



**DECAY DETECTION ON A WEEPING WILLOW TREE AT
UNIVERSITY COLLEGE SCHOOL, LONDON.**



**Prepared for:
Marcus Foster.**

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Site Address: University College School, London, NW3 6XH.

Client: Marcus Foster

Instruction: Carry out Decay detection tests on the main stem of 1 tree at the address above.

Inspection: The inspection was carried out by Vince Cainey BSc on 4th August 2021. The weather was dry and sunny.

Tree: Weeping Willow *Salix babylonica* Diameter 1160mm Height 9m

General Observation:

This tree is adjacent to the main entrance gate to the school, 4m south of the tree. 4m west of the tree is Frogna, a busy road and 2m west the pavement. 2m to the east is a school road. No faults were observed at the base of the tree. The stem leans to the south towards the entrance gate. At 2m above ground level (agl), to the west is a large lateral limb. The main stem bifurcates at 4m agl with limbs southwest and northeast. A large limb has been removed from the southwest leader leaving a stub of around 1m in length. On the underside of the stub are small brackets of the fungi, *Phellinus igniarius*, and associated decay. The crown has been historically pollarded with lots of old pruning wounds throughout.

Resistograph Tests:

The Resistograph is a Drilling instrument that probes the tree with a micro drill with a 3mm tip and a 1.5mm x 400mm shaft; this can penetrate to a depth of 40cm. As the probe advances it measures the resistance encountered and feed rate of the needle. Good healthy wood gives a high reading and poor dysfunctional wood, or cavity gives a lower reading. The readings are presented below.

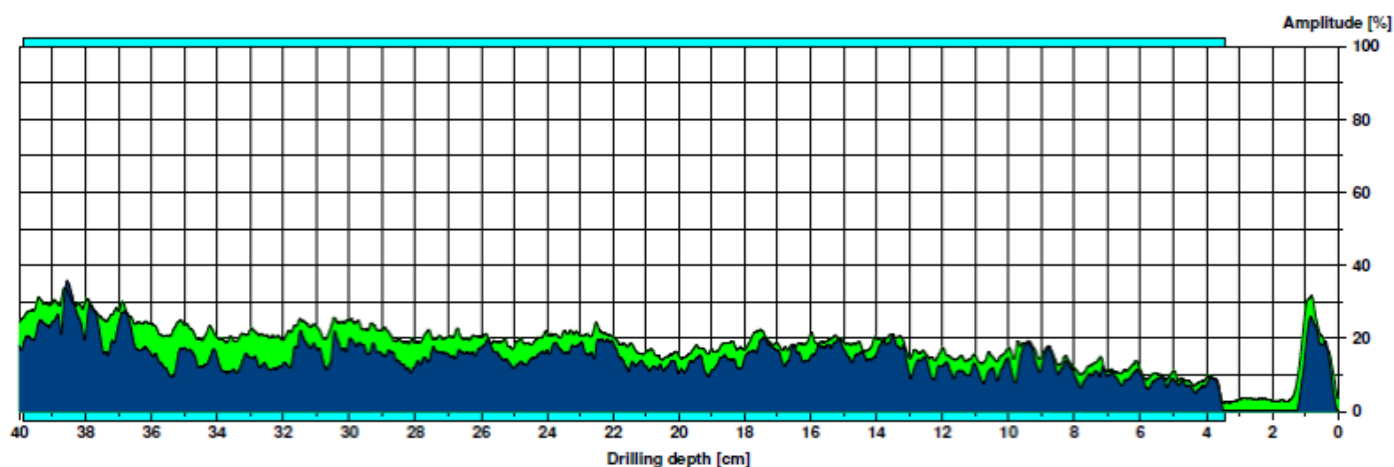
The instrument used was the IML Resistograph PD400 which has far more capability than earlier models. There are 5 different speed settings, and the data is recorded electronically. The readings show the measured resistance as a black line and the feed rate of the needle as a blue colour. It is useful to have the 2 settings as with the F400 friction on the needle would give you a false high graph. Although there is still friction on the needle with the PD400 the feed rate will change as decay is encountered.

9 Resistograph test were carried out.

Direction	Height	Results
East	0cm	All Good.
East	2.5m	Good-25cm, remainder decay.
East	4m	All decay.
North	2.5m	All good.
South	2.5m	Good-23cm, remainder cavity.
South	3.5m	Decay-30cm remainder good.
Southeast	3.5m	Good-30cm, remainder decay.
West	2.5m	Good-14cm, decay -20cm, good-36cm, remainder decay
West	4m	Decay-28cm, remainder cavity

Measuring / object data

Measurement no.: 1	Speed : 2500 r/min	Diameter: 116,00 cm
ID number : UCL E0	Needle state: —	Level : 0
Drilling depth : 40,08 cm	Tilt : —	Direction: East
Date : 04.08.2021	Offset : 82 / 353	Species : Weeping Willow
Time : 10:49:53	Avg. curve : off / off	Location: UCL
Feed : 100 cm/min		Name : Vince Cainey



