simian TREE SURGEONS

EFFICIENT ECONOMIC ECOLOGICAL & EXPERT TREE SERVICES

Arboricultural Hazard Assessment Report

1 Hollycroft Avenue, London, NW3 7QG

November 2017

SUMMARY

This report is an Arboricultural assessment & hazard report for one tree, a Horse Chestnut, *Aesculus hippocastanum* situated in the rear garden of 1, Hollycroft Avenue, Hampstead, London, NW3 7QG.

1. INTRODUCTION

The author has the following qualifications and experience:

1.1.1 Qualifications

ABC Level 4 Diploma in Arboriculture

LANTRA Certificate in Risk Assessment for Arboriculture

Professional Member of the Arboricultural Association

NPTC CS 30.1 & .2, 31, 38, 46

1.1.2 Practical experience

Over 25 years' experience as a practicing arborist with & over 4 years as a qualified Arboricultural Consultant

1.1.3 Continuing professional development

The author has attended numerous CPD courses with relevance to Arboriculture, most recently the Arboricultural Association Assessment of Tree Forks Workshop & their 2017 AGM.

1.1.4 Relevant experience

The author has carried out tree surveys on various sites for clients in the role as Arboriculture Manager at Burleys for the past 2 years &

previous to this 4 years carrying out BS: 5837 Arboricultural Impact Assessments, Hazard Assessments Reports, Tree Condition Surveys and VTA's as a practicing Consultant Arborist. Prior to this, the author has 20+ years' experience as a practicing Arborist, where invaluable arboricultural knowledge was gained.

1.2 Instructions and brief

Mr Greg Hedger, (the client), sought a fee proposal for the work necessary to identify the arboricultural status and any hazard that might be connected to a Horse Chestnut, *Aesculus hippocastanum*, located in the rear garden of his property at 1, Hollycroft Avenue, London, NW3 7QJ.

1.3 Documents & Information provided

A plan of the property is provided, as are photographs of the tree and its position in the landscape. A list of these photographs can be found in Appendix 2.

1.4 Limitations

Targets are considered to be either: persons and/or property - who may be hit by falling trees or debris from trees. Targets are identified during inspection of the trees on the site. Changes to the site, after the time of survey may affect the targets as they have been identified. In such cases, re-evaluation will be necessary.

This report is valid for 12 months from the date of the survey. The appraisals, conclusions & management recommendations contained within this report will become invalid or necessary for review after the end of the 12 month period or if changes occur to the site which may affect: the condition of the trees; the site as evaluated at the time of inspection; or the hazards identified at the time of inspection.

Where future or further inspections are made as a recommendation in the report a follow-on report shall be submitted on those trees in particular, when instructed.

Trees are living organisms and subject to changes outside of human control. Whilst every effort has been made to detect defects within the trees inspected, no guarantee can be given as to the absolute safety or otherwise of any individual tree. Absolute safety is not a realistic goal; even apparently sound trees can fail.

It is recommended that trees are surveyed after adverse weather conditions; these could include strong winds, heavy rain, snow, waterlogged grounds etc.

This report does not consider direct damage to structures as a result of tree root growth.

If the site is covered by any Tree Preservation Orders or within a Conservation Area, (in whole or in part), it will be necessary to apply to or inform the local authority to obtain permissions before any works are undertaken to the trees, other than the removal of dead, dying or dangerous trees/wood within trees.

The survey records details of defects and the condition of those trees deemed to be a hazard at the time of inspection and specifies timescales for work and future re-inspection.

The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act 2000, provides statutory protection to birds, bats and other species that inhabit trees. These could impose constraints on when any tree operations are carried out and it is advisable to confirm if such trees are inhabited before undertaking works.

1.5 Legal Framework

Tree owners and managers owe a duty of care to those who, with reasonable contemplation, could be affected by dangerous trees located on their property or property they are responsible for. Under this duty of care the owner or organisation responsible for the tree must

take reasonable care to avoid acts or omissions that could be foreseen or would be likely to cause harm to persons or property. Failure to meet this standard of care could mean the tree owner is found negligent in Common Law and may result in a claim for damages.

