S188-J1-IA 1

## REPORT

on the impact on trees

of proposals for development at Henley Lodge, Flat 2, 51 Eton Avenue, London, NW3 3EP

(10th August 2020)





### JOHN CROMAR'S ARBORICULTURAL COMPANY LIMITED

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Registered Consultant of the Arboricultural Association John Cromar, Dip. Arb. (RFS), F.Arbor A.



### 01 Introduction and Instructions

I am instructed by Site Specific Ltd on behalf of clients to make an assessment of tree amenity value and condition of trees at Henley Lodge, Flat 2, 51 Eton Avenue, Hampstead, London, NW3 3EP and of the impact of a proposal for development (timber outbuildings) on such trees. Accordingly, I visited the property on 15<sup>th</sup> July 2020 in order to carry out an inspection.

### 02

<u>Copyright</u>

### 02.01

Copyright is retained by the writer. This is a report for the sole use of the client(s) named above. It may be copied and used by the client in connection with the above instruction only. Its reproduction or use in whole or in part by anyone else without the written consent of the writer is expressly forbidden. The appended schedule of tree work, and the plan, may, without the written consent of the writer, be reproduced to contractors for the sole purpose of tendering.

#### 03 Notes

### 03.01

#### PLANS

S188-J1-P1 gives an approximate representation (in plan) of actual crown form, and is intended to indicate the relationship of neighbouring trees to each other, and should be read with the comments on crown shape and tree value in TREE DETAILS appended. The plan gives a quick reference assessment of value as per section 4, table 1, of BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'. Assessment of value in the TREE DETAILS table appended is, in accordance with this British Standard related mainly but not exclusively to the criterion of visual value to the general public. The Standard recommends a way of classifying trees when assessing their potential value in relation to proposed development. Some surveys may not include any trees of one or more categories. Table 1 suggests categories 'U', 'C', 'B' and 'A', in ascending merit. 'U' (RED crown outline on plan) category trees are dangerous \ low value trees that could require removal for safety or arboricultural reasons. 'C' (GREY or black/uncoloured crown outline on plan) category trees are of no particular merit, but in adequate condition for retention. 'A' category trees (GREEN crown outline on plan) are trees of high vitality or good form, or of particular visual importance: 'B' (BLUE crown outline on plan) category are good trees but may be of slightly poorer form or be not sited as importantly as 'A' category trees. See TREE DETAILS appended. Category Assessment appears in column 10. This standard also provides a way of determining an area (see TREE DETAILS column 7) - the RPA - root protection area - around the trunk of the tree in which protective measures should be used in order to prevent significant damage to trees. There are various ways of achieving this. A simple way is to use exclusion fencing, but other methods have been shown by established use to be very effective.

### 03.02

S188-J1-P2 and S188-J1-P3 shows proposed retained trees and are colourcoded to indicate where arboricentric methods are proposed during the demolition and construction processes.

### 04 Sources and Documents

Ground level inspection. Supplied plans : SITE SPECIFIC LTD. DRG. NO.:LOWER GROUND FLOOR and GARDEN GA as EXISTING SITE SPECIFIC LTD. DRG. NO.:LOWER GROUND FLOOR and GARDEN GA as PROPOSED REV B

#### 05 <u>Appraisal</u>

#### 05.01

AMENITY / SCREENING BY TREES AND SHRUBS

One tree (1) is of some general public amenity value, by reason of prominence, as it is visible from the tower block to the south. Other trees are of some strictly local amenity value to owners / users of the site, and to those of adjoining properties.