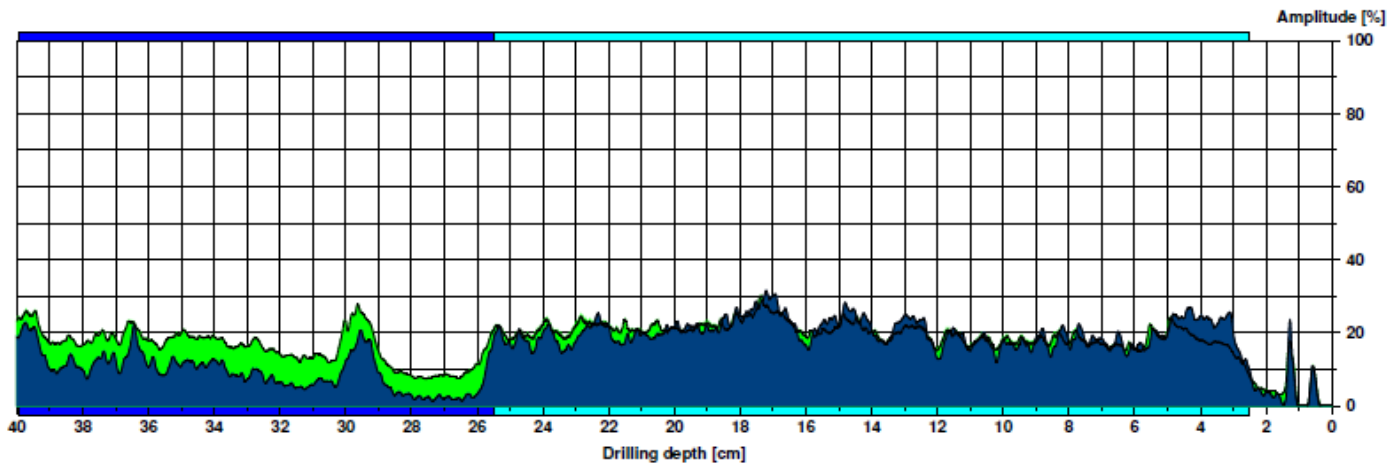
Assessment

From 3,42 cm to 39,87 cm : Good Wood

Comment

Measuring / object data

Measurement no.: 9	Speed : 2500 r/min	Diameter: 116,00 cm
ID number : UCL E2.5	Needle state: ---	Level : 2.5m
Drilling depth : 40,06 cm	Tilt : ---	Direction: East
Date : 04.08.2021	Offset : 76 / 277	Species : Weeping Willow
Time : 11:03:11	Avg. curve : off / off	Location: UCL
Feed : 150 cm/min		Name : Vince Cainey



