Landmark Trees

ARBORICULTURAL IMPACT ASSESSMENT REPORT:

Proposed Flats

10a Oakhill Avenue

London

NW3 7RE

REPORT PREPARED FOR:

Eli Nathenson

C/o Martin Evans Architects

18 Charlotte Road

London,

EC2A 3PB

REPORT PREPARED BY

Adam Hollis

MSc ARB MICFor FArbor A MRICS C Env

Ref: MEA/10aOA /AIA/03

Date: 7th February 2014

APPENDICES

Caveats

This report is primarily an arboricultural report. Whilst comments relating to matters involving built structures or soil data may appear, any opinion thus expressed should be viewed as qualified, and confirmation from an appropriately qualified professional sought. Such points are usually clearly identified within the body of the report. It is not a full safety survey or subsidence risk assessment survey. These services can be provided but a further fee would be payable. Where matters of tree condition with a safety implication are noted during a survey they will of course appear in the report.

A tree survey is generally considered invalid in planning terms after 2 years, but changes in tree condition may occur at any time, particularly after acute (e.g. storm events) or prolonged (e.g. drought) environmental stresses or injuries (e.g. root severance). Routine surveys at different times of the year and within two - three years of each other (subject to the incidence of the above stresses) are recommended for the health and safety management of trees remote from highways or busy access routes. Annual surveys are recommended for the latter.

Tree works recommendations are found in the Appendices to this report. It is assumed, unless otherwise stated ("ASAP" or "Option to") that all husbandry recommendations will be carried out within 6 months of the report's first issue. Clearly, works required to facilitate development will not be required if the application is shelved or refused. However, necessary husbandry work should not be shelved with the application and should be brought to the attention of the person responsible, by the applicant, if different. Under the Occupiers Liability Act of 1957, the owner (or his agent) of a tree is charged with the due care of protecting persons and property from foreseeable damage and injury.' He is responsible for damage and/or nuisance arising from all parts of the tree, including roots and branches, regardless of the property on which they occur. He also has a duty under The Health and Safety at Work Act 1974 to provide a safe place of work, during construction. Tree works should only be carried out with local authority consent, where applicable.

Inherent in a tree survey is assessment of the risk associated with trees close to people and their property. Most human activities involve a degree of risk, such risks being commonly accepted if the associated benefits are perceived to be commensurate.

Risks associated with trees tend to increase with the age of the trees concerned, but so do many of the benefits. It will be appreciated, and deemed to be accepted by the client, that the formulation of recommendations for all management of trees will be guided by the cost-benefit analysis (in terms of amenity), of tree work that would remove all risk of tree related damage.

Prior to the commencement of any tree works, an ecological assessment of specific trees may be required to ascertain whether protected species (e.g. bats, badgers and invertebrates etc.) may be affected.

Tree Constraints & Protection Overview

Client:	Eli Nathenson C/o Martin Evans Architects	**Case Ref:**	MEA/10aOA/AIA/03
Local Authority:	LB Camden	**Date:**	7th February 2014
Site Address: 10a Oakhill Avenue, London NW3 7RE			
Proposal: Extension to existing property including basement to provide new residential flats.			

Report Checklist	**Y/N**		**Y/N**
Arboricultural constraints on site	Y	Trees removal proposed	
Tree Survey	Y	Topographical Survey	
BS5837 Report	Y	Conservation Area	Y
Tree Preservation Orders	N/k		
Tree Protection Plan:	N/a	(Include in future method statement)	
Tree Constraints Plan:			
Arboricultural Impact Assessment:			

Site Layout					
Site Visit	Y	Date: 02/05/13		Access Full/Partial/None	F
Trees on Site			Y	Off-site Trees	Y
Trees affected by development			Y	O/s trees affected by development	Y
Tree replacement proposed:			Y	On or off-site trees indirectly affected by development	N

Trees with the potential to be affected

Fell **G10** ('C' category cypress hedge) and **T2** (category 'C' cypress)

T1: category 'B' oak (LGF encroachment to RPA - 5.4%) low impact reduced further by manhole and change in levels.

T3: category 'B' oak (new steps & demolition of existing steps) low impact.

T8 : category 'B' oak (new LGF encroachment to RPA - 3.9%) low impact reduced further by manhole and change in levels.

T11 : category 'B' oak (new LGF encroachment to RPA – 2%) low impact.

T12: category C WRC (new LGF encroachment to RPA – 22%) Trial pits to confirm low root colonisation; cut back to reduce canopy encroachment.

T16: category B silver birch: (new LGF encroachment to RPA – 6%)

T27: category 'B' oak (new LGF/GF encroachments including lightwell - 4.2%) low impact.

T18 - T21, T25 - T27: (removal of hard landscaping features including path/wall path – possible ground raising)

Comments

T14 ('U' category birch) and T23 ('U' category hawthorn) to be removed for good arboricultural practice

Recommendations

1	Proposal will mean the loss of important trees (TPO/CA)	N
2	Proposal has sufficient amelioration for tree loss	Y
3	Proposals provide adequate tree protection measures	Y
4	Proposal will mean retained trees are too close to buildings	N
5	Specialist demolition / construction techniques required	N
6	The Proposal will result in significant root damage to retained trees	N
7	Further investigation of tree condition recommended	Y

RPA= Root Protection Area
TPP= Tree Protection Plan
AMS= Arboricultural Method Statement
AIA = Arboricultural Implication Assessment
BS5837: 2012 'Trees in relation to design, demolition and construction – Recommendations'

1. SUMMARY

1.1 This report comprises an arboricultural impact assessment of the revised proposals for 10a Oakhill Avenue, London NW3 7RE, reviewing any conflicts between the revised scheme for flats and material tree constraints identified in our survey.

1.2 There are 27 trees surveyed on or around the site, of which 1 is category 'A' (High Quality), 10 are 'B' category *(Moderate Quality), 13 'C' category *(Low Quality), 1 'C/u' category (Low Quality/Unsuitable for retention) and 2 'U' category *(Unsuitable for Retention). In theory, only moderate quality trees and above are significant material constraints on development. However, the low quality trees will comprise a constraint in aggregate, in terms of at least, replacement planting.

1.3 The primary impacts in the current proposals are very similar to the previous scheme for flats on this site. They comprise the felling of two category 'C' trees/ groups (G10 Leyland cypress hedge and T2 Leyland cypress). These rate as low impacts with no significant effect on the visual character of the local conservation area. Further low impacts from the extension of the lower ground floor (LGF) occur to the theoretical RPA's of category 'B' trees T1 (5.4%), T8 (3.9%), T16 (6%) and T27 (4.2%), with theoretical medium impacts to T12 (22%). These theoretical encroachments are reduced further in practice by existing site limitations such as changes in level and drainage (as indicated by manhole covers within the RPA). T3 may also incur theoretical impacts from the removal of the existing step and replacement with new; level differences in the site will have significantly affected the root colonisation of this tree. Thus, the primary impacts are likely to be very low/low, given sufficient site investigations and mitigation: the foundations and existing hard-standing within the RPA's should be manually excavated, with any roots found pre-emptively pruned; roots over 25mm should be pruned under arboricultural supervision. Trial pits are recommended to further assess actual RPA encroachments.

1.4 The proposed hard landscaping works will affect trees T18 - T21, T25 - T27, with the removal of existing hard landscaping features such as retaining walls and paths, in addition to the potential raising of the ground levels within the RPA of these trees. Providing the walls are removed carefully and the ground levels raised with course granular material without disturbing the roots below the existing surfaces, the impact will be low.

1.5 The canopy of T12 (a category 'C' western red cedar) will require cutting back to the boundary facilitate construction of the new elevation. The impact to the tree will be moderate, but to the public, very low.

1.6 Secondary impacts from the new elevation require pruning of T12 to maintain convenient canopy clearance. Other minor secondary impacts include shading and leaf deposition (particularly lightwells). The secondary impacts can be mitigated by room layout and simple cleaning maintenance. However, the current site orientation is unchanged and therefore, there is little alteration of the status quo; i.e. negligible secondary impact arising from development itself.

1.7 The site has potential for development without impacting significantly on the wider tree population or local landscape. Thus, with suitable mitigation and supervision the scheme is viable.

