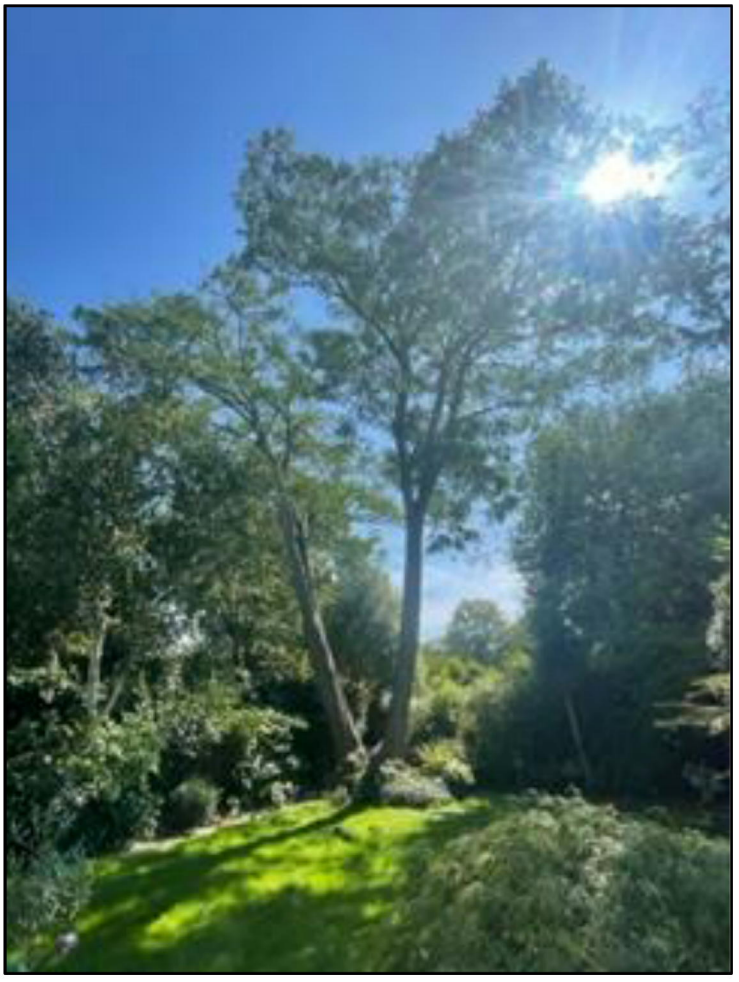
ATWORTH ARBORICULTURE LTD

DECAY DETECTION ON A ROBINIA TREE AT 18, UPPER PARK ROAD, BELSIZE PARK, LONDON.



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Atworth Arboriculture Ltd, [redacted]

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Site Address: 18, Upper Park Road, Belsize Park, London, NW3 2UP.

Client:
[redacted]

Instruction:

Carry out decay detection test on the main stem of 1 tree at the address above.

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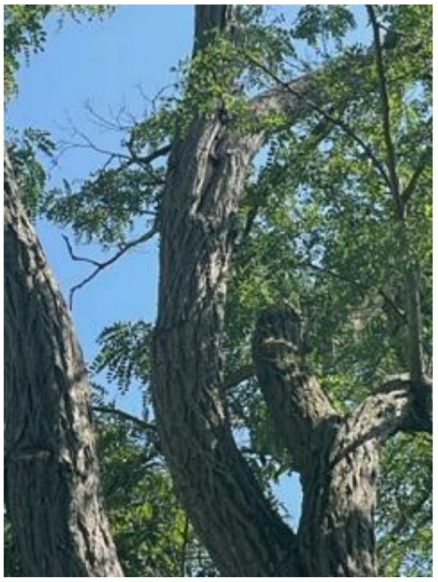
Tree: Robinia (*Pseudo acacia*) Diameter (x2) 750 and 640mm Height 16m

General Observation:

