

Simon Pryce Arboriculture

Report

Client: Mr P Delaney

Site: 34 Christchurch Hill, Hampstead, London, NW3 1JL

Subject: Condition and amenity value of horse chestnut tree

Inspection date: 15 October 2015 and 12 January 2016

Report date: 22 January 2016

Reference: 15/083/2.1

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I Introduction

- 1.1 This report has been prepared on the instructions of Mr P Delaney of 34 Christchurch Hill, London, NW3 1JL.
- 1.2 I have been asked to reinspect a horse chestnut described in my previous report of 5 November 2016, to carry out further investigation of the honey fungus found on the main roots and to assess its public amenity value. This report is a supplement to the previous one and comments made in that one still apply unless expressly contradicted in this one.
- 1.3 This report is based on a site visit and reinspection of the tree on the morning of 12 January 2016.
 1. Further hand excavation was carried out, this is described, with photographs in the report.
 2. The tree was test drilled to assess internal decay using an IML Resistograph, an instrument built for this kind of assessment. The charts are attached, with annotations and the results are analysed and discussed.
 3. The tree's public amenity value was assessed using TEMPO (Tree Evaluation Method for Preservation Orders), which is widely used by councils when assessing whether or not trees warrant tree preservation order (TPOs) protection.

2 Executive summary of findings and conclusions

- 2.1 Further careful hand excavation at the tree's base revealed that the dead bark and underlying honey fungus tissue (mycelium) found on the south side in October 2015 is more extensive than was revealed at the time. It is also present on the north and west sides and extends between the root buttresses towards the centre of the tree.
- 2.2 Test drilling found some sound timber, but also revealed pockets of internal decay low in the tree, which is also characteristic of honey fungus. The internal decay could be a different fungus but that would make no practical difference.
- 2.3 The tree's size and elevated location relative to its immediate surroundings are such that in the event of a failure it would inevitably cause a considerable amount of damage and severe harm to anyone unfortunate enough to be in the way.
- 2.4 Pruning could reduce the immediate risk, but the tree would need regular recutting. That would reduce its already low amenity value and its ability to resist the decay. The recent findings reinforce my original view that the most appropriate course of action is to remove it.
- 2.5 Owing to its size and location the tree has an oppressive effect in the rear garden of no.34 and adjacent houses. It is visible from some public places, but its public amenity value and contribution to the conservation area are modest and outweighed by the problems associated with any attempt to retain it. Using the TEMPO evaluation system employed by many local authorities the tree falls well short of the score that would be required to justify TPO protection.

3 Background

- 3.1 The original inspection in October 2015 involved a visual assessment of the tree combined with limited hand excavation on the south side which exposed part of a root with evidence of infection by honey fungus. Given the tree's location and the potential for damage in the event of it failing a six week conservation area notice (Section 21.1 notice) of intent to fell it was served on Camden Council. They objected and made a TPO, their reference C1163 2015.

- 3.2 The stated reasons for making the order are:

The Horse Chestnut tree is considered to be highly visible from the public realm in various locations and to significantly contribute to the character of this part of the conservation area.

*There appears to be a small area of staining on the stem which may be *Pseudomonas syringae* pv *aesculi* (horse chestnut bleeding canker), the presence of which is common on mature specimens does not by default justify the removal of a tree. Current guidance from the Forestry Commission states:*

"Trees with bleeding cankers on the trunk can still have healthy-looking crowns and may not pose an immediate safety risk. Some trees may survive for many years as disease progression can be very slow or even show signs of recovery (vigorous callus development at the margins of cankers when bark has been killed by the disease). Removing affected trees can be unnecessary. Significant numbers of trees do recover."

The report submitted with the notification contains a photo of a small area of decay at the base of the tree and refers to mycelium on some roots which could be honey fungus although this is not confirmed. This is not considered to demonstrate that the tree is unsafe and should be removed.

It is recommended that a tree preservation order has been served to protect the character of this part of the conservation area.

