Trees and Construction

BS5837 Tree Survey Assessment

Site: 15 Wedderburn Road,
London, NW3 5QS

Ref: 13891 / A2

Client: Mr Dan Wagner

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- October 2013 -

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1. INTRODUCTION

1.1 **Instruction:** This advice has been prepared for Mr Dan Wagner (hereafter; client) and Ben Lovedale of Clive Sall Architecture Ltd (hereafter; architect). Is it in respect of the tree related considerations at 15 Wedderburn Road, London, NW3 5QS (hereafter; site).

As the proposal relates to development work at site, the advice herein is produced in accordance with the British Standard 5837 : 2012 '*Trees in Relation to Design, Demolition and Construction - Recommendations'* (hereafter; BS5837).

1.2 **BS5837:** The scope of BS5837 is to provide guidance on how trees and other vegetation can be integrated into construction and development design schemes. The overall aim is to ensure the protection of amenity by trees which are appropriate for retention.

1.3 **Scope of this advice:** This advice has been produced in accordance with BS5837 and is intended to demonstrate the site's realistic arboricultural constraints and consideration for trees in relation to the design process. The objective is to systematically assess the site and provide suitable recommendations regarding the proposal's potential impact on trees and vice versa.

1.4 Following the initial instruction the consultant surveyed the site on the 24th July 2013. A site assessment and BS5837 tree survey were carried out; all relevant trees were surveyed from ground level and plotted as either an individual or a tree group, i.e. those contained on and around the application boundary.

The tree survey and subsequent advice, specifically '*Considerations for Tree Retention / Removal*' section within this advice, were provided to the client and architect for their consideration in July 2013. This was supported by a site meeting with the council's Arboricultural Officer (Tom Little - hereafter; Tree Officer) on the 23rd October; the associated details are included herein in relation to the site and proposed scheme.

1.5 This advice is subject to caveat at Appendix I, outlines relevant terms and definitions at Appendix II and constitutes the findings of the preliminary site assessment and associated arboricultural recommendations.

1.6 The survey data and site observations use the supplied topographical survey to illustrate the surveyed trees in plan format as a 'Tree Constraints Plan' (hereafter; TCP); the TCP and the tree survey data table are at Appendix III.

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2. SITE INFORMATION & TREE ASSESSMENT

2.1 The site has a detached building which is currently subdivided into three residences. It is on the corner of Wedderburn Road and Akenside Road and is bound thereafter by residential property gardens.

The site has an openly accessible driveway off Wedderburn Road which links to a gated front and rear garden walkways. The front garden sits mostly at the street level whilst the gardens at the rear then sit at differing lower levels and are accessed via stairways and patio sections; these are mostly hard surfaced.

2.2 **Proposal:** It is understood that a scheme is proposed for the renovation of the existing ground and lower ground floor property. This is to include lower level/basement extension, access improvements and a scheme of landscape enhancement throughout.

2.3 The site requires consideration from an arboricultural perspective due to the presence of trees on and around the site (highways); these trees are deemed to be within impacting distance of both the existing property and potential construction area.

The council confirmed that the site is contained within a Conservation Area and specific tree protection is afforded to three trees from a 1950's TPO thus:

- T17 Hawthorn (not present and hence not included in this survey) - likely removed some time ago due to diminished quality;
- T18 Crab Apple (noted as T6 in this survey and on the TCP);
- T20 Flowering Cherry (noted as T8 in this survey and the TCP).

2.4 The tree survey and assessment resulted in the BS5837 quality/retention categories for onsite trees/tree groups of 'C - low' as well as those categorised as 'U' for either small scale trees, hedge growth or those dead, dying of dangerous trees needing to be removed. Thereafter, the highways trees included both 'A - high' and 'C - low' quality categorisations.

The front garden is limited in tree cover with those surveyed being mostly small scale ornamentals which contribute to the shrub border planting. Thereafter the side walkway has congested growth which has been planted to serve a functional screen and some individual trees which protrude the collective canopy cover (including those protected by TPO although not of great individual quality). Likewise, the rear garden trees grow in close confines with hard surfaced surrounds and could be open to significant long term improvement and site enhancement.

Thereafter, the trees at the highway are noted as the largest and best quality trees of the survey. T15 has significant growth potential and together with T16 - T18 provide the initial line of Wedderburn Road's canopy cover.

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3. FINDINGS & RECOMMENDATIONS

3.1 The following information, as with the prior contents of this report, should be read with the appended tree data table and tree constraints plan (13891/TCP/01).