### 05.02

TREES AND LAYOUT - POTENTIAL FOR CONFLICT WITH ROOTS (Details appear in the tree detail table appended.) The figures in columns 5 and 6 in the <u>Tree data</u> table appended indicate the root protection area ('RPA' below), and typically the basic exclusion fence position. New materials and methods have been developed and continue to be developed that assist in promoting the successful retention of trees in association with constructed features. It should be noted that BS 5837:2012 (section 7.4.2) supports 'up and over' methods of construction where appropriate. The design principle of this method is outlined within Arboricultural Practice Note 12 (Through the Trees to Development, - a revision of APN 1, 1996, published originally by AAIS / Tree Advice Trust). This method has been used for many years on the recommendation of John Cromar's Arboricultural Co. Ltd. and has successfully allowed the retention of mature trees very close to construction activities.

#### 05.03

RPA is an abbreviation used in BS5837:2012, signifying the *root protection area*. An assessment as per BS5837:2012 section 4.6.2 has been carried out in connection with the plotting of all RPAs of all trees. (This section requires that site conditions such as location of structures, tree mechanics, etc., are taken into account in determining the likely position of roots.) This is of particular relevance in connection with this site where tree 1 stands very close to a great change in level marked by a retaining wall.

### 05.04 ROOTS and DESIGN

SRP is an abbreviation for *static root plate*, (after *Mattheck*, 1991, etc.) a radial dimension derived from trunk diameter based on studies of wind-thrown trees and thus a guide to where *structurally* significant roots are likely to be located. The RPA is a guide to where *systemically* significant roots are likely to be located. The proposal entails replacement buildings.

Minor encroachment on the RPA of one retained tree is entailed, as analysed in the table below :

Tree	Tree	RPA	Area	%	Notes
no.		area	affected	affected	
		(m²)	(m²)		
1	sycamore	209.18	29.92	14.30%	Proposed structures

In the writer's now extensive experience gained over more than a third of a century in arboriculture, controlled, limited-extent, vertical root cutting is of little or no significance to tree health. (N.B. - no root cutting is proposed here). The actually damaging operations are those that degrade or compact the ground surface within the RPA, for example by uncontrolled access by mechanical excavators, dumpers, etc.

It should be noted carefully that the essence of this application is a *replacement* of existing outbuildings constructed on conventional impermeable footings with new structures on arboricentrically designed, permeable footings, featuring rainwater harvesting thus improving conditions for the tree. Thus in this case all trees to be retained can be adequately protected by exclusion fencing and arboricentric methods as proposed below to reduce impacts on root systems of retained trees.

### 05.05

### PERCEPTION OF TREES

The proposed buildings are not continuously habited. In view of the above I conclude that shading by and perception of trees has been considered (as sections 5.3.4 and 5.6.2.6 of BS 5837:2012 recommend) and appear not to be negative factors.

### 05.06

SUPERSTRUCTURE AND TREE APPRAISAL - TREE PRUNING I note from the drawings supplied that no encroachment on the crowns of retained trees will occur.

#### 05.07

#### TREE REMOVAL APPRAISAL and REPLACEMENT PLANTING

Please see section **O8** for comments on the individual tree proposed for removal. Overall, appropriate replacement tree planting will play some role in providing for future local amenity. The British Geological Survey information for the area indicates that the underlying sub-soil is London clay. This places no significant constraint on species selection for tree and other planting. See plan for location :

A= Mediterranean crab apple (Malus trilobata) 10-12cm girth 35L pot

It is typical for landscaping to be a reserved matter consequent to any grant of consent and for a full landscaping scheme to detail tree, shrub and herbaceous planting etc.

#### 05.08

PUBLISHED GUIDANCE IN RELATION TO TREES AND DEVELOPMENT In conserving trees on development sites, expected best practice is as in B.S. 5837 : 2012. Section 5.1.1 notes :

"Certain trees are of such importance and sensitivity as to be major constraints on development or to justify its substantial modification : attempts to retain too many or unsuitable trees on a site can result in excessive pressure on the trees during demolition or construction work, or post-completion demands for their removal."

#### 05.09

The above advice appears to have been considered in formulating proposals for development.