* British Standards Institute: Trees in relation to design, demolition and construction BS 5837: 2012 HMSO, London

2. INTRODUCTION

2.1 Terms of reference

2.1.1 LANDMARK TREES were asked by Eli Nathenson C/o Martin Evans Architects to provide a survey and an arboricultural impact assessment of proposals for the site: 10a Oakhill Avenue, London NW3 7RE. The report is to accompany a planning application.

2.1.2 The revised proposals are for the extension of the existing residential building including the basement to provide new residential flats. This report will assess the impact on the trees and their constraints, identified in our survey. Although the proposals were known at the time of the survey, Landmark Trees endeavour to survey each site blind, working from a topographical survey, wherever possible, with the constraints plan informing their evolution.

2.1.3 I am a Registered Consultant and Fellow of the Arboricultural Association and a Chartered Forester, with a Masters Degree in Arboriculture and 25 years experience of the landscape industry - including the Forestry Commission and Agricultural Development and Advisory Service. I am a UK Registered Expert Witness, trained in single joint expert witness duties. I am also Chairman of the UK & I Regional Plant Appraisal Committee, inaugurated to promote international standards of valuation in arboriculture.

2.2 Drawings supplied

2.2.1 The drawings supplied by the client and relied upon by Landmark Trees in the formulation of our survey plans are:

Existing site survey: 95274- 10A OakhillAvenue-SiteSurvey

Proposals: Z_LG A1 & Z_UG A1

2.3 Scope of survey

2.3.1 As Landmark Trees' (LT) arboricultural consultant, I surveyed the trees on site on 2nd May 2013, recording relevant qualitative data in order to assess both their suitability for retention and their constraints upon the site, in accordance with British Standard 5837:2012 Trees in relation to design, demolition and construction – Recommendations [BS5837:2012].

2.3.2 Our survey of the trees, the soils and any other factors, is of a preliminary nature. The trees were SURVEYED on the basis of the Visual Tree Assessment method expounded by Mattheck and Breloer (The Body Language of Trees, DoE booklet Research for Amenity Trees No. 4, 1994). LT have not taken any samples for analysis and the trees were not climbed, but inspected from ground level.

2.3.3 A tree survey is generally considered invalid in planning terms after 2 years, but changes in tree condition may occur at any time, particularly after acute (e.g. storm events) or prolonged (e.g. drought) environmental stresses or injuries (e.g. root severance). Routine surveys at different times of the year and within two - three years of each other (subject to the incidence of the above stresses) are recommended for the health and safety management of trees remote from highways or busy access routes. Annual surveys are recommended for the latter.

2.3.4 The survey does not cover the arrangements that may be required in connection with the laying or removal of underground services.

2.4 Survey data & report layout

2.4.1 Detailed records of individual trees are given in the survey schedule in Appendix 1 to this report.

2.4.2 A site plan identifying the surveyed trees, based on the client's drawings / topographical survey is provided in Appendix 5.

2.4.3 This plan also serves as the Tree Constraints Plan with the theoretical Recommended Protection Areas (RPA's), tree canopies and shade constraints, (from BS5837: 2012) overlain onto it. These constraints are then overlain in turn onto the client's proposals to create an Arboricultural Impact Assessment Plan in Appendix 6. General observations and discussion follow, below.

3.0 OBSERVATIONS

3.1 Site description

Photograph 1: 10a Oakhill Avenue, London NW3 7RE looking Northwest (Source: Google Maps)

3.1.1 The site at 10a Oakhill Avenue comprises an existing detached residential dwelling, situated on the north western side of the Avenue. Due to the local topography, the property has various level differences between the neighbouring properties and within the site itself. There is a split level front garden with two basement garage entrances and areas containing trees/scrub. The rear garden is relatively large with landscaped features including paths and hard standings.

3.1.2 The site levels vary over 2 metres in height across the site and between the neighbouring properties.

3.1.3 In terms of the British Geological Survey, the site overlies the Claygate Member / Beds (see dark area on plan extract overleaf). As the youngest part of the London Clay, they form a transition between the clay and the sandier Bagshot Beds above (shown in yellow). Unlike the Bagshot Beds, more typical of Hampstead Heath, the associated soils are generally, highly shrinkable clay; e.g. slowly permeable seasonally waterlogged fine loam over clay. Such highly plastic soils are prone to movement: subsidence and heave.

3.1.4 The actual limits of soil series are not as clearly defined on the ground as on plan and there may be anomalies between them. Further advice from the relevant experts on the specific soil properties can be sought as necessary.

3.1.5	Clay soils are prone to compaction during development. Damage to soil structure can have a serious impact on tree health. Design of foundations near problematic tree species will also need to take into consideration subsidence risk.

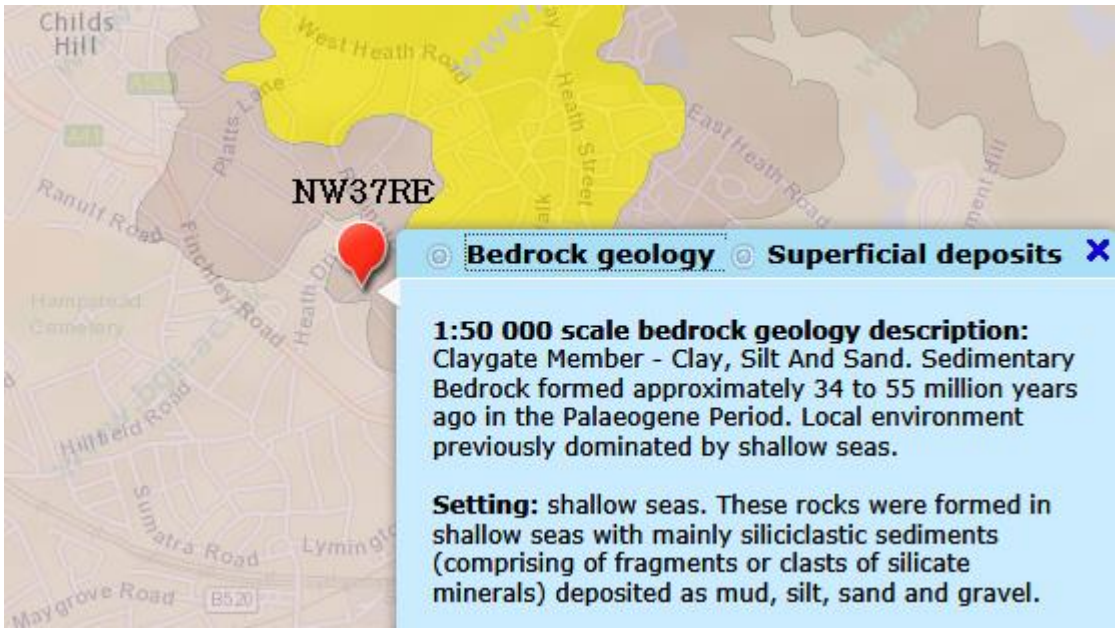

Figure 1: Extract from the BGS Geology of Britain Viewer

3.2 Subject trees

3.2.1	Of the 27 surveyed trees 1 is category 'A' (High Quality), 10 are 'B' category (Moderate Quality), 13 are 'C' category (Low Quality) trees, 1 is a 'C/u' category and 2 are 'U' category trees (Unsuitable for Retention).
3.2.2	The tree species found on site comprise mainly oak, beech, silver birch and cypress, with other species including hawthorn, western red cedar, laurel, ash and sycamore.
3.2.3	In terms of age demographics there is a preponderance of mature trees on the site with few younger, replacement trees in the population.

3.2.4	Full details of the surveyed trees can be found in Appendix 1 of this report.
3.2.5	There are some arboricultural works required within the existing tree population. These are listed in Appendix 2. It is important to note that T14 and T23 are classified as 'U' category and require felling for good arboricultural practice.

3.3 Planning Status

3.3.1	We are not aware of the existence of any Tree Preservation Orders, although it is recommended that confirmation is sort from the Tree Preservation Team in Camden Council. The site stands within the Redington and Frognal Conservation Area, which will affect the subject trees: it is a criminal offence to prune, damage or fell such trees without permission from the local authority.

