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PICUS TOMOGRAPH TEST ON NINE OAK TREES AT LYONS OAK.



Photo 1. Tree 1.

Prepared for: Calibra Tree Surgeons.

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Site Address:

Lyons Oak,

Warfield,

RG42 2PX.

Client:

Calibra Tree Surgeons,

20 Moordale Avenue,

Bracknell.

Instruction:

Carry out Picus Tomograph Decay detection test on main stem of nine Oak trees.

Inspection:

The Inspection was carried out on the 6th July 2020. The conditions were dry and clear. The Inspector was Kim Dear.

Tree 1.

Common Oak (*Quercus robur*). Height 11m Diameter 795mm

General Observations:

The tree is situated to the east of the Lyons Oak entrance on an area of communal grassland. There is a roadway and path 6m to the north.

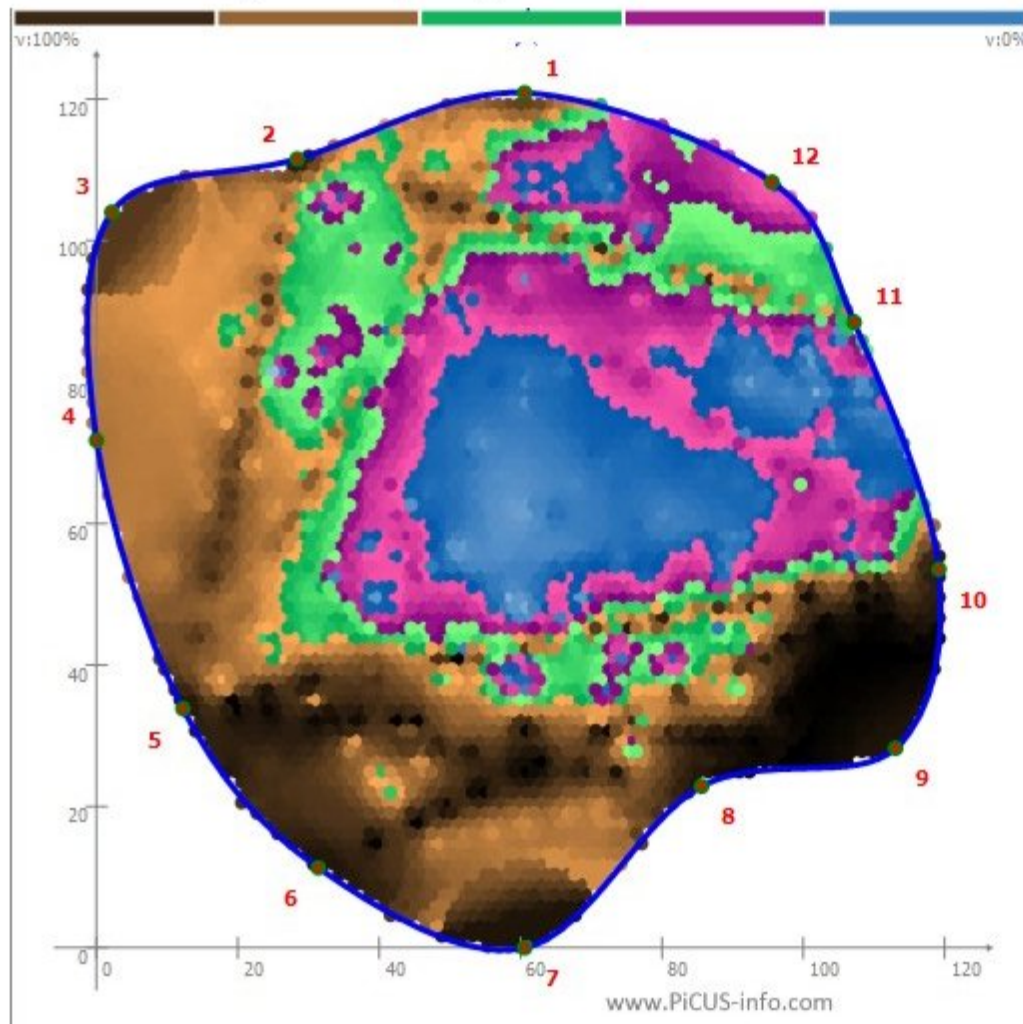
There are bark wounds from the north west to the east from ground level to 1m (Photo 1), with some decay into the buttresses. The crown is in fair condition with minor deadwood.

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.



Picus Tomograph result t1 at 35cm agl.

The tomograph shows an area of decay to the East and North of the stem with a cavity shown in blue, advanced decay coloured pink/purple and the incipient or early decay coloured green.

Conclusion.

The area of decay is fairly extensive at this height, and the visible deterioration of the buttress roots also raises concerns as to the tree's stability.