- 3.3 The TPO was served on 14 January 2016 and the closing date for representations before the council decide whether or not to confirm it is 25 February 2016. This inspection and report have been prepared to support Mr Delaney's objection to it.

4 Bleeding canker

- 4.1 The reference to that and the photograph in my original report are as a record in case it progresses. At present this is not an imminent problem, the main issue is the structural condition of the tree's base and the potential for damage in the event of a failure.

5 Exploratory digging

- 5.1 On January 12 the original excavation on the south side of the tree was reopened and extended and additional excavations were carried out on the north and west sides. This was done by hand working carefully round the roots and only removing bark that was dead and loose. The attached photographs show the findings
1. This confirmed that there is extensive dead bark on the main root on the south side and that it extends back between that buttress and the next one to the east towards to the centre of the tree. There was white fungal tissue (mycelium) between the dead bark and the underlying wood, honey fungus is the only common species that produces this. In a few places the timber under the dead bark was becoming soft. (photo 1).
 2. On the north side where was similar dead bark with underlying fungal tissue on the surface of a major, relatively shallow root, that was curving round towards the east side of the tree. This had not softened as much as the one on the south side. (photo 2).
 3. On the west side there was also dead bark with underlying fungal tissue between the main buttresses. This also extends back towards the centre of the tree, although the gap between these buttresses was too narrow to follow it very far without damaging the tree. (photo 3).

6 Test drilling

- 6.1 The tree was test drilled near the base in three locations near the areas exposed by excavation using an IML Resistograph, a purpose built instrument that measures the resistance of the timber to a long, fine diameter drilling needle and plots it on charts. By drilling from several directions an accurate picture of the tree's internal condition can be gained. It was not drilled from the east as it was not possible to fit the instrument between the trunk and the wall.
- 6.2 The individual charts are at pages 9 - 12 with notes and the readings are discussed below. The instrument takes separate readings of the resistance of the timber to the rotation of the drill (drilling curve) and of the linear resistance to penetration (feed curve), which are shown as a single black line and a filled blue line respectively. Of these the feed curve is the more important as it measures any decay directly.
- 6.3 The three readings taken near the tree's base all show some sound wood, but also that the wood immediately below the dead bark is becoming soft and that there are significant pockets of internal decay at and just below ground level. This pattern is typical of honey fungus. There are other decay fungi that also colonise the roots or base of the tree and spread upwards, honey fungus is the only one that also develops white mycelium under the bark and kills it. However it makes little practical difference whether the tree is being affected by honey fungus alone or another species as well.

Implications of the tree's condition

- 6.4 Some subspecies of honey fungus are highly virulent and kill trees and other woody plants rapidly. Horse chestnut is not among the most susceptible trees and the extent of the fungal growth under the bark and the decay in the lower trunk and main roots indicate that it has been present from some time. The danger in cases like this is that it weakens the main structural roots with no external signs, such as dying foliage, so affected trees can fail with little or no warning, so this is impossible to predict accurately. This one was out of leaf on both of my inspections, but concern about the state of the foliage was one of the things that prompted the owners to seek professional advice. The most likely failure mode would be uprooting and its size and elevated location, with the base more or less level with the upper floor of no.34, mean that this would inevitably cause considerable damage.
- 6.5 The tree could be reduced further to lessen its weight and the wind pressure on the crown, but that would reduce its amenity value and it would need regular recutting to maintain any benefit. Also the reduction in live foliage would reduce its vitality and ability to resist or contain further spread of the decay. Honey fungus tends to colonise weakened trees and anything that places further stress on it, such as pruning, drought or other pathogens will make the tree more susceptible. The findings of this further investigation reinforce my original view that the tree should be removed.