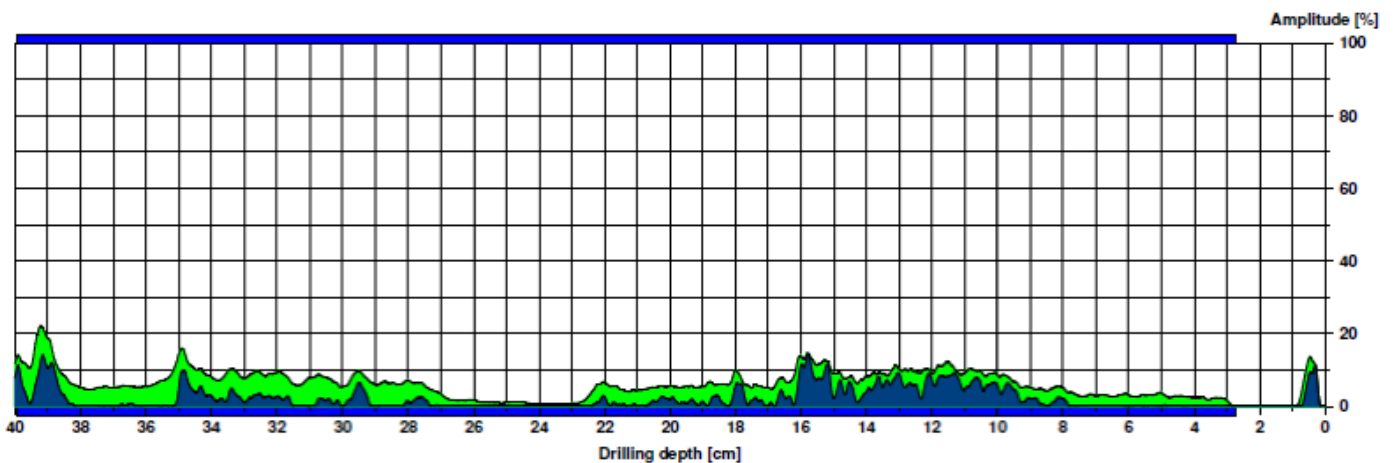
Assessment

From 2,52 cm to 25,49 cm : Good Wood
 From 25,49 cm to 39,94 cm : Decay

Comment

Measuring / object data

Measurement no.: 5	Speed : 2500 r/min	Diameter: 116,00 cm
ID number : UCL E4m	Needle state: ---	Level : 4
Drilling depth : 40,07 cm	Tilt : ---	Direction: East
Date : 04.08.2021	Offset : 88 / 263	Species : Weeping Willow
Time : 10:56:32	Avg. curve : off / off	Location: UCL
Feed : 150 cm/min		Name : Vince Cainey



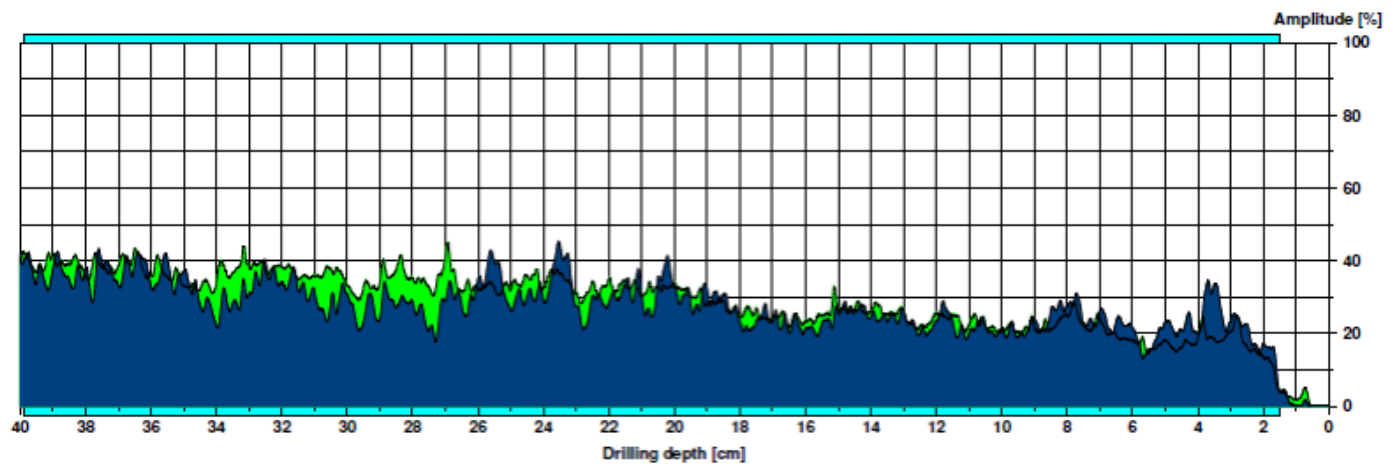
Assessment

From 2,75 cm to 39,94 cm : Decay

Comment

Measuring / object data

Measurement no.:	11	Speed	: 2500 r/min	Diameter:	116,00 cm
ID number	: UCL N2	Needle state:	---	Level	: 2m
Drilling depth	: 40,08 cm	Tilt	: ---	Direction:	North
Date	: 04.08.2021	Offset	: 71 / 262	Species	: Weeping Willow
Time	: 11:05:24	Avg. curve	: off / off	Location	: UCL
Feed	: 150 cm/min	Name	: Vince Cainey		



