Arboricultural Implications Assessment

And Method Statement

41a Buckland Crescent,

London,

NW3 5DJ

Client: Ms S. Tappis

Ref: DAA AIR & AMS 02

Date: August 2016

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Contents

1. Introduction

1.1 Scope of report

1.1.1 The purposes of this report are to assess the arboricultural implications of the proposed construction of a single-storey rear extension at 41a Buckland Crescent, London NW3; and to detail what actions need to be taken to prevent unacceptable damage occurring during the construction period to the trees retained within and immediately adjoining this property.

1.1.2 This arboricultural impact assessment and method statement have been drawn up to comply with the planning policies of the London Borough of Camden which require that an Impact Assessment (AIA), Arboricultural Method Statement (AMS) and Tree Protection Plan (TPP) are submitted as part of the planning application process to demonstrate how any potential damage to retained trees may be prevented or minimized.

1.1.3 This report also complies with the recommendations of British Standard BS 5837: 2012, *Trees in relation to design, demolition and construction – Recommendations* (BS 5837).

1.1.4 The method statement is designed to reflect the principles of the tree protection required for the proposed development and should not be read as a definitive engineering or construction statement for this site. Matters relating to construction detail or engineering performance should be referred to an architect or to a qualified structural engineer for further information and specification.

1.2 Site description and proposals

1.2.1 The site is a semi-detached four-storey residential property built in the Italianate style, situated on the south-east side of Buckland Crescent, with a rear garden at lower ground floor level, and a paved front garden area at street level. The garden is enclosed by brick boundary walls surmounted with timber trellis, with a mix of tree and shrub cover providing screening and seclusion from adjoining properties.

1.2.2 The proposed development comprises the construction of a single-storey rear extension at the lower ground floor level, part with a flat roof, and part with an angled glazed roof, and an enlarged balcony or roof terrace above.

1.2.3 Minor internal alterations and re-landscaping of the paved front garden area are also proposed.

1.3 Tree survey

1.3.1 The trees on the site were surveyed by Abi St Aubyn on Tuesday the 12th July 2016. Their details are set out in the tree schedule at Appendix 1 to this report.

1.3.2 The rear garden contains a range of small to medium-sized ornamental trees and shrubs, with two larger Lime trees close to the rear boundary. There are mature London Planes towards the

rear boundaries of the adjacent properties on either side. To the front, the paved area contains two small ornamental specimens.

1.3.3 The two Limes close to the rear garden boundary (trees 5 and 6) are the dominant arboricultural features of the site, but are only visible in glimpsed views between properties from surrounding roads and public viewpoints.

1.3.4 The site is in the Belsize Conservation Area.

2. Arboricultural Impact Assessment (AIA)

2.1 Tree Protection Plan

2.1.1 The Tree Protection Plan shows the finalized proposals overlaid onto the tree locations and constraints plan, with tree protection measures shown. This can be found at Appendix 2. The implications assessment below is based on this drawing.

2.2 Tree removals

2.2.1 The proposed development will result in the removal of a total of four individual trees. One of these, however, (tree 4, a Myrobalan Plum) is a category 'U' tree which will require removal within ten years for arboricultural reasons, irrespective of the proposed development, due to its defective and decayed condition.

2.2.2 Of the three other individual trees, all are graded as category 'C' specimens of low quality and value. These comprise a Magnolia (tree 1) growing roughly centrally within the garden close to the rear of the house, which will be too close to the rear of the proposed extension to allow for its retention; and the small Quince and Black Mulberry (trees 10 and 11) within the paved area to the front, which is to be used for storage of building materials during the construction period, and re-landscaped thereafter.

2.2.3 Due to their small sizes, the removal of the trees to the front will not make any significant impact on the appearance or character of the street scene. The removal of the Magnolia to the rear will have no significant impact on the site's appearance or density of tree cover in the locality, being of small size and not visible from external public viewpoints.

