Landmark Trees

FURTHER INVESTIGATION REPORT:

41 Frognal

London

NW3 6YD

REPORT PREPARED FOR:

KSR Architects

[redacted]

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Date: 1st February 2019

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Site Details

Site Address: 41 Frognal, London NW3 6YD

Client / Agent: KSR Architects, 14 Greenland Street, London NW1 0ND

Surveyor: Kim Dear

Date of Inspection: 24th January 2019

Instruction

Carry out decay detection tests on the stems of two trees (T13 and T14) at 41 Frognal, London NW3 6YD.

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 allows testing to a depth of 40cm. As the probe advances it measures the resistance encountered and feed rate of the needle. Undecayed wood gives a high reading whilst dysfunctional wood or cavities give a lower reading.

The instrument used was the IML Resistograph PD400 which a greater 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 previous models, friction on the needle could give a falsely high reading. Although there is still friction on the needle with the PD400 the feed rate will change as decay is encountered. This is depicted on the traces shown below.

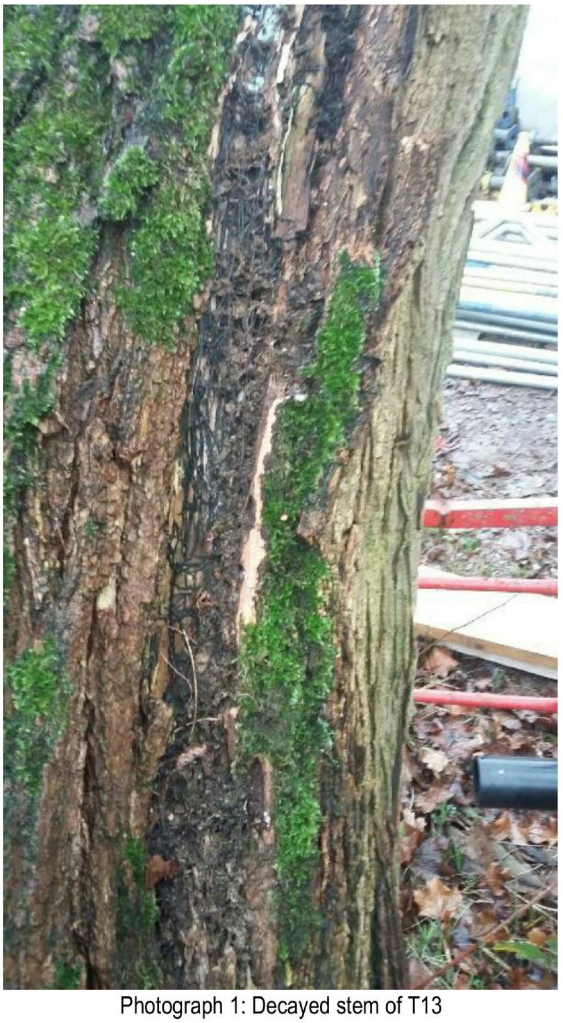
Tree Details

T13

Species: False acacia (*Robinia pseudoacacia*)

Diameter: 450mm

Height: 15m



Photograph 1: Decayed stem of T13

[redacted]

Observations

This tree is situated near the frontage of the property, in its eastern corner. It leans north-west and has a sparse crown with deadwood present throughout. Although not currently visible due to the season, honey fungus *(Armillaria mellea)* fungal fruiting bodies have previously been reported growing at the base of the tree. This is supported by the bark necrosis and rhizomorphs that are spreading from ground level to 1.5 metres that are visible in Photograph 1 above. There is also a wound and decay at ground level to the east.

Results

Table 1: Findings of testing undertaken

Direction	Height	Results
East	5cm	0-4cm bark, 4-28cm good, 28cm needle retraction.

The individual trace is provided for reference within Appendix 1.

[redacted]

T14

Species: Norway maple (*Acer platanoides*)

Diameter: 740mm

Height: 16m

Photograph 2: Weak union at base of T14

[redacted]

Observations

This tree is situated 1.5 metres from the south eastern boundary of the property, 8 metres south of T13. It is bifurcated at 1 metre with co-dominant stems and a narrow, included fork that shows signs of separating. The tree leans to the north west.

Results

Table 2: Findings of testing undertaken

Direction	Height	Results
South	40cm	0-1.2cm bark, 1.2-13.8cm good, 13.8-40cm decay.

The individual trace is provided for reference within Appendix 1.

[redacted]

Discussion

T13

Whilst the Resistograph trace does not any significant decay, this is not unusual for trees colonised by honey fungus. Lonsdale (in *Principles of Tree Hazard Assessment and Management,* 1999) observes that if decay is extensive in the root system there is a high chance of windthrow and that in such cases root death will produce symptoms in the crown of the tree. Given the level of dieback and deadwood present in the crown, it must be assumed that significant root decay has occurred. In combination with the bark delamination which suggests the progression of decay from the roots to the stem base, a high likelihood of windthrow must be assumed.

