Health & Safety Arboricultural Retention/Removal Impact Assessment Recommendation Report: 46 Hillfield Road, West Hampstead, NW6 1PZ

9th November 2014

Ref: PEW/RRIA/1109:14

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CONTENTS

Arboricultural Report

Location: 46 Hillfield Road, West Hampstead, NW6 1PZ
Ref: PEW/RRIA/1109:14
Client: Innisfree Housing Association Ltd
Date: 9th Novemeber 2014
Date of Inspection: 7th May July 2014
Prepared by: Philip Wood BSc(Hons)LAM.

Please note that abbreviations introduced in [Square brackets] *may be used throughout the report.*

Instructions

Issued by – Steve Wilson on behalf of Innisfree Housing Association Ltd

TERMS OF REFERENCE – Ashmore Arboricultural Services [AAS] were instructed to survey the subject trees within grounds of 46 Hillfield Road, West Hampstead, in order to assess their general condition and to provide recommendations for both Health & Safety and Arboricultural Management in accordance with good practice. In addition to assess the practical implementation of a replacement retaining wall and the long term viability of the subject trees.

Executive Summary

AAS have been commissioned to assess the condition of two Horse Chestnut trees located in the garden area of 46 Hillfield Road and also to consider appropriate pruning works required to reduce the likely impact of failure of the tree as they are growing within a raised mound of soil, of which, two of the three retaining walls are showing signs of significant structural failure. A previous section 211 notification for works to the trees was withdrawn as the Local Planning Authorities Arboricultural Officer did not consider that sufficient measures had been taken to assess what pruning works would be required to retain the trees and also to assess the practicality of replacing the dangerous retaining walls and if this was possible while retaining the trees.

The Horse-chestnut Trees have been surveyed and any hazards identified to the site owner/manager as part of this report, with subsequent Health & Safety, and Pruning works for good Arboricultural practice, being recommended in the appended schedule. The work schedule has been given time scales for work to be undertaken, though, it is recommended that these works are carried out as soon as possible and if not carried out the client should make sure that they have a sound reason for not doing so.

The Horse-chestnut trees are very apparent within the street scene, however the poor condition of T2 and the relatively recent substantial pruning work have left very large pruning wounds and die back of large structural limbs which has greatly reduced the amenity value of the tree. As a subsequence of the pruning of T2 the larger Horse-chestnut T1 has been left with an extremely unbalanced asymmetric crown which is making the specimen a substantial hazard given its location growing at the top of a mound of soil contained by structurally unsound retaining walls. The failure of the walls is progressive and the highway authority are not willing for any new retaining walls to be constructed within or encroaching onto the public highway. Furthermore to construct the required foundation or cantilever a retaining wall is not considered possible without damaging tree and its structural root system. The work recommended in the schedule has been designed to address the tree issues based on the current land uses and intensity, if these change significantly then the works may need to be reconsidered. Overall both trees appear, from the ground inspection, to be in poor health showing signs of significant structural and metabolic stress.

The majority of the pruning work identified are Health & Safety pruning work with some additional pruning work being identified for good Arboricultural practice and these are designed to reduce the likely chance of complete structural failure of T1 in particular, but the impact of the proposed work will have a significant adverse impact on the amenity value of the tree rendering it unworthy of a Tree Preservation Order (TPO). The past pruning and condition of T2 has been very significant and the tree is not considered worthy of a TPO and the poor over exposed condition of the tree would be exacerbated by the pruning or the need to remove T1 to engineer and construct new retaining walls.

Therefore from this assessment it is recommended that both trees be removed and replaced to enable new retaining walls to be constructed. Should the retaining walls not be replaced the pruning work proposed must be carried out to the trees as soon as practicably possible.

Documents Supplied

None supplied for the purpose of this report.

1.0 Scope of Survey

1.1 The survey is concerned with the arboricultural aspects of the site only.

1.2 This report is only meant to identify the trees within the confines of the site, or those of dangerous condition within falling distance of the site if in third party ownership and comment on their health, condition and management requirements.