2.3 Pruning

2.3.1 Facilitative pruning works to enable the proposed development, and to provide adequate construction working room, is proposed to the off-site Japanese Maple (tree 2), where it overhangs the boundary into the site. The proposed pruning will allow adequate space for access for the construction activities and for future growth, and will have no significant impact on the tree's health, longevity or appearance.

2.4 Incursions into Root Protection Areas (RPAs)

2.4.1 The footprint of the proposed extension does not encroach into the root protection areas (RPAs) of any retained trees. The north-east garden boundary wall represents a barrier to root growth of the off-site Japanese Maple (tree 2) and as such its RPA does not extend within the site.

2.5 Future relationship of proposal to retained trees

2.5.1 In respect of the proposed extension, the larger retained trees (trees 5 and 6) are located at distances of approximately 19.5m and 17.5m from the nearest points on its rear wall, close to the rear garden boundary to the south-east. Based on the "shading arcs" of the retained trees, drawn from north-west to due east in accordance with the recommendations of BS 5837: 2012, although it is likely some shade from the trees will be cast towards the extension during the early mornings, from late morning onwards the windows and elevations of the extension will enjoy satisfactory access to daylight and sunlight throughout the majority of the day. For this reason, we consider it unlikely that the extension will be shaded or overshadowed to any extent that would give rise to future pressure from occupiers of the house for the trees' removal, or severe crown reduction, which could not reasonably be resisted.

3. Arboricultural Method Statement (AMS)

3.1 Liaison & communication

3.1.1 The developer shall appoint an arboricultural consultant to ensure that the specified tree protection measures are carried out during the entire construction process. A copy of the letter of appointment shall be sent to the Local Planning Authority (LPA).

3.1.2 Before any works of any description take place on the site the developer shall convene a pre-start meeting. This should be attended by the developer's contract manager, the site manager, the groundwork contractor, the arboricultural consultant and, if appropriate, the LPA tree officer. The meeting will be led by the arboricultural consultant who will ensure that contact numbers are exchanged and the methods of tree protection outlined in this statement are fully discussed and explained. Any modifications to this statement arising from this meeting will be recorded and the revision circulated to all parties.

3.1.3 The developer shall inform the arboricultural consultant if at any time during the construction process, the site manager is replaced. In this instance the arboricultural consultant will, within 5 days, arrange a meeting with the new site manager to review all the remaining aspects of this method statement.

3.1.4 A copy of this method statement shall be given to all personnel who have control over works of any nature within the RPAs of the retained trees. The contractor will ensure that adequate instruction is given for the implementation of the protection measures outlined within this statement.

3.2 Tree removals and pruning

3.2.1 The trees listed at Table 1 below are to be felled or pruned as specified. All tree works will be carried out in accordance with British Standard BS 3998: 2010, *Tree Work – Recommendations*.

Tree no.	Species	Height	BS Category	Work required	Reason for work
1	Magnolia	7m	C	Fell to ground level and grind out stump	To enable construction of extension
2	Japanese Maple	10m	C	Crown lift along boundary line to 6m	To allow adequate clearance for construction of extension
4	Myrobalan Plum	11m	U	Fell to ground level and grind out stump	Tree in defective and decayed condition
10	Quince	4.5m	C	Fell to ground level and grind out stump	To allow for materials storage during construction and subsequent relandscaping
11	Black Mulberry	5.5m	C	Fell to ground level and grind out stump	To allow for materials storage during construction and subsequent relandscaping

Table 1 – Tree removals and pruning.

3.3 Protective fencing

3.3.1 Following tree removal, no vehicles of any kind shall enter the site or any works commence until the root protection areas (RPAs) of the retained trees, as shown on the Tree Protection Plan (TPP) at Appendix 2 have been protected by the erection of protective fencing to the specification found in BS 5837, Section 6.2. The location of the fencing is denoted by the continuous, bold purple lines on the TPP.

