



ARTEMIS
TREE
SERVICES



Site

Copper Beech Court
14 Murray Road
Northwood
HA6 2YJ

Prepared for
Alan Cohen

Prepared by
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MArborA

11th March 2022



Arboricultural
ASSOCIATION
Professional Member

Decay Detection DD-23944

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1. Brief

- 1.1 Artemis Tree Services Ltd has been instructed by Alen Cohen to undertake decay detection investigation of one beech tree using a Resistograph PD400 microdrill, and provide recommended management actions based on our findings.
- 1.2 The investigation has been promoted by the presence of several wood decay fungal fruiting bodies (*Ganoderma australe*, *Fomes fomentarius* and *Kretzschmaria deusta*) at the base of the beech trunk and one large *Ganoderma* Sp. fungal bracket growing from the trunk 2.9m from ground level.

2. Report limitations

- 2.1 Climbing inspections have not been carried out as part of the investigation.
- 2.2 Conclusions and recommendations relate to the condition of the site and tree at the time of the inspection only. Comments valid for a period of 1-year from the date of this report.
- 2.3 By their very nature, trees can never be entirely free of risk. The laws and forces of nature dictate a failure rate, even among intact trees with no apparent defects. The recommendations in this report cannot guarantee the elimination of all risk.
- 2.4 The report does not include risk assessment of trees in relation to subsidence.

3. Introduction

3.1 Qualifications

- 3.1.1 I am a Professional Member of the Arboricultural Association and hold the Level 6 Diploma in Arboriculture and Lantra Awards Professional Tree Inspection Certificate.

3.2 Site Description

- 3.2.1 Copper Beech Court is a small private apartment block on Murray Road, Pinner.

3.3 Trees

- 3.3.1 The tree in question is a mature copper beech (*Fagus sylvatica* 'Purpurea') situated on the front boundary of Murray Road. Full tree details and observations from the initial visual assessment are recorded in Appendix 1.

4. Methodology

- 4.1 Decay detection was undertaken using a Resistograph Resi-PD400 microdrill. The Resi-PD400 accurately measures the drilling and feed resistance along a needle as it's inserted at a constant rate into the wood of a tree. This enables small changes of internal wood structure to be detected. Readings from each drilling can be found in Appendix 2 of this report.
- 4.2 Tree height was recorded using a Nikon Forestry Pro Laser Rangefinder. Stem diameter measurement was recorded using a diameter measuring tape.

5. Documents provided

- Tree survey schedule (Appendix 1.)
- Resistograph drill readings (Appendix 2.)

6. Findings

6.1 Decay detection

- 6.1.1 The tree was drilled a total of nine times. It was drilled at the cardinal points at ground level and at 50cm above ground. A single reading was also taken at 180cm from ground level on the south side of the trunk, below a large *Ganoderma* fungal bracket 2.9m from ground level.
- 6.1.2 Tables 1 provides an interpretation of the readings. The reading graphs are included in Appendix 2.

Table 1

Tree ref.	Drill no.	Position	Interpretation
T1	1	Ground level north	Significant drop in amplitude at 8cm depth indicating extensive wood degradation/hollowing. Automatic needle retraction at 24.5cm depth to prevent needle breakage where the needle has come into contact with a cavity wall.
T1	2	Ground level south	Significant drop in amplitude at 16cm depth indicating extensive decay.
T1	3	Ground level east	Significant drop in amplitude at 13cm depth indicating significant decay.
T1	4	Ground level west	Significant drop in amplitude at 5.5cm depth indicating significant decay.
T1	5	50cm north	Significant drop in amplitude at 11cm depth indicating significant decay.
T1	6	50cm south	Potential area of localised decay in early stages at 4.5cm to 8cm depth. Significant drop in amplitude at 13cm depth indicating significant decay.

T1	7	50cm east	Significant drop in amplitude at 18cm depth indicating significant decay.
T1	8	50cm west	Significant drop in amplitude at 11.5cm depth indicating significant decay.
T1	9	1.8m southwest	Moderate drop in amplitude at 12cm depth indicating early stages of decay.

