Simon Pryce Arboriculture

Report

Client:	**Mrs C Halsted**
Site:	**46 Dartmouth Park Road, London, NW5 1SN**
Subject:	**Safety inspection of horse chestnut tree in the rear garden**
Inspection date:	**20 February 2019**
Report date:	**27 February 2019**
Reference:	[redacted]
Author:	**Simon Pryce, BSc, FArborA, RCArborA, CBiol, MICFor**

[redacted]

AA Registered CONSULTANT

1 Introduction

1.1 This report has been prepared for Mrs C Halsted of 46 Dartmouth Park Road, London, NW5 1SN. I have been asked to inspect a red flowered horse chestnut growing in the rear garden, to assess its structural condition and to recommend any necessary or appropriate work.

1.2 This report is based on a site visit and inspection of the tree on 20 February 2019. The tree was inspected visually from ground level and subsequently by climbing to inspect suspect areas not visible from the ground.

1.3 It was also test drilled in four places using an IML PD microdrill, a purpose built instrument that measures and plots the resistance of the timber to a small diameter drilling needle, allowing an accurate picture of the tree's internal condition can be gained.

1.4 The attached photographs illustrate the points discussed below.

2 Background

2.1 The tree is a red flowered horse chestnut *(Aesculus x carnea)* growing near the left hand side of the rear garden close to the back of a modern house on a plot in York Rise. The local planning authority is Camden Council and the garden is in a conservation area.

2.2 Camden's online planning records indicate that the tree was pruned in about 2012, their reference 2012/2202. The only available documents are an email dated 18 April 2012 from Robert Gibbs to Camden's Tree officer commenting that the tree has several canker growths on the trunk and major limbs and there was concern about its safety. The message comments that they would like to reduce it to 6 - 7m, which was considered a more sustainable height and that doing under the five day notice procedure for dealing with dangerous trees would get the benefit of new growth.

2.3 The tree is now also subject to a tree preservation order (TPO) following moves to fell it in connection with a subsidence claim at 23 Laurier Avenue, the house to the rear left. Camden reference 2018/5789.

2.4 There is a current application, ref 2019/0607, to reduce the crown by 15 - 20%, thin by 20 - 25% and prune to clear the roof of the nearby house on York Rise. The application comments that the specification might be altered following this investigation.

3 Observations

3.1 The tree is a mature specimen approximately 14m high with a single vertical trunk about 680mm in diameter that divides at about 4m into three main limbs that ascend to form the main framework of the crown. The tree has been reduced lightly and reshaped and had the crown thinned. This has been done to a good standard and a natural shape and branch structure has been retained. There are some young shoots near the pruning cuts, but these are not particularly dense or vigorous, given the time since the tree was pruned

3.2 The tree has a number of large outgrowths or cankers, which are common in red chestnuts and quite often associated with decay. Some of these had visible signs of decay in the canker or nearby and the tree was climbed to inspect these in more detail. The first photograph of the tree shows the locations of these features and the points where it was test drilled.

3.3 The IML instrument takes separate readings of the resistance of the timber to the rotation of the drill (drilling curve) shown as a single black line, and of the linear resistance to penetration (feed curve), shown as a filled blue line. Of these the feed curve is the more important as it measures any decay directly. The individual reading charts are attached with notes and the readings are discussed below.

Climbing inspection and test drilling

Trunk

3.4 There are signs of decay under the large canker visible under the ladder in the photograph and one in the fork just above. The trunk was test drilled into a wound just below this and shows some evidence of decay in to about 140mm. Beyond that the timber is sound, but there is a sharp dip in resistance at about 25cm, probably due to decay spreading down from above.

Limb above the side boundary

3.5 This is on the left in photograph 1. The upper parts are generally in reasonable condition, but there is a large canker round most of the base just above the attachment to the trunk, shown close up in photo 2. This appears reasonably sound externally, but is much wider across than it is deep. This was test drilled from the fork at the top of the trunk outwards and angled down, as shown in the photograph, revealing major severe decay just below the canker.

Limb over the lawn

3.6 This is the central limb in the photograph. There are no major cankers visible from the ground, but there are several old pruning cuts with decay and one of the main lateral limbs at about 10m has a canker on the top, indicated by P3 in the main photograph and shown close up in photograph 3. There are no obvious signs of decay but the canker has weakened the attachment point of the branch, exacerbated by it developing with an uneven groove across the top.

Limb over the nearby house

3.7 This is on the right in the photograph and has a large canker encircling a large part of the trunk at about 5m above ground shown in photograph 4. The trunk has been weeping and there is brown staining below the canker. Liquid this colour is probably caused by bacterial infections, which do not cause major harm in themselves. However immediately above the canker is a decay cavity about 90mm wide by 200mm wide and 150mm deep, i.e. almost to the centre of the limb. The timber inside is soft and decayed and it was possible to push a 70mm knife blade fully into the back of the cavity with little effort.