7 Amenity value

- 7.1 For trees to warrant TPO protection councils are required to show that they have significant public amenity value. Where the TPO is made in response to a Conservation Area notice to fell the tree they need to weigh that against the reasons for removing the tree. The extracts below are from the current government guidance on making TPOs and are interleaved with comments where applicable to this case. (full citation at the end)

What does 'amenity' mean in practice? Paragraph: 007 Reference ID: 36-007-20140306

- 7.2 'Amenity' is not defined in law, so authorities need to exercise judgment when deciding whether it is within their powers to make an Order.
- 7.3 Orders should be used to protect selected trees and woodlands if their removal would have a significant negative impact on the local environment and its enjoyment by the public. Before authorities make or confirm an Order they should be able to show that protection would bring a reasonable degree of public benefit in the present or future.

What might a local authority take into account when assessing amenity value? Paragraph: 008 Reference ID: 36-008-20140306

- 7.4 When considering whether trees should be protected by an Order, authorities are advised to develop ways of assessing the amenity value of trees in a structured and consistent way, taking into account the following criteria:
- 7.5 Comment - The council's assessment is that the tree is 'considered to be highly visible from the public realm in various locations and to significantly contribute to the character of this part of the conservation area'. However there is no evidence that they have made a structured assessment of that, either by using the listed criteria, discussed in more detail below, or one of the various systems available, such as TEMPO.
- 7.6 **Visibility**
The extent to which the trees or woodlands can be seen by the public will inform the authority's assessment of whether the impact on the local environment is significant. The trees, or at least part of them, should normally be visible from a public place, such as a road or footpath, or accessible by the public.
- 7.7 Comment - The tree dominates the immediate area and, although the crown has been reduced regularly the effect is oppressive, particularly from the rest of the rear garden of no.34, which is much lower, and from the adjacent houses, most of which are at the same level. This is not apparent from outside the property. Although the tree is in an elevated location the surrounding houses are high, so it is not readily visible from the nearest surrounding streets, despite its size. As it is on a hill it can be seen from farther afield, mainly from the backs of houses to the north. However the reduced crown looks unnatural and there are various other trees in the wider area including the very large London plane to the east, that make it less noticeable as an individual than it would otherwise be. The other trees would also mitigate the effect of removing it, so the character of the area would not be drastically or irrevocably affected.
- 7.8 **Individual, collective and wider impact**
Public visibility alone will not be sufficient to warrant an Order. The authority is advised to also assess the particular importance of an individual tree, of groups of trees or of woodlands by reference to its or their characteristics including:
- **size and form;**
Comment - The chestnut is quite large but the reduced crown makes it look unnatural. Pruned trees are not necessarily out of place in an urban setting like this, but it is not a good specimen and has no real potential to improve.
 - **future potential as an amenity;**
Comment - The presence of decay limits its life expectancy and the need to prune it regularly if retained also limits any potential it might have to make a material contribution to local amenity in future.

- *rarity, cultural or historic value;*
Comment - It is not a rare species and has no cultural or historic value.
- *contribution to, and relationship with, the landscape; and*
- *contribution to the character or appearance of a conservation area.*
Comment - Within no.34 and adjacent houses its dominating effect makes a negative contribution. It is not a significant feature of the immediately surrounding streets and, while it can be seen from farther afield, its individual contribution to the wider landscape and to the character and appearance of the conservation area is minimal.

7.9 Other factors

Where relevant to an assessment of the amenity value of trees or woodlands, authorities may consider taking into account other factors, such as importance to nature conservation or response to climate change. These factors alone would not warrant making an Order.

- 7.10 None of these are relevant here. Horse chestnut is a long naturalised species, but has no particular ecological value. It will absorb some carbon dioxide and pollutants, but its individual contribution in alleviating a widespread problem is small and, even without it, there are numerous other trees in the wider area. TPOs deal primarily with visual amenity and the guidelines state that these factors alone would not warrant making an order.

Tempo assessment

- 7.11 This system was devised by Forbes-Laird Arboricultural Consultancy and is widely used by local authorities to provide a straightforward user friendly method for assessing whether trees warrant TPO protection. It awards points for relevant attributes and three stages, so that trees have to gain a minimum number of points in the initial assessment to pass to the second and third. Trees can score between 0 and 25 points and the guidance states that a TPO is defensible at over 12 points.
- 7.12 I have filled in the TEMPO form for this tree, copy at p.7 and it gets 5 points, possibly 6 if an optimistic view is taken about its condition. In either case it falls well short of the threshold that would justify a TPO.