1.3 The planning status of the trees was not investigated in detail, but the trees are believed to be subject of a Tree Preservation Order as noted in an email by the Local Planning Authorities Arboricultural Officer.

1.4 A qualified and trained Horticulturalist and Arboriculturist undertook the site visit and prepared the report. The contents of this report are based on this. Whilst reference may be made to built structures or soils, these are only opinions and confirmation should be obtained from a qualified expert as required.

1.5 Where reference to trees in third party properties, these trees were surveyed from within the subject property, therefore a detailed assessment was not possible and some (if not all) measurements were estimated.

1.6 No Discussions took place between the surveyor and any other 3rd parties.

1.7 The trees were inspected on the basis of the Visual Tree Assessment method expounded by Mattheck and Breleor (The body language of tree, DoE booklet Research for Amenity Trees No. 4, 1994)

1.8 The survey was undertaken in accord with British Standard 5837: 2012 Trees in relation to design, demolition and construction – recommendations (where applicable or required).

1.9 Pruning works will be required to be in accord with British Standard 3998:2010 (Tree work – Recommendations).

1.10 The client's attention is drawn to the responsibilities under the Wildlife and Countryside Act (1981).

2.0 Survey Method

2.1 The survey was conducted from ground level with the aid of binoculars, where required.

2.2 No tissue samples were taken nor was any internal investigation of the subject trees undertaken.

2.3 No soil samples were taken.

2.4 The height of each subject tree was estimated or calculated by use of a clinometer.

2.5 The stem diameters were measured in line with the requirements set out in BS5837:2012 - Trees in relation to design, demolition and construction recommendations.

2.6 The crown spreads were measured with an electronic distometer or retractable tape measure. Where the crown radius was notably different in any direction this has been noted with the tree schedule in Appendix B.

2.7 Tree Root Protection Area's (RPA) for each tree were **NOT** required either as a radius of a circle, or as an area.

2.8 The trees in this report were **NOT** required to be categorised and shown in the following format: COLOUR CODING AND RATING OF TREES:
Category A – Trees of high quality with an estimated life expectancy of at least 40yrs. Colour = light green trunk outline on plan.

Category B – Trees of moderate quality with an estimated life expectancy of at least 20yrs. Colour = mid blue trunk outline on plan.

Category C – Trees of low quality with an estimated life expectancy of at least 10yrs. Colour = uncoloured/grey trunk outline on plan

Category U – Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10years. Colour = red trunk outline on plan.

The crowns of those trees that are proposed for removal, or trees where the crown spread is deemed insignificant in relation to the proposed

development are not always shown on the appended plan; however their stem locations may be marked for reference.

All references to tree rating are made in accordance with British Standard 5837:2012 Tree in relation to design, demolition and construction.

2.9 TREE PRUNING / REMOVAL: A list of all tree works that are required is included in the tree schedule at Appendix B.

Pruning/removal has only been specified for the following reasons:

- Where works are required for safety reasons.
- Where work is needed to mitigate a legal responsibility or duty.
- Where work is required to improve tree form, or improve the longer term health and management of the tree in its current surroundings.

Where any tree work is needed, this work will be in accordance with British Standard 3998: 2010 (Tree Work – Recommendations).

3.0 Appraisal

3.1 Having inspected the Horse-chestnut trees, both tree's overall condition was poor and they were indicating significant signs of stress. This was identified by:

- Some thinning of the crown caused by a reduced leaf size in the upper crown particularly noted in the crown of T1. The limited availability of good growing conditions are likely to be the cause of the reduced vigour and now that the partner tree T2 has been so extensively pruned this is likely to lead to further stress on the tree from its over exposed position.

- In particular to T1, there are a number of deadwood sub-lateral branches on the outer crown, which are more prevalent on the southern side. In relation to T2 there is a large dead scaffold limb in the upper crown which has not flushed with new foliage after the heavy reduction work.

- The decay and cracking/fracturing of the bark combined with the limited branch length extension growth.

