Tree Condition Survey and Arboricultural Report for Proposed Basement Extension

at

43-45 Fitzjohns Avenue
London
NW3 5JU

Prepared For
Kyson
Studio 28
Scrutton Street
London
EC2A 4RP

MWA REF:	N280212.04PW
MWA CONSULTANT:	Peter Wilkins
REPORT DATE:	20 March 2012

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1.0 Introduction

Acting on instructions received from Kyson the property was visited on 8 March 2012 to undertake a Pre-Development Tree Condition Survey in relation to the proposed extension of the subject property by the addition of a basement extension.

The proposed works are described in detail in the documents submitted to support the planning application including the Design and Access Statement. We have been provided with a full set of the proposed drawings.

We have been asked to comment specifically on the implication of the proposed works on the existing tree resource and any measures necessary to ensure the long-term health of the retained trees.

The tree numbers used in this report refer to the tree numbers used in our Tree Condition Survey.

If the recommendations contained within this document are acceptable to the Local Planning Authority then we suggest that they be controlled by planning conditions.

2.0 Site Description

The site is described in detail elsewhere in this application, in summary the site is located to the rear of 43-45 Fitzjohns Avenue, it is currently occupied by a terrace of garages with a concrete driveway and part of the rear garden of 43-45 Fitzjohns Avenue. Within the rear garden is a detached timber garden room. The rear of the garages forms a retaining wall with the garden above the level of the driveway. The area to the western boundary is unmanaged with early mature sycamores dominating. Beyond the southern boundary is a school occupying the converted property known as No. 39 Fitzjohns Avenue.

The proposed development involves the demolition of the garage buildings and the construction of a detached residential property with a partial basement.

3.0 Planning Policy in Relation to Trees

London Borough of Camden's policies for trees in relation to development are given in the following documents.

'Shaping Camden New Basement Development and Extensions to Existing Basement Accommodation' Guidance Note by London Borough of Camden (February 2009)

Camden Planning Guidance 2006 *Landscaping and trees* by London Borough of Camden (2006).

Planning law requires the council to consider both its UDP and the Mayor of London's The London Plan 2011 London's Living Places and Spaces.

See Appendix 4 for a copy of the relevant sections of these policies.

Having reviewed these policies and documents it is our opinion that the proposed basement extension complies with the Local Authority planning policy in relation to trees.

4.0 Statutory Protection

We have been informed that the property is located within the Fitzjohns / Netherhall Conservation Area. Therefore all the trees with a stem diameter in excess of 75mm are currently subject to protection under the Conservation Area.

No vegetation works should be undertake prior to determination of the planning application without the obtaining necessary consent from London Borough of Camden.

Any vegetation works identified in this report as necessary to implement the proposed basement development will be allowed subject to obtaining a full planning permission.

5.0 Discussion

For all trees but particularly those growing in urban areas, root growth is not predictable. Tree roots are opportunistic they grow most prolifically in areas where conditions are favourable and will be deflected by natural features and man-made structures, when hostile conditions are encountered root growth will be limited.

It is generally agreed that the majority of tree roots, even for a mature tree are found in the top 90cm of the soil and are vulnerable to sudden changes in the rooting environment. These roots absorb moisture and nutrients needed for growth and contrary to popular belief mature trees do not have a deep taproot that obtains moisture from great depth.

An ideal soil for root growth is about 50% pore space (in urban areas this is often significantly reduced). These pores, the spaces between soil particles, are filled with water and air, construction activity compacts the soil and can dramatically reduce the amount of pore space. This not only inhibits root growth and penetration but also decreases oxygen in the soil that is essential to the growth and function of the roots.

The two main possibilities for injury to trees during and following the construction process are from direct and indirect damage.

- Direct Damage can be defined as injury resulting from physical contact including contact with machinery or fire, and excavation of the root area.

- Indirect Damage can be defined as injury resulting from activities that take place near the tree such as level changes, compaction of the soil, or contamination by chemical spillage in proximity to the root plate.

The British Standards Institute published BS5837:2005 *Trees in Relation to Construction Recommendations'*. The document was developed through consultation with engineers, architects landscape architects, central government and developers and gives clear and current best practice recommendations and guidance on the principles to be applied to achieve a satisfactory juxtaposition of trees with structures. Where development is proposed, the standard provides guidance on how to assess the value and quality of trees and to decide which trees are appropriate for retention. The surveying of trees as part of the feasibility assessment of a site is important to ensure that the trees inform the design process.