3.2 In addition to the initial advice provided to client, as listed below, comments are made in reference to the architect's scheme as 'NOTE'. This accounts for the proposed layout, access and landscape provision as depicted on the *'proposed site plan'* ref: 111_P1.

3.3 Considerations for Tree Retention / Removal

3.3.1 Due to the offsite location of T15 - T18, the large scale and established canopy cover and/or potential street tree cover of said trees, said trees are to be retained and protected as a default consideration of the development.

NOTE: The extend of root growth from said trees will be limited by the hard surfaces, encased sections due to wall foundations, utilities, and roadside sub-base. However, as a cautionary measure the retained parking/hard surfaced area closest to T17 and T18 is to have the hard surface retained during construction, the lifting and relaying done manually and the existing soil levels retained. Likewise, the RPA sections of T16 and T17 which are within the front lawn should have the existing soil level maintained and be protected during construction.

3.3.2 There were two trees identified as 'U' (T3 and T14) which are recommended for removal for H&S. Further, the removal of T2, T4, T5 (G2) is anticipated in conjunction with site development to make way for landscape enhancements. T3 is suppressed and with dieback, T14 grows in a compromised position with structural implications for the boundary wall and of poor form and the remaining trees provide only a scrubby contribution with limited future; removals should be included within the scheme.

NOTE: To the rear, te scheme shows a green wall and landscaped area with terrace. Removal of said trees will allow for the inclusion of pleached trees or a small/medium scale tree/pair from where these removals will take place; to be seen from the Akenside Road.

3.3.3 In conjunction with the above removals and as part of landscape works it may also be desirable to remove some of the low quality 'C' category trees. This may arise due to a declining tree condition, poor form, structural defect, poor future contribution or small scale but is to be mindful of the current function of said trees. For example, removals including T7 and T9 will still require suitable mitigation as part of landscape planting to replicate the part screen and landscape cover which they provide; new tree planting will again enhance the future amenity contribution.

NOTE: The landscape and access arrangement will require the removal of T7, T9 and G3 and also includes the removal of T10 - T13 for the newly landscaped front garden. Again, these are all small scale and simple landscape consideration will easily compensate.

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3.3.4 The remaining 'C' quality trees (i.e. T1, T6 and T8) are suitable for retention providing that preventative and restorative pruning works are undertaken. As such they could be integrated into a design where they are protected by avoidance.

Likewise, the retention of the hedge cover G1 may serve as a functional screen for the new landscape layout. However, due to the limited functional amenity of G1 and the lower level of T1 (obscured and only most clearly visible from site), removal and replacement could be mitigated by considered new tree planting in a similar location.

Likewise, the pruning works required to T6 and T8 will diminish the already limited contribution and future retention. This is due to their age, multiple stem structures, conflicting branch formation, included unions and pruning wound decay on branch compression sides. Hence, it is not considered suitable for said trees to constrain or significantly guide the design in this instance. It is worth noting that a considered approach will be required for prominent new tree planting.

NOTE: The scheme shows a correction to the multiple levels in and around T1 and hence removal is required. Further, the removal of T6 and T8 is also included whereby a retained landscape section along the Akenside Road boundary is to be utilised for enhancement tree planting.

As a replacement for T6 and T8, and also to enhance the site, it is recommended that 3x select or heavy standard nursery stock trees are planted. Medium scale species for year round interest are recommended (Field Maple, Wild Service Tree, Rowan etc.) although various ornamentals and alternate cultivars are also suitable, i.e. Paperbark Maple.

3.3.5 The removal of the above trees or a proportion thereof may impact on the green cover in the first instance, however, development will present an enhancement opportunity. The currently declining and limited amenity of the site's trees is to be noted. Certainly, the vast majority of trees are obscured from offsite positions or in decline. The more notable trees which were once worthy of TPO protection have passed their best, as such removal would have no impact on the long term amenity of the site. Further, removal allow for the selection of new specimen species to enhance the site's long term amenity.

NOTE: This is reiterated and confirmed within the scheme as an enhanced front garden section with infilled and planted lightwell, retained landscape space, enhanced rear garden and prominent locations for new tree planting.

3.4 <u>Tree Protection</u>

3.4.1 The design and layout of the site is to incorporate the essential components of retained trees (crown and rooting area) and provide a suitable level of clearance to allow for their long term safe retention, i.e. RPA protection and crown clearance as well as for any new tree(s) being planted; no direct conflict is anticipated as the maintenance of the highways trees allows for vehicle access without impact.