Pruning work has been highlighted in the appended schedule, where works have been deemed more urgent H&S work then these have been highlighted in red. These have been recommended and should be carried out if the trees are not to be removed as part of the implementation of new engineered retaining walls

3.2 At the point of inspection neither tree had any obvious fungal fruiting bodies visible from the ground inspection, which would normally help to identify trees of imminent hazard, these normally are factors that identify specific limits to a trees appropriate retention in high foot fall areas. However there were a number of branches with deadwood within the crown of T1 and extensive thinning of the foliage within the crown and a large scaffold limb within the crown of T2, which indicated some stress and are biomechanical weak points, that could lead to branch loss or failure of a limb, the recommendations within the report are designed to limit the risk while retaining the amenity value of the tree for the benefit of the environment and well-being of the users of the site.

3.3 There are two major concerns regarding their long term viability/ Health & Safety of the two trees, this relates to:

- The poor unstable nature of the rooting environment which has led to a number of large exposed structural roots which appear open to the ground or where soil has eroded from around them, this has been compounded by the obvious structural failure of the retaining walls which is weakening the adhesion capacity of the soil environment even further.

- With reference to T1, due to the heavy pruning of T2, has removed part of the co-terminus crown that has now led to an extremely over exposed unbalanced asymmetric crown.

3.4 The main emphasis of the assessment has been to consider the likely impact of the retention of the trees and also to consider the possibility of constructing a new engineered retaining wall while retaining the trees. This takes account of the elements of the tree within influencing distance of the main rights of way, high pedestrian use, car parks and buildings, which require management in order to reduce the risk of them causing damage to persons or property by means of total or partial failure. In general there are a number of obvious signs from the ground level inspection that the tree could be liable to total failure in particular reference to T1. This is especially important given the proximity of the trees to the busy highway which is an important vehicular and pedestrian route with relatively high volumes of footfall. The deadwood found within the crown requires tree surgery to avoid partial failure of those limbs. Furthermore, the tree must be pruned to reduce the risk of structural failure, however the pruning work proposed will have a significant and detrimental impact on the visual amenity value of the tree, though it is essential that the overexposed asymmetric crown of T1 is extensively pruned.

3.5 It is clear that action is required to address the fact that two of the retaining walls holding the soil mound in place have lost most of their mechanical rigidity which are liable to failure by collapse. The highways authority are understood to be unwilling for any new retaining walls or their foundations to be constructed on or within the public highway. Given the extremely close location of the T1 to the public highway it is not considered to be possible to construct an engineered retaining wall. Therefore, in addition to the extensive pruning work required to the tree (which will remove a significant volume of its amenity value) the specimen should be removed and replaced.

3.6 Tree T2 is a specimen of both poor health and condition, exacerbated by the recent pruning work, if tree T1 is removed as recommended

then T2 should also be removed as it has little amenity value and its impaired condition and form rendering it unworthy of its TPO's status.

3.7 There were signs of extensive bark cracking and plateleting of the trunk of T2 which was showing signs of significant dieback on structural limbs. This indicates that this specimen is displaying signs of significant stress. The health of this tree is likely to have been accentuated by the new housing development on the adjoining site. T1 has a large volume of small undersized foliage within the crown; this is apparent by extensive thinning of the upper crown which is an indication that the metabolic dynamic of the tree is under substantial stress or has changed. This is not a positive sign for this tree, especially taking account of its dramatically unbalance asymmetric crown.

3.8 Reference should be made to the tree survey schedule in Appendix B for details of trees on an individual basis.

3.9 A number of options have been considered for new retaining walls to accommodate the tree and some of its future growth. However these are not considered to be practicable or possible without the local highways authority allowing a new retaining wall and/or its foundations being built partially or wholly within the public highway.