Under the Occupiers Liability Act 1957 and 1984 there is a duty upon the occupier to take such care as is reasonable to ensure that visitors to their land shall be safe from harm. This duty extends also to unlawful trespassers, but only in as far as risks of which the occupier is aware.

The Health and Safety at work act 1974 also states “It shall be the duty of every employer to conduct his undertaking in such a way as to ensure, so far as is reasonably practicable, that persons not in his employment who may be affected thereby are not exposed to risks to their health and safety.”

2. SITE VISIT AND OBSERVATIONS

2.1 Site Visit

An unaccompanied site visit was carried out on 16th June, 2016 by Nicholas Eddison. The trees were surveyed visually from the ground. No drilling or excavation was carried out on this occasion. The weather at the time was fair and there were no impediments to visual analysis. At times, observations were made from the roadway of College Road, as the Hawthorn tree itself stands on the boundary of the property and the public highway.

2.2 Tree Survey Methodology

The survey was undertaken in accordance with the guiding principles of British Standard 5837 (2005)" *'Trees in Relation to Construction: Recommendations"* and the tree assessed objectively. (Explanatory details regarding the survey methodology can be found in Appendix 3). Inspection according to the principles of Visual Tree Assessment (VTA)[1] was initiated from ground. VTA is a methodology, undertaken by arboriculturists, to evaluate the structural integrity of a tree, relying on observation of a tree's biomechanical and physiological features; this is the method generally adopted throughout the arboricultural industry and as such is 'industry best practice'; and is appropriate in this instance. VTA methodology employs superficial investigative techniques, such as the taking of soundings with a nylon hammer & use of a probe. Such techniques may give a useful indication as to the presence of functional or dysfunctional wood within the internal structure of the tree, but are in no way definitive. Further, internal investigative techniques can be recommended & employed if the

[1] 'The Body Language of Trees: a handbook for failure analysis', Claus Mattheck and Helge Breloer – The Stationary Office, 2003.

superficial techniques indicate thatit would be useful & pertinent to do so.

2.3 Observations:

2.3.1 The Site

The tree is located in rear garden on boundary with Platt's Lane & a section of the tree's crown overhangs the footpath & carriageway of Platt's lane.

2.3.2 Topography

Topography of the rear garden is flat generally, with a very gentle slope towards the front of the property & Hollycroft Avenue.

2.3.3 General Observations

The tree is a historic pollard, with the major crown break at 8m from ground level. Approximately 50% of the crown is supported by the main stem, with 3 major pollard 'knuckles'. There are approximately 8 more scaffolds supporting further pollard points. The branches emanating from the 3 main knuckles & 8 scaffolds are all lapsed pollard growths; the regrowth from the original pollard points is approximately 3-8m long, depending on position in the crown. These regrown branches are approximately 20-40cm in diameter. At the end of these branches are secondary pollard points, which have been pruned in a regular maintenance programme, last undertaken approximately 4-5 years ago. The approximate length of these branches is 2-3m & their approximate diameter is 3-5cm. The outer extremity of these is within 0.5m of the built structure of the neighbouring property.

Reports from the property owner confirm the specimen has an infestation of Chestnut Leaf Miner, Cam*eraria ohridella,*an insect that manifests annually according to its life-cycle & create patches of discolouration of the leaf as it feeds from within the leaf structure. Also observed on the lower stem were small patches of Bleeding Canker of Horse Chestnut exudate, *Pseudomonas syringae* pv *aesculin,* & some minor lifting of bark associated with this condition. Also observed were patches of small red rust, another symptom of this condition, generally less than 10cm in average diameter.

2.3.4 Detailed Observations

ROOTS: some lateral are roots exposed, though not of any significance. Normal buttressing for a tree of this size was observed. Soundings with a nylon hammer were taken on the buttresses & these indicate no immediate dysfunction. 1 patch of exudate observed on 1 buttress & there was dullness in the soundings taken immediately surrounding this area, indicating localised dysfunction in the wood. Some evidence of epidemic shooting was also observed on the buttresses, though not a significant amount that would indicate an unusually stressed tree. (These can be most likely attributed as reactive response due to the pollarding regime).