Recommendations:

As a TPO is in place on this tree the local authority is reluctant to allow removal. Regular monitoring is therefore recommended as part of the tree management schedule.

Tree 2.

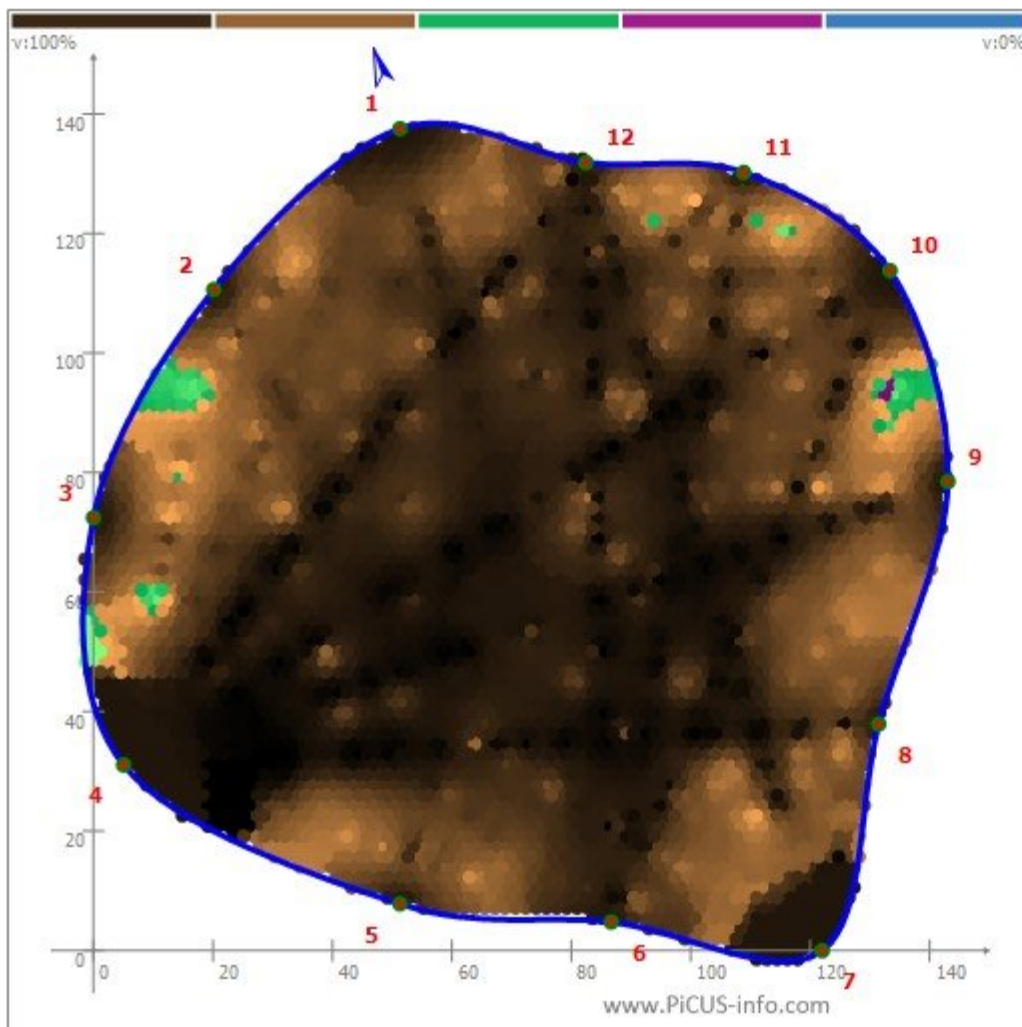
Common Oak. (*Quercus robur*). Height 13m Diameter 1050mm.

General Observations.

This tree is situated 4m east of T1. There are bark wounds at 1.5m to the North, from ground level(gl) to 1m to the East, and from gl to 1.6m above ground level (agl) to the south. The crown appears sparse with minor deadwood. There is also damage and decay in the buttress roots. (Photo 2).



Photo 2. Tree 2.



Picus tomography image T2 at 30cm agl.

Conclusion.

The Picus image indicates sound wood coloured brown, with some minor patches of early decay to the East and West coloured green.

Recommendations.

Re-test in 5 years, or sooner if the tree shows signs of decline.

Picus tomography image T2 at 30cm agl.

Tree 3.

