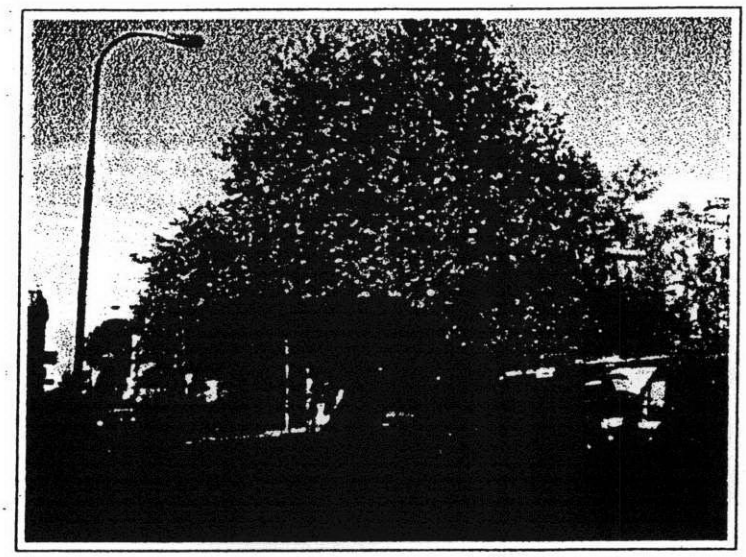
HARRAWAY TREE SERVICES

Tree Management and Training

TREE INSPECTION REPORT



34 Hillfield Road, London NW6

October 2000

John Harraway DipArb(RFS), FArborA

Member of the Expert Witness Institute

HARRAWAY TREE SERVICES

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TREE INSPECTION REPORT

Client: Mr.T.Finlayson

Location: 32 Hillfield Road, London NW6 1PZ

Date of inspection: Friday 6 October 2000

Inspector: J.Harraway

Instructions received:

I am instructed by Mr.Finlayson, 34 Hillfield Road, to inspect a mature tree on his neighbour's property, Mr.Edwards 32 Hillfield Road, and carry out an evaluation of the possible presence and significance of internal decay associated with a cavity on the stem.

I understand that proposals for the construction of a dwelling in the vicinity of the base of the tree are being considered at the present time.

Tree number/identification: n/a

Our reference: **TIR/1000/1**

Species: London plane (*Platanus x hispanica*)

General description:

The tree is approximately 17 metres in height, with a diameter near ground level of approx. 55cm. It is situated at the end of the garden area, immediately adjacent to the boundary of the property with the public highway in Mill Lane. The tree has been previously hard-pruned but has now redeveloped a broad crown, much of which overhangs the footpath and highway (see cover illustration).

A cavity is evident on the north side of the stem at a height of approx. 2.5 m (fig.1).

The base of the tree is growing at a level approx. 50 cm higher than the adjacent footpath (fig.2).

Method of inspection:

The crown of the tree was inspected visually, from ground level.

An evaluation of possible decay in the vicinity of the cavity at 2.5 m was carried out with an Arborsonic Decay Detector, on the north-south axis at a height of approx. 2 m. Additionally, a Resistograph F300 decay detecting drill was used in four locations on the stem, just beneath the cavity and at one point on the north side of the lower stem.

The Arborsonic measures the time it takes for a pulse of ultrasound to travel through the stem to indicate the likelihood of internal decay. The Resistograph records the drilling resistance of a very fine drill-bit, to a maximum depth of 30 cm.

A brief explanation of the methods of operation of both instruments is appended to this report, as are the results obtained.

Results:

Examination of the leaves and extension twig growth suggests that the present vitality of the tree is satisfactory. No significant deadwood was noted in the crown and there were no external indications of basal movement or other significant structural defects in the main branch system.

A cavity at 2.5 m on the north side of the stem is evident and probably arose following the removal by pruning of a major limb many years ago. The tree has responded to the wound by developing a ring of callus tissue around the wound, which now partially occludes it.

Probing with a hand tool inside the cavity suggested that it was hard-walled and not extensive. However, the Arborsonic gave a reading which was approx. 60% above the anticipated result (anticipated time 225 micro-seconds, actual time 364 m-secs). This is generally indicative of the presence of established decay.

Furthermore, investigations with the Resistograph at points on the north, west and east sides of the stem at a level just beneath the cavity all gave clear indications of a significant drop in drilling resistance, and hence decay, at an average depth of approx. 10 cm (see measurements 2, 3 and 4).