7. Analysis

- 7.1 The decay detection investigation has identified significant decay within the central area of the trunk, close to ground level.
- 7.2 The average thickness of remaining sound wood at the base of the trunk (inside bark) is 8.8cm.
- 7.3 The average thickness of remaining sound wood at 50cm above ground level (inside bark) is 11.4cm.
- 7.4 Using the the stem diameter measurement taken at 50cm from ground level, the sound wall thickness at ground level (excluding root flare) is calculated at an average of 8.5% of trunk diameter. At 50cm above ground level, the sound wall thickness is calculated at 11% of the trunk diameter. Based on these figures there is a high potential for structural failure.
- 7.5 The tree has been subject to crown reduction pruning previously. However, with an overall tree height of 15m and crown diameter spread of 14m, the potential loading on the trunk is remains high.
- 7.6 Based on the current extent of decay at the base of the trunk and the poor ability of beech to defend against spread of decay, further crown reduction pruning is unlikely to reduce risk of harm to acceptable levels.

8. Conclusions

- 8.1 Following the decay detection investigation, it is my opinion that the tree currently poses a high risk of harm to people and property.
- 8.2 Considering the size and position of the tree within falling distance of the apartments and adjacent road, and the species poor defence against the spread of decay, crown reduction pruning to reduce loading on the defective trunk is in my opinion unsuitable.

9. Recommendations

- 9.1 I strongly recommend the tree is removed as soon as reasonably practicable within 3 months from the date of this report.

Appendix 1

Tree Ref.	Species	Height (m)	Stem diameter (cm)	Crown spread (m)	Age class	Physiological condition	Structural condition	Observations	Photo
T1	Copper beech (<i>Fagus sylvatica</i> 'Purpurea')	15	103 @50cm height	14	M	G	P	Tree situated 9.5m from building and 4m from road. Tree crown reduced previously with 1.5-2m long regrowth. Nine fungal brackets at the base of the trunk, four with the appearance of <i>Ganoderma australe</i> and five with the appearance of <i>Fomes fomentarius</i>. <i>Kretzschmaria deusta</i> fungi also present on at the base of the trunk on the north side. One large tiered <i>Ganoderma</i> Sp. fungal bracket also present at 2.9m from ground level on the southwest side of the trunk, just below the crown break. Major deadwood in crown as a result of previous pruning (stub cut branches failed to resprout).	

Appendix 1



Appendix 1

Survey Key

Diameter (mm)

Stem diameter in millimetres measured at 1.5m above ground level. Where the stem is divided below 1.5m, measurement is taken as directed by BS:5837 Annex C.

Branch Spread (m)

Radial crown spread in metres, measured for each of the four cardinal points of the compass from the centre of the trunk.

Age class

(NP) Newly planted – a tree within 3 years after planting

(Y) Young – a tree within its first one third of life expectancy

(EM) Early Mature – a tree within its second third of life expectancy

(M) Mature – a tree in its final one third of life expectancy

(OM) Over Mature – a tree having reached its maximum life span and is declining in health and size due to old age

(V) Veteran – a tree in the second or mature stage of its life and has important wildlife and habitat features including; hollowing or associated decay fungi, holes, wounds and large dead branches.

(A) Ancient – a tree in the ancient or third and final stage of their life that is of interest biologically, aesthetically or culturally because of its age, size and condition