#### 05.10

#### CONCLUSION

I conclude that the construction proposed, subject to precautionary measures as outlined above and as per the recommendations outlined below, will not be injurious to trees to be retained, nor will require any trees of significant public amenity value to be removed. Any tree losses will be satisfactorily addressed by proposed planting.

### 05.11

#### SUPERVISION

Supervision by and regular communication with an arboriculturist is typically an essential element of site management where trees are present and to be retained. I propose that this takes place at key points in the construction process, and additionally whenever required by the architect or LPA. These key stages are as per OVERVIEW below.

#### 05.12

Note to LPA : if the Authority is minded to grant consent, it is invited to consider:

a) the incorporation of the specific *order of implementation* of the arboricentric methods below into any Conditions applied.

b) to specify in a Condition that any Construction Management Plan incorporates all the arboricentric methods herein.

Such measures are likely to maximise tree protection.

06 TREE PROTECTION

# OVERVIEW

It is highly important to tree health and vitality that construction activities are carried out strictly in accordance with the tree protection methods specified below. It is widely not understood that a single traverse of a root protection area by a mechanical excavator can cause SIGNIFICANT and PERMANENT (albeit temporarily invisible) damage to trees.

Any such machinery, including, for example, tracked piling rigs, shall be kept at ALL times outside the root protection areas (RPAs) as indicated in the <u>Tree data</u> table appended, and/or shall be subject to ARBORICENTRIC METHODS below.

Fences to protect trees shall be respected as TOTAL EXCLUSION fences. Hence, before any site activity, including demolition, the fence lines shall be complete.

Protective fencing and any temporary protection of ground surfaces will have to be removed in due course to allow finishing of landscaping, paving, etc., but this shall not take place until all need for vehicular access to the site has passed, and shall be agreed with arboriculturist / planners on site during progress of works.

Supervision by an arboriculturist appointed directly by the client (not the main contractor) should take place at key points in the construction process, and additionally whenever required by the architect, client, main contractor or LPA. These key stages are :

- 1) At site possession by contractor, outline all tree protection measures with site agent and resolve any issues arising.
- 2) Ensure tree work is carried out to specification and sign off. Ensure protective fencing is erected and completed as proposed.
- 3) Supervise lifting of hard surfacing near trees.
- 4) Supervise laying of permanent geotextile combination ground protection and sign off.
- 5) Attend as required to supervise digging for and the laying of lighting cable ducts or services.
- 6) Approve any removal or adjustment of tree protection and sign off.

## **PREPARATION / DEMOLITION**

PLEASE READ WITH PLAN REFERENCE S188-J1-P2, APPENDED. The Methods shall be implemented in the order given unless it is stated to the contrary.

### Method 1 : TREE WORK

Tree work shall be in accordance with the provided specification and good arboricultural practice, and to BS 3998:2010 'Tree Work - Recommendations'.

### Method 2 : TREE PROTECTION FENCING

Tree protection fencing shall be erected, consisting of 'Heras' type fencing (weld-mesh panels), each section securely attached to uprights driven at least 0.6m into ground, as per the layout as shown on the plan



approval of an arboriculturist.

(pink lines). No ground levels reduction or excavation shall take place within (=the tree side of) the fence lines. The standard rubber supports ('elephant's feet') shall if used, be as per BS 5837:2012 section 6, figure 3, left; that is, pinned to the substrate with re-bar. The fencing shall include, as indicated on plan, the protection of an area where planting is proposed.