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3.4.2 The notable trees surrounding the property have been influenced by the presence of the road, level change and building foundation. It is recommended that any basement or building extensions encroach no further on retained trees than currently observed and the existing levels within their RPAs remain; current crown to also be accommodated.

NOTE: The scheme accounts for the above advice whereby the retained hard surface entrance and garden area will have the levels maintained and works undertaken sensitively within the RPAs of retained trees: T16, T17 and T18.

3.4.3 The process of site operations will be an important aspect to confirm as a construction layout plan, i.e. site access, material delivery area, material storage area etc., all outside of RPAs or with a provision for ground protection. As a basis for tree protection the following points will need to be considered:

- Removal of all agreed trees and any agreed pruning works prior to works commencing by a suitably qualified arboricultural contractor;
- Induction of construction personnel regarding the exclusion of works (including access and storage) from the retained trees' RPAs;
- Secure temporary PBF within the front garden section to exclude the highway trees' RPAs from the working site;
- The retention of hard surfaces for the protection of the highway trees' RPAs for the duration of construction (to include a temporarily installed impermeable surface cover for material storage);
- The storage of materials clear of all retained trees' RPAs and/or to ensure no contamination/run-off into soils in proximity to trees or on higher ground;
- The sensitive removal of structures and/or hard surfaces from retained trees' RPAs undertaken manually with special provision for tree protection.

3.5 General Overview

3.5.1 The considerations for trees which are to be retained as part of the proposal need to be addressed in order to ensure their protection. This is to account for the potential impact on retained trees and their growing environment from the proposed development and vice versa (these follow).

Tree Works

The proposed tree removals are to be justifiable in the context of the site layout and are to be mitigated as part of a detailed landscape scheme. Only general landscape planting is considered necessary to replace poor quality trees, i.e. T3 - T5 with a higher quality specification planting for those others, i.e. T6 and T8.

Any trees which are to be removed should be well indicated to ensure that the retained trees are suitably protected. Hence, all trees which are to be removed are to be marked by a suitably qualified person [spraying the stems with a cross] prior to tree works.

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Tree Crowns

Taking account of the previous encroachment on structures, providing the previous conditions remain or the clearance is increased this should demonstrate no change of circumstance or an improvement to the existing conditions and should be acceptable.

NOTE: The site's existing access is to be altered but maintains the principal function with no raised pressures on the highway trees. As such no conflict arises between the scheme and retained tree's crowns.

Root Protection Areas (RPA)

As a minimum it is suitable to consider the outer extents of retained trees' RPAs as construction exclusion zones and be protected. It is however *sometimes* possible to undertake construction activities within the rooting areas of retained trees which requires greater attention to tree protection, phasing of works etc.

NOTE: The hard surface works within the RPAs of T17 and T18 require sensitive methods and retained soil levels to ensure no change of circumstance for said trees. If a greater extent of works are proposed within these areas, more specific advice should be sought from a qualified arboriculturalist with a view to assessing the feasibility of said proposal and forming a suitable method statement.

Demolition/Excavation Works

Any removal of existing built structures (including walls, utilities) or hard surfacing will need to be undertaken with great care where this occurs within or near to the anticipated rooting areas of retained trees. This will require demolition/excavation works be undertaken manually with hand held non mechanical tools and ensure that existing ground levels are retained within RPAs.

NOTE: As above, the hard surface works within the RPAs of T17 and T18 will be undertaken sensitively and retain the existing soil levels in order to maintain the current conditions.

Hard Landscape Works

As with the previous arboricultural restrictions to demolition/construction, the newly proposed layout should avoid retained trees' RPAs. However, where ground works are proposed within RPAs, construction methods [for hard surfaces, walls etc.] should retain the existing ground levels, be undertaken sensitively and use a no dig design.

NOTE: This will apply for the landscape works to the front of the property. Typically, existing hard surfaces within RPAs can be replaced on a like for like basis or with a preferential surface treatment. Elsewhere, conversion of soft surfaces within RPAs to hard surfaced walkways etc., will need to utilise a no-dig system to ensure no negative impact on the tree roots and/or growing conditions.

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3.5.2 For any proportion of tree removal, new tree planting is to be integrated into a landscape scheme. The new trees should be of a suitable volume, species, scale, in suitably prepared planting locations with adequate space for future growth and development and enhance the site's long term amenity contribution.

NOTE: The scheme shows consideration for new tree planting, landscape provision and green cover. Certainly if executed correctly with suitably selected nursery stock the scheme can demonstrate a long term enhancement to amenity from trees. It is recommended that a detailed landscape scheme be produced which the council's Tree Officer may support as being addressed by way of condition; this will allow council steer on the more exact tree volume, location, species and nursery stock selection.