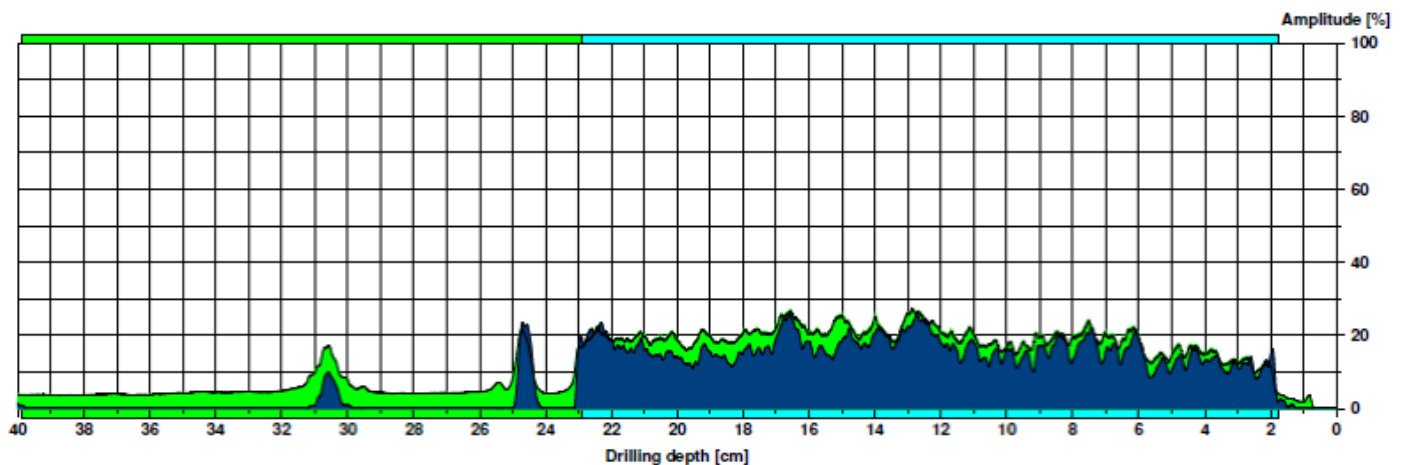
Assessment

From 1,49 cm to 39,90 cm : Good Wood

Comment

Measuring / object data

Measurement no.:	8	Speed	: 2500 r/min	Diameter:	116,00 cm
ID number	: UCL S2.5	Needle state:	---	Level	: 2.5m
Drilling depth	: 40,03 cm	Tilt	: ---	Direction:	South
Date	: 04.08.2021	Offset	: 83 / 270	Species	: Weeping Willow
Time	: 11:02:09	Avg. curve	: off / off	Location	: UCL
Feed	: 150 cm/min	Name	: Vince Cainey		



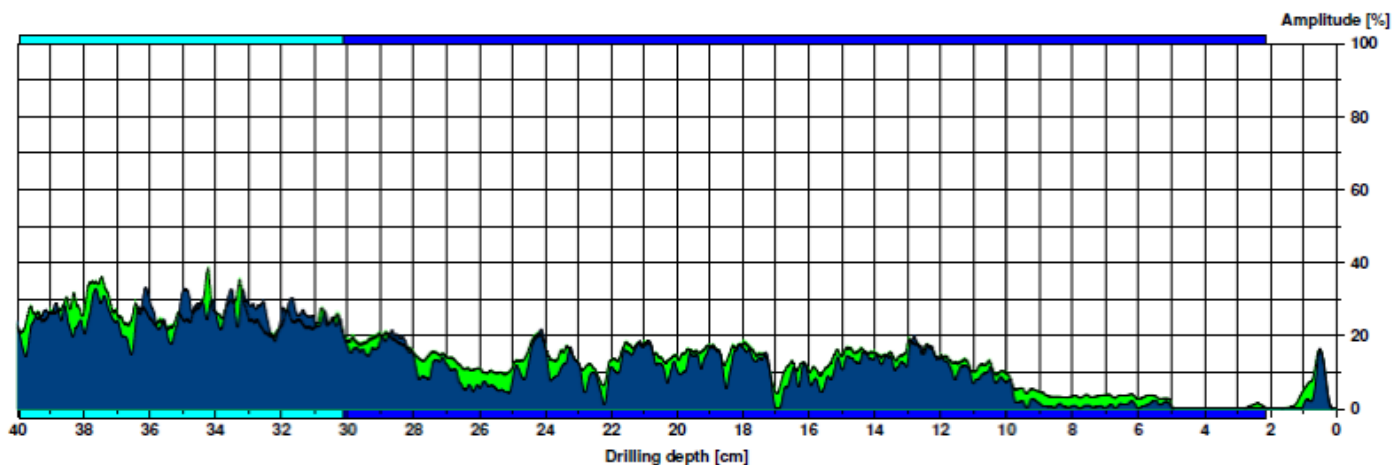
Assessment

From 1,74 cm to 22,88 cm : Good Wood
From 22,88 cm to 39,87 cm : Cavity

Comment

Measuring / object data

Measurement no.: 6	Speed : 2500 r/min	Diameter: 116,00 cm
ID number : UCL S3.5	Needle state: —	Level : 3.5m
Drilling depth : 40,07 cm	Tilt : —	Direction: South
Date : 04.08.2021	Offset : 86 / 258	Species : Weeping Willow
Time : 10:57:48	Avg. curve : off / off	Location : UCL
Feed : 150 cm/min		Name : Vince Cainey