The rapid drop in drilling resistance between sound wood and decayed wood suggests that the tree has successfully 'walled-off' the area affected by the original decay-causing organism .

The micro-drill was also used on the lower stem from the north side, at a height of 40 cm (measurement 5). Although no drop in drilling resistance was recorded at this point, examination of the drill trace shows that it becomes relatively smooth from a depth of 15 cm. This may be an indication of initial decay in the vicinity which is altering wood structure in advance of reducing its strength.

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Conclusions:

The investigations have confirmed the presence of significant decay associated with the cavity at 2.5 m. However, the initial decay pathogen may no longer be active and continued enlargement of the area of deterioration may not be inevitable.

Although the tree does not appear to be in a hazardous condition at the present time, the decay in the stem must have inevitably reduced its structural integrity. It would be prudent, in my opinion, to reduce the dimensions of the crown by approximately 30%, to minimise the likelihood of future failure. Such action could include the removal and reduction of limbs over the adjacent highway which, if allowed to develop without restraint, could impede the passage of high-sided vehicles.

Furthermore, I recommend that development of the crown in future is controlled through regular pruning, on a frequency of perhaps 5-7 years, and that investigation into the structural condition of the stem is repeated in 3-5 years.

Alternatively, the removal of the tree could be considered and its replacement with a new specimen which could provide a landscape feature for the area for decades to come, without the compromise to public safety which the present tree may represent.

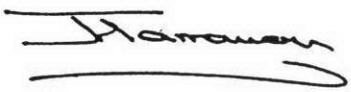
This course of action would seem particularly appropriate if new structures are built adjacent to the tree.

Recommendations:

1. **Crown reduce tree by approx. 30% within six months of the date of this report**
2. **Repeat decay evaluation in 3-5 years**
3. **Repeat crown reduction at intervals of 5-7 years**
4. **OR, fell tree to ground level and replace with same or similar species**

N.B. If the tree is covered by a tree preservation order or is situated within a conservation area, appropriate application to the local planning authority will be necessary and written consent obtained before action is taken. This report may be used to provide technical evidence for any such application.

It is recommended that all work carried out conforms to British Standard BS3998 'Recommendations for Tree Work'. You are advised to ensure that any contractor engaged carries adequate and appropriate Public Liability insurance cover.

Signed:  **Date:** 7/10/00

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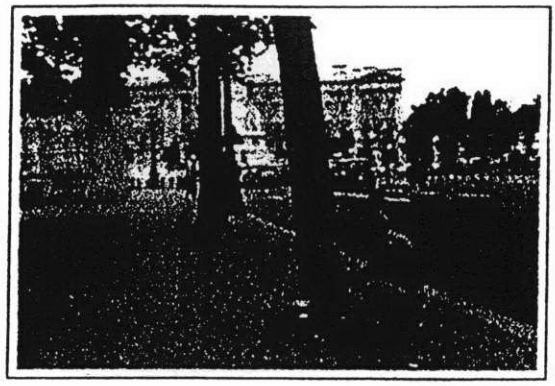
THE ARBORSONIC DECAY DETECTOR



The Arborsonic Decay Detector is a specialist instrument for detecting and evaluating the extent of decay in standing trees. It provides clear and reliable information about the likely condition of the heartwood and can greatly assist an arboriculturist in making appropriate decisions about the management of amenity trees.

The technique is non-invasive, unlike any form of drilling into the tree, and can be carried out in all weathers, at all times of the year.

The Arborsonic is equipped with two transducers, one of which emits a tuned ultra-sound pulse into the tree while the other acts as a receiver. The instrument measures the time it takes to go from the transmitter to the receiver, in millionths of a second (micro-seconds). Field trials by the instrument's manufacturers, Fujikura Europe Limited, have shown that ultra-sound tuned to the frquency and wavelength used by the Arborsonic travels at a constant velocity of approximately 2000 metres per second through **sound wood**, regardless of species.