The BS 5837 2005 calculator for Root Protection Areas aim to ensure a sufficient area of the root system is protected. It aims to protect an area around each retained tree of sufficient size to maintain the health and vigour and ensure the longevity of the trees. We have indicated the theoretical Root Protection Area of each tree on the Tree Survey Plan.

With reference to the location of the trees and the built form all around the site, for this project it is not considered appropriate to determine the Root Protection Areas solely by following the formula contained in BS 5837 2005. As stated in BS5837 (2005) Trees in Relation to Construction - Recommendations Section 5.2.4 (see below) other factors should be considered when calculating Root Protection Areas.

5.2.4 *The RPA, for each tree as determined in Table 2 (of BS5837 (2005) Trees in Relation to Construction – Recommendations), should be plotted on the TCP taking full account of the following factors as assessed by an arboriculturist, which may change its shape but not reduce its area whilst still providing adequate protection for the root system.*

a) *The likely tolerance of the tree to root disturbance or damage, based on factors such as species, age and condition and presence of other trees. (For individual open grown trees only it may be acceptable to offset the distance by up to 20% in one direction) (See Note 1 of 11.3.5);*

b) *The morphology and disposition of the roots, when known to be influenced by past or existing site conditions (e.g. the presence of roads, structures or underground services).*

c) *The soil type and structure;*

d) *Topography and drainage;*

From BS5837 (2005) Trees in Relation to Construction - Recommendations

It is thought that a healthy tree tolerates the removal of approximately one-third of its roots (Harris 1992, Helliwell 1985). Helliwell further states that a healthy vigorous tree could withstand removal of up to 50% of its roots without dying. The BS 5837 (2005) is more conservative suggesting the up to 20% of the RPA can be offset by increasing the RPA in other directions to compensate. It states that this offsetting is only appropriate for 'open grown' trees but clearly the intention of the BS5837 is not to protect a perfectly circular Theoretical Root Protection Area around all trees nor protect areas where roots are unlikely to be present.

For retained trees it is essential that the structurally important roots will remain undisturbed, these important larger roots radiate outwards from the trunk, they are characterised by being relatively few in number and tapering rapidly from the base of the tree. Even for mature trees they are only 2-3m in length, at this length they are likely to be 2-5cm in diameter and they have lost their rigidity and physical strength. (See Tree Root Systems AAIS 1995).

The vegetation to be removed to allow for the proposed basement are a Sycamore T4, Cherry T8, T11 Sycamores T12, T13, Ash T14 and Elder T15. The Sycamore T4 is located to the southern boundary of the site and the impact of the removal of this tree is screened from the public realm by the retained trees T1 and T3. The remaining vegetation to be removed is located to the northern side of garages behind the main building and consequently this vegetation has very limited public amenity. The loss of this vegetation will not impact on the character or appearance of the area and can be mitigated by new planting within the rear garden.

The proposed basement is offset from the southern flank boundary by a distance of approximately 5m and broadly follows the footprint of the existing garage. With regard to and the tree species present, it is my opinion that the 5m offset provides a sufficient volumes of undisturbed soil to support the retained 3rd party trees. The existing built form will not have served to prevent root growth from T1-T3 into the proposed site, however it is likely that they will have served to restrict the root growth into the site and the majority of the Ash tree T3 root system will be exploiting the more favourable conditions in the rear garden of 39 Fitzjohns Avenue.

The driveway area to the southern side of the garages is currently covered by the concrete and the proposed development replaces this with a small single-storey projection and a garden area. This provides the opportunity to remove the existing hardstanding. We recommend this area is designated as the 'No-Dig Zone'. Providing the proposed open ground is specified as No-Dig and the Tree Protection guidelines as outlined in this report are followed, these works have the potential to improve the growing conditions for the existing 3rd party owned trees and any future planting along this boundary.

The proposed living room projection and garage are located with the area currently occupied by the concrete driveway with regard to their relative location to the retained trees we recommend that these structures are designed to avoid concrete strip foundations excavations. To minimalise the impact of these structures on the neighbours trees we recommend that they are constructed on structural slabs to allow existing roots to remain undisturbed beneath these structures.

During the demolition and construction works we recommend that the existing hardstanding is retained and if necessary covered with additional material to withstand the construction traffic loads. This will serve to prevent compaction of the ground along this boundary, after construction works are completed as part of the landscaping works the concrete can be carefully removed and the open ground covered with a permeable and porous material to form the proposed Zen Garden.