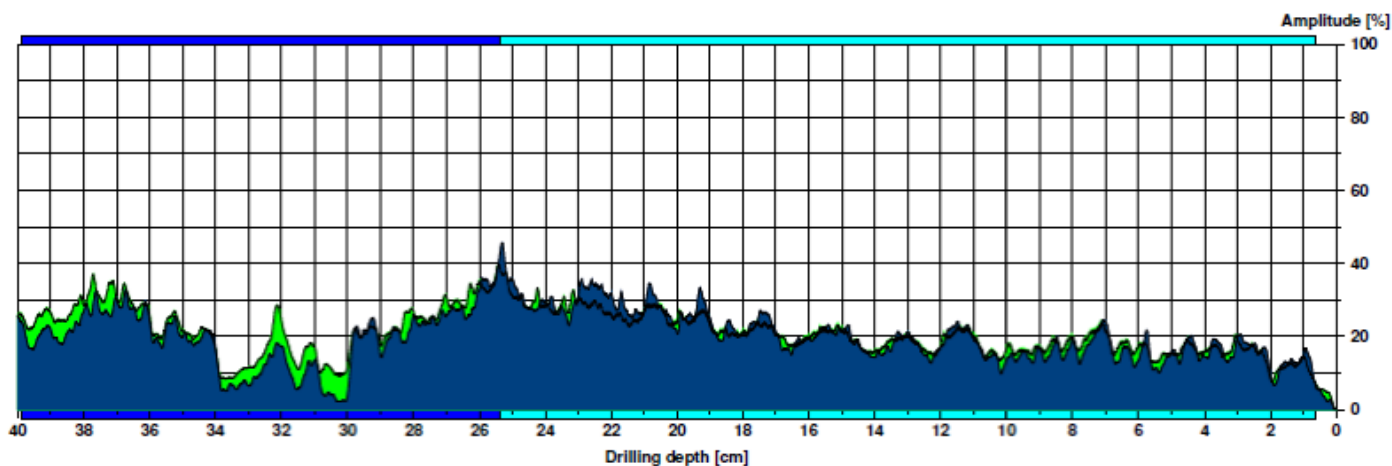
Assessment

From 2,13 cm to 30,11 cm : Decay
 From 30,11 cm to 39,94 cm : Good Wood

Comment

Measuring / object data

Measurement no.: 7	Speed : 2500 r/min	Diameter: 116,00 cm
ID number : UCL SE3.5	Needle state: —	Level : 3.5
Drilling depth : 40,05 cm	Tilt : —	Direction: Southeast
Date : 04.08.2021	Offset : 86 / 264	Species : Weeping Willow
Time : 10:59:05	Avg. curve : off / off	Location : UCL
Feed : 150 cm/min		Name : Vince Cainey



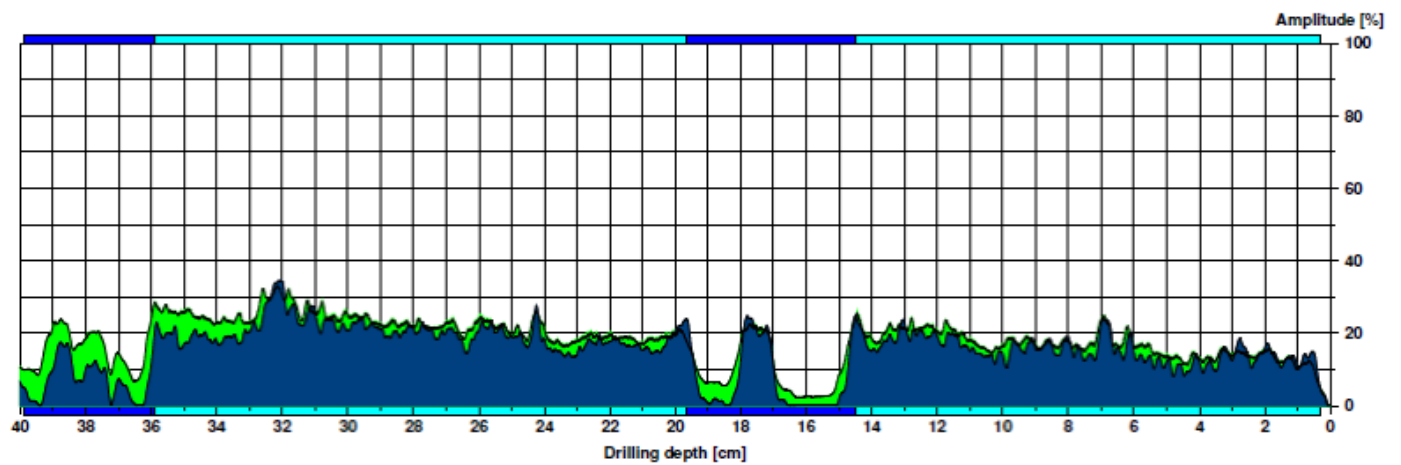
Assessment

From 0,65 cm to 25,40 cm : Good Wood
 From 25,40 cm to 39,90 cm : Decay

Comment

Measuring / object data

Measurement no.:	10	Speed	: 2500 r/min	Diameter:	116,00 cm
ID number	: UCL W2.5	Needle state:	---	Level	: 2.5
Drilling depth	: 40,05 cm	Tilt	: ---	Direction:	West
Date	: 04.08.2021	Offset	: 78 / 264	Species	: Weeping Willow
Time	: 11:04:24	Avg. curve	: off / off	Location	: UCL
Feed	: 150 cm/min	Name	: Vince Cainey		