3.8 There are no signs of callus growth round the edges of the cavity and teeth marks round the edges and fragments of wood inside indicate that it is being used by grey squirrels.

3.9 This limb was test drilled above the cavity and below the canker and the readings are attached. Chart 3 shows very extensive severe decay above the cavity with little wound wood supporting the parts of the limb above. Chart 4 from below the canker is harder to interpret; there is more sound wood than above the cavity, but there is significant decay.

4 Discussion

Condition of the tree

4.1 The horse chestnut is in reasonable physiological health, but in trees that is not always closely linked with structural condition, especially in horse chestnut as their timber is weaker and less durable than in many other species. That is the case here and, while this one's trunk is still in reasonable condition, there is extensive severe decay in several critical locations in all three of the main limbs. Given the tree's size and location almost any limb failure would cause significant damage within the property and to neighbours.

Options for tree work

4.2 Horse chestnuts can survive quite heavy pruning but in order to address the safety issues this one would need very heavy reduction, leaving little more than a standing trunk. That would continue to decay, so any regrowth would need regular trimming to keep weight and wind resistance down to a reasonable level. It has become a common practice to reduce dead or decayed trees to standing stumps, particularly where that can give ecological benefits. That could be done here, although the tree would no longer make an appreciable contribution to the garden or the surrounding area and would need regular inspection and maintenance for as long as it was retained.

4.3 Felling the tree would avoid that and a suitable replacement at or near the same place could mature to make a comparable or better contribution to the garden and local amenity. The problems with this one are due mainly to its age, so there is no compelling reason why another red horse chestnut would not be suitable. One advantage over the white flowered one is that it is not susceptible colonisation by leaf miner moth, *Cameraria ohridella,* which can be very disfiguring in summer. There is a wide range of other possibilities including sweet gum, tulip tree or Indian bean (Catalpa). These are native to warmer areas, so would also have some resilience to climate change.

Restrictions

4.4 With TPO protected trees it is normally necessary to apply for consent for any pruning or felling. However this one is a hazard that needs to be addressed without delay, so it is exempt from that. Regulation 14 of the 2012 TPO regulations [1] exempt any work urgently necessary to remove an immediate risk of serious harm. In such cases the council should be notified as soon as practicable after the work becomes necessary, and this report has been prepared, so that it can be submitted to them as evidence of the tree's condition.

cont…

[1] HMSO (2012) Statutory Instrument 2012 no.605. The Town and Country Planning (Tree Preservation)(England) Regulations 2012

5 Conclusions

5.1 The tree is in reasonable physiological condition for its age, but has extensive severe decay and structural defects in all three of the main limbs that form the crown. Any failure would cause serious harm.

5.2 Any reduction severe enough to address the safety issue would leave the tree as little more than a stump that would still need regular inspection and maintenance, so the most practical option is to fell it.

5.3 The tree is in a conservation area and has been made the subject of a TPO, but its condition is such that it can be felled under the exemption for removing an immediate risk of major harm. The council should be notified and can be sent this report as evidence of the tree's condition.

[redacted]

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Photographs

1) View of the tree from the garden. Numbers 1 - 4 show the places where it was test drilled. P3 indicates the branch junction shown in photo 3.

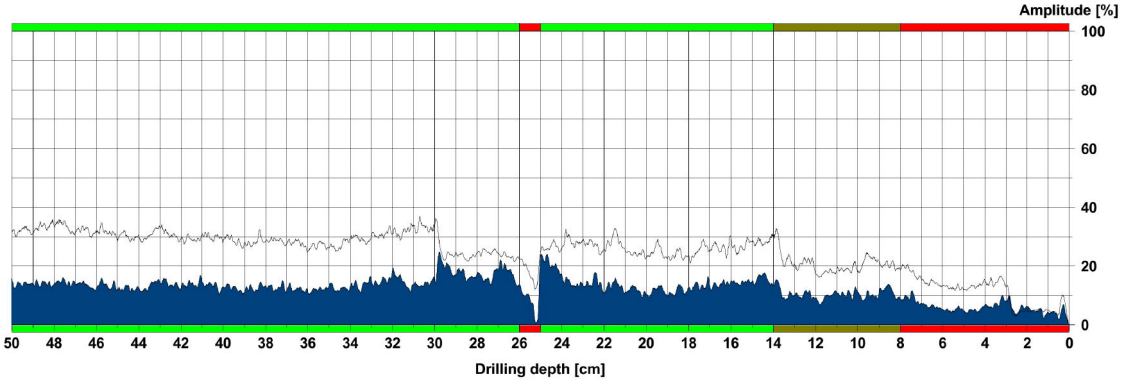
2) Large canker at the base of main limb facing the house.
Red arrow shows approx. line of test drill 2.