8 Conclusions

- 8.1 The further excavation confirms that the tree's main roots have been colonised by honey fungus and that this is more extensive than originally thought.
- 8.2 Test drilling found decay in the lower trunk and root buttresses. This is also consistent with honey fungus, it could be a different species, but that does not make any practical difference here.
- 8.3 The tree's size and location mean that any failure would inevitably cause major structural damage and severe harm to anyone unfortunate enough to be in the way.
- 8.4 Reducing the tree would lessen the immediate risk, but it would need regular recutting, which would reduce its amenity value and ability to resist or contain the decay. The recent investigation reinforces the view that it should be removed.
- 8.5 As it is rooted at the top of a retaining wall effect on the rear garden and immediate surroundings is oppressive and its amenity value there is negative. Its public amenity value is modest and outweighed by the problems associated with it. Under the TEMPO system it is well short of the score needed to justify TPO protection.

Simon Pryce

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Reference

Government guidance on TPOs
<http://planningguidance.planningportal.gov.uk/blog/guidance/tree-preservation-orders/>

Photographs



1) South side of the tree showing dead bark and underlying fungal tissue extending between buttresses towards the centre of the tree.

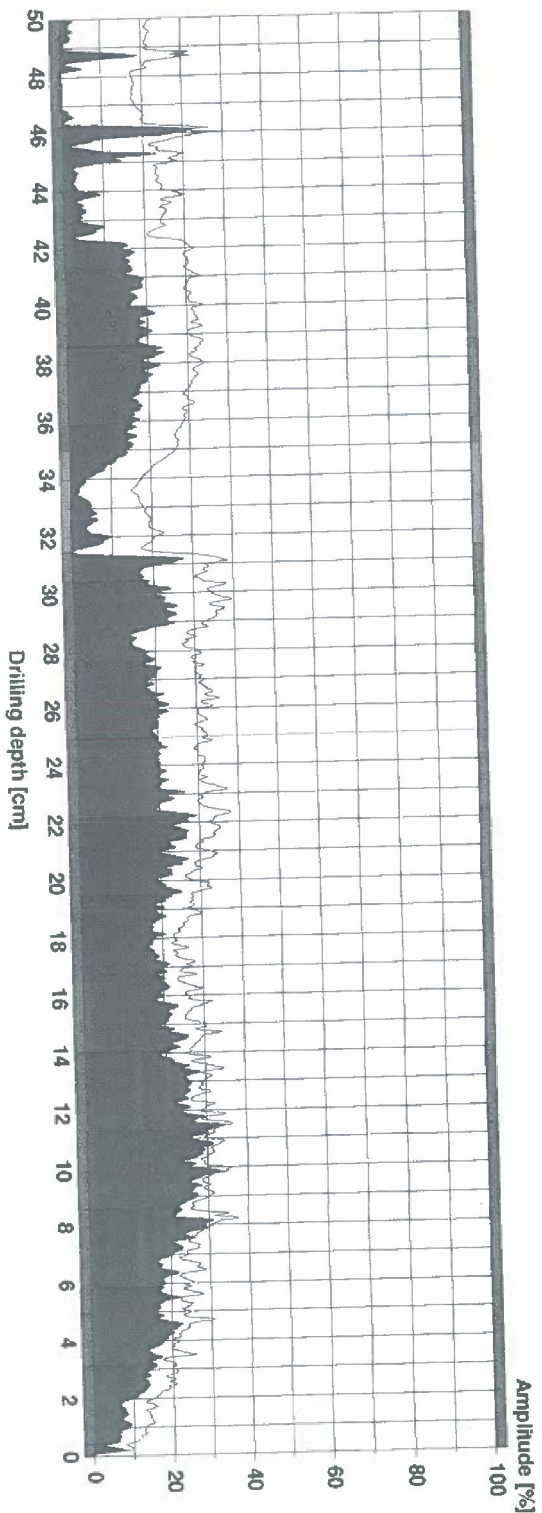
2) Root on the north side



3) Dead bark and fungal tissue between roots on the west side.

