Arboricultural Note

Project: Barham House PiCUS Investigation

2nd November 2023 Aspect ref: 11854.TN.01

1. Introduction

1.1.1. Aspect Arboriculture were instructed to visit Barham House during October 2023 to undertake detailed PiCUS investigations of a veteran Beech set within the north-western extent of the curtilage of the house.

1.1.2. The investigations concerned the tree's lower trunk structure and set out to assess its internal structural condition. The outcome of the works are described in full below.

1.1.3. The PiCUS sensors were positioned to target the anticipated area of dysfunction relative to the presence of visible external defects. This report summarises the findings of the inspection and provides conclusions regarding the tree's structural integrity and recommendations regarding its future management.

2. Limitations

2.1.1. Reasonable effort has been made to identify defects during the inspection, however trees are dynamic living organisms, whose health and condition can be subject to rapid changes resulting from a number of internal and external factors. Trees are subsequently prone to natural failure without any visible warning, therefore no guarantee can be made as to the absolute safety of any tree.

2.1.2. The conclusions and recommendations contained within this report are based on observations of the trees at the time of inspection. Aspect's opinion of the trees' structural and physiological conditions are valid for limited period of 12 months from the date of inspection; validity is assumed in the absence of inclement weather and no change to the trees' existing context.

3. Beech – *Fagus sylvaticar*

3.1.1. The Beech is situated within a dense collection of trees, defining the western boundary to Barham House. Exhibiting a significant stem diameter for its species (1200mm), the Beech was inspected using the RAVEN2 methodology. Resultant calculations using the White Method[1] suggests that the tree is c.200 years old. Upon inspection of condition, it was initially noted that the canopy was particularly sparse, suggesting a reduced physiological condition as illustrated within Figure 1 overleaf. Further inspection and removal of Ivy at the base exposed a large area of decayed heartwood to the east, Ganoderma brackets surrounding the stem at c.1500mm and extensive burring above this point (Figure 2).

3.1.2. Although concluding that the tests for being considered a veteran example of its species had been satisfied, the presence of a public footpath and residential dwelling immediately to the tree's west

[1] WHITE, J (1998). *Estimating the Age of Large and Veteran Trees in Britain.* Forestry Commission Information Note. Forestry Commission, Edinburgh.

resulted in concerns regarding the tree's structural stability taking precedence and the PiCUS investigation was undertaken.

Figure 1. Beech viewed from the east demonstrating its particularly sparse canopy for its species

Figure 2. Large Ganoderma bracket above significant area of exposed decayed heartwood

3.1.3. To objectively test for the presence of internal dysfunctional wood, tomogram soundings were recorded on the lower part of the trunk at 470mm, 830mm and 1440mm above ground level, it was noted that at points the sensors had to be repositioned to find solid wood to take a reading. These

readings are provided within Figures 3-5 and reveal that very little sound wood remains, c.13%, c.8% and c.65 respectively. The fungal decay strategy of Ganoderma on Beech is a selective white rot, significantly reducing the structural integrity of the timber.