No fires shall be made on any part of the site, or within 20m of any tree to be retained. No storage of materials shall be made within the protective fences. No breaching or moving of the protective fences shall take place without the

Method 3 : GROUND SURFACE HANDLING and PROTECTION This method shall apply in the zone hatched blue on plan. NO levels reduction shall take place. This includes no 'scraping up' with a mechanical excavator or otherwise. Any existing hard surfacing, any existing surface debris, light vegetation, etc., that lies within the zone shall be removed using hand tools only. A 2D geotextile membrane, such as 'Ekotex' shall be laid; 100mm of green-source woodchip; continuously abutted scaffold boards or manufactured boards so as to completely cover this area. This area shall be used for pedestrian access only. Method 4 : EXISTING HARD SURFACES TO BE SUPERCEDED BY FOUNDATION DETAIL

This method shall apply in the orange crosses zones on plan. The existing hard surfaces and dwarf retaining wall shall be lifted by hand tools or hand-held power tools only. Footings and any underlying subbase shall be left undisturbed if levels allow and if the sub-base is competent to support the loads envisaged. Otherwise no excavation below the underside of the existing sub-base shall take place. Any such excavation in the existing sub-base shall be by hand tools or hand-held power tools only.

Method 5 : DEMOLITION

This method shall apply generally. Arisings shall be removed for disposal off site. None shall be spread in root protection areas (orange shapes/circles).

Demolition, which shall be by 'top down, sides in' method, shall be carried out with hand tools or hand-held power tools only. Arisings shall be removed for disposal off site.

Any contaminated soil shall be removed with hand tools only and removed from site.

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## CONSTRUCTION

PLEASE READ WITH PLAN REFERENCE S188-J1-P3, APPENDED. The Methods shall be implemented in the order given unless it is stated to the contrary.

Method 6 : GROUND SURFACE HANDLING and PROTECTION Method 3 above shall be adjusted as per the zones hatched blue on plan.

Method 7 : SERVICE TRENCHES N.B. -This applies to ALL services : Electricity, gas, water, etc. Existing services shall be utilised wherever possible.

These methods shall apply generally within any RPA (orange circles).

1) The trench shall be opened with an air-spade to required depth. Roots 20mm or more in diameter unearthed shall be temporarily protected with bubble-wrap and insulating or gaffer tape while rest of trench is dug. Services shall be worked under/over/around/ between roots so as not to cut or damage any larger than 20mm diameter. OR 2) The trench shall be dug with hand tools only. Probes such as screwdrivers or steel rod <10mm diameter to determine root presence ahead of digging shall be used. The work shall proceed cautiously. No roots over 20mm diameter shall be cut. Roots 20mm or more in diameter unearthed shall be temporarily protected with bubble-wrap and insulating or gaffer tape while rest of trench is dug. Services shall be worked under/over/around/ between roots so as not to cut or damage any larger than 20mm diameter.

#### OR

3) Services shall be thrust-bored using trenchless techniques (compressed air-driven 'mole') at a depth of 700mm or more below ground level, entailing no surface excavation. Starter pits for rams shall be outside any RPA, or reception/starter pits shall be opened according to 1) or 2) above.

#### Method 8 : RETAINING WALL

This method shall apply in zones of brown fill on plan. The retaining wall shall be formed from modern railway sleepers (1200mm x 200mm x 100mm or similar) laid flat, to required height, drilled at approx. 1.5m intervals and pinned to substrate with 25mm dia. re-bar or similar. Levelling shall be via chocking on hardwood slips / packers, and/or cutting the timber base layer to fit step-wise into any slope. The re-bar shall be driven below the upper face of the topmost sleeper and the hole sealed with timber dowel or other hardwood peg and glued and trimmed flush.

#### Method 9 : OUTBUILDING SLAB CONSTRUCTION

This method shall apply within the magenta honeycomb zones on plan. No general reduction whatever of existing ground levels shall take place. Edging/formwork shall be placed, consisting of modern railway sleepers drilled vertically and pinned through to the substrate with 20-25mm dia. re-bar. (These shall abutt those laid under Method 8 above.) A geogrid such as Tensar 'TriAx' type , with a grid size sufficient to retain the size of aggregate shall be laid directly on the ground surface within the timber. A rainwater salvage and delivery system shall be laid, entailing perforated ducts to lie below the slab to return precipitation to the area covered by the buildings. 20-40mm CLEAN STONE - NO FINES (typically sold as 'track ballast') shall be packed around the ducts and shall cover them by 100mm. An impermeable membrane shall be laid to prevent any leachate reaching the RPA below. The slab shall be cast, with re-inforcing mesh if required, and after setting, the timber edging/formwork shall be drilled horizontally with 20mm holes at 200mm intervals to allow gaseous exchange for roots preserved below the slab.