T14

The Resistograph trace identifies the presence of a significant amount of decay around the union between the two stems. This, and the nature of the union itself, strongly indicates that the structural integrity of the tree at this point is irremediably compromised to the extent that the failure of the tree at this point must be considered foreseeable.

Recommendations

Fell both trees as soon as practicable using a suitably competent, insured contractor.

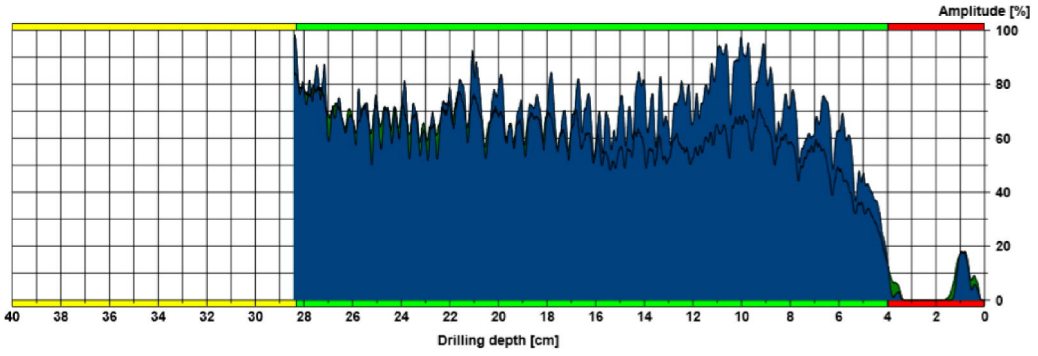
[redacted]

Appendix 1

RESISTOGRAPH TRACES

Measuring / object data

Measurement no.	: 10	**Needle speed**	: 2500 r/min	**Diameter**	: 450,0 cm
ID number	: 41 FROGNAL ROBINIA 5CM E	**Needle state**	: ---	**Level**	: 5,0 cm
Drilling depth	: 28,41 cm	**Tilt**	: ---	**Direction**	: East
Date	: 24.01.2019	**Offset**	: 99/365	**Species**	: Robinia
Time	: 12:20:47	**Avg. curve**	: off	**Location**	: 41 Frognal
Feed speed	: 100 cm/min			**Name**	: T13



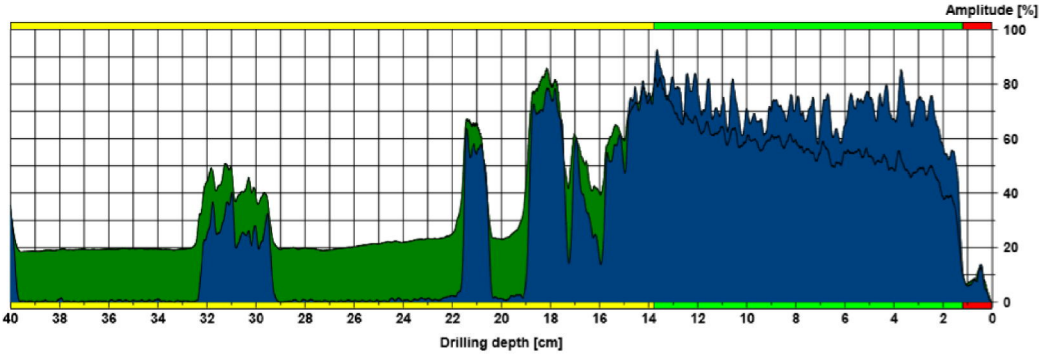
Assessment

From	0,0 cm	**to**	4,0 cm	:	Bark
From	4,0 cm	**to**	28,3 cm	:	Good
From	28,3 cm	**to**	40,0 cm	:	Needle retraction
From	0,0 cm	**to**	0,0 cm	:	
From	0,0 cm	**to**	0,0 cm	:	
From	0,0 cm	**to**	0,0 cm	:	

Comment

Measuring / object data

Measurement no.	: 9	**Needle speed**	: 2500 r/min	**Diameter**	: 70,0 cm
ID number	: 41 FROGNAL MAPLE 14 40CM S	**Needle state**	: ---	**Level**	: 40,0 cm
Drilling depth	: 40,00 cm	**Tilt**	: ---	**Direction**	: South
Date	: 24.01.2019	**Offset**	: 96/490	**Species**	: Norway Maple
Time	: 12:12:28	**Avg. curve**	: off	**Location**	: 41 Frognal
Feed speed	: 100 cm/min			**Name**	: T14



Assessment

From	0,0 cm	to	1,2 cm	: Bark
From	1,2 cm	to	13,8 cm	: Good
From	13,8 cm	to	40,0 cm	: Decay
From	0,0 cm	to	0,0 cm	:
From	0,0 cm	to	0,0 cm	:
From	0,0 cm	to	0,0 cm	:

Comment

Crack at 16cm, between 2 stems,