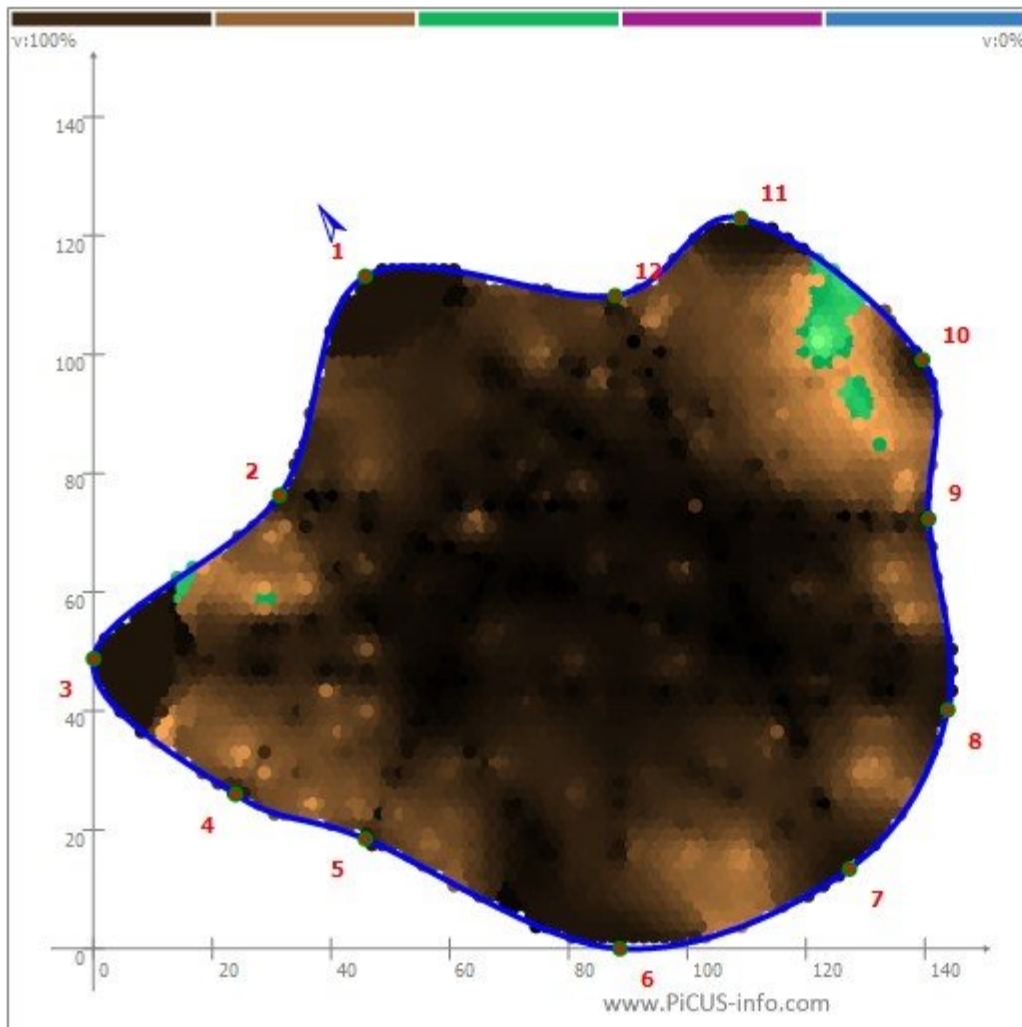
Common Oak. (*Quercus robur*). Height 15m Diameter 1030mm



Photo 3. Tree 3.

General Observations.

This tree is situated 14m East of T2. It has three distinct buttresses (Photo 3), to the North, North West and North East, all are damaged and decayed. There is a further bark wound at 1m agl to the South which is occluding. There is minor deadwood in the crown and epicormic growth on the main stem.



Picus tomography image T3 at 40cm agl.

Conclusion.

There is sound wood at this level indicated by the brown colouring, with a small patch of early decay indicated by the green colour to the East.

Recommendation.

Re-test in 5 years or sooner if the tree shows signs of decline.

Tree 4.

Common Oak. (*Quercus robur*). Height 17m Diameter 945mm.



Photo 4. Tree 4.

General Observations.