3.5.3 The removal of larger scale trees and those currently protected by TPO (although made in the 1950's and now of lessened quality) will need justification as part of the scheme. As such, pre-application advice or contact with the Tree Officer are also recommended sources of guidance in respect of the council's response to proposed tree removals.

NOTE: The subsequent site meeting with Tree Officer was constructive. This surrounded the principal of development and future tree cover. The removal of poor quality trees, those of small scale and limited visibility as well as scrubby overgrowth was discussed in favour of enhanced landscaping; as expected, this was received positively.

Likewise, the removal of trees in conjunction with the scheme with the aim of long term enhancement was also discussed, i.e. T1, T6, T8. This was again openly discussed with a mutual agreement on the tree defects, the trees' limited future contribution and the potential for site enhancement through landscape and tree planting.

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4. METHOD STATEMENT 'CONSIDERATIONS'

4.1 Arboricultural Construction Restrictions

4.1.1 The following restrictions are considered relevant for tree protection purposes which are to be illustrated on a detailed Tree Protection Plan as part of planning conditions:

a) Tree works are to be completed prior to any and all site works: no tree works not specified within the associated arboricultural method statement (or leaning against or attaching of objects to a tree) are permitted unless agreed in writing by the council.

b) Protective barrier fencing (PBF) is to be installed immediately after the tree works and prior to the site works commencing (front garden section). The fenced off sections are to act as Construction Exclusion Zones and be retained until construction completion.

c) In conjunction with the PBF, the retained hard surfaces within the RPAs of T17 and T18 are to be supplemented with a temporary concrete pad. This is also to be retained until construction completion.

d) No chemicals / materials are to be transported / stored / used / mixed within RPAs.

e) No fires are to be lit and no machinery, plant or vehicles are to be washed down within 10m of the tree's canopy or in a RPA.

f) During construction processes RPAs may not be breached, i.e. no surfacing works, without the prior advice of the consultant and the consent of the council.

g) No mechanical digging or scraping is permitted within a RPA.

h) Only after construction completion can the PBF and ground protection be removed and any remaining soft landscaping works undertaken (works undertaken manually with non-mechanical hand tools and ground levels retained within RPAs).

4.2 Arboricultural Site Monitoring / Supervision

4.2.1 The site should be checked by a qualified arboriculturist throughout the construction processes to ensure the tree protection measures are adhered to, i.e. prior to tree work operations to approve the marking of all trees to be removed, following barrier fence installations and prior to the removal of the protective measures. Monthly visits are not considered necessary as the retained highway trees are clear of construction, however, the aforementioned inspections are recommended in order to sign off the site as having correctly adhered to the arboricultural method statement.

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4.3 Protective Barrier Fencing (PBF) Specification

4.3.1 Barrier fencing is to be installed (and signed off by way of arboricultural supervision) following the completion of the tree works. It is to be illustrated on a tree protection plan to aid ease of installation and is to remain in situ for the entire duration of the demolition/construction processes unless otherwise agreed in writing by the council.

4.3.2 The barrier fencing is to consist of a series of Heras panels secured in place by driven scaffold posts or a scaffold frame to ensure that the fencing lines are well braced to resist impact, prevent access to RPAs and construction exclusion zones and ensure the protection of trees within the fenced off areas.

4.4 Underground utilities

4.4.1 Any new underground utilities are to use the construction area and hard surface extents for new installations and avoid the need for works in proximity to trees. Certainly, utility installations are to be:

- Located outside of RPAs and construction exclusion zones where possible; or
- Use manual excavations under arboricultural supervision or excavate using sensitive no-dig methods (e.g. Air-Spade) for works within RPAs;
- Any exposed roots shall be packed with a clean damp sand (not builders sand) and wrapped in hessian sacking to protect them;
- Small roots which are identified (those less than 25mm diameter) may be carefully pruned back with a clean sharp tree saw; and
- Larger roots which are identified (those greater than 25mm in diameter) are to be retained and protected as they may be necessary for a tree's health and stability.

4.5 Sensitive Surface Excavations (under arboricultural supervision)

4.5.1 Any excavations necessary within a RPA or designated CEZ (to be illustrated on an approved TPP - retained trees' RPAs and hard surfacing to the front of the site) must:

- Only be undertaken when the development is completed and all storage facilities, site cabins and building materials have been removed from site;
- Use sensitive excavation techniques to protect the tree roots and their existing growing conditions.