4.0 Recommendations

4.1 The recommendations are detailed within the Tree Schedule in Appendix B. The recommendations have been colour coded to highlight those works that are directly Health and Safety related **(RED),** which is classed as priority work and should look to be actioned as a priority. Subject to budget constraints, these may need to be prioritised by the project or site management, but recommendations should be observed and implemented accordingly. Other works that are required for good arboricultural management and to avoid future conflict are noted in standard text colour **(Black).**

4.2 It is recommended, that to ensure a commitment from all parties to the healthy safe retention of the tree, that details are passed by the client to any contractors, management, companies and individuals responsible for working on site, so that the practical aspects of the above precautions implemented or included in their method statements, and financial provision made for these.

4.3 That in the short term, if the retaining walls are not to be built, Innisfree Housing Association Ltd as owners/managers of the site manager's, should make (or have made on their behalf) an application to the Local Planning Authority to carry out the pruning works detailed in this report. However, it is accepted that the pruning work will have a major impact on the visual amenity of the protected trees. But it is vital this work is carried out on safety grounds given the asymmetric form and exposed nature of the tree crown of T1 compounded by the extremely poor rooting environment.

4.4 In the longer term a full engineered design solution for the retaining wall must be agreed. Currently, it would appear that there is insufficient room to create a new retaining wall without it being constructed within the public highway. Furthermore, to construct a retaining wall to make safe the current bank of soil with room for the roots and trunk of the tree to grow and develop in the future would require an even greater incursion onto the public highway which, given the narrow nature of the footway, is believed to be out of the question and has been rejected by the Local Authority Highways Department. Therefore to construct a safe engineered retaining wall it is recommended that T1 be removed. Subsequently T2 is not considered to be worthy of retention as a protected tree but once T1 is removed T2 will be even more exposed to windthrow and its poor form will be even more apparent, thus it should also be removed.

4.5 Replacement tree planting is considered vitally important for both environmentally sustainable reasons, and also to support the longer term amenity value of the conservation area. Suitable trees should be agreed with the Local Planning Authorities Tree Preservation Officer.

4.6 If only the pruning recommendations are carried out then a re-survey is advised to be carried out annually, but some site managers choose to extend this to every two years were they feel they have adequately trained staff to make interim observations.

9th November 2014

Philip Wood *BSc (Hons) LAM*
Principal Consultant
For and on Behalf of
Ashmore Arboricultural Services

Appendix A

Limitations & Qualifications

Limitations & Qualifications

The report is based on above ground inspections only unless clearly stated otherwise. Now below ground inspections were carried out unless clearly identified in the report and instructed to do so by the client. No samples were taken from the soil nor from any trees unless stated within the report, schedule or instructed to do so by the client.

Where limitations to carrying out a full inspection were present on or adjoining the site, this is clearly identified within the report. Should a full detailed inspection be required, where obstructions are present, or on adjoining land it is the responsibility of the client to facilitate full unhindered access at an agreed time at the client's expense.

The accuracy and validity of the observations and recommendations of this report are based on the accuracy of the information, plans, data and background information provided to Ashmore Arboricultural Services Limited [AAS] prior to the time of the survey and site inspection. Failure to provide any pertinent or relevant information is likely to invalidate any guarantees expressed or implied within this report. Information supplied to AAS will not be independently assessed unless the client or their representatives notes any concerns or uncertainty of its accuracy. AAS will not be responsible for the recommendations within this report where essential data has not been made available or is inaccurate even if provided to the client or their representative in good faith.

This report remains valid for one year from the date of inspection, but will be invalidated if any works are not carried out or carried out and not completed to the required standard, services are installed, soil levels, ground water levels, are altered in any way, chemicals are spread or spilt, any alternative surgery works carried out and if any building works or construction activity (including site preparation works) within the root area of the trees inspected, which were not disclosed prior to the time of the survey and site inspection.

If any of the aforementioned activities occur, or are deemed to have occurred, then a new survey/inspection is required in whole, or in part.

It is accepted that implementation of the recommendation in whole, or in part, that the limitations and qualifications of this report area accepted. That it is deemed acceptable by the client that the formulation of the recommendations for the management of the trees noted will be guided by, and not limited, to the following:

1. The need to avoid reasonably foreseeable risk/damage
2. The arboricultural considerations – Tree Safety, Good Arboricultural Practise, Accepted Good Practise and Landscape/Amenity Aesthetics.