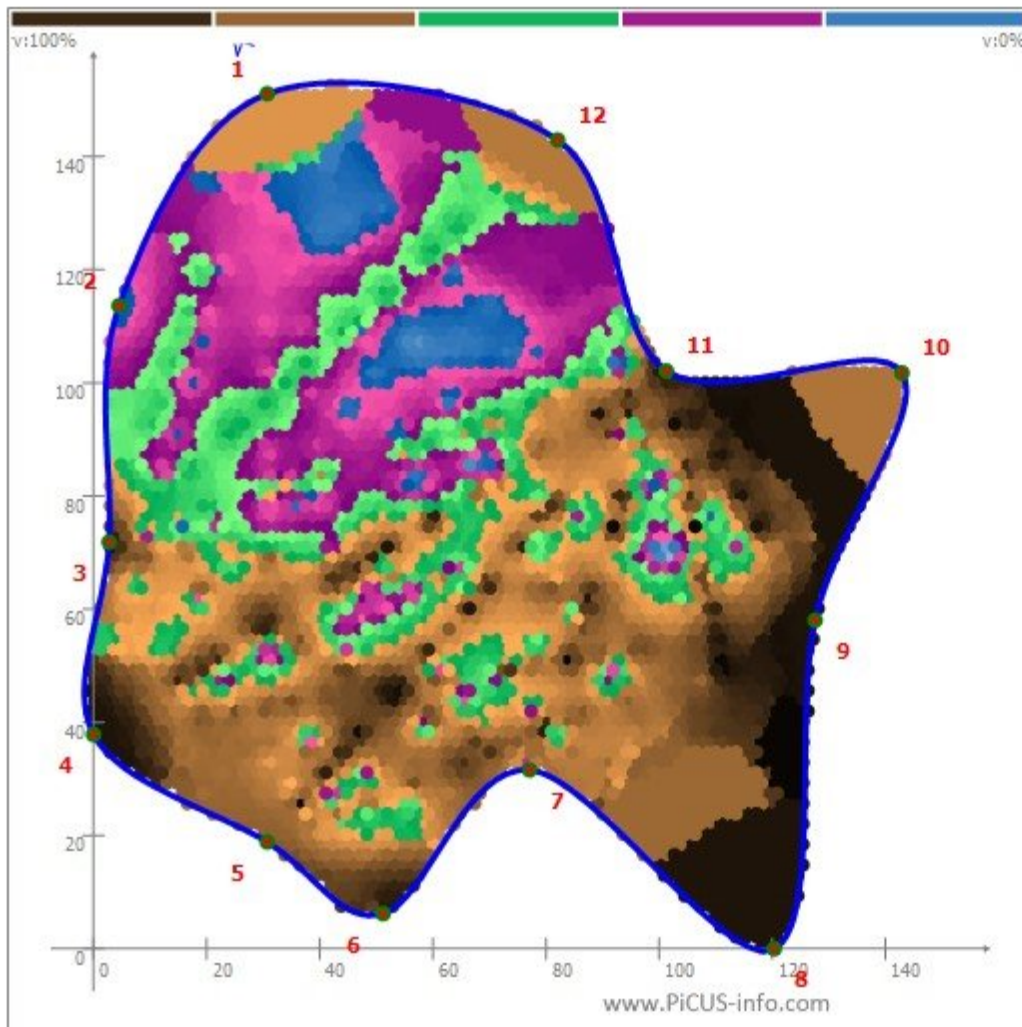
This tree is situated 8 m East of T3. It appears in fair condition, with old pruning wounds on the main stem.

Conclusion.

There is an area of early decay to the North indicated by the green and purple colouring.

Recommendation.

As with tree 1, careful monitoring is recommended with a further test in 5 years, or sooner if there is a decline in the trees condition.



Picus tomography image Tree 4 at 20cm agl

Tree 5.