3.3.2 The fencing shall be at least 2.1m in height and comprise of standard 'Heras' welded mesh fence panels mounted on a scaffolding framework. The panels shall be fixed to each other with at least two clamps and secured with anti-lift devices to concrete or rubber bases that are pinned to the ground to a depth of 450mm by short lengths of scaffolding tube.

3.3.3 Scaffold uprights shall be at 3.5m centres and supported on the side closest to the retained trees by struts braced to the ground at an angle of 45 degrees. The 'Heras' panels shall be secured to the two cross members between the uprights with heavy duty cable ties. Notices stating "Tree Protection Zone – Keep Out" will be attached with cable ties to every third panel.

3.3.4 No activity of any kind shall be undertaken behind this protective fencing; there shall be no storage of materials, no access for vehicles or personnel and no excavation or changes in soil level of any kind.

3.3.5 The contractor's site huts may, where appropriate, be incorporated into the protective fencing line. If this is to be the case, then their locations must be agreed in advance with the

arboricultural consultant and a method statement supplied that details how the huts are to be placed and supported without compacting the soil within the RPA. Details of the proposed hut locations will be supplied to the LPA in advance of their positioning on site.

3.3.6 Areas for storing or mixing of fuels, oils or cement shall be agreed at the pre-start meeting. None of these areas shall be within 10m of any retained tree. No fixtures of any nature shall be attached to the retained trees.

3.3.7 Where tall plant or equipment may be passing close to the canopies of the retained trees, timber uprights shall be erected and fastened to the protective fencing to prevent accidental damage to branches. Cross members between the uprights shall be marked clearly with reflective tape to ensure high visibility.

3.3.8 If the protective fencing is accidently damaged or knocked over, the damaged sections shall be immediately marked with high visibility tape of mesh fencing. The damaged sections shall be replaced or repaired to the original specification within 48hrs. All events of this nature must be recorded and reported to the arboricultural consultant.

3.3.9 When the installation of the protective fencing is complete, the arboricultural consultant shall be informed so he may come and inspect it. If it complies with this statement he will record the fact and notify the client and LPA.

3.3.10The protective fencing will not be moved, dismantled or relocated without the prior approval of the arboricultural consultant. When the construction period is complete, the fencing may then be removed, but only after first informing the arboricultural consultant of this intention.

3.4 Ground protection

3.4.1 If the existing hard surfacing within the front garden is removed, temporary ground protection shall be put into place for the duration of the construction period, in the locations shown by pink hatching on the TPP. The ground protection should be capable of supporting any traffic, pedestrian or mechanical, entering or using the site without being distorted, or causing compaction of underlying soil.

3.4.2 The ground protection shall either be the retained existing hard surfacing or comprise one of the following:

- For pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100mm depth of woodchip), laid onto a geotextile membrane;
- For pedestrian-operated plant up to a gross weight of 2t, proprietary inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150mm depth of woodchip), laid onto a geotextile membrane;

- For wheeled or tracked construction traffic exceeding 2t gross weight, an alternative system (e.g. proprietary system or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

3.5 Construction of foundations

3.5.1 The foundations for the proposed extension do not lie within the RPAs of retained trees. Accordingly, no special foundation construction measures are required to protect retained trees for this element of the scheme.

3.6 Landscaping

3.6.1 Replacement tree planting will be undertaken as part of a comprehensive soft hard and soft landscaping scheme.

3.6.2 Following completion of construction work, but prior to the commencement of any landscaping works, the developer shall arrange a pre-start meeting with the site manager, the arboricultural consultant and the landscape contractor. The details of this method statement shall be discussed in relation to the proposed landscape operations and a clear sequence of operations established.

3.6.3 Within the RPAs the following principles will be maintained:

- Existing ground levels shall not be substantially altered.
- No plant or vehicles shall enter the RPAs.
- No fuels or chemicals shall be stored within any of these areas.
- Any excavation required for fence posts, log retaining walls or any other landscape structures shall be undertaken by hand under direct arboricultural supervision. If roots are encountered then the position of the excavation shall be moved to a new location. If this is not possible then any roots with a diameter less than 25mm may be cut cleanly by hand. Any exposed roots shall be re-covered within 24hrs of excavation.
- No structure shall be fastened in any way to the trunks of the retained trees.
- No drainage or irrigation pipes shall be installed within the RPAs of the retained trees.
- Any unwanted vegetation shall be removed by hand.