ROOT/STEM JUNCTION: no dysfunction observed

STEM: the tree has lost a major scaffold - there is a historic pruning wound a 1.8m that has partially occluded, indicting this may have occurred at some point within the last 20 years. Some patches of red rust were observed, indicating the presence of *Pseudomonas syringae* pv *aesculin* at these locations, as was some bark-lifting but it could not be determined whether this is attributable to normal 'plating' of bark, as is character of a tree of this species & maturity or as a result of the pathogenic colonisation. The stem was probed behind the lifting

plates & no cavitation was detected. Soundings were taken, with dullness indicating dysfunctionality around areas where exudation was seen, as well as dullness around where bark plates were lifting, (though, of course, this would be expected at these points). There are areas where epicormic shooting has formed over time into burrs, through successive pruning of the epicormic shoots. These are present from 1.8m to crown break at 8m. There are multiple cavities present from 1.8m to 8m, all are historic pruning wounds, and can only be as a result of the removal of large branches, estimated to be within the last 20 years. None have fully occluded, though some show near full occlusion, though others much less so. Those that have not occluded well show deadwood within the wounds, to a greater or lesser extent.

SCAFFOLDS/MAJOR LIMBS: observations were limited due to being on ground level. The larger limbs show bark plating & fissuring on lower, underside surfaces, at areas where the wood bears heavy loading, as would be expected of a tree of this maturity & size. One limb over the adjacent hedge/fence has damage to its lower surface consistent with historic squirrel damage, with exposed & deadened heartwood. There has been significant compensatory wound wood regrowth around the scarring. There are some recent pruning wounds that are in varying states of occlusion. Reactive growth from secondary pollarding seems normal on each major limb.

SECONDARY BRANCHES/POLLARD REGROWTH: normal with no signs of dysfunctions

OVERALL CROWN: as is expected for a tree of this species, size & maturity in this location. Little deadwood present.

3. CONCLUSIONS AND RECOMMENDATIONS

3.1 General conclusions:

Overall, the tree is in a fair condition. The tree contributes significantly to the local surroundings & has great amenity value, as well as some significant wildlife value, (providing a habitat for invertebrates that in turn will provide a food source for wild birds). This amenity value has been protected by the Local Planning Authority, a Tree Preservation Order, (TPO), is in force for this tree.

3.2 Specific conclusions:

The tree is classed as 'over-mature', but the impact of such a mature specimen being present in such a congested residential area has been significantly mitigated by the management pruning it has received; both historically & in recent times. The lapsed nature of the historic pollarding has restricted the species tendency to grow to great height & to establish very significantly sized stems & scaffolds. Whilst the stem is of a significant girth, (117.3cm Diameter at Breast Height, DBH), the scaffolds have had their growth severely limited by this intervention. The more recent pollarding regime has repeated this effect, thereby enabling such a large specimen to remain manageable & keep its position as focal point in what is a relatively confined space – the rear garden of a residential property. The tree has 2 pathogenic infestations as detailed, but this must be qualified by reference to other specimens of the same species in the locality & throughout London & the South of England. At the present time it is very unlikely that a Horse Chestnut without an infestation of Chestnut Leaf Miner could be found within the South of England. This condition, whilst not fatal to the colonised tree, does restrict the tree's ability to optimally photosynthesise, thereby weakening it's ability to combat secondary pathogenic attack from bacterial colonisation from *Pseudomonas*

syringae pv *aesculin*. However, the extent of colonisation in this specimen is very limited – but it is likely only to get more severe as time passes.

3.3 Recommendations:

Perform an aerial inspection, to determine extent of pathogenic colonisation of major scaffolds & produce a written report of the findings. Prune the extremities of the branch extending towards the neighbouring property to achieve 1.5m clearance from the built structure. Maintain a programme of pollarding, with next pollard prune to occur within 2 years as a minimum.