The client is deemed to have accepted the limitations placed on the recommendations, whether expressed or implied, by the sources quoted in the report (incl. its appendices) and where time or the clients limits on resources, this may result in or lead to an incomplete qualification or quantification of the risk.

Appendix B

Tree Schedule

Tree / Group No	Name	Botanical Name	Age	Dia (mm)	Height (m)	North (m)	South (m)	East (m)	West (m)	Sule	Condition	Recommendations	Time Scale within (months)
T1	Horse-chestnut	Aesculus Hippocastanum	O/M	760	14	3	11	7	8	<10	Poor	Crown Reduce overall height by 40%. Reduce back lateral length of the crown spread over road by approximately 7m. Crown Lift low branches and epicormic growth up to 5m above ground. Remove Deadwood. Fell to ground level and plant a replacement tree	3m 9m
T1 Observations	Southerly most specimen located closest to the public highway. Specimen has flushed but has thinning upper crown, showing signs of significant stress. Crown is extremely off balanced due to the presence of the adjoining tree which has been very aggressively pruned. The crown of T1 is over exposed and dangerously asymmetrical due to the pruning of T2. Tree T1 is located at the top of a 1-1.2m high raised mound which appears to be the retained original garden level/area. The specimen is located 1m from a retaining wall to the east, 1m from a retaining wall to the west where a new 1.5m retaining wall has been built in the adjoining garden in the location of a former wall, which is also believed to have been the retaining wall in the past. It is also touching the remains of a retaining wall to the south which has very little strength left in its structure. A large structural root is visible in the parking bay and is currently being driven over to access the parking space. Some dieback in upper crown, previously topped at approximately 6m above ground level which has subsequently re-grown to form a full broad crown, though extremely asymmetrical. Specimen requires major surgery in the short term and in the longer term, for safety reasons, the southern retaining wall adjacent to the public highway requires rebuilding to retain the soil of the garden and to do this the tree will require removal. There are major concerns regarding the structural rigidity of the wall, soil and tree in the long term. The location of the tree and the wall means that to form a suitable long term solution for the retaining wall a new wall would either need to be built within the public highway or the tree would require removal.												

Tree / Group No	Name	Botanical Name	Age	Dia (mm)	Height (m)	North (m)	South (m)	East (m)	West (m)	Sule	Condition	Recommendations	Time Scale within (months)
T2	Horse-chestnut	Aesculus Hippocastanum	O/M	540	12	4	2	2	3	<10	Poor	Remove Deadwood. Reduce overall vertical height of tree by 30-40% Fell to ground level and plant a replacement tree.	3m 9m
T2 Observations	Northerly most specimen located furthest from the public highway Both trees had formed a co-terminous crown, with T2 having recently been extensively and aggressively pruned. Most of the crown has flushed, but one large scaffold in the upper crown has not flushed. The tree appears in poor health with significant cracking and fracturing of the bark on the trunk. The plateleting of the bark formation indicates a high degree of stress, with an area of decay on the southern side of the trunk and base with some moderate reaction wood.												

KEY:

(for tree schedule / table on previous pages)

Tree No: Tree number (T= individual tree, G= group of trees, W= woodland)
Crown = the leaf bearing part of the tree
Tree Species: Sp.= sub species or cultivar of main species; NT = Neighbours Tree (Tree on adjoining land)
GL = Ground Level; AGL = Above Ground Level; DWS = Deadwood and Stubs
Diameter: MS = Multi-stemmed; N/S = Not Surveyed (unable to inspect/restricted visibility or access)
Age class: Young (Y), Young Mature (Y/M), Middle Aged (MA) Semi Mature (S/M), Mature (M), Over mature (O/M), Veteran (V)
Height (Ht): Measured in metres +/- 1
SULE: Estimated Safe Useful Life Expectancy, Tree can live longer than this value, but can pose a risk to persons or property
Condition: G – Good, F – Fair, P – Poor, D - Dead

REPORT END