3.7 Supervision and monitoring

3.7.1 At the start of the construction process the arboricultural consultant shall visit the site to inspect the tree protection measures (ground protection/fencing) as installed. If these measures comply with the specification detailed in this method statement a statement of compliance shall be sent to the contractor/developer and copied to the LPA.

3.7.2 The arboricultural consultant shall then visit the site on a regular basis, as agreed with the local planning authority at the pre-start meeting, or when specifically required as set out in Table 2 below, to ensure that tree protection measures are kept in place and functioning as designed. Regular contact will be maintained with the site manager to determine any forthcoming operations that may make an impact on these tree protection measures and if arboricultural supervision is required. A record of these monitoring visits will be kept, and copies sent to the developer and the LPA.

3.7.3 The site manager shall give at least 48 hours' notice to the arboricultural consultant of any operations, e.g. installation of underground services, construction of hard surfacing etc., which may make an impact on the RPAs of the retained trees.

3.7.4 Any alterations or variations in drawings for the site that are within, or adjacent to, the RPAs of the retained trees shall be referred in the first instance to the arboricultural consultant for his advice. If these changes make any kind of impact on the retained trees the arboricultural consultant shall suggest changes that will either avoid damage to the retained trees or offer solutions to mitigate the impact. Following this consultation, the arboricultural consultant shall issue revised Tree Protection Plans that reflect the changes.

3.7.5 Where any operations carried out by the developer deviate substantially from this method statement, a meeting will be convened between the developer, the arboricultural consultant and the site manager to determine the best method to mitigate any damage that may have occurred.

Visit no.	Timing of visit	Function carried out
1.	Prior to the start of any construction works.	Site pre-commencement meeting.
2.	Installation of ground protection and protective fencing.	To check that the ground protection and protective fencing have been installed correctly and to the correct standards.
3.	Every four weeks during construction phase.	To check the ground protection and protective fencing remain in place and that activities which would be harmful to trees are not being carried out.
4.	At any other time which is sensitive in arboricultural terms.	To ensure retained trees are protected from development activities.

Table 2 - Timings of Supervision and Monitoring Visits.

Abi St. Aubyn | Senior Arboricultural Consultant
DipARB(RFS), MEng(Hons), MArbor A, MicFor

August 2016

APPENDIX 1 – Tree Survey Schedule

Notes for the Tree Schedule

This schedule is based on an inspection carried out Abi St Aubyn on Tuesday the 12th July 2016. Weather conditions at the time were overcast with heavy showers. Deciduous trees were in full leaf.

The information contained in this schedule reflects the conditions of those specimens at the time of inspection. They were inspected from the ground only; they were not climbed and no internal investigations were undertaken, thus no guarantee may be given as to their structural integrity.

As trees are dynamic organisms and subject to continual change no dimensions expressed in this schedule may be relied upon for development purposes for more than 24 months from the date of survey. Estimated dimensions are marked thus; #