#### Method 10 : BACKFILL

This method shall apply in green crosses zones. 20-40mm CLEAN STONE – NO FINES (typically sold as 'track ballast') shall be laid to required level ; a geogrid such as Tensar 'TriAx' type , with a grid size sufficient to retain the size of decorative shingle laid as a finish.

## LANDSCAPING PHASE

Method 11 : GROUND PREPARATION FOR TREE PLANTING AREAS This method shall apply after completion of main build only. Ground preparation for tree planting areas shall entail removal of hard surfacing using hand tools or hand-held power tools only, the removal of degraded or compacted or contaminated soil to a depth of at least 0.45m below finished surrounding ground level. The base and sides of the pit shall be forked over to at least one hand fork's spit in depth. Screened topsoil (to BS3882 : 2015 topsoil) with biochar (such as https://www.soilfixer.co.uk/biochar-article) - 5% of the topsoil volume. This equates to about 20 kgs of product per cubic metre of topsoil (to BS3882 : 2015 topsoil) to a maximum depth of 0.45m within 1.3m of the trunk location of each tree to be planted. Soil handling of any kind shall take place only after a minimum of 3 days after heavy rain, and shall where possible be carried out 7 days or more after such rainfall. Tree planting shall be in accordance with British Standard 8545:2014 'Trees : from nursery to independence in the landscape -Recommendations'. This enshrines good arboricultural practice: the tree shall be planted so that the root collar lies at finished ground level, shall be short-staked and tied with proprietary tree tie. The ground surface shall be mulched within 0.75m of the trunk location to a depth of 100mm with composted organic material or proprietary mulch mat.

### Method 12 : MAINTENANCE

Maintenance shall consist of the regular moderate watering of any plant the subject of the planting proposal during the first season (April 15 to October 15) after planting and thereafter in the following four years if drought conditions occur. Hedges shall be trimmed twice yearly to a height of no less than 1.3m and no less than 0.5m thickness (cross sectional). Mulch shall be kept topped up to a maximum depth of 100mm. Grassed areas shall be cut weekly (April 15 to October 15).

#### Method 13 : REPLACEMENT

If within five years of issue of certificate of completion any plant the subject of the planting proposal dies or in the opinion of the LPA becomes seriously damaged or diseased, the same shall be replaced according to the above methods.

(All design subject to engineering approval, but used on other sites and known to be practicable and reliable).

### 07 <u>General</u>

If conflicts between any part of a tree and the building(s) arise in the course of development these can often be resolved quickly and at little cost if a qualified arboriculturist is consulted promptly. Lack of such care is often apparent quickly and decline and death of such trees can spoil design aims and can of course affect saleability, and reflect poorly on the construction and design personnel involved. Trees that have been the recipients of careful handling during construction add considerably to the appeal and value of the finished development.

10th August 2020 Signed:

loma Inn

John C. M. Cromar, Dip.Arb.(RFS) F.Arbor A.

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#### **APPENDICES**

### 08 <u>Tree Data</u>

Tree number	Tree type	Height	Height to lowest branch	Stem diameters	Radius of RPA if circle (mm)	RPA (m²)	Comments	Life expectancy (years)	Assessed BS5837 value category
1	sycamore	13	3.5	680	8160	209.2	Lowest substantial branch (70mm). Union normal. Contribute significantly to screen	40+	A2
2	Japanese cherry	7		210	2520	20.0	Stem removed, leaving large wound. Little contribution to screen	20+	C1
3	purple plum	8		150, 120, 100	2598	21.2	Outside curtilage	20+	C1

In all cases, in the absence of negative comment on health/vitality and structure, normal physiological and structural condition should be considered to apply.

