Landmark Trees

FURTHER INVESTIGATION REPORT:

5 Oval Road

London

NW1 7EA

REPORT PREPARED FOR:

Richard Tomlinson

5 Oval Road

London

NW1 7EA

REPORT PREPARED BY

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Site Details

Site Address: 5 Oval Road, London NW1 7EA

Client / Agent: Richard Tomlinson

Surveyor: Kim Dear

Date of Inspection: 20th August 2020

Instruction

Carry out Picus Tomograph Decay detection on the main stem of T6, a sycamore within the rear garden of 5 Oval Road. Client would like a second opinion on the condition of the tree. As part of our report, the Client would specifically like our *opinion on the disease, the life expectancy, stability (tree is leaning) and the effects on the adjacent properties (No5 & No7 Oval Road) by removing the tree*.

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.

T6 Details

Species: Sycamore (*Acer pseudoplatanus*)

Diameter: 700mm

Height: 19m

Photograph 1: Location of T6

Observations

The tree is situated on the northern boundary of the property, with a panel fence loosely attached to the east and west of the stem. The stem leans to the north over the adjoining council-owned property (No7 Oval Road) and is bifurcated at 6m with a narrow fork. The property is being developed and site usage appears relatively intensive. According to the British Geological Survey, the site overlies London Clay (please see http://mapapps.bgs.ac.uk/geologyofbritain/home.html).

There is a small cavity measuring 10cm by 5cm at ground level to the south of the stem (see Photograph 2). No immediate fungal fruit bodies or pathogens are evident at the seat of decay, nor is inspection of the internal wood readily possible. There are metal brackets included in the stem at 0.4 and 1.5m to the West and 2m to the east. The canopy appears full and well balanced with no obvious dieback, but has been crown raised in the past, leaving a long unmodified 'lever-arm' to the main stem and relatively low crown ratio. There is moderate swelling in the base of the tree around the cavity with the diameter increasing markedly to >1000mm, compared to 700mm at 1.5m height.

Photograph 2: Small cavity at base of tree

Results

One tomograph was taken, at a level 10cm above ground. The tomograph shows an area of decay to the south of the stem with a cavity shown in blue, advanced decay coloured pink/purple and the incipient or early decay coloured green.

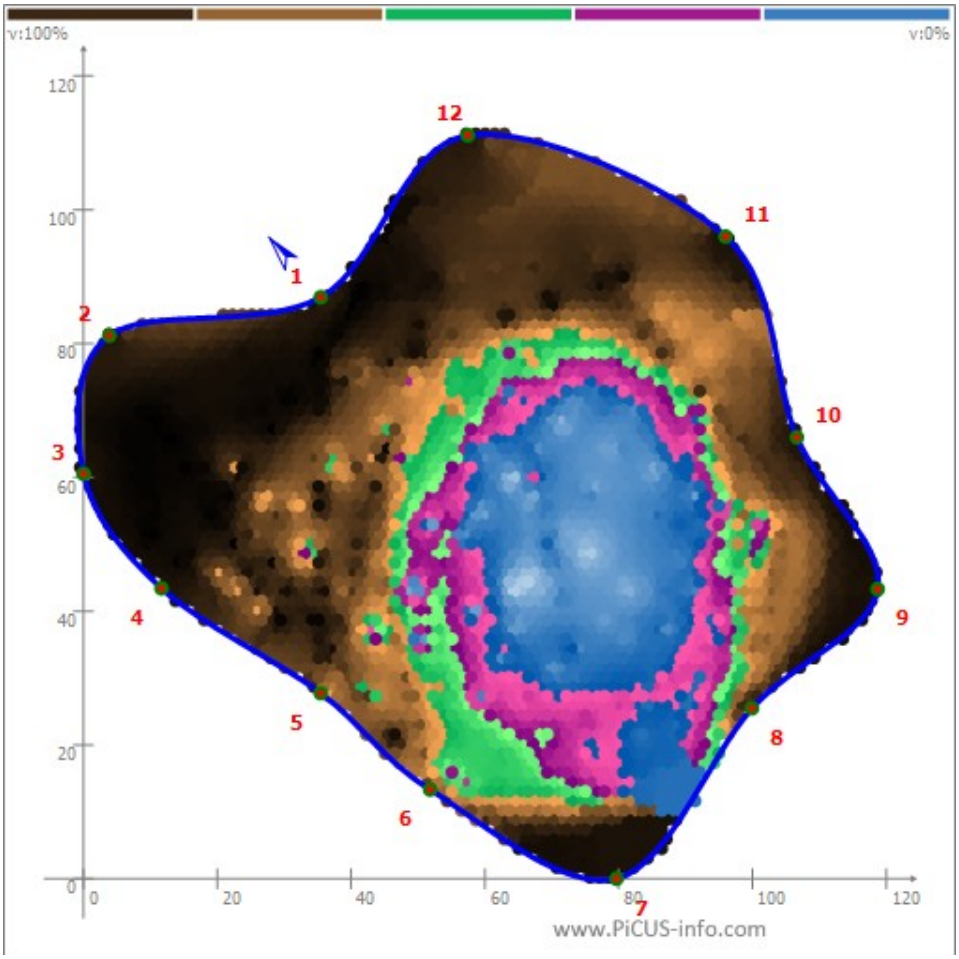

Figure 1: Tomograph of T6 taken at 10cm above ground level

Discussion

No single pathogen / disease can be confirmed at this time, though annual fungal fruit bodies may reveal themselves presently in Autumn. Equally, bodies of perennial fruiting fungi are not always evident on impacted trees. However, it is most likely the decay is caused by one or more of the common decay fungi colonising hardwood / broadleaved trees (e.g. *Ganoderma* spp). These degrade the internal timber with often less obvious symptoms in the tree's external physiognomy, though sometimes a marked basal swelling and / or general thinning / dying back of the canopy. Basal swelling has been observed here as is common in *Ganoderma* decay.

Whilst the percentage cross-sectional area of decay (55%) to sound wood (45%) indicated on the tomograph does not necessarily occupy a high proportion of the overall cross-section of the stem, its eccentric position means it does occupy a large part of the southern half of that stem with the result that the residual walls at points 6 and 8 are particularly narrow (c. 3cm). A higher percentage of 70% decay to 30% sound wood is generally considered a statistical safety threshold. However, Fraedrich and Smiley (1999) recommend increasing the sound wood requirement for trees with asymmetric decay columns, trees that are leaning, trees with low crown ratios, trees with other defects and trees on high use sites. Given the other observed defects in the tree, ongoing adjacent construction works and difficulty in carrying out a crown reduction due to the past pruning history, its retention is deemed, on balance, imprudent. Given the size and position of the cavity, in conjunction with the leaning stem and other defects / site conditions, I would be reticent to award this tree much more than 10 years Safe Useful Life Expectancy.

The removal of a mature tree from a property overlying highly shrinkable London clay could lead to a change in soil volume as the tree's water extraction ceases. This change could impact adversely upon surrounding structures (e.g. wall or building foundations) in the immediate and adjacent properties. A risk assessment is recommended (see below).

Recommendations

Fell tree within 3 months of the date of this report.

Consult with a structural engineer on providing a heave risk assessment with regards to potential ground movement following the removal of a mature tree. NB replacement planting may also be a condition of planning consent to remove the existing tree: the design of foundations and other structures should also take this condition (and future tree growth) into consideration.