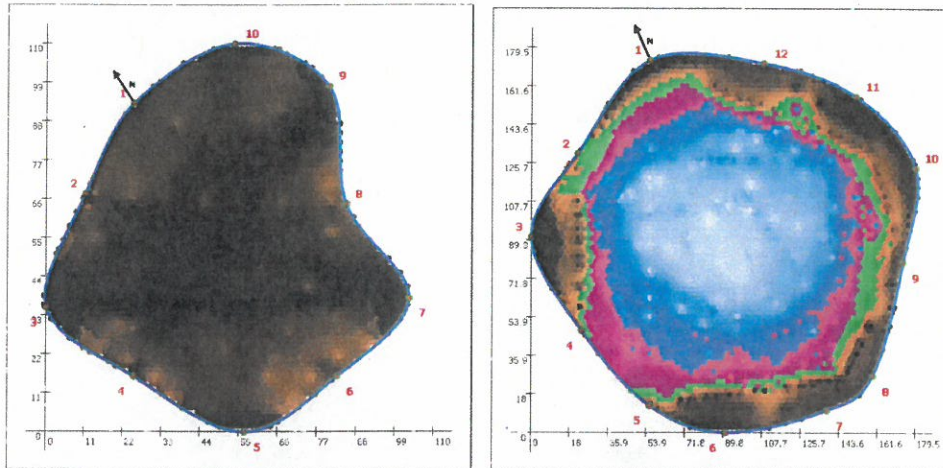
Method of inspection:

In addition to visual inspection, the base of the stem was investigated using a Picus sonic tomography unit and an IML Resi decay detecting drill in three selected locations. The two sub-stems were also assessed with the Resi in a number of locations in the vicinity of wounds just above their union with the main stem. Brief details of the operating systems of both instruments are included overleaf for information.

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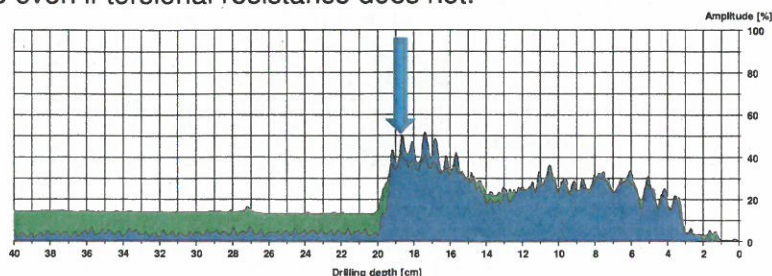
Decay Evaluation in Standing Trees

The Picus sonic tomograph 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 Resistograph makes such decay visible as resistance to forward motion will drop even if torsional resistance does not.