Measuring / object data

Measurement no. :	1	Needle speed :	2500 r/min	Diameter :	102.0 cm
ID number :	15/083	Needle state :	---	Level :	---
Drilling depth :	50.00 cm	Tilt :	---	Direction :	from S into buttress
Date :	12.01.2016	Offset :	85/295	Species :	Horse chestnut
Time :	11:52:55	Avg. curve :	off	Location :	34 Christchurch Hill
Feed speed :	100 cm/min			Name :	P. Delaney



Assessment

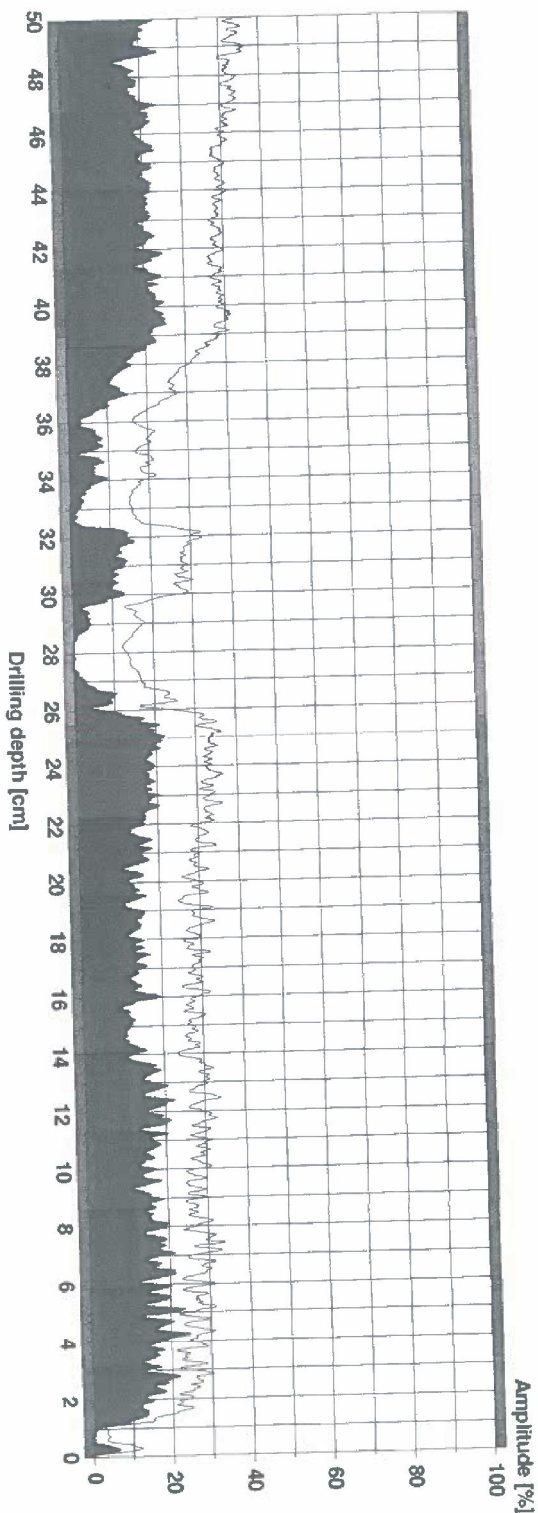
From 0.0 cm to 2.0 cm	Suspected decay
From 2.0 cm to 31.5 cm	Sound wood
From 31.5 cm to 35.0 cm	Decay
From 35.0 cm to 42.0 cm	Sound wood
From 42.0 cm to 50.0 cm	Advanced decay
From 0.0 cm to 0.0 cm	

Comment

Dead bark removed, some superficial decay initially then sound but with significant decay from 32cm. Serrated pattern of sound wood is caused by the texture of the grain.
Filled blue curve shows resistance to penetration, black line is rotational drag on the drill.