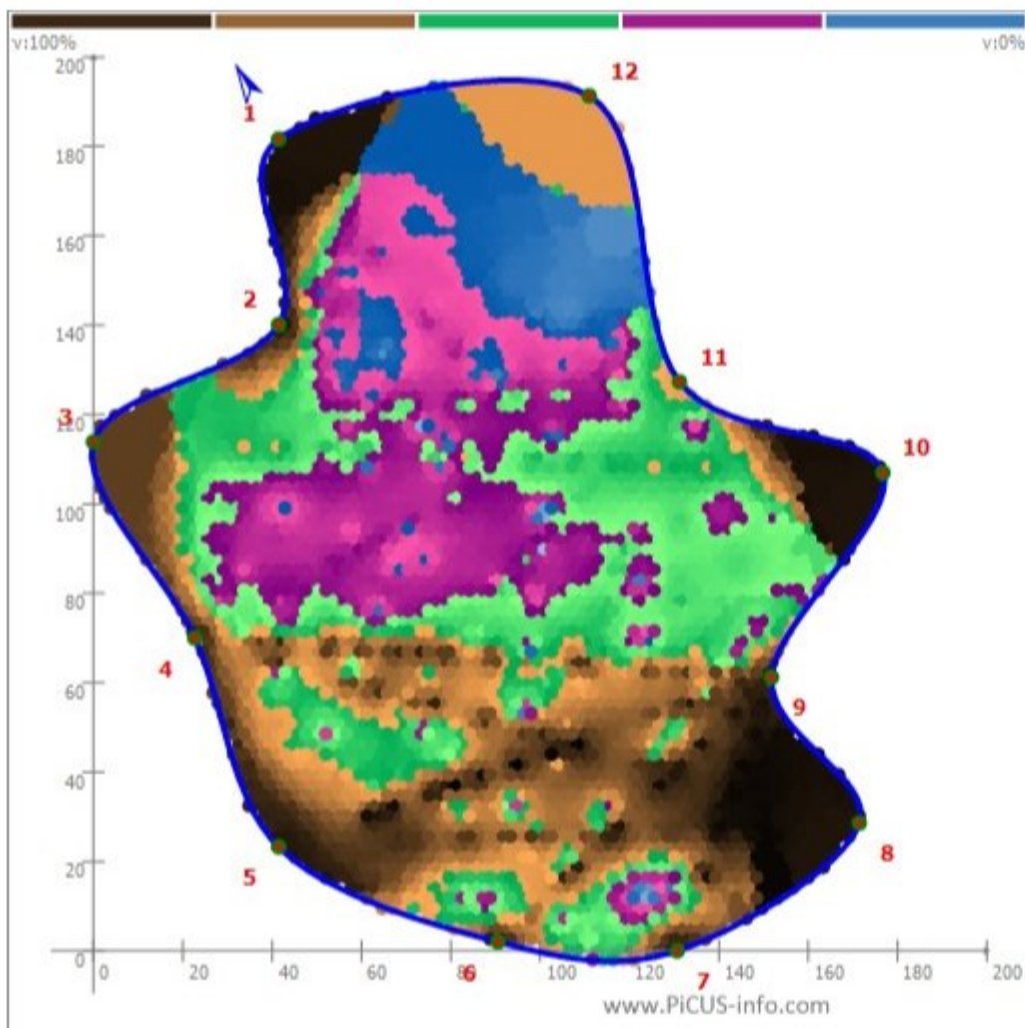
Common Oak (*Quercus robur*). Height 13m Diameter 1135mm

General Observations:

This mature tree is situated on an area of common land to the west of the entrance to Lyons Oak. (Photo 1). It has a slight lean to the north and a sparse crown. There are fungal brackets (Photo 2) to the south, west and north east at ground level, most likely *Inonotus hispidus*. The tree has been reduced in the past.



Photo 2.



Picus Tomograph result T5 at 10cm agl.

The Tomograph shows an area of decay to the North East of the stem with a cavity shown in blue , advanced decay coloured pink/purple and the incipient or early decay coloured green.

Conclusion.

There is a significant area of decay which is likely to degenerate further with the active growth of the fungal pathogens.

Recommendations:

Discussion on site with Mark concluded that the tree should be reduced, particularly to the north over the neighbouring garden.

Tree 6.

Common Oak. (*Quercus robur*). Height 17m Diameter 1570mm.



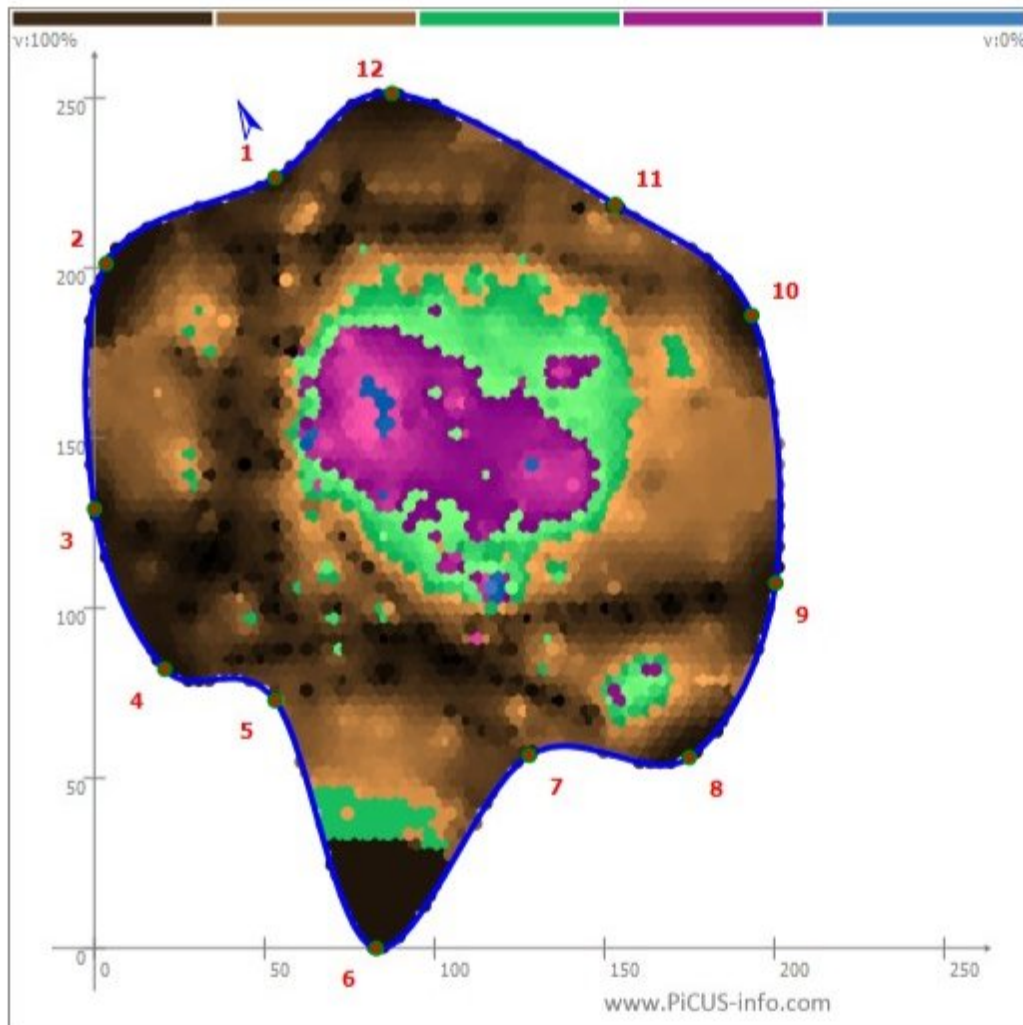
Photo 3. Tree 6.