For the retained trees no pruning works are required to allow for the construction of the basement.

All the remaining trees are located a sufficient distance from the proposed basement to be unaffected by the construction works. Subject to appropriate protection a sufficient volume of soil is left undisturbed to allow these trees to be successfully retained.

Providing the proposed development is constructed following our tree protection guidelines outlined in this report, (from Section 6 onwards) then it is my opinion that the proposed development will not impact on the health, stability or longevity of the retained trees.

We recommend that consideration is given to the opportunity that this development provides to enhance the existing tree resource within the site. The rear boundary vegetation is dominated by relatively poor quality ivy covered Sycamores which make a very limited contribution to the tree resource within the locality. A management plan and proposed new tree planting scheme would serve to improve the appearance of this area.

The basement excavation works will be undertaken following the installation of contiguous / secant piling. This ensures that all excavation works can be undertaken from within the footprint of the proposed basement.

All works will be undertaken within the curtilage of the site and at no time will equipment overhang the boundary of the site. The site access utilises existing hardstanding and subject to appropriate tree protection measures this will avoid any damage to the retained trees.

Subject to planning approval a detailed construction methodology will be prepared by the appointed contractors, this will be reviewed to ensure the works do not impact on the retained trees. Section 6 of this report gives an outline of the proposed Arboricultural Method Statement (AMS) a detailed AMS can be secured by use of Standard Planning Conditions.

6.0 Preliminary Arboricultural Method Statement

6.1 Site Monitoring

To ensure that the construction process is undertaken with minimal disturbance to the retained tree stock, we recommend that an experienced Arboricultural Supervisor be appointed to undertake regular inspections of the site. Listed below are the key activities for arboricultural supervision.

- Erection of Tree Protection Fencing
- Enabling Works
- Demolition works
- Piling Works and Excavation of Basement
- Removal off existing concrete Hardstanding
- Dismantling of Tree Protection Barriers
- Landscaping within RPA
- Practical completion

It is our experience that a mix of scheduled and unannounced site visits are appropriate these unannounced inspections will serve to identify any damage to the Tree Protection Fencing, poor working practices, potential problems and points of conflict between the construction process and the health of the trees. These reports will include recommendations for remedial action.

During these visits any changes to the proposed works will be discussed, their impact assessed and recommendations for best practice will be outlined. After each of these visits a copy of the report should be sent to the Site Agent, Local Authority Tree Officer and Client. The remedial action undertaken will be recorded on the next visit.

6.2 Pre-Commencement Site Meeting

Prior to commencement of the works an onsite meeting will be held with all relevant parties including the site manager and appointed arboricultural Supervisor. The purpose of this meeting is to record site features including tree condition, agree the location of tree protection measures, and discuss the construction programme, the temporary works and site set up.

6.3 Tree Surgery Works

The presence and relevance of any statutory protection of the vegetation including Tree Preservation Orders (TPO), Conservation Area status, Planning Conditions must be determined prior to any tree works being implemented, failure to do so can result in prosecution.

All Tree surgery works should be carried out by competent contractors with the necessary insurance and competency certifications and according to British Standard 3998 (2010) *Recommendations for Tree Work*.

Particular care is needed in dealing with legally protected species such as nesting birds, and roosting bats which are protected under the *Wildlife and Countryside Act 1981 (as amended)* from intentional harm and killing and applies to roosting and hibernating bats and active bird nests. We can advise further on this matter if required.

6.4 *Tree Protection Measures*

Subject to planning the Tree Protection Measures outlined in this report will be revisited in detail based on the working drawings, construction programme and method statement to be prepared. This matter can be addressed by use of a standard planning condition.

To prevent the proposals impacting on the health, stability or longevity of the retained trees the main requirement is the installation of suitable tree protection fencing, to protect the above ground part of the trees and to prevent compaction of the retained open ground within the rear garden..

The Tree Protection Fencing will be installed as per the Tree Protection Plan will be agreed with the Local Authority Tree Officer, we have provided a draft copy of this plan See Appendix 2, The proposed fencing specification can be found in Appendix 3.

Tree protection fencing should be installed prior to any demolition or ground-works commencing, remain in place throughout construction and be removed only after completion of the construction works. Prior to commencing any demolition or construction works, the fencing will be inspected by the appointed consultant.