This tree is in the rear garden of the property to the south 20m south of the house. The neighbouring properties are 2m east, number 20 and 10m west, number 16. The Secret Garden Nursery is 5m south of the tree. The tree is bifurcated from the base with limbs east (stem 1) and west (stem 2). both stems lean, but the east more significantly. The inside of each stem has a recess. The eastern stem bifurcates at 5m above ground level (agl). There is lots of major (over 75mm diameter) dead wood in the crown of this stem and some apiacal dieback. A Cobra cable brace is fitted between the 2 stems at 10m agl. Just below the brace on the east stem is a fork with some decay (Picture 1). Stem 1 seems sparser than stem 2. Stem 2 bifurcates at 8.5m agl. There is a little die back but otherwise the crown looks normal.

Picture 1



Resistograph Tests:

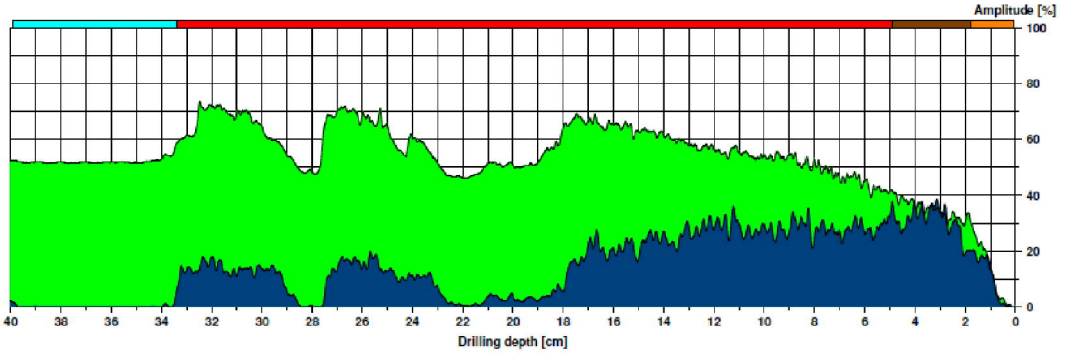
The Resistograph is a Drilling instrument that probes the tree with a micro drill with a 3mm tip and a 1.5mm x 400mm shaft; this can penetrate to a depth of 40cm. As the probe advances it measures the resistance encountered and feed rate of the needle. Good healthy wood gives a high reading and poor dysfunctional wood, or cavity gives a lower reading. The readings are presented in Appendix 1 at the foot of the report.
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.

4 Resistograph tests were taken on stem 1

Direction	**Height**	**Results**
East	5cm	Good – 5cm, decay – 34cm, remainder cavity
North	5cm	Good – 34cm, remainder cavity
South	30cm	Good – 10cm, remainder decayed
West	30cm	Good – 8cm, early decay – 24cm. remainder cavity

Measuring / object data

Measurement no.	3	**Speed**	2500 r/min	**Diameter**	75,00 cm
ID number	18 Upper Park Hill St1 E5	**Needle state**	---	**Level**	5
Drilling depth	40,06 cm	**Tilt**	---	**Direction**	East
Date	16.08.2023	**Offset**	46 / 285	**Species**	Robinia
Time	10:59:06	**Avg. curve**	off / off	**Location**	18 Upper Park Hill
Feed	25 cm/min			**Name**	Vince Cainey