4.5.2 The excavations are to be undertaken by hand with the use of manually operated hand tools (hand held). This is to be preventative and carefully avoid damage to tree roots; individual 50mm layers are to be excavated at a time within an RPA/CEZ. This is to ensure that excavations do not incur on the existing soil levels, i.e. no downward regrading of soil levels within RPAs.

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4.5.3 Any exposed roots shall be packed with a clean damp sand (not builders sand) and wrapped in hessian sacking to protect them from temperature changes and drying out.

4.5.4 Small roots (those less than 25mm in diameter) may be carefully pruned back with a clean sharp tree saw. However, pruning large roots (those greater than 25mm in diameter) will require the advice of the consultant and permission of the council; these may be necessary for a tree's health and stability.

4.5.5 Once the hard surface material (including compacted base) has been removed, any hessian wrapping will be removed and roots will be surrounded/packed with a sharp sand and any existing ruts, holes or dips are to be infilled with a mix of sharp sand and high grade tree planting soil.

4.5.6 As the existing surface being removed is hard surfaced with block paving and some tarmac / concrete sections. As the proposed surfaces are similar or more preferable, the surface treatment installations can be undertaken in a traditional manner.

Where the new surfaces can use more preferential treatments to encourage percolation of surface water and encourage aerated soils with nutrient availability, this will demonstrate an enhancement to the existing conditions for tree root growth and is encourages where possible (to be illustrated on the landscape scheme).

4.6 Additional Recommendations

4.6.1 The detailed tree planting proposals are to be included within a final landscape plan. This is to include the hard and soft landscaping together with tree locations, species and stock selection, installation and maintenance; this may be undertaken as part of planning conditions and, where required, the appointed landscape architect will have the full support of the arboricultural consultant.

4.6.2 In line with an approved scheme and as part of planning conditions, a tree protection plan will confirm PBF alignment, material storage, sensitive surface works (removal of existing driveway from the RPA of T17 and T18) etc. As such, it is considered suitable to state that the scheme is achievable in this instance. The retained highway trees are clear of site works and new tree planting will be integrated into a landscape scheme as part of planning conditions to mitigate removals and enhance the site's long term tree cover.

This concludes our advice.

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Appendix I

Caveat

Any and all information supplied to Indigo Surveys Ltd by/on behalf of the client is assumed to be accurate unless otherwise informed. | This advice is limited to the observations made on the date of inspection as detailed herein and any deletion, editing or alteration will result in the advice being null and void in its entirety. | This advice in its entirety may be deemed null and void if remedial works are undertaken on any area of the site, on or after the date of the survey. | No liability is assumed by the author or by Indigo Surveys Ltd for any misuse, misinterpretation or misrepresentation of this advice. | This advice is not valid in adverse or unpredictable weather conditions or for any failure due to 'force majeure' or unpredictable events. | No responsibility is assumed either by the author of this advice or by Indigo Surveys Ltd for any legal matters that may arise as a consequence. | Neither the author nor Indigo Surveys Ltd will be required to attend court or give testimony as part of this agreement. | The responsibility for any works undertaken on the basis of the recommendations of this advice does not form part of this agreement.

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Appendix II

Terms and Definitions

"Arboriculturist" - person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction.

"Competent Person" - person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached.

"Topographical survey" - an accurately measured land survey undertaken to show all relevant existing site features. *A method of carrying out topographical surveys is given in RICS specification* Surveys of land buildings and utility services at scales of 1:500 and larger.

"BS5837 Tree survey" - should be undertaken by an arboriculturist to record information about the trees on or adjacent to a site. The results of the tree survey, including material constraints arising from existing trees that merit retention, should be used (along with any other relevant baseline data) to inform feasibility studies and design options. For this reason, the tree survey should be completed and made available to designers prior to and/or independently of any specific proposals for development.

"Tree categorization method" - trees should be categorised in accordance with the BS5837 cascade chart by an arboriculturist. This is to identify the quality and value (in a non-fiscal sense) of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained in the event of development occurring.

"Root protection area (RPA)" - layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority, shown as an arboricultural constraint in m^2. The radius is calculated using the BS5837 calculation method. An arboriculturist may change the shape of an RPA but not reduce its area.

"Arboricultural implications assessment" - a study, undertaken by an arboriculturist, to identify, evaluate and possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of any site layout proposal.

"Arboricultural method statement" - methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained.

"Tree protection plan" - a scale drawing, informed by descriptive text where necessary, based upon the finalized proposals, showing trees for retention and illustrating the tree and landscape protection measures.