Measuring / object data

Measurement no. :	2	Needle speed :	2500 r/min	Diameter :	102.0 cm
ID number :	15/083	Needle state :	---	Level :	---
Drilling depth :	50.00 cm	Tilt :	---	Direction :	From N
Date :	12.01.2016	Offset :	100/307	Species :	Horse chestnut
Time :	11:41:14	Avg. curve :	off	Location :	34 Christchurch Hill
Feed speed :	100 cm/min			Name :	P. Delaney



Assessment

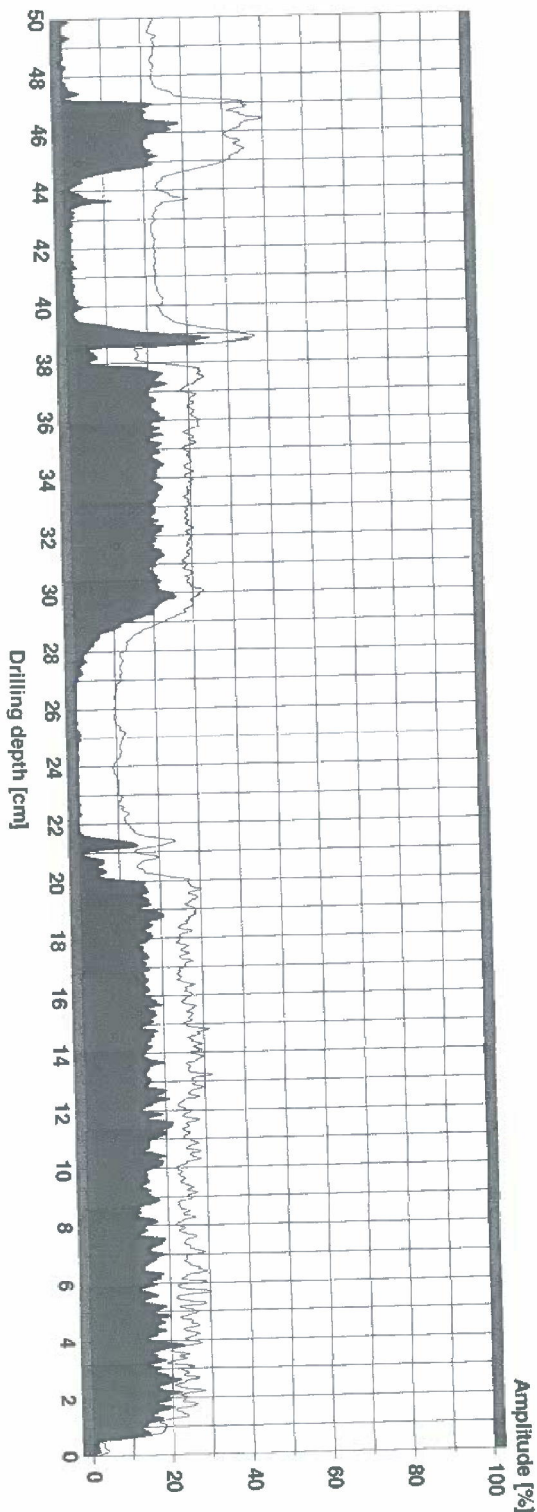
From 0.0 cm to 1.0 cm :	Bark
From 1.0 cm to 25.5 cm :	Sound wood
From 25.5 cm to 39.0 cm :	Decay
From 39.0 cm to 50.0 cm :	Sound wood
From 0.0 cm to 0.0 cm :	
From 0.0 cm to 0.0 cm :	

Comment

Drill angled slightly down. Mainly sound but pocket of decay between 25.5 and 39cm, probably extending up from roots