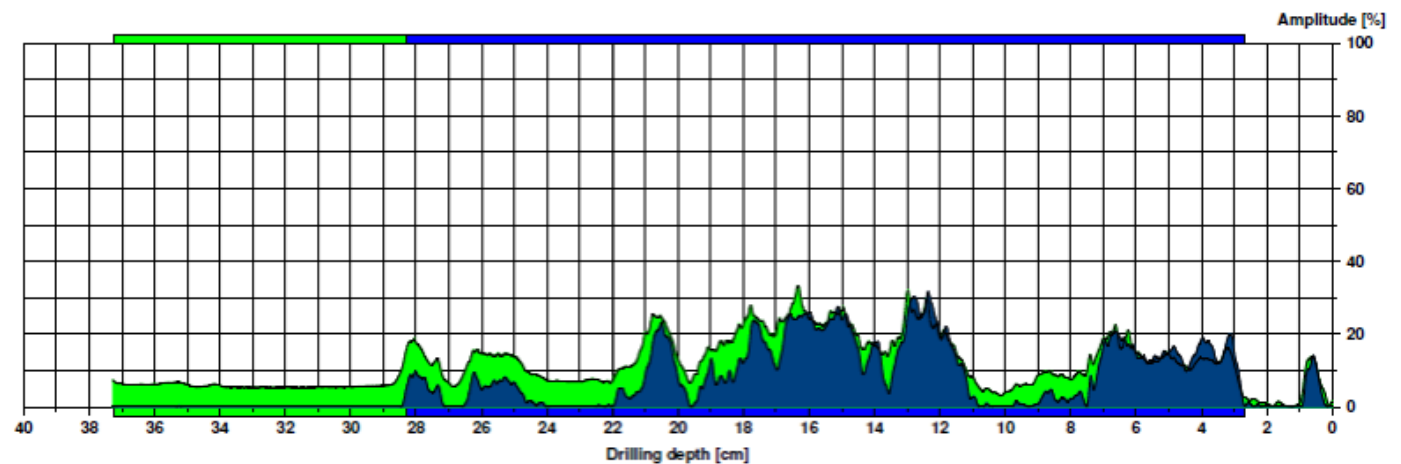
Assessment

From	0,32 cm to	14,51 cm	: Good Wood
From	14,51 cm to	19,64 cm	: Decay
From	19,64 cm to	35,90 cm	: Good Wood
From	35,90 cm to	39,90 cm	: Decay

Comment

Measuring / object data

Measurement no.:	2	Speed	: 2500 r/min	Diameter:	116,00 cm
ID number	: UCL W4m	Needle state:	---	Level	: 4m
Drilling depth	: 37,27 cm	Tilt	: ---	Direction:	West
Date	: 04.08.2021	Offset	: 108 / 437	Species	: Weeping Willow
Time	: 10:52:00	Avg. curve	: off / off	Location	: UCL
Feed	: 150 cm/min	Name	: Vince Cainey		



Assessment

From	2,71 cm to	28,30 cm	: Decay
From	28,30 cm to	37,22 cm	: Cavity

Comment

Conclusion.

Resistograph readings were taken in 2 main areas, around the decaying stub at 4m and above the large lateral limb at 2.5m. Most of the tests show cavity and decay. This level of decay is sufficient to affect the structural integrity of the tree. As the tree has already been pollarded little work can be done to reduce the stress and weight of the decayed and hollow areas. Willow although classed as hard wood is relatively weak and are prone to catastrophic failure. The target should the tree fail is very high.

Recommendations:

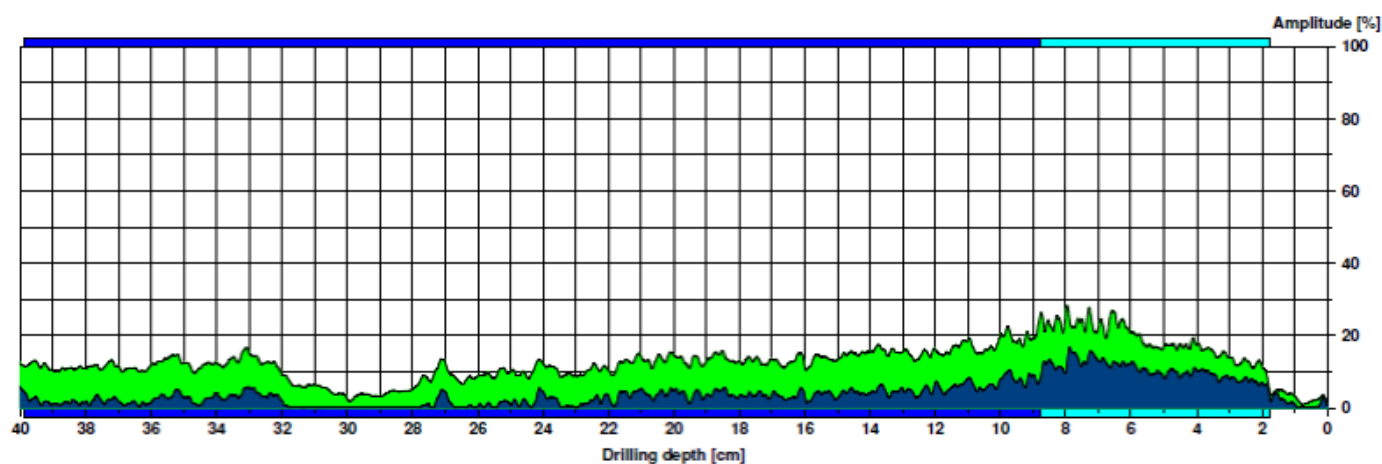
The tree should be felled as soon as practically possible. This work to be carried out by a fully qualified and insured tree surgeon working to BS3998(2010), Tree work..