Assessment

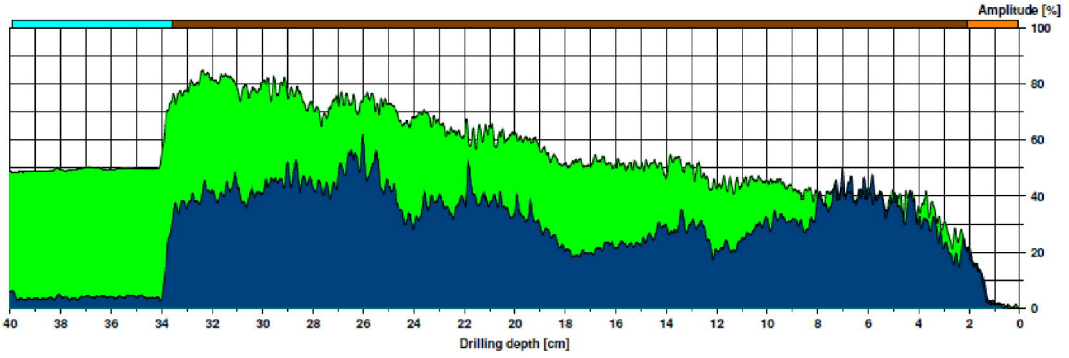
From	0,06 cm	**to**	1,80 cm	: Bark
From	1,80 cm	**to**	4,90 cm	: Good Wood
From	4,90 cm	**to**	33,37 cm	: Decay
From	33,37 cm	**to**	39,90 cm	: Cavity

Comment

18 Upper Park Hill St1 EsM003

Measuring / object data

Measurement no.	1	**Speed**	2500 r/min	**Diameter**	75,00 cm
ID number	18 Upper Park Hill St1 N5	**Needle state**	---	**Level**	5
Drilling depth	40,07 cm	**Tilt**	---	**Direction**	North
Date	16.08.2023	**Offset**	65 / 294	**Species**	Robinia
Time	10:48:58	**Avg. curve**	off / off	**Location**	18 Upper Park Hill
Feed	50 cm/min			**Name**	Vince Cainey



Assessment

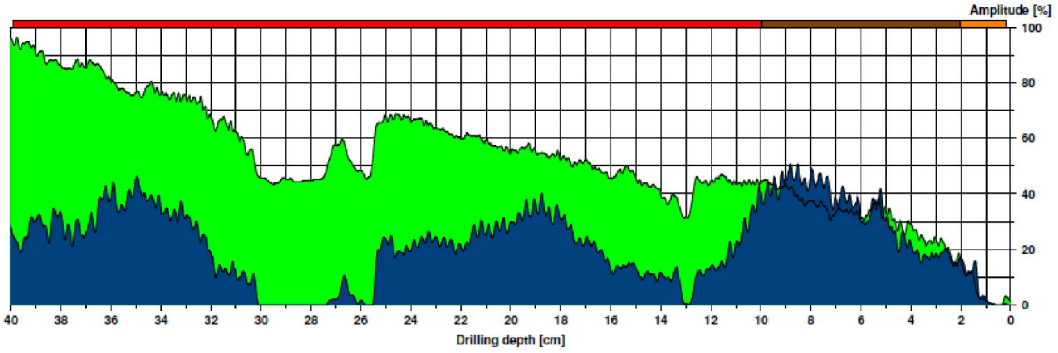
From	0,06 cm	**to**	2,09 cm	: Bark
From	2,09 cm	**to**	33,59 cm	: Good Wood
From	33,59 cm	**to**	39,94 cm	: Cavity

Comment

18 Upper Park Hill St1 NsM001

Measuring / object data

Measurement no.:	4	**Speed**	: 2500 r/min	**Diameter:**	75,00 cm
ID number	: 18 Upper Park Hill St1 S30	**Needle state:**	---	**Level**	: 30
Drilling depth	: 40,11 cm	**Tilt**	: ---	**Direction:**	South
Date	: 16.08.2023	**Offset**	: 46 / 322	**Species**	: Robinia
Time	: 11:01:47	**Avg. curve**	: off / off	**Location**	: 18 Upper Park Hill
Feed	: 25 cm/min			**Name**	: Vince Cainey