4. REFERENCES

- British Standard 5837: 2005 *'Trees in relation to construction: Recommendations".* BSI
- British Standard 3998: 1989 *"Recommendations for Tree Work".* BSI
- DCLG (2000) *"Tree Preservation Orders – A Guide to the Law and Good Practice".*
- Mattheck, C. Breloer, H., (1994) *"The Body Language of Trees"* Forestry Commission
- Mattheck, C (2007) *"Updated Field Guide for Visual Tree Assessment*
- Strouts, R. G., Winter, T.G., (1994), *"Diagnosis of Ill Health in Trees,* 2nd Ed., DETR
- Lonsdale, D., (1999) *Principles of Tree Hazard Assessment and Management, DETR*

Nicholas Eddison BA, Cert. Arb.
Proprietor and Consultant Arborist, Simian Tree Surgeons

5. APPENDICES

Appendix 1: Photographs

Photo 1 – Overall view of tree

Photo 2 – Showing historic wounding on stem & partial occlusion of wounds

Photo 3 - Showing more historic wounding on stem & extent of occlusion

Photo 4 – Showing a patch of red rust, *Pseudomonas syringae* pv *aesculin*

Photo 5 – Showing squirrel damage to 1 lower limb

Photo 6 – Showing proximity of branch to neighbouring property

Photo 1

Photo 2

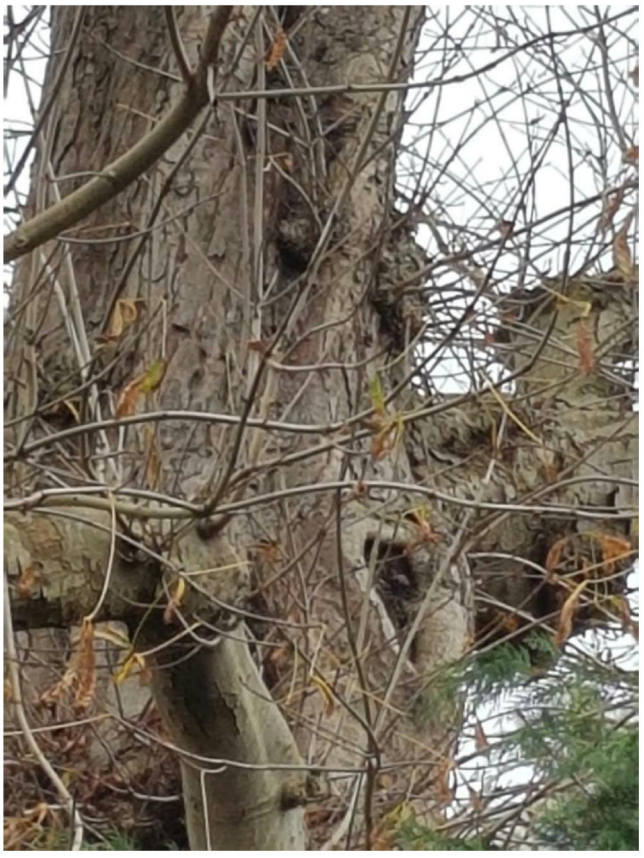

Photo 3

Photo 4

Photo 5

Photo 6

Appendix 2: Tree Survey Methodology

The survey was undertaken in accordance with the guiding principles of British Standard 5837 (2005) *'Trees in relation to Construction: Recommendations'*

Information in the survey includes:

Species – identification is based on visual observations and the common English name of what the tree appeared to be is listed first, with the botanical name after in brackets. In the case of groups only the principle species are recorded, other minor species may be omitted.

Tree Heights – are in metres. Estimated mature heights are given in brackets. In the case of groups the mean current height is recorded. Height is measured using a Hagloff clinometer

Trunk Diameters – measured at 1.5 metres from the ground and recorded in millimetres to the nearest 10mm. However, where the trunk of any tree is breaks below 1.5 metres it is considered a multi-stemmed tree and, in accordance with British Standard 5837 (2005), *'Trees in Relation to Construction: Recommendations'* it is measured immediately above the root flare. In the case of groups of trees the maximum diameter was recorded.