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Appendix III

Data Table: As appended (BS5837 Tree Survey Key & Table)

Tree Constraints Plan: As appended (13891/TCP/01)

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TREE SURVEY IN ACCORDANCE WITH BRITISH STANDARD 5837:2012
'TREES IN RELATION TO DESIGN, DEMOLITION & CONSTRUCTION - RECOMMENDATIONS'

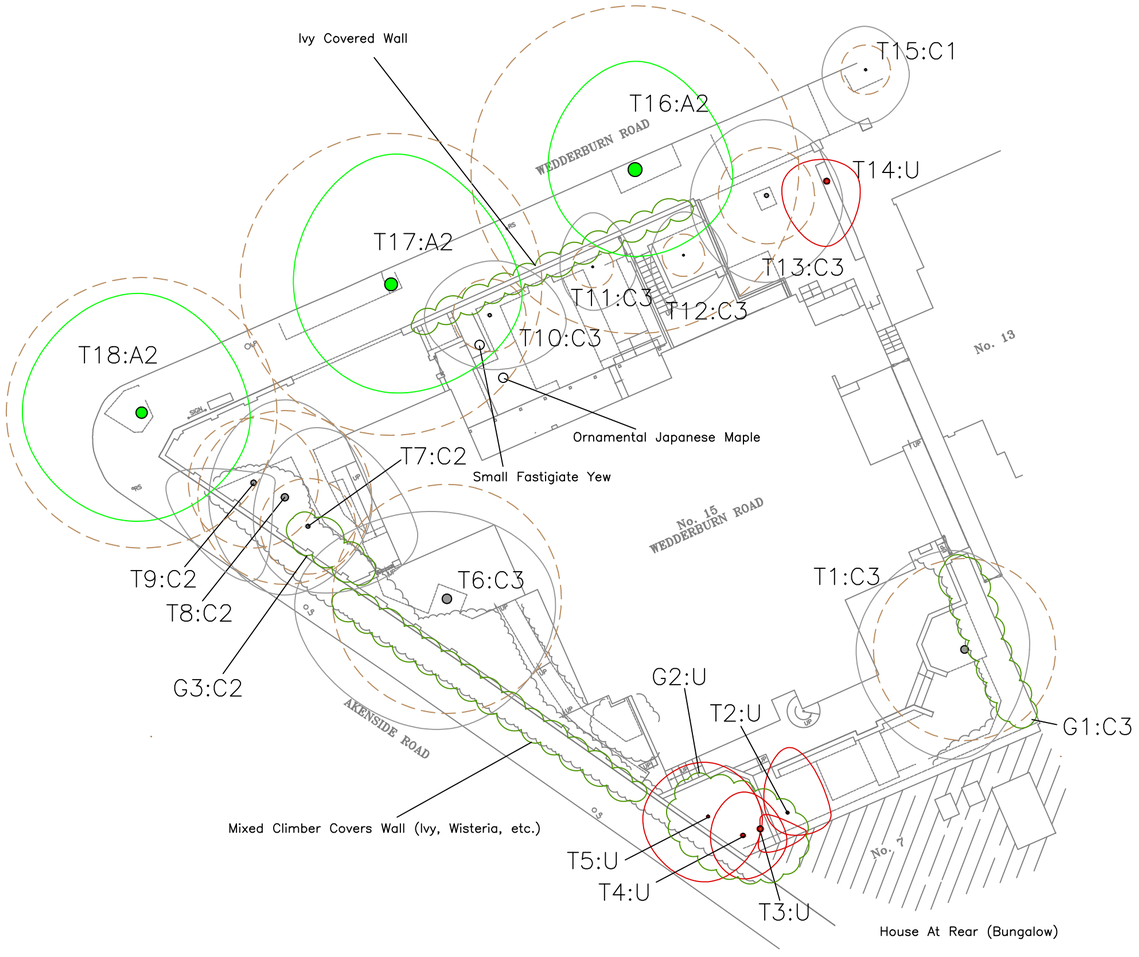
FIELD KEY:		
TPO/CA	-	On client request: presence of Tree Preservation Orders (TPO) / site location within a Conservation Area (CA) & date checked;
TREE REF. #	-	Tree reference number: tag or plan number (T - individual tree, G - group of trees/shrubs, H - hedge);
SPECIES	-	Genus, species and/or common name;
AGE	-	Age classification (Y - young, SM - semi mature, M - mature, LM - late mature, OM - over mature);
HEIGHT (in m)	-	Approximate height of tree in metres;
CANOPY (in m) N - S - E - W	-	Approximate branch spread in metres of the four principal compass points;
STEM (in mm)	-	Stem diameter in millimetres: measured in accordance with s.4.6 of BS5837;
RPA (in m²)	-	Root Protection Area: calculated as a function of the STEM measurement (single stem/multiple stem variant, as outlined within BS5837);
CLEARANCE (in m)	-	Crown clearance in metres above the adjacent ground level and to first significant branch and direction of growth (where relevant);
LIFE & VITALITY	-	Estimated useful life expectancy and physiological condition typically gauged from annual extension growth (good, fair, poor, dead);
NOTES	-	Structural and physiological condition observations;
ESTIMATED REMAINING CONTRIBUTION	-	Approximate number of years the tree will continue to make a contribution without the need for oppressive arboricultural intervention, categorised in years as <10, 10-20, 20-40 and >40;
BS CAT.	-	BS5837 tree quality assessment category: resulting from structural/physiological condition and remaining contribution (approximate useful life expectancy);
	-	Standard retention category **U**: in such a condition that any existing value would be lost within 10 years;
	-	Standard retention category **A**: high quality and value, in such a condition as to be able to make substantial contribution of 40+ years;
	-	Standard retention category **B**: moderate quality and value, in such a condition as to make a significant contribution of 20+ years;
	-	Standard retention category **C**: low quality and value, currently in adequate condition to remain until new planting could be established 10+ years;
	-	Standard retention sub-category, mainly due to: **1**- Arboricultural values, **2**- Landscape values, **3**- Cultural values, including conservation;
MANAGEMENT	-	Preliminary management recommendations (as appropriate);
' * '	-	Within the survey schedule denotes an estimate