A handwritten signature in blue ink, appearing to read 'V. Cainey', on a light-colored background.

Vince Cainey BSc
23rd August 2021.

Measuring / object data

Measurement no.: 3	Speed : 2500 r/min	Diameter: 60,00 cm
ID number : ISLAND NW0	Needle state: ---	Level : 0
Drilling depth : 40,06 cm	Tilt : ---	Direction: North West
Date : 25.02.2021	Offset : 69 / 277	Species : Lime
Time : 11:31:20	Avg. curve : off / off	Location : Island
Feed : 100 cm/min		Name : Vince Cainey



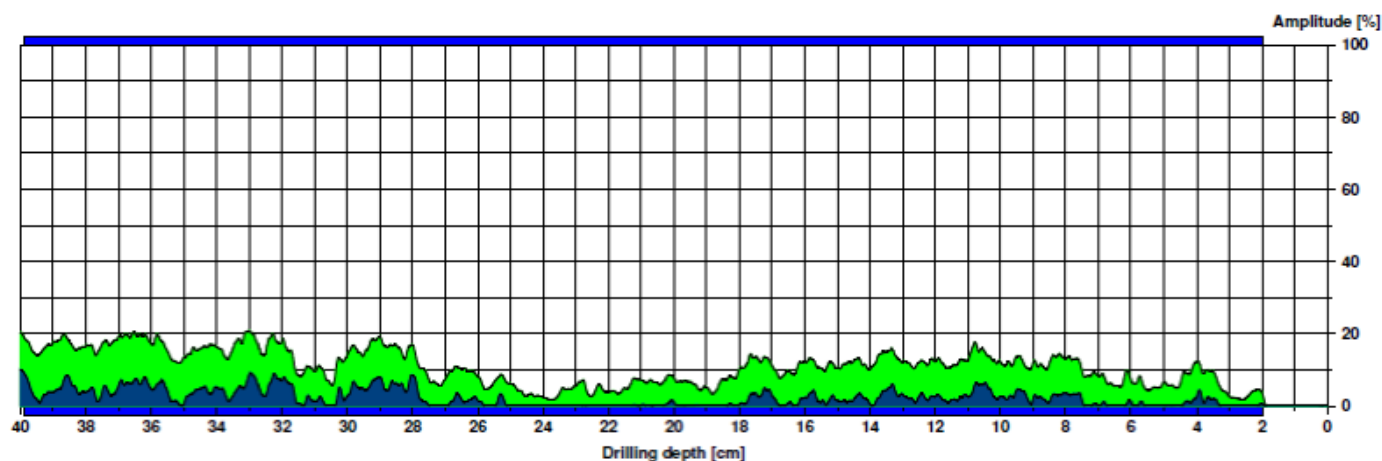
Assessment

From 1,74 cm to 8,79 cm : Good Wood
 From 8,79 cm to 39,87 cm : Decay

Comment

Measuring / object data

Measurement no.: 1	Speed : 2500 r/min	Diameter: 60,00 cm
ID number : ISLAND NE 0	Needle state: ---	Level : 0
Drilling depth : 40,06 cm	Tilt : ---	Direction: North East
Date : 25.02.2021	Offset : 84 / 320	Species : Lime
Time : 11:27:27	Avg. curve : off / off	Location : Island
Feed : 100 cm/min		Name : Vince Cainey