4.0 DEVELOPMENT CONSTRAINTS

4.1 Primary constraints

4.1.1 BS5837: 2012 gives Recommended Protection Areas (RPA's) for any given tree size. The individual RPA's are calculated in the Tree Schedule in Appendix 1 to this report, or rather the notional radius of that RPA, based on a circular protection zone. The prescribed radius is 12-x stem diameter at 1.5m above ground level, except where composite formulae are used in the case of multi-stemmed trees.

4.1.2 Circular RPA's are appropriate for individual specimen trees grown freely, but where there is ground disturbance, the morphology of the RPA can be modified to an alternative polygon, as shown in the diagram below (Figure 2). Alternatively, one need principally remember that RPA's are area-based and not linear – notional rather than fixed entities. **No modifications have been made in this instance (please see overleaf).**

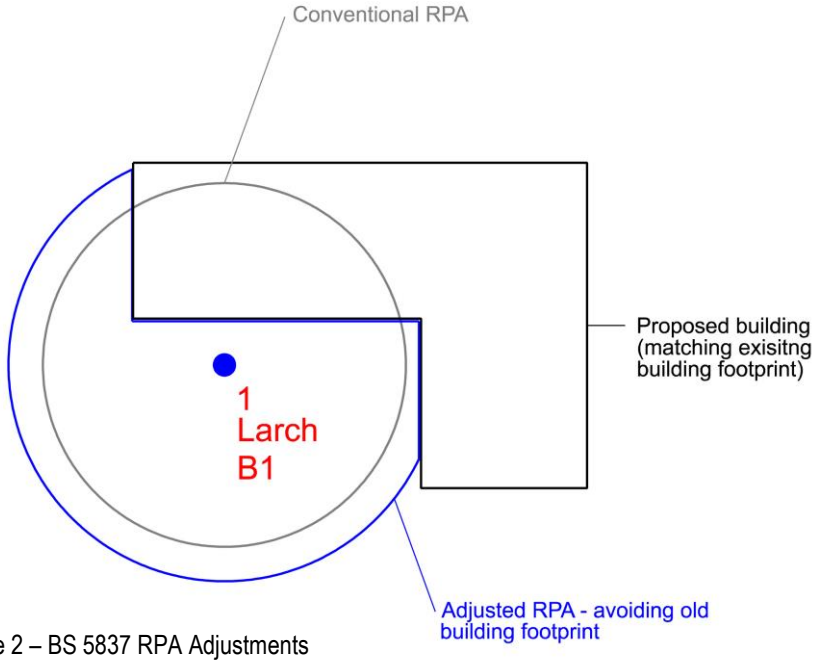

Figure 2 – BS 5837 RPA Adjustments

4.1.3 In BS5837, paragraph 4.6.2 states that RPA's should reflect the morphology and disposition of the roots; where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area should be produced. Modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution. Not infrequently, LT are requested by LPA Tree Officers to modify the RPA's to reflect their assumptions that e.g. a road will have drastically limited root growth.

4.1.4 Such assumptions cannot be proved without prior site investigations / trial pits. Where it is not always possible to conduct site investigations (e.g. below busy roads), we can always look to the published science. There seems little support for the popular myth that roads and services will curb root growth: research for the International Society of Arboriculture by Kopinga J (ISA 1994), found that "a constant high moisture content of the soil directly underneath the pavement surface can be considered as a major soil factor in attracting the trees' roots to develop there." By contrast, grass in lawns may actively antagonise tree roots with natural pathogens. Similarly, Professor F Miller (ISA 1994) found that service trenches at > 3m distances from trees had minimal impact on growth or crown shape.

4.1.5 A key misunderstanding, even among professionals, is that we conflate the RPA with the actual root system: RPA's are *prima facie* a notion / convention / treaty and almost entirely theoretical, but readily calculable. Conversely roots are a "known unknown," spatial entity that we predict at our folly. Yet, many are quick to do so.

4.1.6 LT favour the neutrality of a circular RPA, because in a difference of opinion, the tree officer will always have the prerogative to dictate the final modification of shape. With the best will in the world, the free allowance of modifications will tend to lead to inequitable outcomes, prejudicing the applicant and the practice is in our view, best avoided. The neutral circle dispenses with this inequity.

4.1.7 Ultimately, the point of the circular RPA is to illustrate areas of concern. The purpose of this report is to consider areas of concern (not to modify them to suit our argument or findings). Therefore, no modifications are made here to the RPA's, regardless of roads etc.

4.1.8 The quality of trees will also be a consideration: U Category trees are discounted from the planning process in view of their limited service life. Again, Category-C trees would not normally constrain development individually, unless they provide some external screening function. As discrete, internal trees, their removal will not affect the wooded envelope that encloses much of the site.

4.1.9 At paragraph 5.1.1. BS5837: 2012 notes that "Care should be exercised over misplaced tree preservation; attempts to retain too many or unsuitable trees on a site are liable to result in excessive pressure on the trees during demolition or construction work, or post-completion demands on their removal."

4.1.10 In theory, only moderate quality trees and above are significant material constraints on development. However, the low quality trees will comprise a constraint in aggregate, in terms of at least, replacement planting.

4.1.11 In this instance, there are potentially significant primary constraints from on-site and off-site trees. The varying site levels, existing hardstanding and drainage will have an impact on the significance of these constraints, as these factors will have affected the rooting distribution across the site.

4.2 Secondary Constraints

4.2.1 The second type of constraint produced by trees that are to be retained is that the proximity of the proposed development to the trees should not threaten their future with ever increasing demands for tree surgery or felling to remove nuisance shading (Figure 3), honeydew deposition or perceived risk of harm.

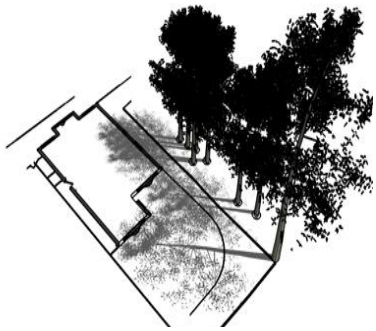

Figure 3 – Shading Constraints

4.2.2 The shading constraints are crudely determined from BS5837 by drawing an arc from northwest to east of the stem base at a distance equal to the height of the tree, as shown in the diagram opposite. Shade is less of a constraint on non-residential developments, particularly where rooms are only ever temporarily occupied.

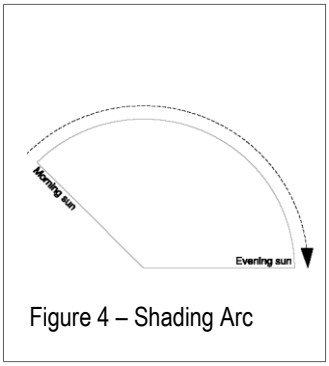

Figure 4 – Shading Arc

4.2.3 This arc (see Figure 4) represents the effects that a tree will have on layout through shade, based on shadow patterns of 1x tree height for a period May to Sept inclusive 10.00-18.00 hrs daily.

4.2.4	The trees on and around the site have the potential to provide a variety of secondary constraints, including shading, organic deposition and the potential need to maintain crown clearance in the future. The significance of these constraints will vary depending on the location and proximity to the proposed re-development.

Note: Sections 5 & 6 will now assess the impacts upon constraints identified in Section 4. Table 1 in Section 5 presents the impacts in tabular form (drawing upon survey data presented in Appendices 1 & 2). Impacts are presented in terms of whole tree removal and the effect on the landscape or partial encroachment (% of RPA) and its effect on individual tree health. Section 6 discusses the table data, elaborating upon the impacts' significance and mitigation.