Figure 3. Tomogram reading 470mm

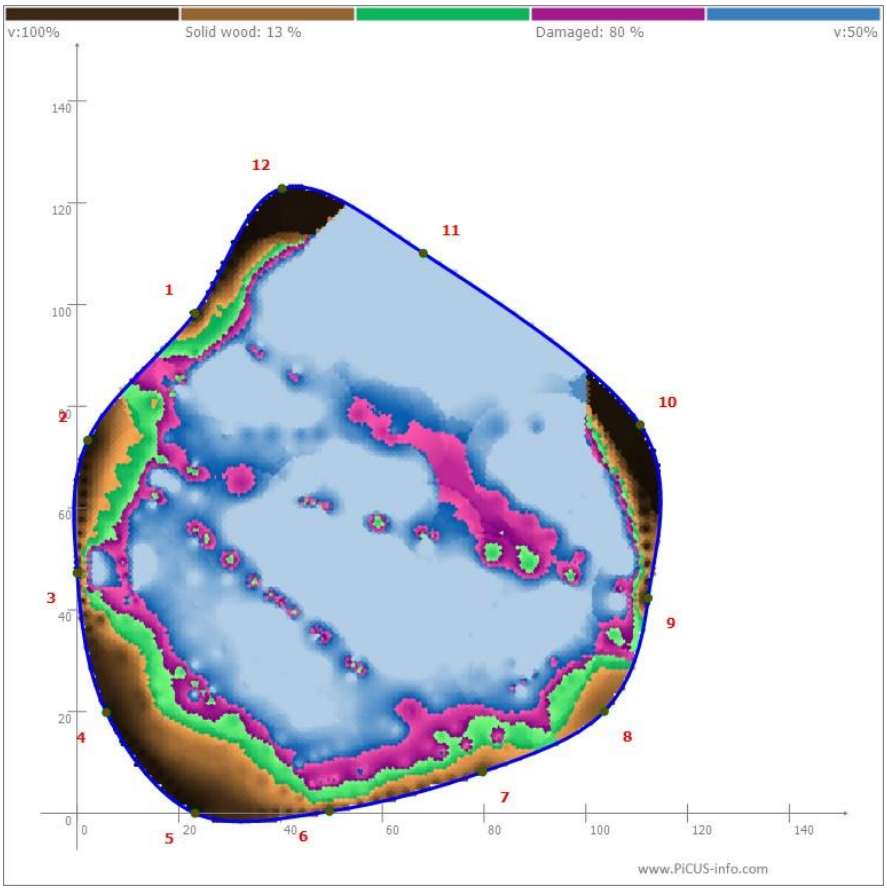


Figure 4. Tomogram reading 830mm

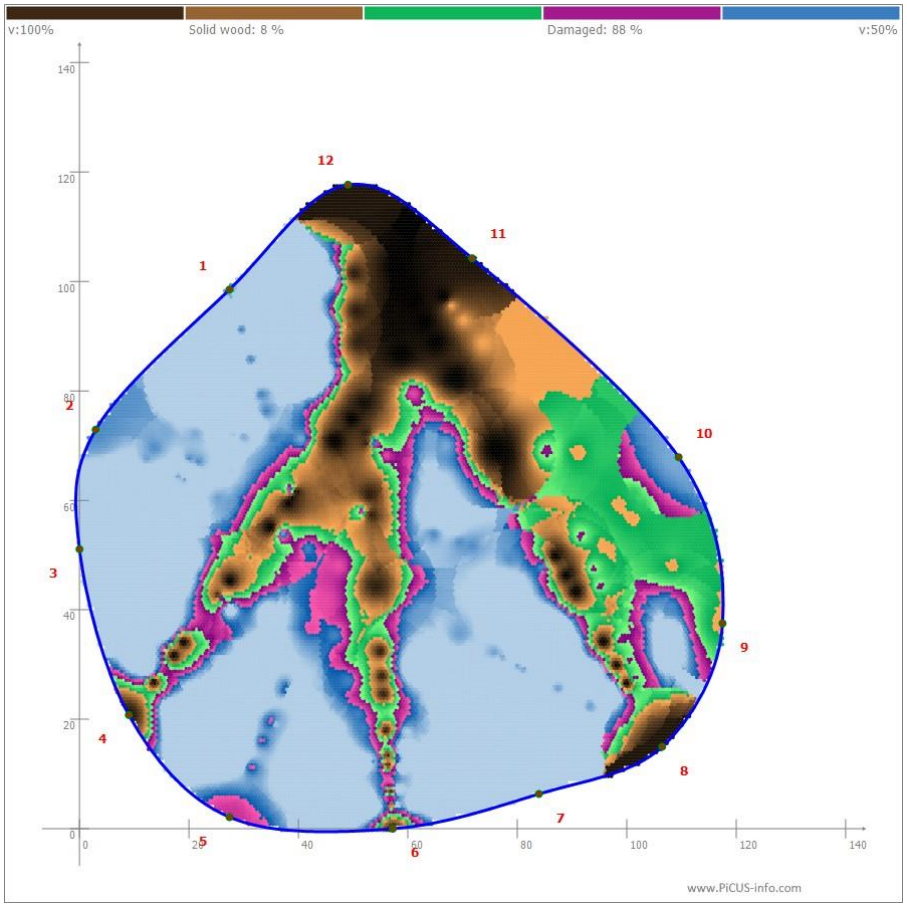
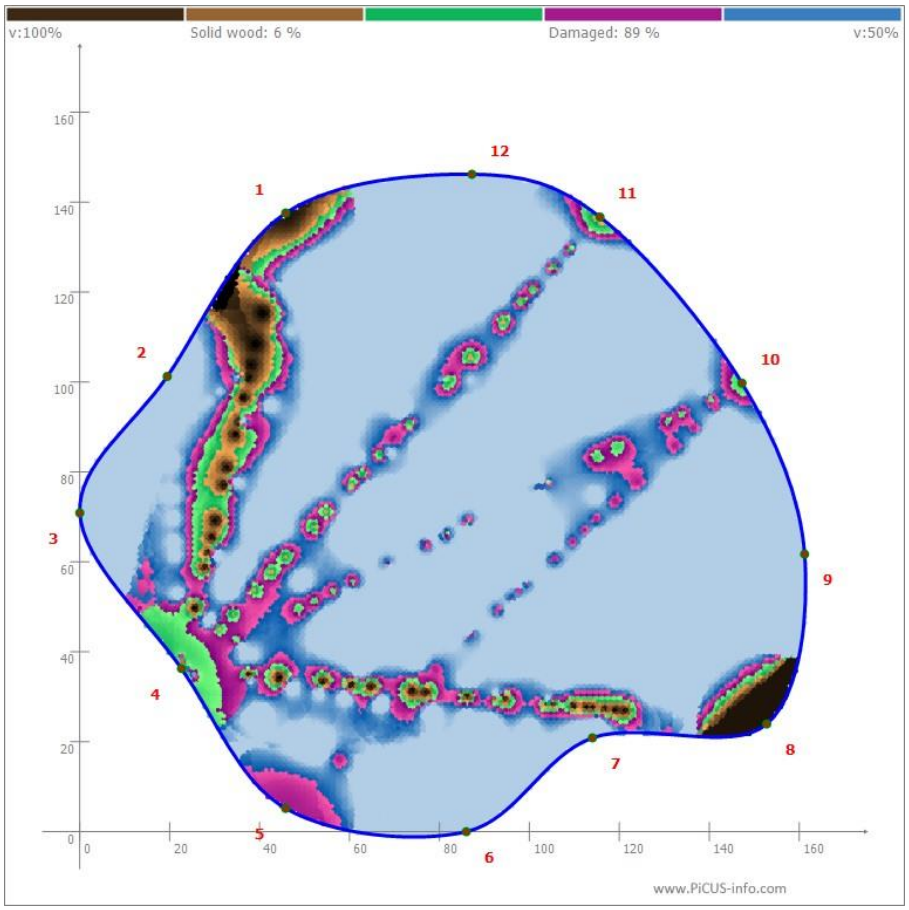


Figure 5. Tomogram reading 1440mm



4. Conclusion & Recommendation

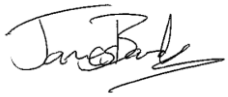
4.1.1. The significant decay present within the basal stem of the Beech leads to a conclusion that structural failure of the whole tree is forseeable. The presence of the public right of way and residential dwelling immediately to the west results in a target being present, and that this target is not able to be moved.

4.1.2. The tree is demonstrating a reduced physiological condition through its sparse canopy, and hence equally low is its capacity to tolerate the significant pruning works that would be required to negate the hazard it poses.

4.1.3. Subsequently, notwithstanding the Beech's status as a veteran example of its species, it is recommended that the tree is felled to ground level as a priority.

4.1.4. I trust that the above is self-explanatory, of course, should you have any queries regarding the findings of our assessment, please do not hesitate to contact me.

Prepared by



James Bardey BSc (Hons) MArborA
Principal Arboricultural Consultant
james.bardey@aspect-arbor.com

Arboricultural ASSOCIATION
Professional Member