3) Canker at the base of high branch. Indicated by P3 in photo 1.

3) Limb over the adjacent house showing canker and decay cavity above. Test drill 3 was above the cavity, no.4 through the brown stained area below the canker. (Lower one shown green to stand out against the background)

Measuring / object data

Measurement no.	: 1	**Needle speed**	: 2500 r/min	**Diameter**	: 68,0 cm
ID number	: [redacted]	**Needle state**	: ---	**Level**	: 200,0 cm
Drilling depth	: 50,34 cm	**Tilt**	: ---	**Direction**	: From NE
Date	: 20.02.2019	**Offset**	: 87/272	**Species**	: Horse chestnut
Time	: 13:10:07	**Avg. curve**	: off	**Location**	: 46 Dartmouth Pk rd
Feed speed	: 100 cm/min			**Name**	: [redacted]



Assessment

From	0,0 cm	to	8,0 cm	: Decay
From	8,0 cm	to	14,0 cm	: Suspected decay
From	14,0 cm	to	25,0 cm	: Sound wood
From	25,0 cm	to	26,0 cm	: Decay
From	26,0 cm	to	50,0 cm	: Sound wood
From	0,0 cm	to	0,0 cm	:

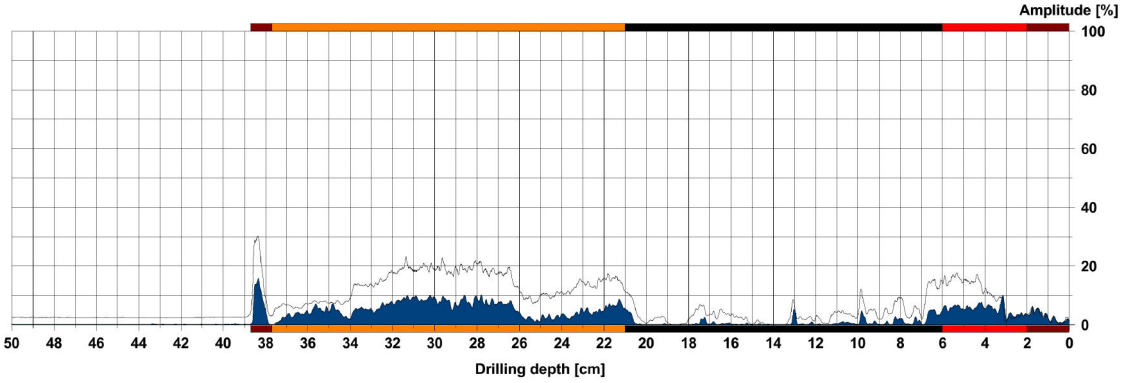
Comment

Into wound in the trunk below the large canker. Suspected decay to about 14cm. Sound after that apart from sharp drop in resistance at 25cm, probably a small decay pocket

18_096_1.rgp

Measuring / object data

Measurement no.	: 2	**Needle speed**	: 2500 r/min	**Diameter**	: 39,0 cm
ID number	: [redacted]	**Needle state**	: ---	**Level**	: 400,0 cm
Drilling depth	: 50,33 cm	**Tilt**	: ---	**Direction**	: from NW into SW stem
Date	: 20.02.2019	**Offset**	: 90/485	**Species**	: Horse chestnut
Time	: 13:18:29	**Avg. curve**	: off	**Location**	: 46 Dartmouth Pk rd
Feed speed	: 100 cm/min			**Name**	: [redacted]



Assessment

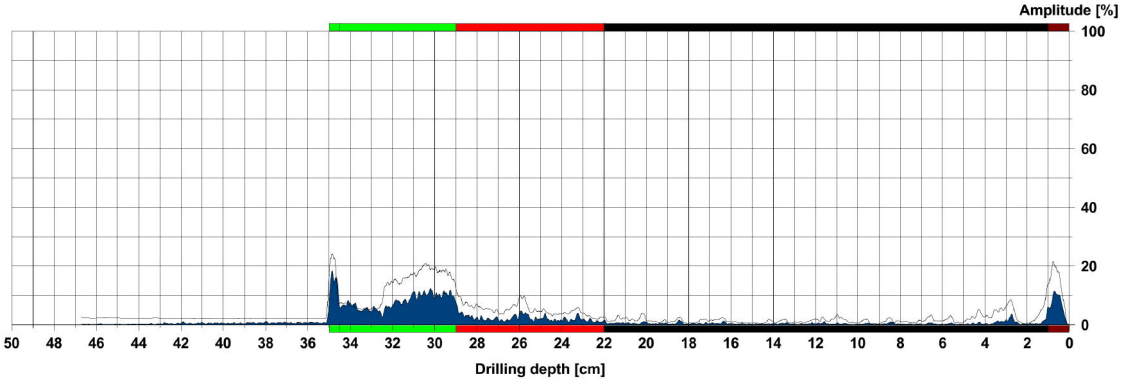
From	0,0 cm	to	2,0 cm	:	Bark
From	2,0 cm	to	6,0 cm	:	Decay
From	6,0 cm	to	21,0 cm	:	Cavity
From	21,0 cm	to	37,7 cm	:	Incipient decay
From	37,7 cm	to	38,7 cm	:	Bark
From	0,0 cm	to	0,0 cm	:	