Measuring / object data

Measurement no. :	3	Needle speed :	2500 r/min	Diameter :	102.0 cm
ID number :	15/083	Needle state :	---	Level :	---
Drilling depth :	50.00 cm	Tilt :	---	Direction :	from W
Date :	12.01.2016	Offset :	97/391	Species :	Horse chestnut
Time :	11:43:45	Avg. curve :	off	Location :	34 Christchurch Hill
Feed speed :	100 cm/min			Name :	P. Delaney



Assessment

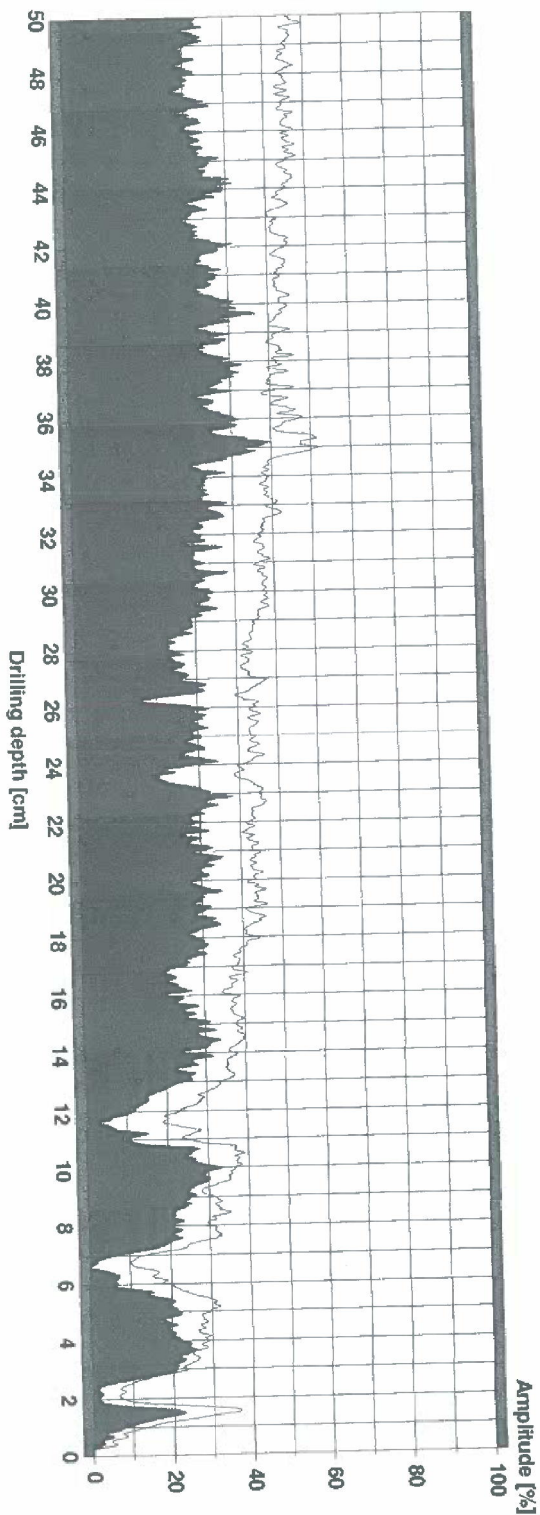
From 0.0 cm to 1.0 cm :	Bark
From 1.0 cm to 20.0 cm :	Sound wood
From 20.0 cm to 29.0 cm :	Advanced decay
From 29.0 cm to 38.0 cm :	Sound wood
From 38.0 cm to 50.0 cm :	Advanced decay
From 0.0 cm to 0.0 cm :	

Comment

From W above area in photo, angled down slightly. Sound wood present but there are pockets of decay.