1. **No:** Expressed in sequential order starting from number 1 – woodlands, groups & hedges are prefixed as W, G, & H respectively.
2. **Species:** The common name as given in "Collins Tree Guide", Johnson & More (2004).
3. **Height:** Estimated with the aid of a 'Disto' laser range finder and expressed in metres**.**
4. **Trunk Diameter:** Measured at 1.5m above ground level and expressed in millimetres to the nearest 10mm; where multiple stems are present they are measured individually and a cumulative total calculated in accordance with BS5837 (2012**).**
5. **Radial Crown Spread:** Distance in metres from the centre of the trunk to each cardinal point of the compass and rounded up to the nearest half metre.
6. **Crown Clearance:** Mean height from adjacent ground level to the lowest point of the crown.
7. **Height to First Branch:** Height, in metres, of the first significant branch (100mm) or to crown break from ground level.
8. **Life Stage:** Young, Semi mature, Mature, Veteran/Ancient.
9. **Physiology:** Health and condition of the tree in comparison to a typical specimen of species and age: Good, Average, Below Average, Poor, Dead.
10. **Structure:** The structural condition of the tree based on an assessment of any visible roots, trunk and crown, noting the presence of any defects or decay: Good, Moderate, Indifferent, Poor, Hazardous.
11. **Landscape Value:** Reflecting the importance of the tree in the local landscape. High, Moderate, Low, Nil.
12. **Estimated Years:** Estimate of remaining contribution expressed in years <10, 10-20, 20-40, 40+.
13. **Comments:** Notes relating to health and condition, structure and form, estimated life expectancy and importance within the local landscape.
14. **Category: -** A rating given to individual trees based on Table 1 in the British Standard, BS 5837 (2012) "*Trees in relation to design, demolition and construction - Recommendations*".

Category 'U' - Trees in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboriculture management.

Category 'A' - Trees of high quality and value; in such a condition as to be able to make a substantial contribution (Normally a minimum of 40 years).

Category 'B' - Trees of moderate quality and value; those in such a condition as to make a significant contribution (Normally a minimum of 20 years).

Category 'C' - Trees of low quality and value; currently in adequate condition to remain until new planting could be established (Normally a minimum of 10 years), or young trees with a stem diameter below 150mm.

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Landscape Value	Est. Years	Comments	Cate-gory
1	Magnolia	7m	130mm 140mm 70mm	4m	1m	0.5m	Semi-mature	Average	Indifferent	Low	40+	Multi-stemmed from base; previously topped at 2.5m and 3.5m; multiple stems from previous pruning wounds resulting in a less than optimum form; not visible from any public viewpoint; of no more than moderate quality; of low landscape value; of long term potential.	C
2	Japanese Maple	10m	160mm est 130mm est	4m	1.5m	-	Mature	Average	Indifferent	Low	40+	Off-site tree; growing adjacent to 1.6m brick wall which is likely to be a root barrier; not visible from any public viewpoints; of moderate quality; of low landscape value; of long term potential.	C
3	Laburnum	10m	120mm est	3m	1.5m	-	Mature	Average	Indifferent	Low	20-40	Off-site tree; growing adjacent to 1.6m brick wall which is likely to be a root barrier; not visible from any public viewpoints; of moderate quality; of low landscape value; of medium term potential.	C
4	Myrobalan Plum	11m	435mm ivy est	4.5m	2.5m	2m W	Over-mature	Below average	Poor	Low	<10	Trunk abuts boundary wall of 1.6m in height; large fungal fruiting body of Ganoderma sp. growing at 1m on W side or trunk; upper crown sparser than average with incipient die back top centre; previous pruning wounds at 5.5m; not visible in any public viewpoints; of low quality; of low landscape value; of little potential.	U
5	Lime	15m	430mm ivy est	5m	0.5m	-	Mature	Average	Indifferent	Low	40+	Extensive epicormic shoots at base; garden materials (wood planks) stored at base; not possible to measure diam. accurately due to impeded access to trunk; previously crown reduced to 2m from trunk up to a height of 5m on W side (adjacent to existing summer house); difficult to assess crown due to dense leaf cover but it appears to have previously been pollarded at a height of c.11m; only visible in glimpsed public views between No. 3 and No. 5 Adamson Road; of moderate quality; of low landscape value; of long term potential.	B