Comment

From NW through canker at the base of the large stem above the side boundary growing towadrd no.46. Decay all the way through, very severe or cavity in the centre.

Measuring / object data

Measurement no.	: 3	**Needle speed**	: 2500 r/min	**Diameter**	: 35,0 cm
ID number	: [redacted]	**Needle state**	: ---	**Level**	: 600,0 cm
Drilling depth	: 46,71 cm	**Tilt**	: ---	**Direction**	: From NE above cavity
Date	: 20.02.2019	**Offset**	: 88/246	**Species**	: Horse chestnut
Time	: 13:25:46	**Avg. curve**	: off	**Location**	: 46 Dartmouth Pk rd
Feed speed	: 100 cm/min			**Name**	: [redacted]



Assessment

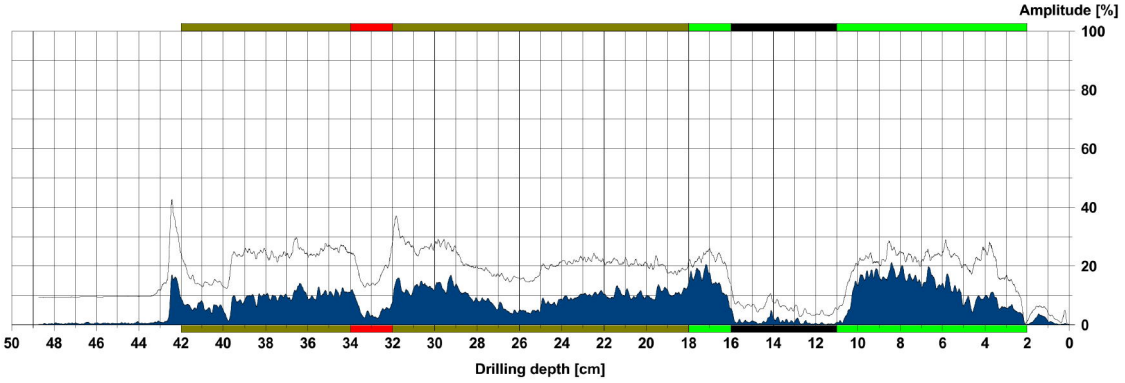
From	0,0 cm	to	1,0 cm	: Bark
From	1,0 cm	to	22,0 cm	: Cavity
From	22,0 cm	to	29,0 cm	: Decay
From	29,0 cm	to	34,5 cm	: Sound wood
From	34,5 cm	to	35,0 cm	: Sound wood
From	0,0 cm	to	0,0 cm	:

Comment

From NE into limb overhanging the adjacent house just above the cavity opening. Severe and extensive decay / cavity

Measuring / object data

Measurement no.	: 4	**Needle speed**	: 2500 r/min	**Diameter**	: 43,0 cm
ID number	: [redacted]	**Needle state**	: ---	**Level**	: 500,0 cm
Drilling depth	: 48,74 cm	**Tilt**	: ---	**Direction**	: from NE below cavity
Date	: 20.02.2019	**Offset**	: 86/246	**Species**	: Horse chestnut
Time	: 13:27:50	**Avg. curve**	: off	**Location**	: 46 Dartmouth Pk rd
Feed speed	: 100 cm/min			**Name**	: [redacted]



Assessment

From	2,0 cm	to	11,0 cm	: Sound wood
From	11,0 cm	to	16,0 cm	: Cavity
From	16,0 cm	to	18,0 cm	: Sound wood
From	18,0 cm	to	32,0 cm	: Suspected decay
From	32,0 cm	to	34,0 cm	: Decay
From	34,0 cm	to	42,0 cm	: Suspected decay

Comment

Below cavity in limb over adjacent house. System limited by not allowing more than six assessment categories, so bark has been omitted. Pattern complex, indicating some sound wood with significant decay.