General Observations.

This tree is situated 18m south of T5. It is bifurcated at 4 m with the crown on the southerly stem noticeably sparser. There is Ivy growing to the east reaching a height of 6m.

There is a soil level change of 0.6m west to east. There is a house 9m to the west and a roadway 8m to the south and east.

There is some staining to the south (Photo 4), possibly caused by a fungal bracket that has been removed.



Picus Tomograph image T6 at 15cm agl.

Conclusion.

There is a central area of decay indicated by the purple and green colouring. This currently does not significantly affect the structural integrity of the tree.

Recommendation.

Retest in 5 years or sooner if the tree shows signs of decline.



Photo 4. Tree 6 staining.

Tree 7.

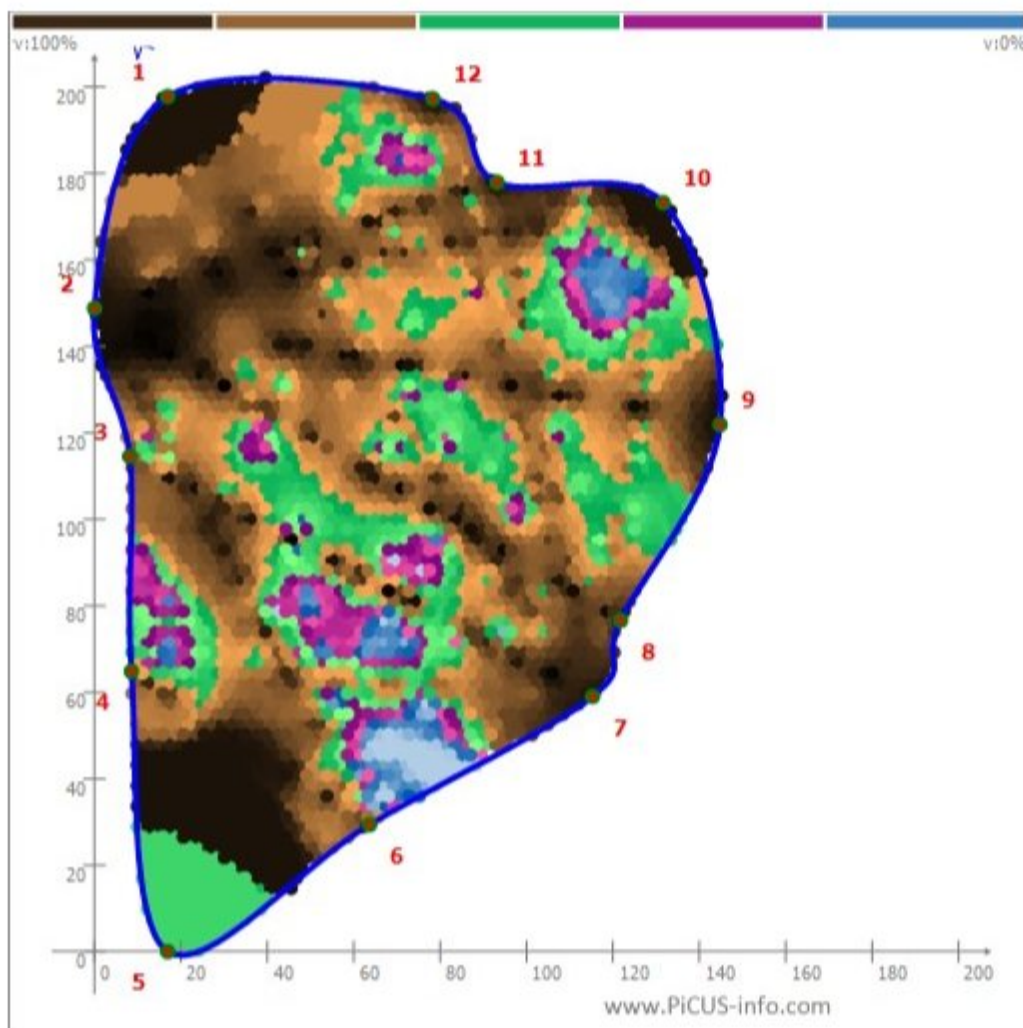
Common Oak (*Quercus robur*). Height 15m. Diameter 880mm.