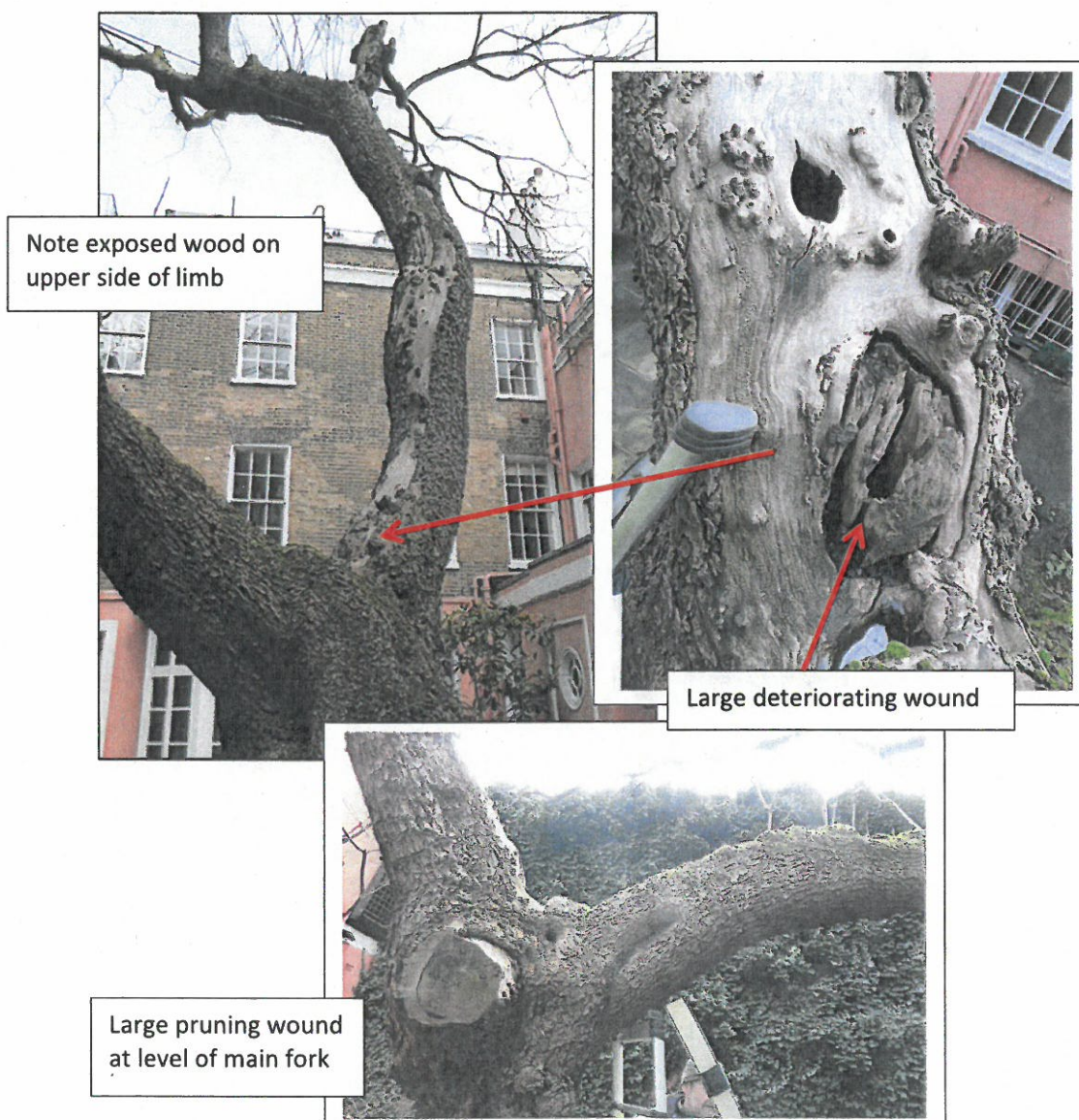


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Results of inspection:

The distinct lean of the lower stem is not typical of the species and is almost certainly due to previous basal movement; this view is supported by the presence of apparent delamination of wood on the upper (tension) side of the stem. Continued movement appears to have been arrested by the underside of the stem coming into contact with the paved surface of the courtyard.

A large limb has previously been removed from the west side of the stem, just below the level of the main fork, leaving a short dead stub. The ascending limb on the north side exhibits extensive bark loss on its upper side from the fork and extending some four metres up the limb and also affecting the first lateral limb to the west. Cavities are evident at the base of the limb at the site of limbs now removed. See photos below:



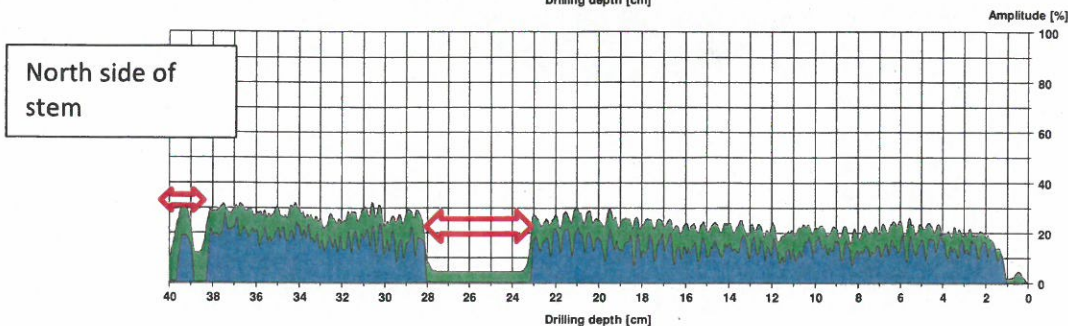
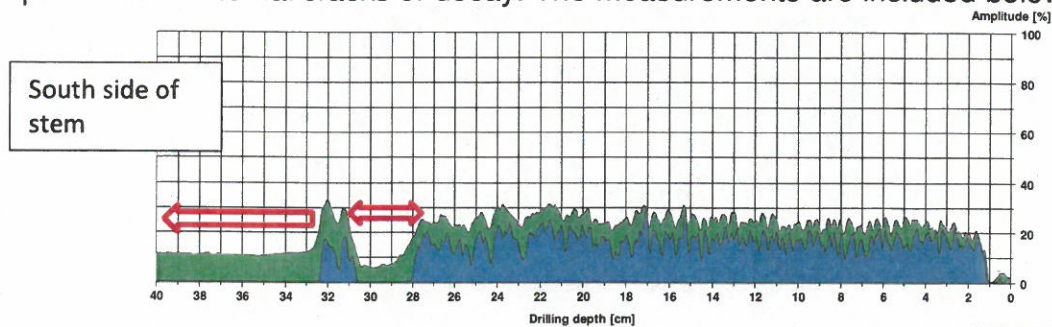
A further lower limb on the west side has also suffered extensive bark loss and is virtually dead. The remaining crown is somewhat sparse, due in part to previous pruning work, and its vigour appeared low (accurate assessment of vitality was limited by the season of inspection).

