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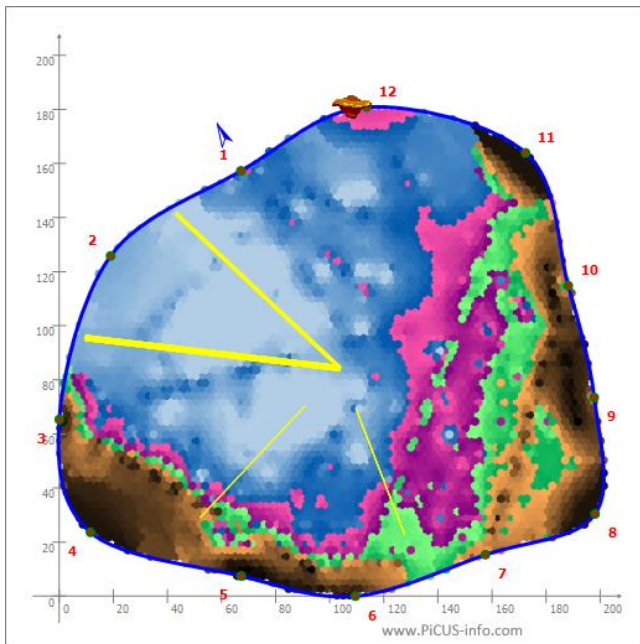
WHERE COMMON SENSE IS STILL COMMON

DECAY DETECTION ON THE MAIN STEM OF A CEDAR OF LEBANON TREE AT CEDAR CLOSE, WORTON September 2020

Cedar of Lebanon - *Cedrus libani* - Height 18m; Diameter 1750mm; 5 major limbs

This mature cedar grew on communal council-owned land in a residential housing estate built in the 1980s.

The limb growing to the southwest shows a large bark wound at 8m above ground level. Old hanging chains were noticed in the crown, probably from an old swing. Also, old pieces of iron bracing were found on the ground, but not seen in the crown. The crown was sparse, with areas of die back and minor deadwood.



- Brown** = Good wood
- Green** = Early decay (or included bark)
- Pink** = Advanced decay
- Blue** = Cavity **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.

Conclusion: The Tomograph showed a large cavity coloured blue with some advanced decay coloured pink and early decay coloured green. The yellow lines are where the software indicates there could be cracks. The thicker the line, the larger the crack. The sonic data shows that there are cracks. These cracks are naturally occurring in this species of tree and increase with maturity.

Recommendations

This was a significant tree and showed prominently on the village skyline. The tree had already been significantly reduced, which may have been in part responsible for its lack of vigour and die back. The house near the tree was within target range of the tree.

This tree was at the end of its growing life, the cracks will not necessarily increase. The fungus observed at the base of the tree predominantly affected the root structure which could also attribute to the sparse crown. As a result of the report, the tree was felled in April, and a replacement planted.



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