Crown Height – the height to the lowest branch is estimated in metres. In the case of groups of trees minimum crown height was recorded

Branch Spread – was recorded in metres along each of the compass points. In the case of groups of trees the maximum peripheral spread was recorded

Age Class – Whether the tree is: Juvenile; Semi-Mature; Mature; or Over-Mature

Physiological Condition – is based upon a preliminary assessment of physiological health and is categorised thus:

A – Good

B – Fair

C – Poor

U – Unclassifiable, (very poor, dying or dead)

In the case of groups the category awarded is that typical of the group.

Structural Condition – is based upon a preliminary assessment of structural condition and is categorised thus:

A – Good

B – Fair

C – Poor

U – Unclassifiable, (very poor, dying or dead)

In the case of groups the category awarded is that typical of the group.

Preliminary management recommendations – works required regardless of development proposals.

Estimated Remaining Contribution (Years) - estimated: less than 10 years; 10-20 years; 20-40 years; more than 40 years

Retention Category is given as follows, which corresponds with Table 1 (See Appendix 2) of British Standard 5837 (2005), *'Trees in Relation to Construction: Recommendations'* for example:

- **A** – Trees of a high quality and value, including visual amenity value, (sub-categories 1, 2, 3). It is usual for such trees to be retained unless the planning merits of a particular scheme or layout override.
- **B** – Trees of moderate quality and value, including visual amenity value, (sub-categories 1, 2, 3). Such trees should be considered for retention.
- **C** – Trees with a stem diameter of less than 150mm or which are of low quality and value, including visual amenity value, (sub-categories 1, 2, 3).

The retention of Category C trees should not be allowed to impose a constraint on development. Trees with a stem diameter of less than 150mm should be considered for transplanting.

- **R** – Trees in such a condition that they should be removed.

Sub-categories are also awarded and reflect where the value of a particular tree lies, for example:

- **Sub-category 1** – awarded in recognition of arboricultural value
- **Sub-category 2** – awarded in recognition of landscape value
- **Sub-category 3** – awarded in recognition of cultural value, including historic value

All sub-categories carry equal weight and some trees may qualify in more than one category, although they will not accrue additional value if they do.

It must be noted that Retention Categories are awarded purely on arboricultural/amenity grounds and that in some instances the planning merits of a particular scheme may well override the retention of even those trees qualifying for Retention Category 'A'.

Root Protection Area (RPA) – In respect of all trees surveyed the RPA has been calculated and is given in the Tree Survey Schedule. The figures given represents both the radial distance from the trees trunk, from which the barriers should erected and the entire area that should be encompassed by the barriers.

The RPA is calculated thus:

Number of Stem		**Calculation**
Single Stem Tree	RPA (m^2)=	$\frac{(\text{stem diameter(mm) @ 1.5m x 12})^2 \times 3.142}{1000}$
Trees with more than one stem arising below	RPA (m^2)=	$(\text{Basal diameter (measured immediately above root flare) x 10})^2 \times 3.142$

1.5m above ground level		1000

British Standard 5837 (2005), *'Trees in Relation to Construction: Recommendations'*

Appendix 4: Tree survey table

Tree No.	Species	Height (M)	Single/ multi stem	Diameter at 1.5m* (as specified in annex C)	Crown height* (M and direction)	Branch Spread (M)*	Age class	Physiological condition	Structural condition	Preliminary management recommendations	Estimated remaining contribution (years)	Category	Root protection area (M and M^2)
T1	*Aesculus hippocatanum*	21	Single	117.3	5	n/a	Over - mature	Fair	Fair	Aerial inspection/ report; clear neighbouring built structures by up to 1.5m	20	B	703

**Tree Species Scientific names
*** Estimated measurements annotated with #**

simian TREE SURGEONS

EFFICIENT ECONOMIC ECOLOGICAL & EXPERT TREE SERVICES

Nicholas Eddison BA, Dip Arb
Owner & Consultant Arborist

[redacted]

Arboricultural Hazard Assessment Report: 1, Hollycroft Avenue, London, NW3 7QG