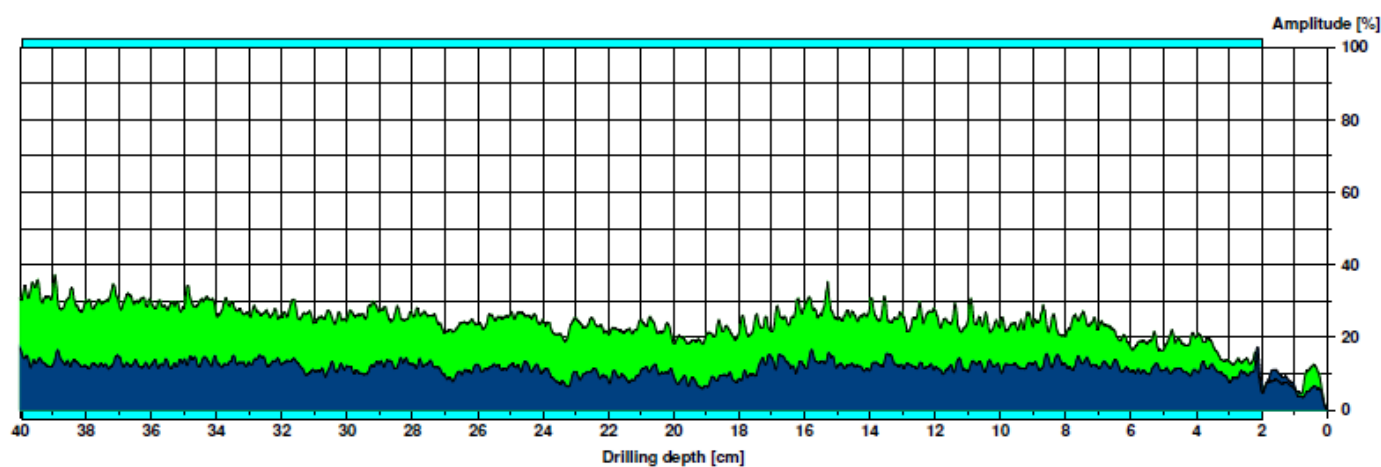
Assessment

From 2,00 cm to 39,90 cm : Decay

Comment

Measuring / object data

Measurement no.:	4	Speed	: 2500 r/min	Diameter:	60,00 cm
ID number	: ISLAND N70	Needle state:	---	Level	: 0
Drilling depth	: 40,07 cm	Tilt	: ---	Direction:	North
Date	: 25.02.2021	Offset	: 70 / 272	Species	: Lime
Time	: 11:32:33	Avg. curve	: off / off	Location	: Island
Feed	: 100 cm/min	Name	: Vince Cainey		



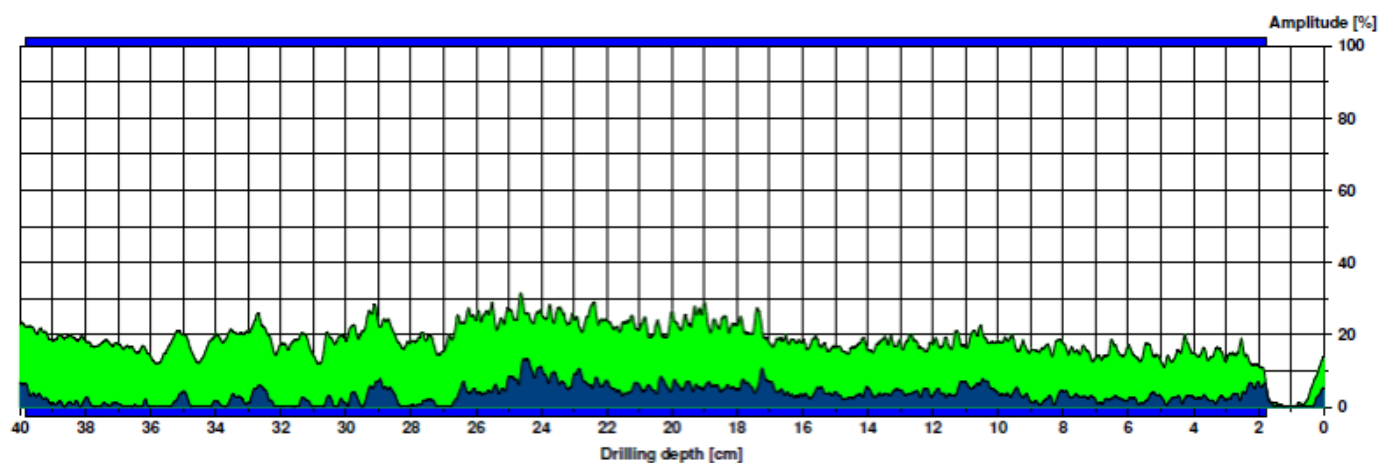
Assessment

From 1,97 cm to 39,94 cm : Good Wood

Comment

Measuring / object data

Measurement no.:	2	Speed	: 2500 r/min	Diameter:	60,00 cm
ID number	: ISLAND E0	Needle state:	---	Level	: 0
Drilling depth	: 40,07 cm	Tilt	: ---	Direction:	East
Date	: 25.02.2021	Offset	: 106 / 610	Species	: Lime
Time	: 11:29:42	Avg. curve	: off / off	Location	: Island
Feed	: 100 cm/min	Name	: Vince Cainey		



Assessment

From 1,74 cm to 39,84 cm : Decay

Comment