5.0 Table 1: Arboricultural Impact Assessment

Hide irrelevant | Show All Trees

(Impacts assessed prior to mitigation and rated with reference to From Matheny & Clark (1998))

Ref: MEA/10aOA/AIA

B.S. Cat.	Tree No.	Species	Impact	Tree / RPA Affected	Age	Growth Vitality	Species Tolerance	Impact on Tree Rating	Impact on Site Rating	Mitigation
B	1	Oak, English	LGF: 15.5m2 (4.5%) - all exist. building/hard standing Positive impact from removal of exist. hard standing	15.5 m^2 4.53 %	Mature	Normal	Moderate/ good	Very Low	N/A	Airspade / manual excavation Pre-emptive root pruning
C	2	Cypress, Leyland	Felled to Facilitate Development	m^2 N/A %	Semi-mature	Normal	N/A	N/A	Low	New planting / landscaping
B	3	Oak, English	LGF: 56m2 (15%) - all exist. building. Removal of steps/ hard surface	0 m^2 0 %	Mature	Moderate	Moderate/ good	Low	N/A	Manual excavation & pre-emptive root pruning Porous replacement surfaces/ landscaping
B	8	Oak, English	LGF: 19.2m2 (5.1%) - all exist. building/hard standing External stairs/new steps - all existing 14.3m2 (3.8%)	0 m^2 0 %	Mature	Normal	Moderate/ good	Low	N/A	Manual excavation Manual excavation/ pre-emptive root pruning
C	H9	Leyland / Privet	Cut back to facilitate construction	m^2 N/A %	Young	Normal	Good	Very Low	N/A	Remedial tree surgery (see Rec. Works)
C	G10	Cypress, Leyland	Felled to Facilitate Development	m^2 N/A %	Semi-mature	Normal	N/A	N/A	Very Low	New planting / landscaping

5.0 Table 1: Arboricultural Impact Assessment

Hide irrelevant | Show All Trees

(Impacts assessed prior to mitigation and rated with reference to From Matheny & Clark (1998))

Ref: MEA/10aOA/AIA

B.S. Cat.	Tree No.	Species	Impact	Tree / RPA Affected	Age	Growth Vitality	Species Tolerance	Impact on Tree Rating	Impact on Site Rating	Mitigation
B	11	Oak, English	Demolition of existing shed/hard standing LGF: 1m2	1 m^2 1.96 %	Early Mature	Normal	Moderate/ good	Very Low	N/A	Manual demolition/excavation Manual excavation & pre-emptive root pruning
C	12	Western Red Cedar	Removal of existing hard standing/flower beds (canopy 1.5m clearance) LGF: 4.5m2 (22%) GF: 2m2	4.5 m^2 21.57 %	Semi-mature	Normal	Good	Medium	N/A	Remedial tree surgery (see Rec. Works)/manual excavation Trial pits / further investigation
B	16	Birch, Silver	LGF: 2.5m2 (including new steps) Landscaping	2.5 m^2 6.14 %	Semi-mature	Normal	Moderate/ poor	Low	N/A	Manual excavation & pre-emptive root pruning No-dig construction
B	18	Beech, Common	Landscaping only - wall demolition within RPA Possible ground level raising within RPA	m^2 N/A %	Semi-mature	Normal	Moderate	Low	N/A	Manual demolition Course, granular material used to raise levels by hand
B	19	Beech, Common	Landscaping only - wall demolition within RPA Possible ground level raising within RPA	m^2 N/A %	Early Mature	Normal	Moderate	Low	N/A	Manual demolition Course, granular material used to raise levels by hand
B	20	Beech, Common	Landscaping only - wall demolition within RPA Possible ground level raising within RPA	m^2 N/A %	Early Mature	Normal	Moderate	Low	N/A	Manual demolition Course, granular material used to raise levels by hand

5.0 Table 1: Arboricultural Impact Assessment

Hide irrelevant | Show All Trees

(Impacts assessed prior to mitigation and rated with reference to From Matheny & Clark (1998))

Ref: MEA/10aOA/AIA

B.S. Cat.	Tree No.	Species	Impact	Tree / RPA Affected	Age	Growth Vitality	Species Tolerance	Impact on Tree Rating	Impact on Site Rating	Mitigation
A	21	Oak, Red	Landscaping only - removal of stone path 1.5m2 (0.2%) Possible ground level raising within RPA	1.5 m^2 .15 % 	Post-Mature	Normal	Moderate/ good	Low	N/A	Manual demolition Course, granular material used to raise levels by hand
C/u	25	Maple, Norway	Landscaping only: wall demolition within RPA Possible ground level raising within RPA	m^2 N/A % 	Semi-mature	Moderate	Moderate	Low	N/A	Manual demolition Course, granular material used to raise levels by hand
C	26	Cypress, Lawson variety	Landscaping only: wall demolition within RPA Possible ground level raising within RPA	m^2 N/A % 	Young	Normal	Good	Low	N/A	Manual demolition Course, granular material used to raise levels by hand
B	27	Oak, English	Landscaping only: 2.5m2 (0.6%) Wall demo/levels raised	20 m^2 4.42 %	Mature	Normal	Moderate/ good	Very Low	N/A	Pre-emptive root pruning Airspade / Manual demolition Course, granular material used to raise levels by hand

6.0 DISCUSSION

6.1 Rating of Primary Impacts

6.1.1 The principal impacts in the current proposals are the removal of trees G10 ('C' category cypress hedge) and T2 (category 'C' cypress). These rate low impacts with no significant effect on the visual character of the local conservation area. T14 is within close proximity to the proposed redevelopment area, but is to be removed on the grounds of good arboricultural practice (as a Category U specimen). These rate as low impacts with no significant effect on the visual character of the local conservation area. Further low impacts from the extension of the lower ground floor (LGF) occur to the theoretical RPA's of category 'B' trees T1 (5.4%), T8 (3.9%), T16 (6%) and T27 (4.2%), with theoretical medium impacts to T12 (22%). These theoretical encroachments are reduced further in practice by existing site limitations such as changes in level and drainage (as indicated by manhole covers within the RPA). T3 may also incur theoretical impacts from the removal of the existing step and replacement with new; level differences in the site will have significantly affected the root colonisation of this tree. Thus, the primary impacts are likely to be very low/low, given sufficient site investigations and mitigation: the foundations and existing hard-standing within the RPA's should be manually excavated, with any roots found pre-emptively pruned; roots over 25mm should be pruned under arboricultural supervision. Trial pits are recommended to further assess actual RPA encroachments.

6.1.2 The principal of RPA encroachment is established within BS5837:2012 and supported by the source document, National Joint Utilities Guidelines 10 / Vol. 4 1995 / 2010. NJUG introduced the x12 diameter *Precautionary Zone* for supervised working and *Prohibited Zone* at a universal 1m from the base of the tree. RPA's are frequently confused with the NJUG Prohibited Zone, when they clearly correlate with the NJUG Precautionary Zone.

6.1.3 An RPA encroachment of <20% of RPA may be considered as low impact, given the permissive references to 20% RPA relocation and impermeable paving within BS5837:2012 and other published references to healthy trees tolerating up to 30-50% root severance (Coder, Helliwell and Watson in CEH 2006). The trees in question are healthy specimens of species with a good resistance to development impacts, and quite capable of tolerating these low impacts.

6.1.4 "**In practice 50% of roots can sometimes be removed with little problem**, provided there are vigorous roots elsewhere. Inevitably, this degree of root loss will temporarily slow canopy growth and even lead to some dieback" (Thomas 2000). LT do not recommend annexing such high proportions of the root system; rather that within the context of the published science, planning should not be unduly concerned by impacts that are well below the subcritical threshold – *tree health is not at stake.*

6.2 Rating of Secondary impacts

6.2.1 The principal, secondary impact would be the encroachment of T12, which will need to be cut back on a routine basis following the initial works to facilitate construction. This is a negligible public impact, as the conifer is out of sight from the road.

6.2.2 In addition, shading impacts occur will occur from the on and off-site trees, particularly T1, T3 and T8. However, these constraints are similar to the situation that exists today and can be mitigated. Development will not create significant, new impacts.

6.2.3 Organic deposition will also be a factor on this site, although mitigation will minimise this secondary impact to similar levels currently experienced by the existing property.

6.3 Mitigation of Impacts

6.3.1 All plant and vehicles engaged in demolition works should either operate outside the RPA, or should run on a temporary surface designed to protect the underlying soil structure. Hard surfacing and walls, including the steps within the RPA of T3, should be lifted with caution by hand or a skilled machine operator working away from the tree. The final position of the new steps within the RPA of T3 should be determined by trial pits and constructed with shallow excavation only.