TREE SURVEY IN ACCORDANCE WITH BRITISH STANDARD 5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION & CONSTRUCTION - RECOMMENDATIONS'

SITE: 15 Wedderburn Road, London, NW3 5QS (ref: 13891) ***ARBOR CONSULTANT:*** Andrew Turnbull MArborA

CLIENT: Mr Dan Wagner ***SURVEY DATE:*** 24 Jul 2013

TREE REF. #	SPECIES	AGE	HEIGHT (in m)	CANOPY (in m) N	S	E	W	STEM (in mm)	RPA (in m²)	CLEARANCE (in m)	LIFE & VITALITY	NOTES	BS CAT.	MANAGEMENT
T1	Apple; *Malus,. Rosaceae*	M	7	4.5	5	3	5	350	55	2 (1.5m - All)	Normal	Established free, good crop cover, maintained by pollard. Multiple stem at 1.5m+ with good regrowth but starting to encroach building. Only visible in garden.	C 3	Retain / replace tree cover as part of scheme.
G1	Mixed Border (Laurel, Choisya, Ivy, Apple Blossom, Pyracantha)	SM - M	5 - 7	/	/	/	/	/	/	0	Fair	Mixed shrub border pruned laterally to encourage height and screening. Located in retaining wall border and around raised patio.	C 3	Retain / replace functional screen as part of scheme.
T2	Laurel; *Laurus, Lauraceae*	SM	5.5	3	1	2	1	130	8	1	Fair	Lapsed planting, likely for formal cover but height encouraged for screen, collective growth.	U	Consider removal.
T3	Cherry; *Prunus, Rosaceae*	M	5	0.5	1	2	0	260	31	1.5	Very Poor	Almost dead.	U	Consider removal.
T4	Laurel; *Laurus, Lauraceae*	M	6	2	2	2	1.5	190	16	1	Fair	Lapsed planting, likely for formal cover but height encouraged for screen, collective growth. Dieback in crown.	U	Consider removal.
T5	*Cotoneaster, Rosaceae*	SM / M	8	2.5	3	2.5	3	120	7	0	Fair	Lapsed planting, likely for formal cover but height encouraged for screen, collective growth. Multiple stem base.	U	Consider removal.
G2	Mixed Shrub Border (Laurel, Cotoneaster, Ivy, Virginia Creeper)	SM / M	5 - 8	/	/	/	/	/	/	0	Fair	Contains T2 - T5, collective canopy, informal provides screening and blends with Ivy covered wall.	U	Consider removal.
T6	Crab Apple; *Malus, Rosaceae*	LM	9.5	4	6	5	7	440	88	2.5 (2m - All)	Normal	Multiple stem at 2m, growing with paved RPA close to wall and house. Slight balcony overhang, multiple stem crown with some branch conflicts. Decay at old pruning points just above multiple stem union, previously reduced.	C 3	Retain (25% reduction required for risk management) or replace tree cover as part of scheme.
G3	Cypress x3	Y / SM	4 - 5	/	/	/	/	/	/	1	Fair	3x small stems grow as collective and provide buffer to wall and screening. Limited future contribution.	C 2	Not to guide or constrain the layout - simple replacement landscaping required.
T7	*Cotoneaster, Rosaceae*	M	9.5	4.5	3	5	2.5	184	15	1.5	Fair	Co-dominant at 0.5-1.0m, congested crown from reaction growth, growth lean and low quality form. (Multiple stems measured 120, 240mm).	C 2	Not to guide or constrain the layout - replacement planting required (ornamental).
T8	Cherry; *Prunus, Rosaceae*	M / LM	14	4.5	4.5	4	3.5	334	50	4 (6m - N)	Fair	Co-dominant base, located in shrub border. Previous branch reduction noted in parts, sparse crown and stem scarring on largest stem. (Multiple stem 210, 260mm).	C 2	Retain (monitor tree's condition for risk management) or replace tree cover as part of scheme.