Assessment

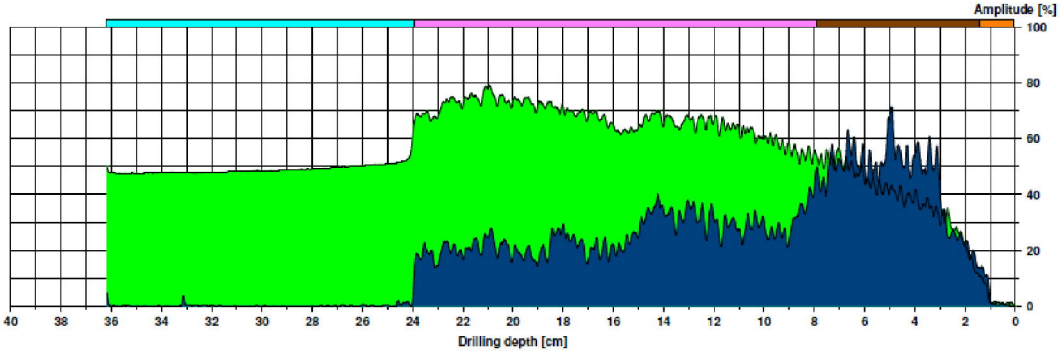
From	0,16 cm	**to**	2,03 cm	: Bark
From	2,03 cm	**to**	9,98 cm	: Good Wood
From	9,98 cm	**to**	39,94 cm	: Decay

Comment

18 Upper Park Hill St1 S30M004

Measuring / object data

Measurement no.:	5	**Speed**	: 2500 r/min	**Diameter:**	75,00 cm
ID number	: 18 Upper Park Hill St1 W30	**Needle state:**	---	**Level**	: 30
Drilling depth	: 36,16 cm	**Tilt**	: ---	**Direction:**	West
Date	: 16.08.2023	**Offset**	: 35 / 245	**Species**	: Robinia
Time	: 11:04:20	**Avg. curve**	: off / off	**Location**	: 18 Upper Park Hill
Feed	: 25 cm/min			**Name**	: Vince Cainey



Assessment

From	0,06 cm	**to**	1,45 cm	: Bark
From	1,45 cm	**to**	7,89 cm	: Good Wood
From	7,89 cm	**to**	23,96 cm	: Early decay
From	23,96 cm	**to**	36,20 cm	: Cavity

Comment

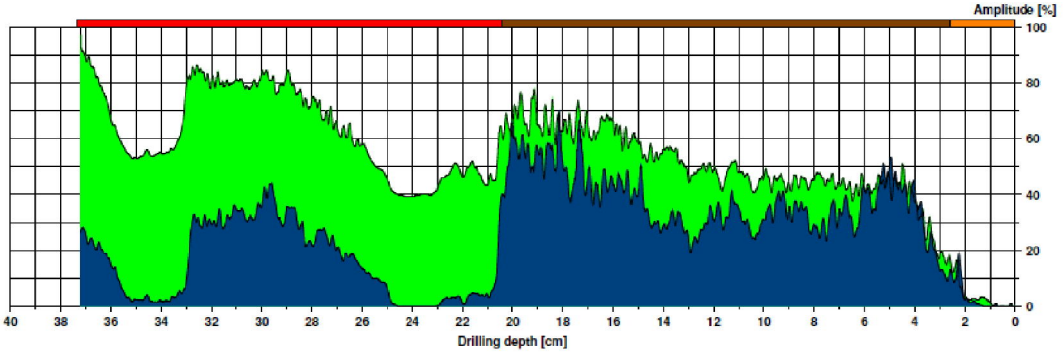
18 Upper Park Hill St1 W30M005

4 Resistograph tests were taken on stem 2.

Direction	Height	Results
East	30cm	Good – 20cm, decay, remainder decay
North	10cm	Good – 8cm, decay – 18cm, remainder cavity
South	10cm	Good – 23cm, remainder decayed
West	10cm	Good – 10cm, early decay – 36cm. remainder decay