6.3.2 RPA piling / foundation encroachments will be pre-emptively excavated by hand or with an Airspade under arboricultural supervision. Roots smaller then 25mm diameter may be cut cleanly with a sharp pruning saw or secateurs back to a junction. Roots larger than 25mm diameter may only be cut in consultation with an arboriculturalist. Trial excavation of the key encroachments is recommended prior to the works to better assess the extent of root colonisation across the site.

6.3.3	Any replacement paving/hard landscaping within an RPA will require a no-dig construction technique, either using a cellular confinement system with no fines aggregate for the sub-base or simply building upon the existing sub-base without disturbing the ground below. Any ground level raising will require a course granular material within the RPA of any retained tree. The key principle is not to excavate in the presence of roots and to provide a porous surface to promote healthy soil water relations for future root growth.
6.3.4	Nuisance deposition can be mitigated with regular crown cleaning and filtration traps on the guttering (see Figure 5 below). Alternatively, a green roof construction might be considered.
6.3.5	The shading impacts can be mitigated by building design, with the provision of dual aspect windows and choice of room layout. Some minor crown reduction may be necessary, but not such as to impose a burden of frequent, repetitive management.
6.3.6	The landscape impact of tree losses can be offset by the landscape proposals, ideally involving new planting of ornamental varieties of native species, and where appropriate with columnar or compact form. A selection of columnar tree species cultivars for constricted sites is provided in Appendix 4.

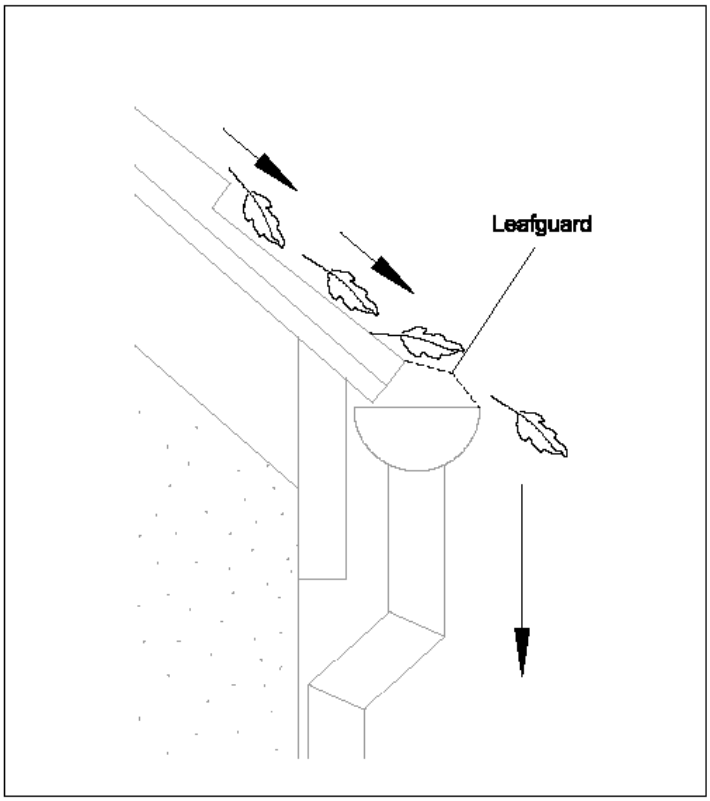

Figure 5: Filtration traps, as shown above, could be fitted on the gutters which can easily be maintained at 2-3m above ground.

7.0 CONCLUSION

7.1 The potential impacts of development are all relatively low in terms of both quality of trees removed and also RPA encroachments of trees retained. Trial pits would confirm the assumptions made as to level differences and their effect on root colonisation within the site.

7.2 The full potential of the impacts can be largely mitigated through design and precautionary measures. These measures can be elaborated in Method Statements in the discharge of planning conditions.

7.3 The species affected are generally tolerant of root disturbance / crown reduction and the retained trees are generally in good health and capable of sustaining these reduced impacts.

7.4 The trees that are recommended for felling are of little individual significance, such that their loss will not affect the visual character of the area.

7.5 Therefore, the proposals will not have any significant impact on either the retained trees or wider landscape.

8.0 RECOMMENDATIONS

8.1 Specific Recommendations

8.1.1 Current tree works recommendations are found in Appendix 2 to this report, with works to facilitate development in Appendix 3 and a selection of columnar tree species cultivars for constricted sites provided in Appendix 4. Any tree removals recommended within this report should only be carried out with local authority consent.

8.1.2 Excavation and construction impacts within the RPA's of trees identified in Table 1 above, will need to be controlled by method statements specifying mitigation methods suggested in para 6.3 above and by consultant supervision as necessary. These method statements can be provided as part of the discharge of conditions.

8.1.3 Replace felled trees with native ornamental nursery stock under current best practice; i.e. conforming to and planted in accordance with the following:

- BS 3936:1980 Nursery Stock;
- BS 4043:1966 Transplanting Semi-Mature Trees; and
- BS 5236:1975 Cultivation and Planting of Trees in the Advanced Nursery Stock Category.
- All replacement stock should be planted and maintained as detailed in BS 4428:1989 (Section 7): Recommendations for General Landscape Operations.

8.2 General Recommendations

8.2.1 Any trees which are in close proximity to the construction works should be protected with a Tree Protection Barrier (TPB). Where possible, this TPB should comprise steel, mesh panels 2.4m in height ('Heras') and should be mounted on a scaffolding frame (shown in Fig 2 of BS5837:2012). The position of the TPB can be shown on plan as part of the discharge of conditions, once the lay out is agreed with the planning authority. The TPB should be erected prior to commencement of works, remain in its original form on-site for the duration of works and removed only upon full completion of works.

8.2.2 A TPB may no longer be required during soft landscaping work but a full arboricultural assessment must be performed prior to the undertaking of any excavations within the RPA of a tree. This will inform a decision about the requirement of protection measures. It is important that all TPBs have permanent, weatherproof notices denying access to the RPA.

8.2.3 The use of heavy plant machinery for any demolition, removal of imported materials and grading of surfaces should take place in one operation. The necessary machinery should be located above the existing grade level and work away from any retained trees. This will ensure that any spoil is removed from the RPAs. Prior to the proposed garden level changes, it is vital that the original soil level is not lowered as this is likely to cause damage to the shallow root systems.

8.2.4 Any pruning works must be in accordance with British Standard 3998:2010 Tree work [BS3998].

8.2.5 The replacement steps within the RPA of T3 should be positioned by trial pits and shallow excavated. Where any other sections of hard surfacing are proposed in close proximity to trees, it is recommended that "No-Dig" surfacing be employed in accordance with BS5837:2012 and 'The Principles of Arboricultural Practice: Note 1, Driveways Close to Trees, AAIS 1996 [APN1]'.

8.2.6 If the RPA of a tree is encroached by underground service routes then BS5837:2012 and NJUG VOLUME 4 provisions should be employed. If it is deemed necessary, further arboricultural advice must be sought.

8.2.7 Numerous site activities are potentially damaging to trees e.g. parking, material storage, the use of plant machinery and all other sources of soil compaction. In operating plant, particular care is required to ensure that the operational arcs of excavation and lifting machinery, including their loads, do not physically damage trees when in use.

8.2.8 To enable the successful integration of the proposal with the retained trees, the following points will need to be taken into account:

1) Plan of underground services.
2) Schedule of tree protection measures, including the management of harmful substances.
3) Method statements for constructional variations regarding tree proximity (e.g. foundations, surfacing and scaffolding).
4) Site logistics plan to include storage, plant parking/stationing and materials handling.
5) Tree works: felling, required pruning and new planting. All works must be carried out by a competent arborist in accordance with BS3998.
6) Site supervision: the Site Agent must be nominated to be responsible for all arboricultural matters on site. This person must:
   - be present on site for the majority of the time;
   - be aware of the arboricultural responsibilities;
   - have the authority to stop work that is causing, or may cause harm to any tree;

- ensure all site operatives are aware of their responsibilities to the trees on site and the consequences of a failure to observe these responsibilities;
- make immediate contact with the local authority and/or a retained arboriculturalist in the event of any tree related problems occurring.