Dependent on time of year of survey, deciduous trees may not have been in leaf at the time of inspection. This may have limited precise identification.

### 09 <u>Schedule</u>

## Trees at Henley Lodge, Flat 2, 51 Eton Avenue, Hampstead, London, NW3 3EP

Please read in conjunction with plan S188-J1-P2.

Tree number	Tree type	Height	Height to lowest branch	Stem diameters	Comments
2	Japanese cherry	7		210	Remove; grind stump to 250mm below ground level.

#### NOTES:

This schedule notifies the LPA, where such notification is required, of intention to prune or remove trees in accordance with TCP Act 1990 Section 211. 42 days after notification should be allowed before proceeding with the work, during which time (and after) the LPA may place a Tree Preservation Order on the tree(s), thus requiring a formal application for any works to living wood.

All tree work should be carried out to BS 3998 : 2010 'Tree Work - Recommendations'. The Wildlife and Countryside Act 1981 protects with certain exceptions all birds and their nests. It is an offence to destroy such nests or take or injure such birds in the course of tree works operations. If a tree is a bat-roost, a licence to work on the tree must first be obtained from the relevant Statutory Nature Conservation Organization (in England : Natural England 0845 601 4523.) Acting without a licence is likely to be justifiable only in acute emergencies threatening human life and where all other legally available option such as footpath diversion, fencing and warning signs cannot be applied.

10 <u>Plans</u>

S188-J1-P1-1 v3

S188-J1-P2-1 v2

S188-J1-P3-1 v2



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A

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EXISTING TIMBER OUTBUILDINGS 70 BE REMOVED

В

B below A

by 4m or so

#### PREPARATION / DEMOLITION

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-2 KEY TO COLOURS / LINETYPES LISED IN RELATION TO TREES

BLUE - Moderate Value (B) BLACK - Low Value (C) RED - Remove/Very short life expectancy (U)

Spread and trunk colours correspond directly to those used in British Standard 5837:2012, Table 2.

NOTES To not use for setting out purposes

All dimensions to be checked on site DRG. NAME TREE RETENTION & TREE PROTECTION MEASURES (Site Preparation Phase)

FOR FULL METHOD DETAILS PLEASE SEE REPORT

BASED ON BASED ON SITE SPECIFIC LTD. DRG. NO.: LOWER GROUND FLOOR and GARDEN GA as EXISTING SUPPLIED SITE ADDRESS

Henley Lodge, Flat 2, 51 Eton Avenue. Hampstead, London, NW3 3EP

DRG. REF. 5188-J1-P2 rev. no. v2 SCALE & SIZE 1:100 @ A1 DATE 10-Aug-20

CONTRACTOR - CONTR

#### CONSTRUCTION

Method 6 : GROUND SURFACE HANDLING and PROTECTION Method 3 (see plan ref. S188-J1-P2) shall be adjusted as per the zones hatched blue on plan.

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(All design subject to engineering approval, but used on other sites and known to be practicable and reliable).



NOT RETAINED: 2

NOTE: OUTBUILDINGS TO BE LIGHTWEIGH TIMBER CONSTRUCTION ON SHALLOW



JOHN CROMAR'S ARBORICULTURAL COMPANY LIMITED

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-2 KEY TO COLOURS /

RELATION TO TREES BLUE - Moderate Value (B) RED - Remove/Very short life expectancy (U)

LINETYPES LISED IN

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Table 2.

NOTES o not use for setting out purposes

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FOR FULL METHOD DETAILS PLEASE SEE REPORT

SITE SPECIFIC LTD, DPG, NO - LOWER

SITE ADDRESS Henley Lodge, Flat 2, 51 Eton Avenue. Hampstead, London, NW3 3EF

CONTRACTOR - 20000 - 20000 - 20000

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