Physiological Condition

GOOD – a tree in a healthy condition with no significant problems

FAIR – a tree generally in good health with some problems that can be remediated

POOR – a tree in poor health with significant problems that can't be remediated

DEAD – a tree without sufficient live material to sustain life

Structural Condition

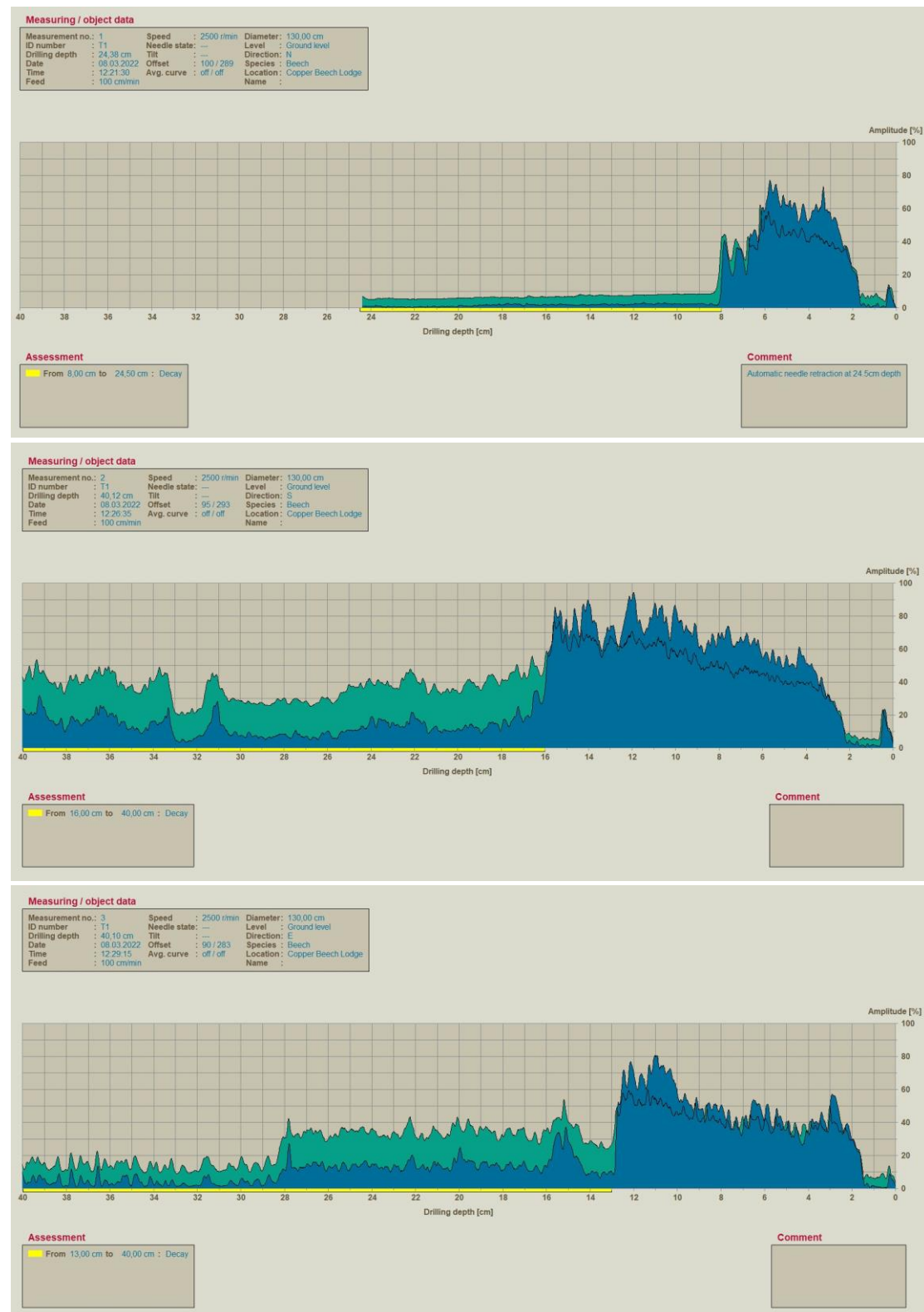
An assessment of the structural/safe condition of the tree categorised into:

GOOD – a tree in a safe condition with no significant defects

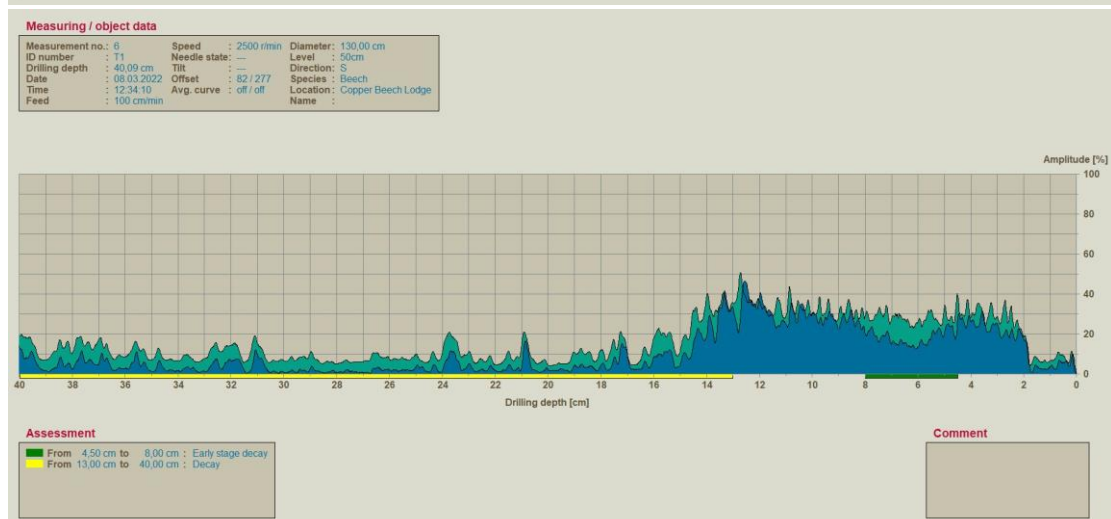
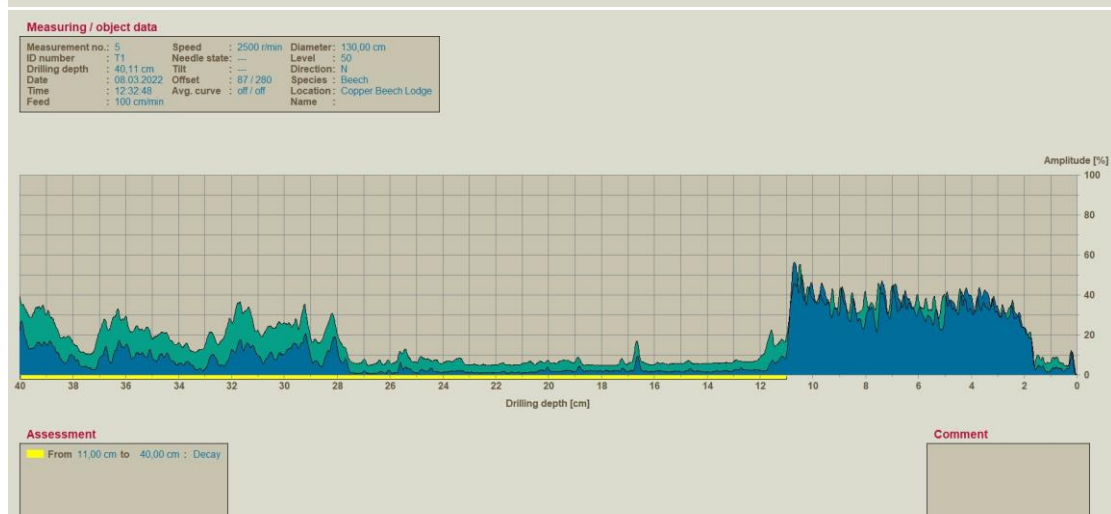
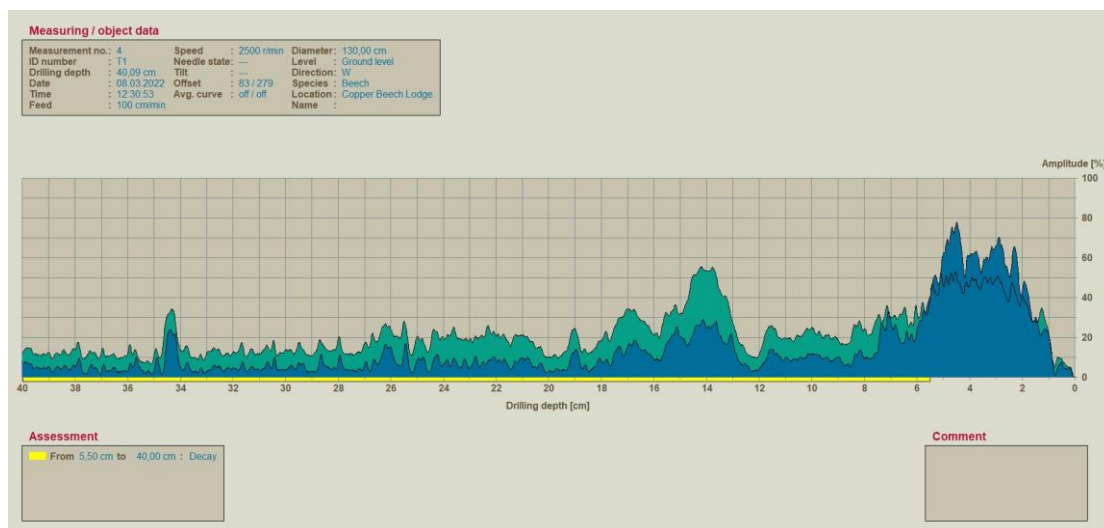
FAIR – a tree in a safe condition at present but with defects or with significant defects that can be remediated