8.2.9 These points can be resolved and approved through consultation with the planning authority via their Arboricultural Officer.

8.2.10 The sequence of works should be as follows:

i) initial tree works: felling, stump grinding and pruning for working clearances;
ii) installation of TPB for demolition & construction;
iii) installation of underground services;
iv) installation of ground protection;
v) main construction;
vi) removal of TPB;
vii) soft landscaping.

9.0 REFERENCES

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APPENDIX 1

TREE SCHEDULE

Notes for Guidance:

1. Height describes the approximate height of the tree measured in metres from ground level.
2. The Crown Spread refers to the crown radius in meters from the stem centre and is expressed as an average of NSEW aspect if symmetrical.
3. Ground Clearance is the height in metres of crown clearance above adjacent ground level.
4. Stem Diameter (Dm) is the diameter of the stem measured in millimetres at 1.5m from ground level for single stemmed trees. BS 5837:2012 formula (Section 4.6) used to calculate diameter of multi-stemmed trees. Stem Diameter may be estimated where access is restricted and denoted by '#'.
5. Protection Multiplier is 12 and is the number used to calculate the tree's protection radius and area
6. Protection Radius is a radial distance measured from the trunk centre.
7. Growth Vitality - Normal growth, Moderate (below normal), Poor (sparse/weak), Dead (dead or dying tree).
8. Structural Condition - Good (no or only minor defects), Fair (remediable defects), Poor - Major defects present.
9. Landscape Contribution - High (prominent landscape feature), Medium (visible in landscape), Low (secluded/among other trees).
10. B.S. Cat refers to (British Standard 5837:2012 section 4.5) and refers to tree/group quality and value; 'A' – High, 'B' - Moderate, 'C' - Low, 'U' - Unsuitable for retention. The following colouring has been used on the site plans:
    - High Quality (A) (Green),
    - Moderate Quality (B) (Blue),
    - Low Quality (C) (Grey),
    - Unsuitable for Retention (U) (Red)
11. Sub Cat refers to the retention criteria values where 1 is Arboricultural, 2 is Landscape and 3 is Cultural including Conservational, Historic and Commemorative.
12. Useful Life is the tree's estimated remaining contribution in years.

Landmark Trees

Site: 10a Oakhill Avenue, London NW3 7RE

Date: 2nd May 2013

BS5837 Tree Constraints Survey Schedule

Landmark Trees Ltd
Tel: 020 7851 4544
Surveyor(s): Adam Hollis

Ref: MEA/10aOA/AIA

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Clear Stem Height	Stem Diameter	Age Class	Protection Radius	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
1	Oak, English	16	4545	12.0	10.0	870.0	Mature	10.4	Normal	Fair	B	3	>40	Pollard (Old) Cavity pockets in pruning wounds History of hard landscaping nr base; 2m retaining wall to East
2	Cypress, Leyland	6	3	1.0	1.0	300.0	Semi-mature	3.6	Normal	Fair	C	2	20-40	Pollarded
3	Oak, English	13	4536	4.0	4.0	910.0	Mature	10.9	Moderate	Poor	B	3	20-40	Pollard (Old) Cavity pockets in pruning wounds Basal cavity to 1m abg Roots against LGF garage
4	Ash, Common	8	2322	2.0	2.0	113.1	Young	1.4	Normal	Good	C	2	10-20	Unsuitable species for position RS
5	Magnolia (M. grandiflora)	6	3222	2.0	2.0	158.1	Young	1.9	Normal	Good	C	2	20-40	RS
6	Birch, Silver	12	2	2.0	2.0	120.0	Young	1.4	Normal	Good	C	2	10-20	Unsuitable species for position RS

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Tree No.	English Name	Height	Crown Spread	Ground Clearance	Clear Stem Height	Stem Diameter	Age Class	Protection Radius	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
7	Oak, English	10	4	4.0	4.0	130.0	Young	1.6	Normal	Good	C	2	>40	
8	Oak, English	17	6836	6.0	6.0	1000.0	Mature	12.0	Normal	Fair	B	3	>40	Pollard (Old) RS
H9	Leyland / Privet	3	1	1.0	1.0	50.0	Young	0.6	Normal	Good	C	2	20-40	
G10	Cypress, Leyland	7	1.5	2.0	2.0	270.0	Semi-mature	3.2	Normal	Fair	C	2	20-40	Pollarded
11	Oak, English	16	5354	6.0	6.0	335.4	Early Mature	4.0	Normal	Good	B	2	>40	RS
12	Western Red Cedar	9	4	1.5	1.5	214.7	Semi-mature	2.6	Normal	Fair	C	2	20-40	RS

Landmark Trees

Site: 10a Oakhill Avenue, London NW3 7RE

Date: 2nd May 2013

BS5837 Tree Constraints Survey Schedule

Landmark Trees Ltd
Tel: 020 7851 4544
Surveyor(s): Adam Hollis

Ref: MEA/10aOA/AIA

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Clear Stem Height	Stem Diameter	Age Class	Protection Radius	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
13	Birch, Silver	16	2	7.0	7.0	210.0	Semi-mature	2.5	Normal	Good	C	2	>40	RS
14	Birch, Silver	17	5432	6.0	4.0	310.0	Early Mature	3.7	Normal	Poor	U		<10	Break out wound with cavity in main stem / lost lead stem Pruning cavity at 5m NE
15	Sycamore	17	4424	4.0	4.0	300.0	Early Mature	3.6	Normal	Good	B	2	>40	RS
16	Birch, Silver	17	4321	4.0	4.0	300.0	Semi-mature	3.6	Normal	Good	B	2	20-40	Leaning (slightly) to S RS
17	Laurel, Portugese	6	3	1.0	1.0	212.1	Early Mature	2.5	Normal	Fair	C	2	20-40	Pollarded
18	Beech, Common	16	0	3.0	3.0	230.0	Semi-mature	2.8	Normal	Good	B	2	20-40	Root girdling by retaining wall Group canopy generated from T19

Landmark Trees

Site: 10a Oakhill Avenue, London NW3 7RE

Date: 2nd May 2013

BS5837 Tree Constraints Survey Schedule

Landmark Trees Ltd
Tel: 020 7851 4544
Surveyor(s): Adam Hollis

Ref: MEA/10aOA/AIA

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Clear Stem Height	Stem Diameter	Age Class	Protection Radius	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
19	Beech, Common	18	10	5.0	10.0	400.0	Early Mature	4.8	Normal	Good	B	2	20-40	Root girdling by retaining wall Group canopy generated from T19
20	Beech, Common	18	10	5.0	4.0	420.0	Early Mature	5.0	Normal	Good	B	2	20-40	Root girdling by retaining wall Group canopy generated from T19
21	Oak, Red	19	12	5.0	3.0	1500.0	Post-Mature	18.0	Normal	Good	A	2	>40	RS
G22	Laurel	12	7	2.0	4.0	300.0	Mature	3.6	Normal	Poor	C	2	10-20	Broken branches still hung-up
23	Hawthorn, Common	12	4	4.0	3.0	282.8	Mature	3.4	Dead	Poor	U			Broken branches still hung-up
24	Cypress, Lawson variety	8	2	1.0	1.0	100.0	Young	1.2	Normal	Good	C	1	>40	

Landmark Trees

Site: 10a Oakhill Avenue, London NW3 7RE

Date: 2nd May 2013

BS5837 Tree Constraints Survey Schedule

Landmark Trees Ltd
Tel: 020 7851 4544
Surveyor(s): Adam Hollis

Ref: MEA/10aOA/AIA

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Clear Stem Height	Stem Diameter	Age Class	Protection Radius	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
25	Maple, Norway	7	4416	3.0	3.0	200.0	Semi-mature	2.4	Moderate	Poor	C/u	2	10-20	Leaning (significantly) & kinked Ivy smothered RS
26	Cypress, Lawson variety	12	1	0.0	0.0	150.0	Young	1.8	Normal	Good	C	1	>40	
27	Oak, English	14	6	5.0	5.0	1000.0	Mature	12.0	Normal	Fair	B	3	>40	Pollard (Old) RS

APPENDIX 2

RECOMMENDED TREE WORKS

Notes for Guidance:

1, 2, 3 - Urgent (ASAP), Standard (within 6 months), Non-urgent (2-3 years)
RP - Pre-emptive root pruning of foundation encroachments under arboricultural supervision.
CB - Cut Back to boundary/clear from structure.
CL# - Crown Lift to given height in meters.
CT#% - Crown Thinning by identified %.
CCL - Crown Clean (remove deadwood/crossing and hazardous branches and stubs).
CR#% - Crown Reduce by given maximum % (of outermost branch & twig length)
DWD - Remove deadwood.
Fell - Fell to ground level.
FInv - Further Investigation (generally with decay detection equipment).
Pol - Pollard or re-pollard.
Mon - Monitor ongoing condition (annually by staff / owners & every 2-3 yrs by consultant).
Svr Ivy / Clr Bs - Sever ivy / clear base and re-inspect base / stem for concealed defects.