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Landscape Value	Est. Years	Comments	Cate-gory
6	Lime	25m	820mm ivy	5.5m	3.5m	4.5m SW	Mature	Average	Indifferent	Low	40+	Covered in heavy ivy; trunk leans to NW by 15 degrees; ground levels appear to be raised at base due to a build up of garden debris; only visible in a glimpsed public view between No. 3 and No. 5 Adamson Road; of moderate quality; of low landscape value; of long term potential.	B
7	London Plane	22m	500mm est	6m	0m	-	Mature	Average	Indifferent	Low	40+	Off-site tree; no access to tree, all measurements estimated; glimpsed public view of crown between houses on Adamson Road; of moderate quality; of low landscape value; of long term potential.	B
8	London Plane	17m	500mm est	6m	0m	-	Mature	Average	Indifferent	Low	40+	Off-site tree; recently crown reduced; no access to tree, all measurements estimated; only public visibility is a glimpsed view between houses on Adamson Road; of moderate quality; of low landscape value; of long term potential.	B
9	False Acacia	18m	590mm	6.5m	4m	5m	Mature	Average	Indifferent	High	40+	Off-site tree; street tree growing in opening in pavement; of high landscape value; of moderate quality; of long term potential.	B
10	Quince	4.5m	140mm @1m	1.5m	1.5m	1m	Mature	Average	Indifferent	Low	40+	Small tree of 4.5m in height; readily replaceable; growing within hard standing (crazy paving) which reduces in level towards the property; largely screened in public views by False Acacia and Silver Wattle; of moderate quality; of low landscape value; of long term potential.	C
11	Black Mulberry	5.5m	150mm @1m	2.5m	1.5m	1m	Mature	Average	Indifferent	Low	40+	Small fruit tree; readily replaceable; growing within hard standing (crazy paving) which reduced in level towards the property; woolly aphid infection; largely screened in public views by False Acacia and Silver Wattle.	C
12	Silver Wattle	7.5m	135mm	2.5m	2m	2m	Young	Average	Indifferent	Low	40+	Off-site small tree; of moderate quality; of moderate landscape value; of long term potential.	C

APPENDIX 2 – Tree Protection Plan

BUCKLAND CRESCENT

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Small trees removed to allow for materials storage.

Existing surface to remain in place to act as ground protection.

Canopy of off-site tree no. 2 to be cut back where required to allow for construction of extension and associated working space.

RPAs modified around likely root barriers/ restictions.

Protective fencing.

Trees to be removed.

Existing garden room

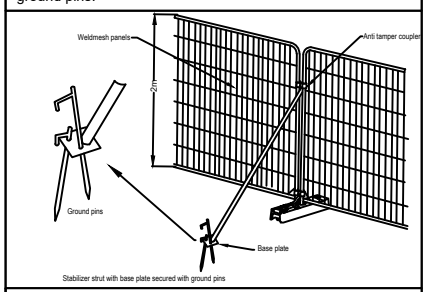
1 2 3 4 5 6 7 8 9 10 11 12

0m 2m 4m 6m 8m 10m

1:200@A3

PROTECTIVE FENCING

To comprise of 2m tall welded mesh panels on rubber or concrete feet. Panels are to be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The panels should be supported on the inner side by stabiliser struts, which should be attached to a base plate and secured with ground pins.



GROUND PROTECTION

To be installed prior to any demolition or construction works. For *pedestrian movements only*, a single thickness of scaffold boards placed either on top of a driven scaffolding frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100mm depth of woodchip), laid onto a geotextile membrane;
For *pedestrian-operated plant* up to a gross weight of 2t, proprietary inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150mm depth of woodchip), laid onto a geotextile membrane;
For *wheeled or tracked construction traffic* exceeding 2t gross weight, an alternative system (e.g. a proprietary system or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

DAVID ARCHER ASSOCIATES
ARBORICULTURAL CONSULTANCY

Project:
41A Buckland Crescent,
London,
NW3 5DJ

Drawing:
TREE PROTECTION PLAN

Based on:
Proposed Site Plan

Drawing No:	Rev:
TPP 02	-----

Date:	Scale:	Drawn:
Aug 2016	1:200 @ A3	MR

Tree nos.:	● 1	Canopies of trees:		Trees to be removed:	
Category 'B' RPA:		Category 'C' RPA:		Protective fencing:	
Ground protection:					

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