Measuring / object data

Measurement no. :	4	Needle speed :	2500 r/min	Diameter :	102.0 cm
ID number :	15/083	Needle state :	---	Level :	100.0 cm
Drilling depth :	50.00 cm	Tilt :	---	Direction :	from N
Date :	12.01.2016	Offset :	97/286	Species :	Horse chestnut
Time :	11:49:53	Avg. curve :	off	Location :	34 Christchurch Hill
Feed speed :	100 cm/min			Name :	P. Delaney



Assessment

From 0.0 cm to 1.0 cm :	Bark
From 1.0 cm to 50.0 cm :	Sound wood
From 0.0 cm to 0.0 cm :	
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

From 1m just below a small wound, which is the likely cause of the small decay pockets at 2, 7 & 12cm. Sound wood confirms at this level that decay is spreading from the base.

TREE EVALUATION METHOD FOR PRESERVATION ORDERS - TEMPO

SURVEY DATA SHEET & DECISION GUIDE

Date: 12 January 2016 Surveyor: Simon Pryce

Tree details		
TPO Ref (if applicable): C1163 2015	Tree/Group No:	Species: Horse chestnut
Owner (if known): Mr P Delaney	Location: 34 Christchurch Hill, London, NW3 1JL	

REFER TO GUIDANCE NOTE FOR ALL DEFINITIONS

Part 1: Amenity assessment

a) Condition & suitability for TPO; where trees in good or fair condition have poor form, deduct 1 point

- | | |
|--------------------------|-------------------------|
| 5) Good | Highly suitable |
| 3) Fair | Suitable |
| 1) Poor | Unlikely to be suitable |
| 0) Dead/dying/dangerous* | Unsuitable |

Score & Notes
0 - not an imminent threat but its safe life is severely limited a score of 1 would be unduly optimistic

* Relates to existing context and is intended to apply to severe irremediable defects only

b) Retention span (in years) & suitability for TPO

- | | |
|-----------|-----------------|
| 5) 100+ | Highly suitable |
| 4) 40-100 | Very suitable |
| 2) 20-40 | Suitable |
| 1) 10-20 | Just suitable |
| 0) <10* | Unsuitable |

Score & Notes
1 - If retained it might just last ten years if reduced further and and recut frequently.

*Includes trees which are an existing or near future nuisance, including those clearly outgrowing their context, or which are significantly negating the potential of other trees of better quality

c) Relative public visibility & suitability for TPO

Consider realistic potential for future visibility with changed land use

- | | |
|---|---------------------|
| 5) Very large trees with some visibility, or prominent large trees | Highly suitable |
| 4) Large trees, or medium trees clearly visible to the public | Suitable |
| 3) Medium trees, or large trees with limited view only | Suitable |
| 2) Young, small, or medium/large trees visible only with difficulty | Barely suitable |
| 1) Trees not visible to the public, regardless of size | Probably unsuitable |

Score & Notes
4 for size alone but see the detailed assessment, realistically between 3 and 4

d) Other factors

Trees must have accrued 7 or more points (with no zero score) to qualify

- | | |
|--|--|
| 5) Principal components of arboricultural features, or veteran trees | Score & Notes
N/A - even being optimistic about its condition it doesn't reach the threshold |
| 4) Tree groups, or members of groups important for their cohesion | |
| 3) Trees with identifiable historic, commemorative or habitat importance | |
| 2) Trees of particularly good form, especially if rare or unusual | |
| 1) Trees with none of the above additional redeeming features (inc. those of indifferent form) | |

Part 2: Expediency assessment

Trees must have accrued 9 or more points to qualify

- | | |
|-------------------------------|---|
| 5) Immediate threat to tree | Score & Notes
N/A - doesn't reach the threshold |
| 3) Foreseeable threat to tree | |
| 2) Perceived threat to tree | |
| 1) Precautionary only | |

Part 3: Decision guide

- | | |
|-------|-----------------------|
| Any 0 | Do not apply TPO |
| 1-6 | TPO indefensible |
| 7-11 | Does not merit TPO |
| 12-15 | TPO defensible |
| 16+ | Definitely merits TPO |

Add Scores for Total:
5, 6 if optimistic view is taken of its condition

Decision:
TPO indefensible