Landmark Trees

Site: 10a Oakhill Avenue, London NW3 7RE

Date: 2nd May 2013

Surveyor(s): James Bell

Ref: MEA/10aOA/AIA

Recommended Tree Works

Show All Trees
Hide irrelevant

Tree No.	English Name	Height	Stem Diameter	Crown Spread	Recommended Works	Comments/ Reasons
1	Oak, English	16	870.0	4545	Mon	Pollard (Old) Cavity pockets in pruning wounds History of hard landscaping nr base; 2m retaining wall to East Advisable for good arboricultural practice
3	Oak, English	13	910.0	4536	FInv	Pollard (Old) Cavity pockets in pruning wounds Basal cavity to 1m abg Roots against LGF garage Advisable for good arboricultural practice
14	Birch, Silver	17	310.0	5432	Fell 3rd party tree?	Break out wound with cavity in main stem / lost lead stem Pruning cavity at 5m NE Advisable for good arboricultural practice
18	Beech, Common	16	230.0	0	Mon	Root girdling by retaining wall Group canopy generated from T19 Advisable for good arboricultural practice
19	Beech, Common	18	400.0	10	Mon	Root girdling by retaining wall Group canopy generated from T19 Advisable for good arboricultural practice
20	Beech, Common	18	420.0	10	Mon	Root girdling by retaining wall Group canopy generated from T19 Advisable for good arboricultural practice
21	Oak, Red	19	1500.0	12	Mon	RS Advisable for good arboricultural practice

Landmark Trees

Site: 10a Oakhill Avenue, London NW3 7RE

Date: 2nd May 2013

Surveyor(s): James Bell

Ref: MEA/10aOA/AIA

Recommended Tree Works

Show All Trees
Hide irrelevant

Tree No.	English Name	Height	Stem Diameter	Crown Spread	Recommended Works	Comments/ Reasons
G22	Laurel	12	300.0	7	CCL	Broken branches still hung-up Advisable for good arboricultural practice
23	Hawthorn, Common	12	282.8	4	Fell	Broken branches still hung-up Advisable for good arboricultural practice
25	Maple, Norway	7	200.0	4416	Mon	Leaning (significantly) & kinked Ivy smothered RS Advisable for good arboricultural practice

APPENDIX 3

RECOMMENDED TREE WORKS TO FACILITATE DEVELOPMENT (See Table 1)

Notes for Guidance:

CB - Cut Back to boundary/clear from structure.
CL# - Crown Lift to given height in meters.
CT#% - Crown Thinning by identified %.
CCL - Crown Clean (remove deadwood/crossing and hazardous branches and stubs).
CR#% - Crown Reduce by given maximum % (of outermost branch & twig length)
DWD - Remove deadwood.
Fell - Fell to ground level.
FInv - Further Investigation (generally with decay detection equipment).
Pol - Pollard or re-pollard.
Mon - Monitor ongoing condition (annually by staff / owners & every 2-3 yrs by consultant).
Svr Ivy / Clr Bs - Sever ivy / clear base and re-inspect base / stem for concealed defects.

Landmark Trees

Site: 10a Oakhill Avenue, London NW3 7RE

Surveyor(s): James Bell

Date: 3rd January 2014

Ref: MEA/10aOA/AIA/02

Recommended Tree Works to Facilitate Development

Show All Trees
Hide irrelevant

Tree No.	English Name	Height	Stem Diameter	Crown Spread	Recommended Works	Comments/ Reasons
2	Cypress, Leyland	6	300.0	3	Fell	Pollarded Recommended to permit development
3	Oak, English	13	910.0	4536	FInv	Pollard (Old) Cavity pockets in pruning wounds Basal cavity to 1m abg Roots against LGF garage Advisable for good arboricultural practice
H9	Leyland / Privet	3	50.0	1	CB Cut back overhanging	Recommended to facilitate development
G10	Cypress, Leyland	7	270.0	1.5	Fell	Pollarded Recommended to permit development
12	Western Red Cedar	9	214.7	4	CL Crown-lift to 2m/cut back to boundary	RS Recommended to facilitate development

APPENDIX 4: TREE SELECTION FOR CONSTRICTED SITES

Table 4: Rosaceous Tree Species for Constricted Planting Sites

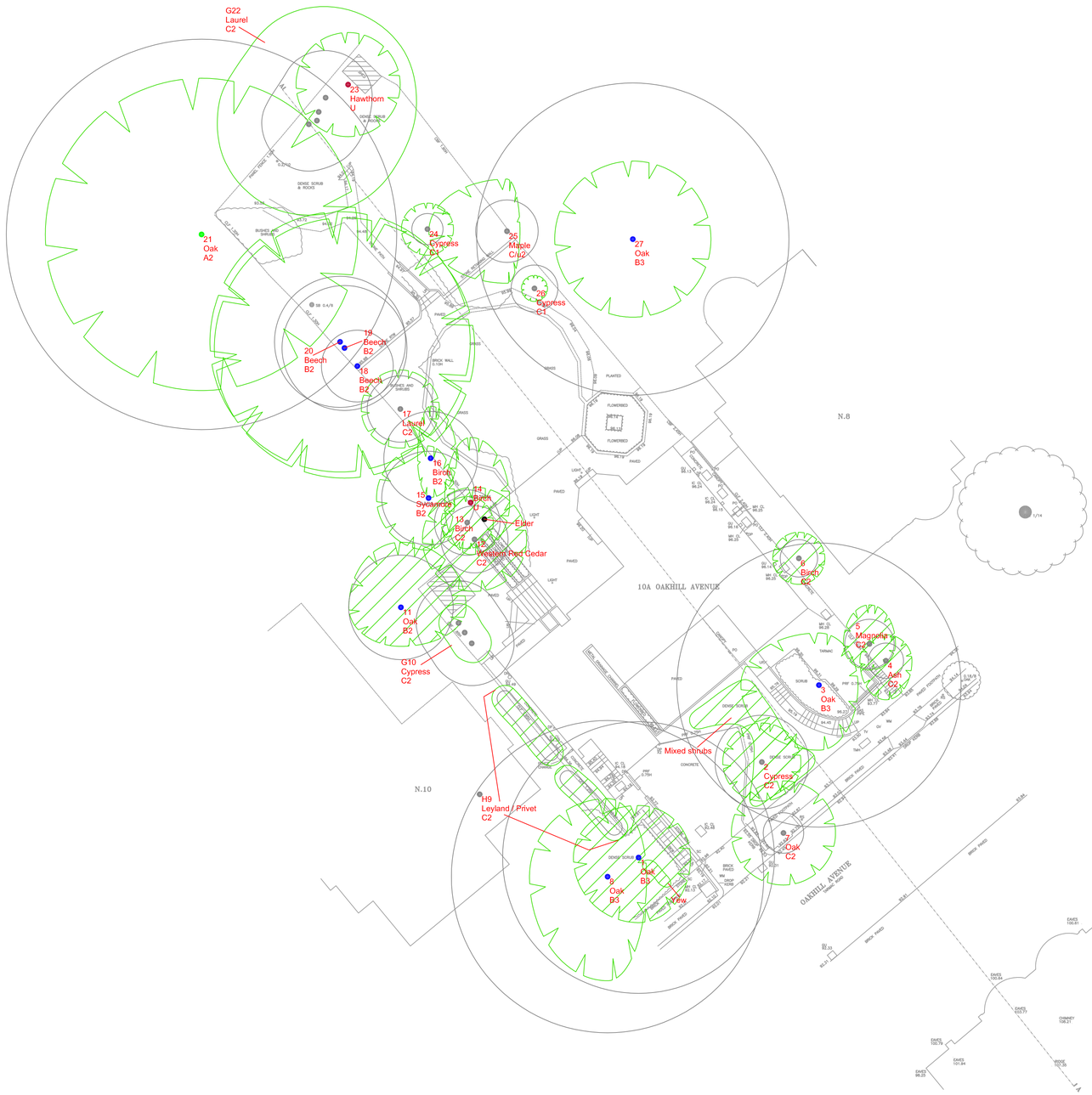
Common Name	Species	Selected Form
Hawthorn	Crataegus monogyna	Stricta
Cockspur	Crataegus prunifolia	Splendens
Cherry	Prunus x hillieri	Spire
Bird cherry	Prunus padus	Albertii
Rowan / Mountain ash	Sorbus aucuparia	Cardinal Royal
Rowan / Mountain ash	Sorbus aucuparia	Rossica Major
Rowan / Mountain ash	Sorbus aucuparia	Sheerwater Seedling
Swedish whitebeam	Sorbus intermedia	Brouwers
B. whitebeam	Sorbus x thuringiaca	Fastigiata