Photo 5. Tree 7.

General Observations.

This tree is situated 20 m south of T6. It has a severe lean to the east, with the crown over the road and adjacent property. There is a large exposed buttress root to the west. The crown has normal vitality. There is a wound at 4m to the east from a lost limb.



Picus tomography image T7 at 15 cm agl.

Conclusion.

The Picus image shows some early incipient decay. This currently does not significantly affect the structural integrity of the tree at this level. Failure is likely to be caused by uprooting, so the root plate security needs to be monitored as part of the tree management schedule.

Tree 8.

Common Oak. (*Quercus robur*). Height 17m

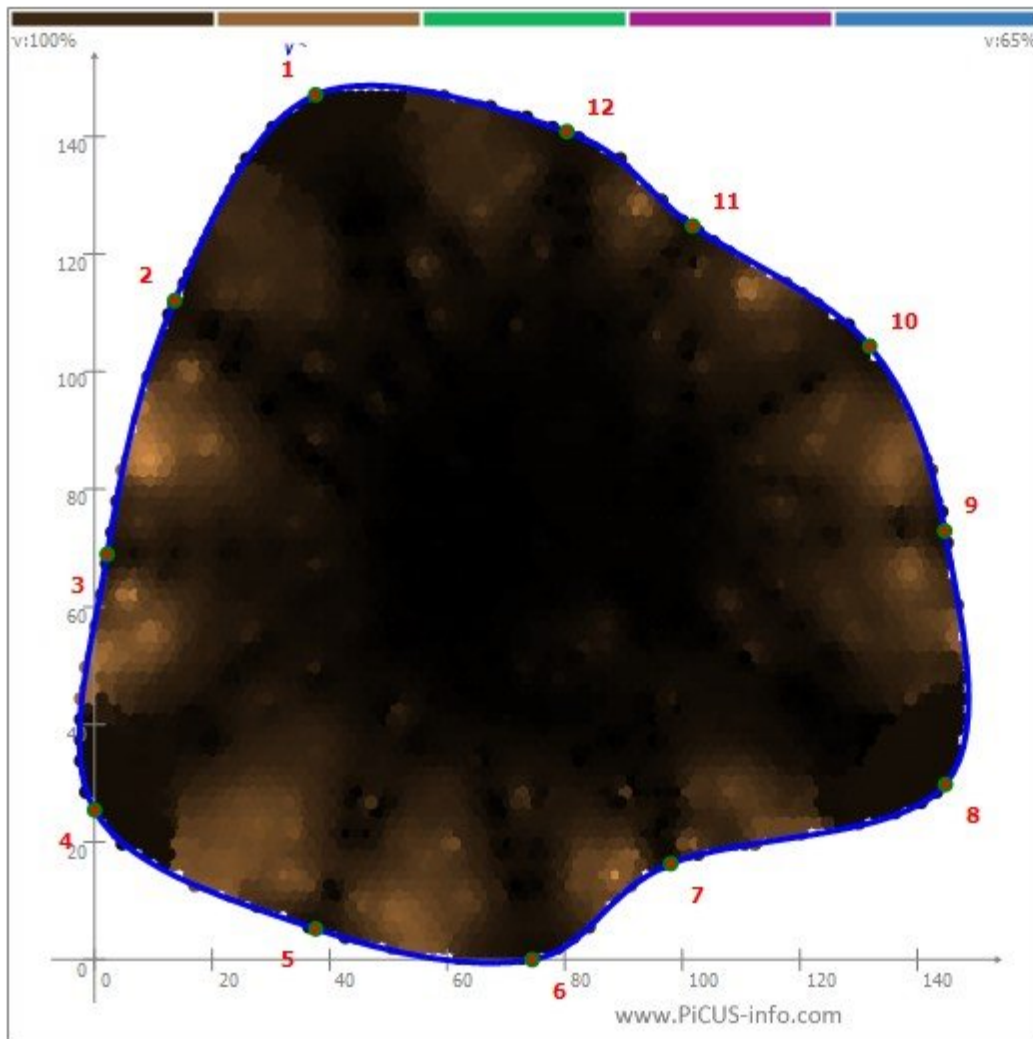
Diameter 1055mm.