Measuring / object data

Measurement no.	: 7	Speed	: 2500 r/min	Diameter	: 64,00 cm
ID number	: 18 Upper Park Hill St2 E30	Needle state	: ---	Level	: 30
Drilling depth	: 37,20 cm	Tilt	: ---	Direction	: East
Date	: 16.08.2023	Offset	: 52 / 246	Species	: Robinia
Time	: 11:10:55	Avg. curve	: off / off	Location	: 18, Upper Park Road
Feed	: 50 cm/min			Name	: Vince Cainey



Assessment

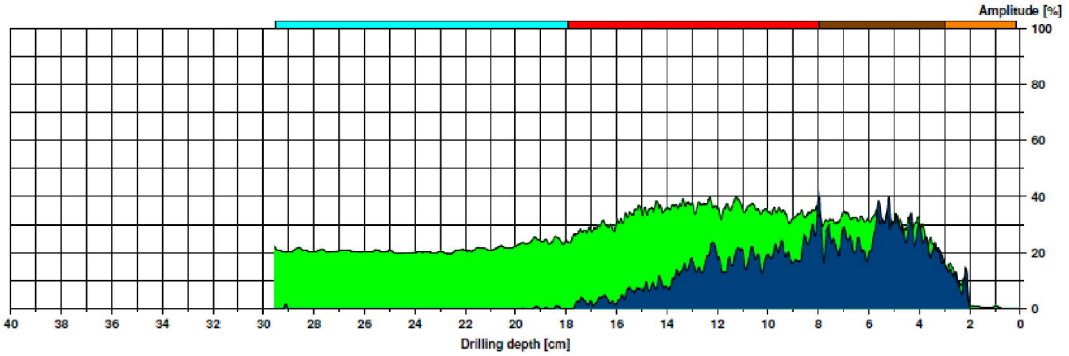
From 0,03 cm to 2,58 cm : Bark
From 2,58 cm to 20,42 cm : Good Wood
From 20,42 cm to 37,36 cm : Decay

Comment

18 Upper Park Hill St2 E30M007

Measuring / object data

Measurement no.:	6	**Speed**	: 2500 r/min	**Diameter:**	64,00 cm
ID number	: 18 Upper Park Hill St2 N10	**Needle state:**	---	**Level**	: 10
Drilling depth	: 29,56 cm	**Tilt**	: ---	**Direction:**	North
Date	: 16.08.2023	**Offset**	: 56 / 254	**Species**	: Robinia
Time	: 11:06:48	**Avg. curve**	: off / off	**Location**	: 18, Upper Park Road
Feed	: 25 cm/min			**Name**	: Vince Cainey



Assessment

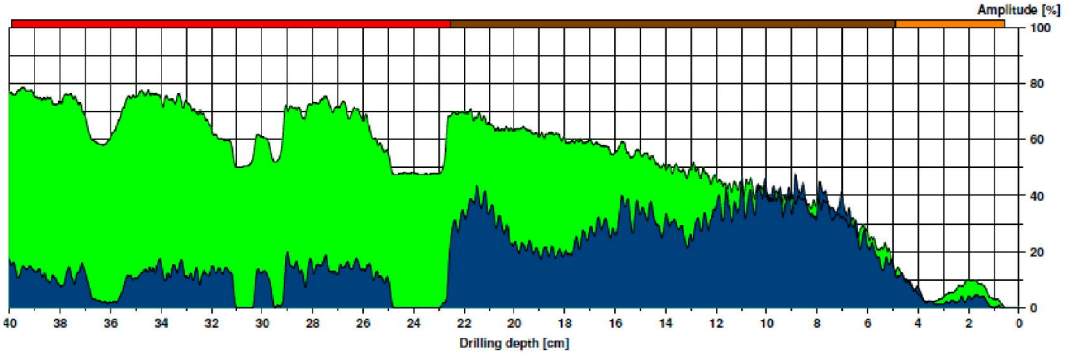
From	0,19 cm	**to**	3,00 cm	: Bark
From	3,00 cm	**to**	7,95 cm	: Good Wood
From	7,95 cm	**to**	17,91 cm	: Decay
From	17,91 cm	**to**	29,53 cm	: Cavity