T9	Cherry; *Prunus, Rosaceae*	M	6.5	0.5	4.5	1	4	250	28	2.5 (2m - SW)	Fair	Multiple stem at 2m, maintained by pollard with average form and regrowth. Suppressed by T8.	C 2	Not to guide or constrain the layout - replacement planting required (ornamental).
T10	Thorn; *Cretaegus, Rosaceae*	SM / M	8	2.5	2.5	3.5	3	140	9	1.5	Normal	Multiple stem crown, fairly congested from regrowth after crown reduction.	C 3	Not to guide or constrain the layout - replacement planting required (ornamental).
T11	Ornamental Cherry; *Prunus, Rosaceae*	Y / SM	6	2.5	2	2	1.5	80	3	1.5	Normal	Multiple stem crown, established, fair form and small scale.	C 3	Not to guide or constrain the layout - replacement planting required (ornamental).
T12	Mespil; *Amelanchier, Rosaceae*	SM	4.5	2	2.5	2	1.5	80	3	1	Normal	Multiple stem stock at base, located in planter with good form and canopy cover, small scale.	C 3	Not to guide or constrain the layout - replacement planting required (ornamental).
T13	Crab Apple; *Malus, Rosaceae*	M	9	3.5	4	3.5	3.5	185	15	3.5	Normal	Central to block paved driveway, co-dominant at 3-5m with good form and canopy cover from growth at base.	C 3	Not to guide or constrain the layout - replacement planting required (ornamental).
T14	Golden Chain; *Laburnum, Fabaceae*	SM /M	4.5	1	3	1.5	2	260	31	1.5 (2.5m - NE)	Fair	Growing in confined conditions, suppressed by T13.	U	Consider removal.
T15	Street Tree: Lime; *Tilia, Tiliaceae*	Y	8	2	2.5	2	2	95	4	2.5	Normal	Established young street planting with stem damage and stub at 2.0-2.5m.	C 1 / 3	Local Authority managed.
T16	Street Tree: Lime; *Tilia, Tiliaceae*	M	20	5	4	4.5	4	630	180	2.5 (6m - S)	Normal	Multiple stem at 3.5m, maintained by pollard, good canopy form and leaf cover.	A 2	Local Authority managed.
T17	Street Tree: Lime; *Tilia, Tiliaceae*	M	20	6	5	6	4.5	580	152	2.5 (6m - All)	Normal	Multiple stem at 5-6m, maintained by pollard, good canopy form and leaf cover.	A 2	Local Authority managed.
T18	Sycamore; *Acer, Aceraceae*	SM / M	16	5.5	5	5	5.5	520	122	4 (5m - All)	Normal	Multiple stem at 6-7m, maintained by pollard with fairly uniform but congested crown from regenerative growth.	A 2	Local Authority managed.



Indicative

KEY

- Tree Crown Spread
- Root Protection Area (RPA)
- Tree Stem
- T1 Tree No.

Tree Condition Category

- A
- B
- C
- U

The surveyed trees are illustrated on this Constraints Plan which is prepared in accordance with British Standard BS5837: 2012 'Trees in Relation to Design, Demolition and Construction – Recommendations'

0 5m

DO NOT SCALE FROM DRAWING

The original of this drawing was produced in colour – a monochrome copy should not be relied upon.

REV.	DESCRIPTION	DWN	CHK'D	DATE

CLIENT
Mr Dan Wagner

PROJECT
13891
15 Weddersburn Road,
London, NW3 5QS

TITLE
Tree Constraints Plan

DWN	DATE	CHK'D	DATE	APP'D	DATE	SCALE
RCK	26/07/2013	AE	29/07/2013			1:200

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