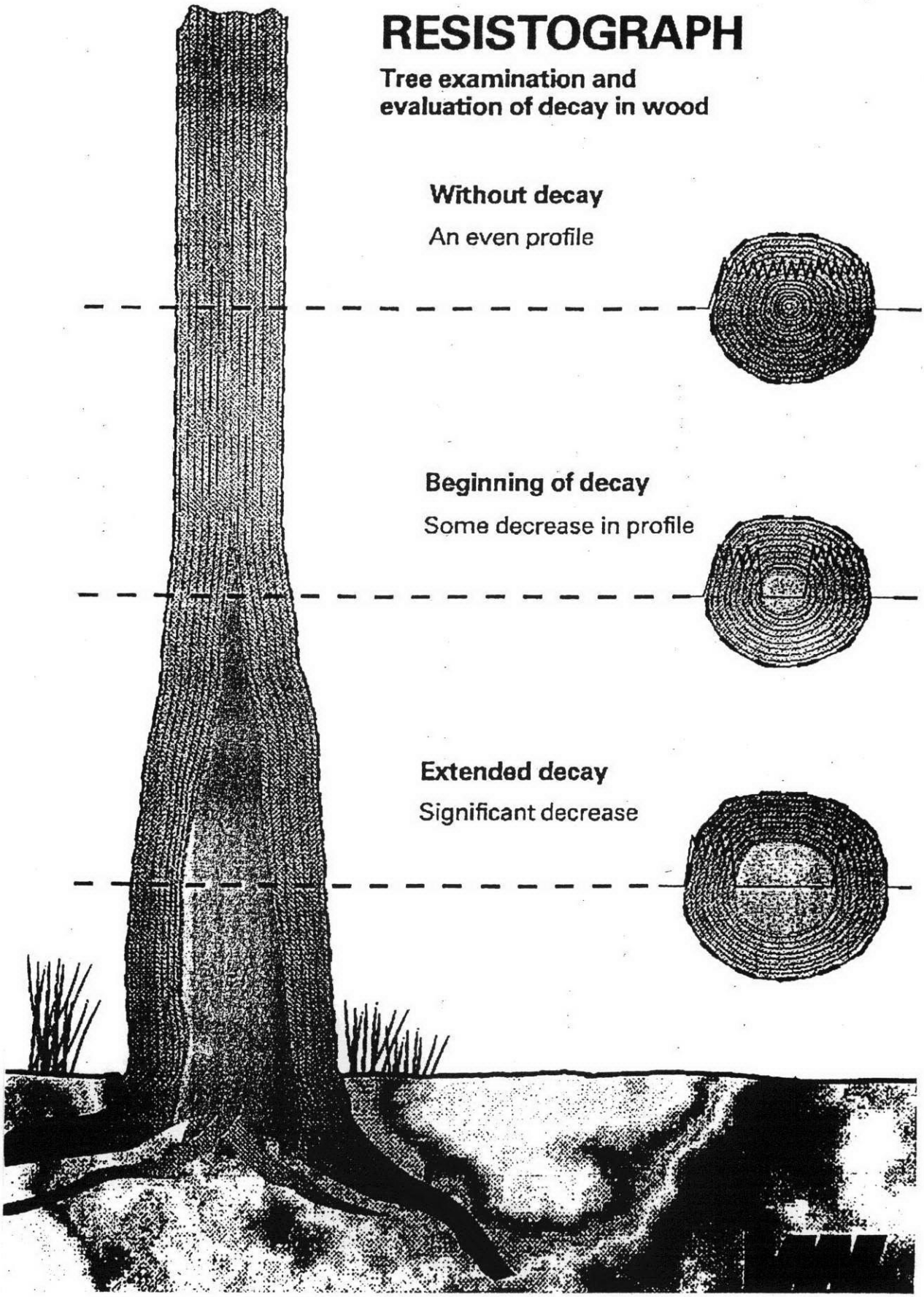
Therefore if the distance between the transducers is measured the time taken by the pulse can be predicted. However if decay is present, the time taken is enhanced as the pulse is forced to take a longer route before it is detected by the receiver. The more decay, the longer the time taken. Again based on actual field trials, Fujikura have been able to formulate guidance times to categorize the likely significance of readings given. By consulting the information supplied with the instrument or performing a simple mental calculation the operator is able to quickly and simply interpret the results.

The Arborsonic has only been available to the tree care industry since 1994 but it is already used by a large number of consultants, contractors and local authorities throughout the UK, Europe and North America.

To ensure the transducer makes good contact with the tree a small plug of bark is removed. This is normally put back into position after testing so usually it is not apparent without very close scrutiny that a tree has even been investigated. The small bark wound formed closes over rapidly, often within a single growing season.

RESISTOGRAPH

Tree examination and evaluation of decay in wood



Tree Diameter (mm) v Propagation Time (usec) - Diametric Testing (Transducers @ 180°)