Comment

18 Upper Park Hill St2 N10M006

Measuring / object data

Measurement no.:	8	**Speed**	: 2500 r/min	**Diameter:**	64,00 cm
ID number	: 18 Upper Park Hill St2 S10	**Needle state:**	---	**Level**	: 10
Drilling depth	: 40,09 cm	**Tilt**	: ---	**Direction:**	South
Date	: 16.08.2023	**Offset**	: 47 / 252	**Species**	: Robinia
Time	: 11:12:50	**Avg. curve**	: off / off	**Location**	: 18, Upper Park Road
Feed	: 25 cm/min			**Name**	: Vince Cainey



Assessment

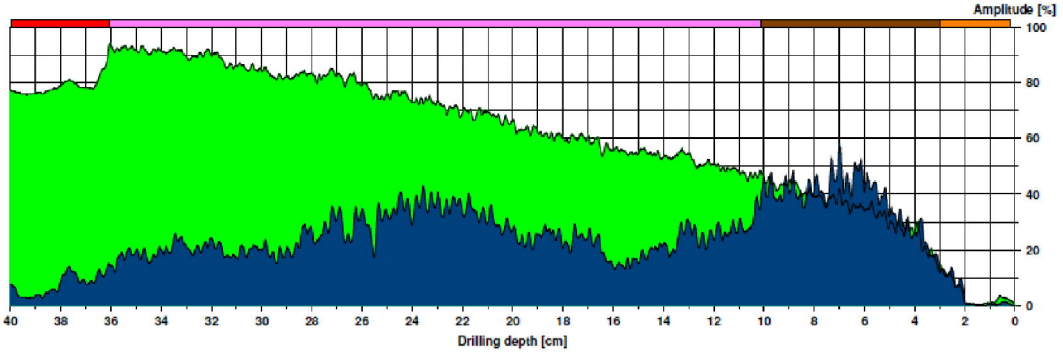
From	0,58 cm	**to**	4,90 cm	: Bark
From	4,90 cm	**to**	22,51 cm	: Good Wood
From	22,51 cm	**to**	39,94 cm	: Decay

Comment

18 Upper Park Hill St2 S10M008

Measuring / object data

Measurement no.	: 9	Speed	: 2500 r/min	Diameter	: 64,00 cm
ID number	: 18 Upper Park Hill St2 W10	Needle state	: ---	Level	: 10
Drilling depth	: 40,05 cm	Tilt	:	Direction	: West
Date	: 16.08.2023	Offset	: 43 / 240	Species	: Robinia
Time	: 11:15:46	Avg. curve	: off / off	Location	: 18, Upper Park Road
Feed	: 25 cm/min			Name	: Vince Cainey



Assessment

From	0,19 cm	to	3,00 cm	: Bark
From	3,00 cm	to	10,11 cm	: Good Wood
From	10,11 cm	to	36,04 cm	: Early decay
From	36,04 cm	to	39,97 cm	: Decay

Comment

18 Upper Park Hill St2 W10M009

Conclusion.

All the Resistograph readings in both stems show extensive decay or a cavity. Some of the readings stop short as the needle could cause damage to the machine if left to rotate in a cavity so auto retracts after 10cm of cavity. I would expect the roots to be decayed too as the crown is dying back and has extensive decay. This level of decay is sufficient to affect the structural integrity of the tree. Should the tree fail, the target area is high.

Recommendations:

With a high risk target area to all cardinal points, the tree should be felled as soon as practically possible. This work to be carried out by a fully insured and qualified tree surgeon working to BS3998 (2010), Tree work.

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Vince Cainey BSc

29th September 2023.