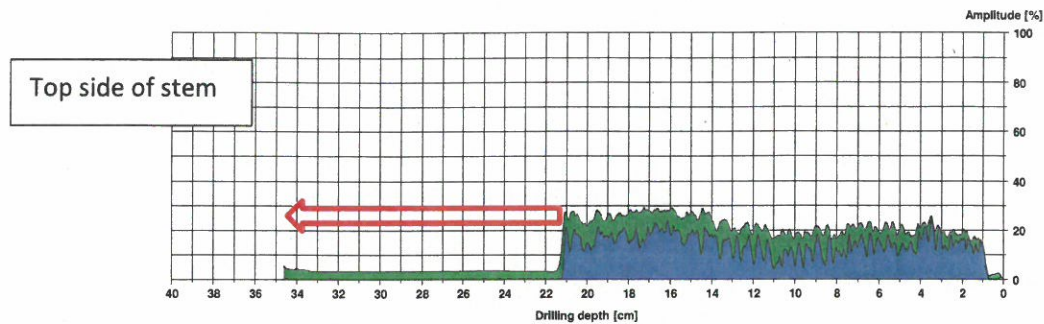
The base of the stem was investigated using the Resi micro-drill on its north and south sides and from the top of the stem, through the part affected by previous delamination (see below):



The Resi is shown in use in the second drilling position

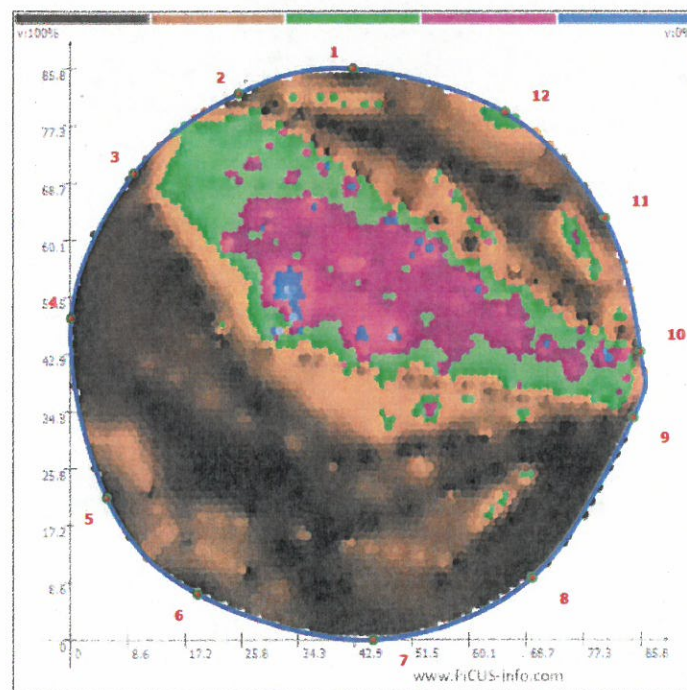
Drops in drilling resistance were recorded at each drilling location, suggesting the presence of internal cracks or decay. The measurements are included below:



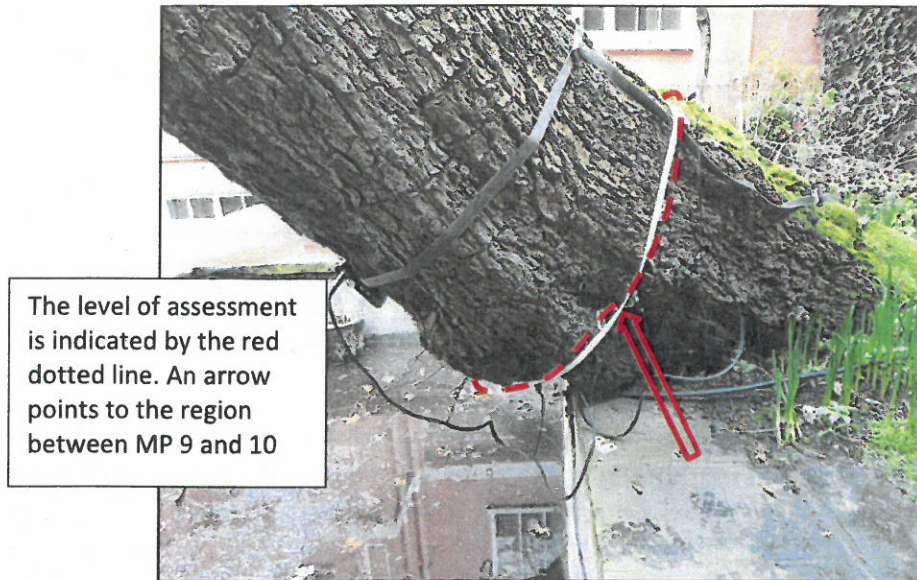


The needle was auto-retracted on the last measurement at a depth of 34cm due to deviation caused by a lack of lateral support within a void.

The main stem was also investigated with the Picus; however due to the requirement to place measuring points around the complete stem, this was carried out at the level at which the recumbent stem clears the side of the pool. A total of twelve measuring points (MP) were used, with MP 1 placed on the upper side of the stem. The stem shape was assumed to be circular as exact measurement of its geometry was hindered due to its proximity to the proximity of the pond; however the exact location of each measuring point around the stem circumference is recorded.



A distinct zone of reduced sonic velocity is indicated across the upper side of the stem from MP 9-10 to MP 2-3 (coloured maroon/green). The form and location of the area of lowered sonic velocity suggests the presence of a significant internal crack, possibly accompanied by some decaying wood. The result appears to corroborate the results with the Resi micro-drill.



Further investigation was also undertaken with the Resi at the base of both sub-limbs, just above the level of the main fork; no internal deterioration was recorded and the results are not included (although they will be retained as a record of the assessment). However, the site of an old branch stub is likely to be subject to further decay (see photo on page 4).

Observations:

Despite the indications of previous basal movement and the presence of internal faults, the lower stem *appears* stable at present. However, its continued stability should not be assumed and some reduction in the current size of the crown should be considered if it is to be retained beyond the short term.

The form of the crown does not provide many opportunities for reduction to suitable secondary growth and it is likely that the tree's current visual appeal could be adversely affected by reduction. However, significant bark loss has occurred from the sub-stem to the north side of the crown, which has already virtually encompassed two lower limbs and will require their removal. The cause of this dysfunction was not apparent at the time of inspection. Continued deterioration of the limb may well occur and if its removal becomes necessary the crown will be left one-sided, unbalanced and lacking any real merit, in my opinion.

I am unaware of the future use of the premises but assume that it will continue to provide accommodation for a number of people. The area in which the tree stands provides the only outside space available to occupants and is thus a valuable component of the property. Refurbishment will presumably be planned for it, possibly involving alterations to the current paved surface and removal of the water feature.

I cannot comment whether a comparatively large tree, in deteriorating condition, will be compatible with the future design but would merely advise that any major work to the tree should be carried out whilst the current refurbishment is in progress.

The only apparent access to the courtyard is via a tortuous route through the premises and of out the main door onto the street; this obviously creates logistical difficulties in carrying out work.

On available evidence, I do not consider the tree is likely to be subject to major structural failure at present but its structural and physiological condition is obviously impaired. Assuming that continued use of the premises will utilise the courtyard as a recreational area, perhaps in an altered form, I suggest that consideration is given to removing the tree completely at this juncture and replacing it with one or more new plantings that will contribute to the future amenity of the space, without the current constraints.

The tree only appears to be visible from the rear of buildings to the east of the property, limiting its contribution to the amenity of the wider neighbourhood. However, if the tree is covered by a tree preservation order or the property is located within a conservation area, formal application to the local planning authority will be necessary and written consent received before any work is carried out to the tree.

Recommendations:

- Consider making application for the tree's removal and replacement whilst the property is uninhabited
- If the tree is retained beyond the short term, the crown should be reduced in height by 2-3 metres, depending on available options for pruning to suitable secondary growth in each instance; dysfunctional limb in the lower crown should also be removed, and:
- The tree's level of vigour, post-reduction, should be monitored regularly by those on site and arboricultural assistance sought if deterioration is noted, and:
- A further assessment of the tree's physiological and structural condition should be carried out in 2-3 years

Signed:

John Harraway *Chartered Arboriculturist*

Date: 22 February 2017