POOR – a tree with significant defects that can't be remediated

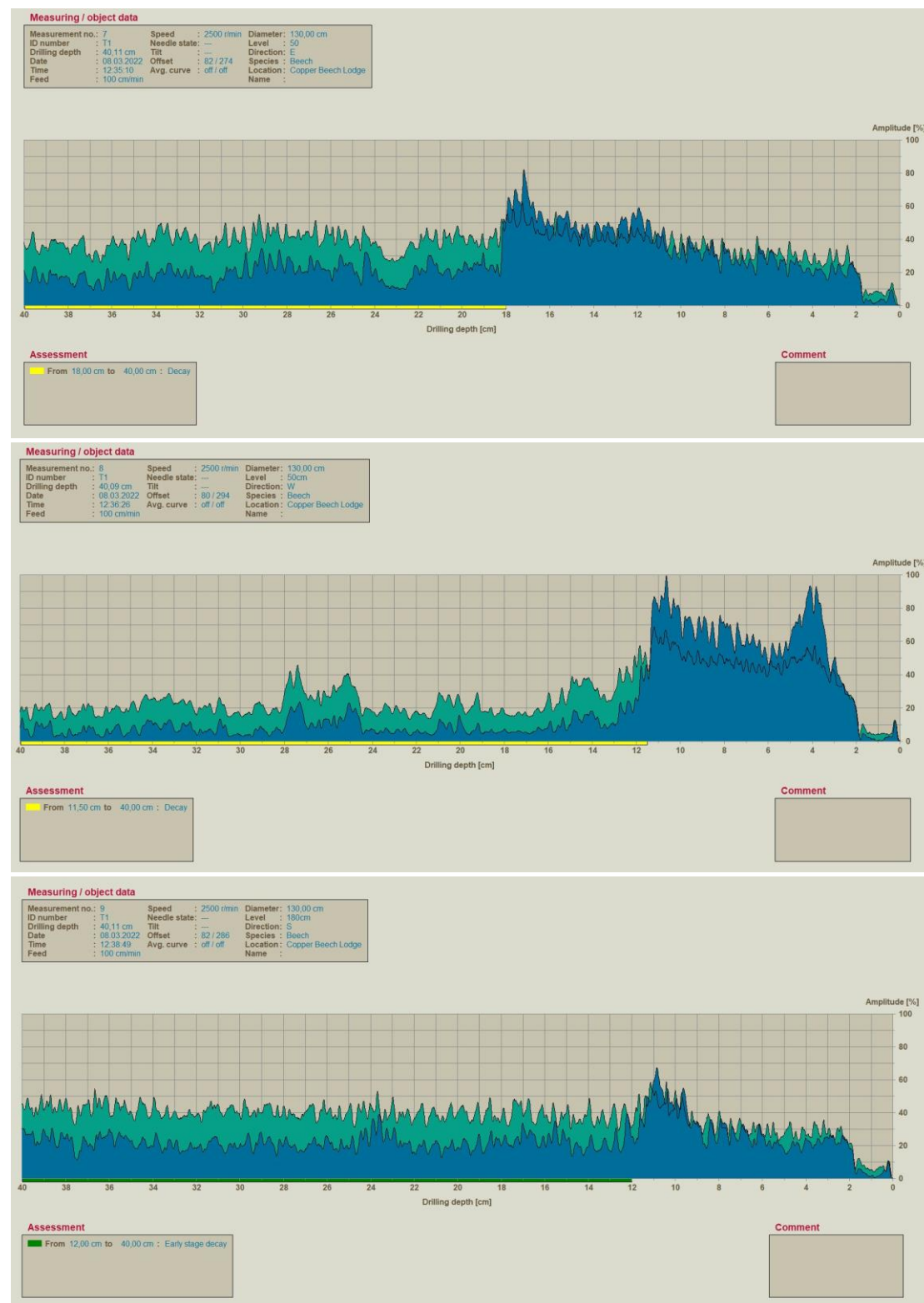
Appendix 2



Appendix 2



Appendix 2



Appendix 3

Document record

Document	Editor	Date	Signature
DD-23944	Lee Davies	11/03/2022	