Table 5: Specimen Tree Species for Constricted Planting Sites

Common Name	Species	Selected Form
Chinese red bark birch	Betula albosinensis	Fascination
Swedish birch	Betula pendula	Dalecarlica
Hornbeam	Carpinus betulus	Fastigiata Frans Fountaine
Turkish Hazel	Corylus colurna	
Maidenhair tree	Gingko biloba	
Pride of India	Koelreuteria paniculata	Fastigiata
European larch	Larix decidua	Sheerwater Seedling
Tulip tree	Liriodendron tulipfera	Fastigiata

APPENDIX 5

TREE CONSTRAINTS PLAN



NOTE:

This survey is of a preliminary nature. The trees were inspected from the ground only on the basis of the Visual Tree Assessment method. No samples were taken for analysis. No decay detection equipment was employed. The survey does not cover the arrangements that may be required in connection with the laying or removal of underground services.

Branch spread in metres is taken at the four cardinal points to derive an accurate representation of the crown.

Root Protection Areas (RPA) are derived from stem diameter measured at 1.5 m above adjacent ground level (taken on sloping ground on the upslope side of the tree base).

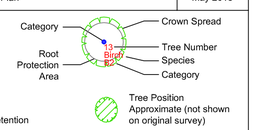
Landmark Trees

20 Broadwick Street, London, W1F 8HT
Tel: 0207 851 4544 Mobile: 07812 989928
e-mail: info@landmarktrees.co.uk Web: www.landmarktrees.co.uk

Site: 10a Oakhill Avenue	1:200 @ A1
Drawing Title: Tree Constraints Plan	May 2013

Key:

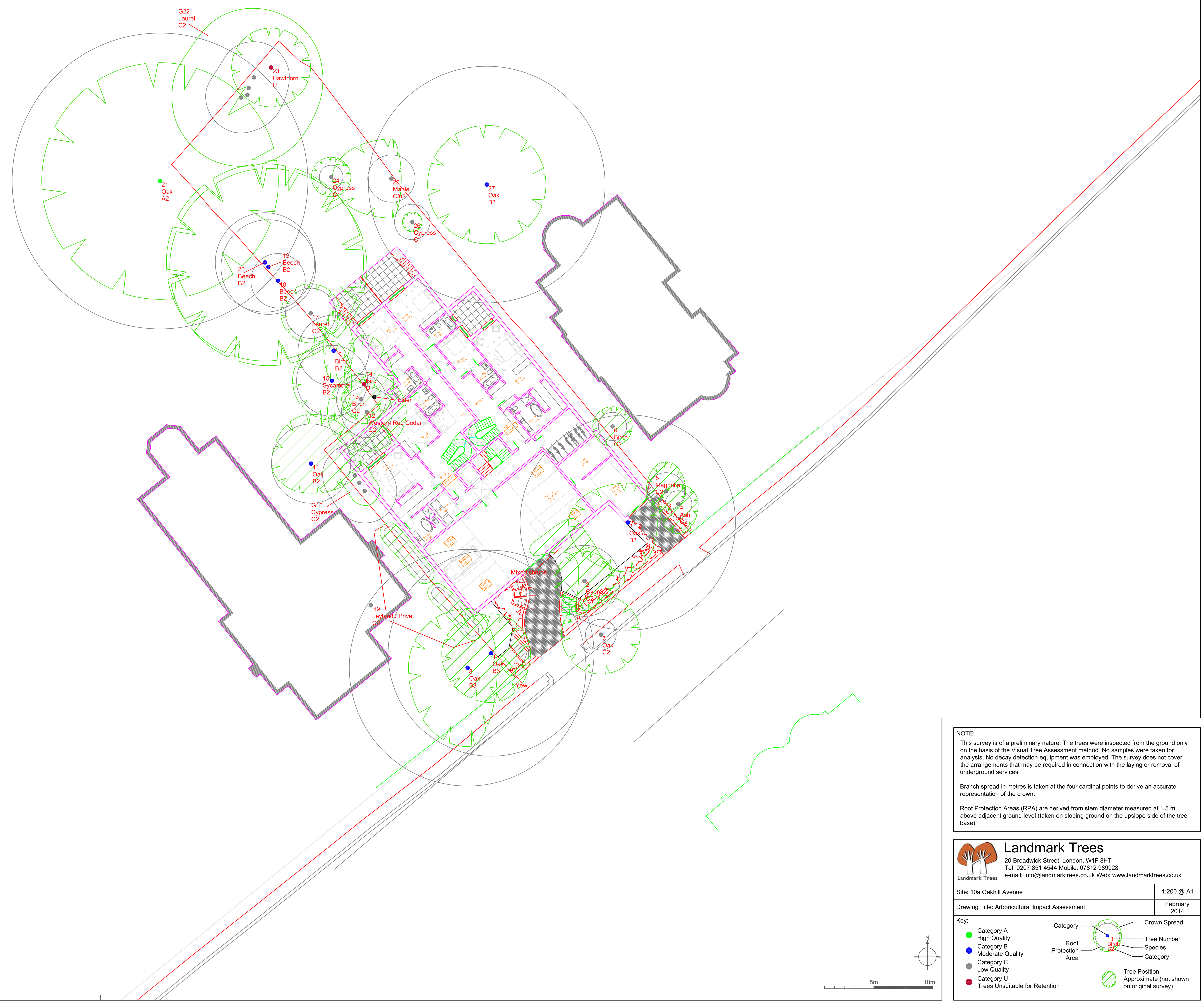
- Category A High Quality
- Category B Moderate Quality
- Category C Low Quality
- Category U Trees Unsuitable for Retention



Tree Position Approximate (not shown on original survey)

APPENDIX 6

ARBORICULTURAL IMPACT ASSESSMENT PLAN



NOTE:

This survey is of a preliminary nature. The trees were inspected from the ground only on the basis of the Visual Tree Assessment method. No samples were taken for analysis. No decay detection equipment was employed. The survey does not cover the arrangements that may be required in connection with the laying or removal of underground services.

Branch spread in metres is taken at the four cardinal points to derive an accurate representation of the crown.

Root Protection Areas (RPA) are derived from stem diameter measured at 1.5 m above adjacent ground level (taken on sloping ground on the upslope side of the tree base).

Landmark Trees

20 Broadwick Street, London, W1F 8HT
Tel: 0207 851 4544 Mobile: 07812 989928
e-mail: info@landmarktrees.co.uk Web: www.landmarktrees.co.uk

Site: 10a Oakhill Avenue	1:200 @ A1
Drawing Title: Arboricultural Impact Assessment	February 2014

Key:

- Category A High Quality
- Category B Moderate Quality
- Category C Low Quality
- Category U Trees Unsuitable for Retention

Category — Crown Spread — Root Protection Area — Tree Number (13) — Species (Birch) — Category (B2)

Tree Position Approximate (not shown on original survey)