Photo 6. Tree 8.

General Observations.

This tree is situated 4m south of T7. It has a straight stem and a well-balanced crown. There are currently no visible pathogens.



Picus Tomography image T8 at 20cm agl.

Conclusion.

There is no decay at the height tested.

Tree 9.

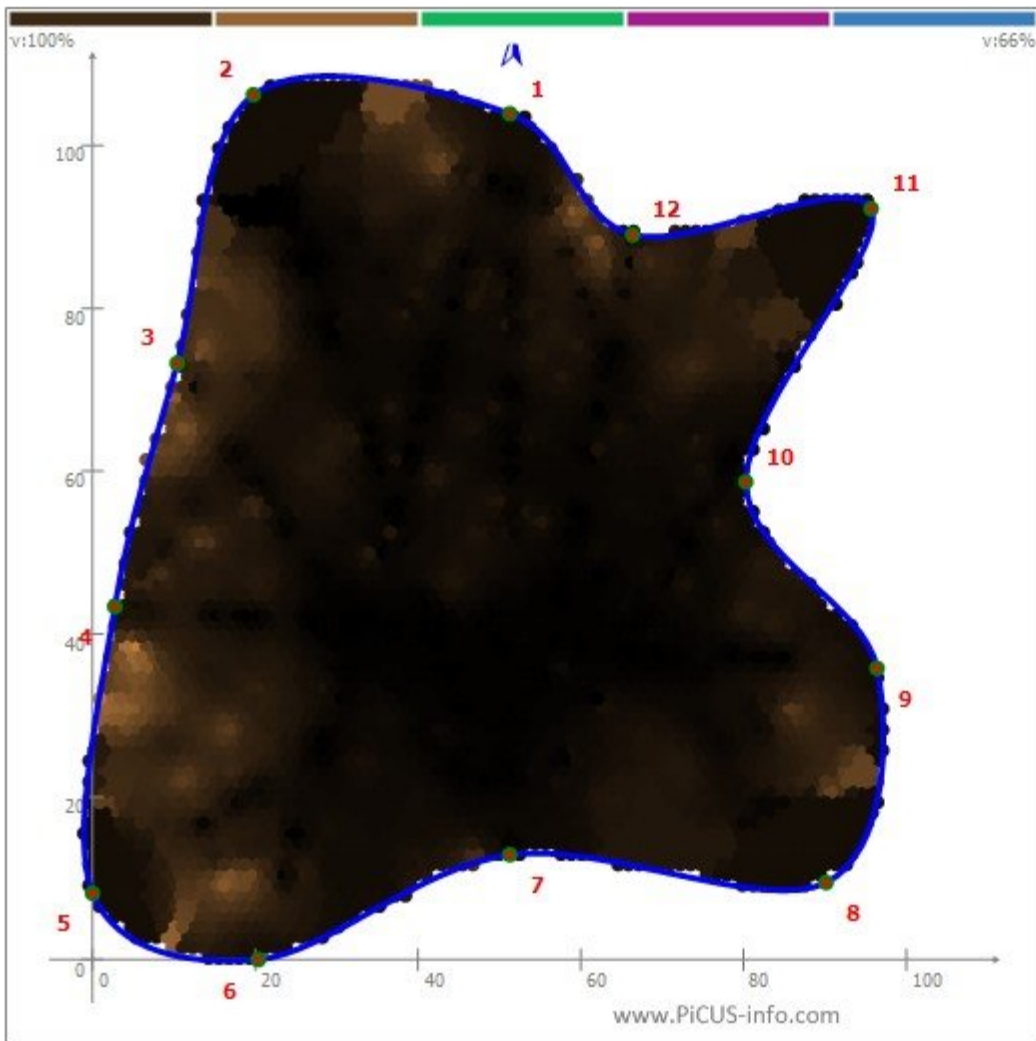
Common Oak. (*Quercus robur*). Height 9m Diameter 705mm.

General Observations.

This tree is situated 5 m south of T8. It is suppressed by T8 and all of the crown is to the south of the main stem. There is minor deadwood throughout the crown and damage to the buttress roots to the north, north east.



Photo 7. Tree 9.



Picus tomography image T9 15cm agl.

Conclusion.

There is no decay at the height tested.

Recommendations.

Remove minor deadwood. Retest if the tree shows signs of decline.



Vince Cainey BSc

5th August 2020.



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5th August 2020.