Within the fenced off Tree protection Area;

- No excavation by any means
- No storage of plant or materials
- No storage or handling of any chemical including cement washings
- No Pedestrian, Machinery or Vehicular Access
- No level changes + or -
- Underground service routes will be located outside the Fenced off area

Clear notices are to be fixed to the outside of the fencing with words such as 'TREE PROTECTION AREA – NO ACCESS OR WORKING WITHIN THIS AREA'. See Appendix 3.

The site agent, all contractors and other relevant personnel are to be informed of the role of the Tree Protection Fencing and their importance. A copy of the Tree Protection Plan will be displayed on site at all times during construction.

Prior to commencing any enabling or construction works, the tree protection measures should be inspected by the appointed arboricultural consultant.

Prior to any works commencing on site the Tree Protection Fencing will be erected. During all works only the front access will be in use. Any plant or vehicles engaged in the works will operate outside the fenced off Tree Protection Areas.

The location of the site office, welfare facilities, storage area needs to be confirmed ideally this should be located outside the Root Protection Area (RPA). If this encroaches into the RPA then temporary ground protection will be required.

All the basement excavation works will be undertaken following the installation of contiguous / secant piling. This ensures that all construction works can be undertaken from within the footprint of the proposed basement.

All the below ground works will be undertaken with the machinery located within the footprint of the basement. Prior to any excavation works commencing the piling rig will be located inside the footprint of the proposed basement and will insert piles, excavation will then be undertaken with machinery accessing the site from the front and working within the footprint of the proposed development. The spoil will be removed from the front of the site. All these works are all undertaken outside the fenced-off Tree Protection Area of the retained trees.

For works within the existing concrete driveway 'No-Dig Zone' the following guidance should be followed. The purpose of these guidelines are to prevent any unnecessary damage to any roots that may be beneath the existing hardstanding layer from construction damage thereby preventing damage to the root systems of the 3rd party trees.

1) For works within the 'No-Dig Zone', a pre-commencement site meeting will be held with the site manager, works crew and appointed arboriculturalist. The arboriculturalist will brief the workers and fully explain how this work is to be executed and answer any questions.
2) Fencing or Site Hoarding will be erected as required to protect the main stem of the trees.
3) All works to be undertaken with machinery located outside the Root Protection Area or on the existing hardstanding.
4) The existing hardstanding is to be broken up in sections sequentially in a direction backwards away from the tree using machine operated breakers.
5) Once broken up, debris is to be removed from the working area.
6) The sub-base for each section carefully removed without excavation of any underlying soil nor damage to any roots found growing in this area ..
7) For areas of open ground good quality soil is to be used to fill any voids to the proposed ground levels. Continue this pattern until the entire working area is free of hardstanding and is dressed with top soil.
8) When the hardstanding is removed there will be no traffic, pedestrian or machinery, across the new open ground within the Theoretical Root Protection Area.
9) For areas of proposed hardstanding, if appropriate the sub-base can be retained, if new sub-base is required this should be specified to avoid excavation beneath the depth of the existing sub-base and to be porous and permeable. This may require use of a Cellular Confinement Systems such as Cellweb.
10) Depending on the load-bearing specification of the new hardstanding, this new sub-base may require protection by Tree Protection Fencing during the construction works.

Subject to planning, the tree protection measures can be addressed in detail and secured by use of a standard planning condition.

We do not have details of underground services either existing or proposed all drainage and underground service routes will be located outside the No-Dig Zone and the fenced-off Tree Protection Area.

Dismantling the protection barriers around retained trees may be required to allow completion of final surface treatments and landscaping. Supervision of this exercise and control of the landscaping thereafter will be administered by the appointed Arboricultural Supervisor. The removal of the Tree Protection Fencing is not an opportunity for machinery to access the previously fenced off area.

Within the fenced off area ground levels will be raised by no more than 100mm by spreading topsoil and or mulch. No soil will be spread around the base of the trees where soil levels will remain unchanged for minimum of 2m radius from the base of the trees.

To prevent the proposals impacting on the health, stability or longevity of the retained trees the main requirements are the installation of suitable tree protection fencing and within the open ground to the flank of the property avoiding excavation beneath the depth of the existing hardstanding. We have provided a draft plan showing the proposed location of the Tree Protection Fencing and the extent of the No-Dig Area. Within this area, all works should following guidance from the Arboricultural Supervisor.

7.0 Conclusion

British Standard BS5837:2005 contains clear and current recommendations for a best practice approach to the assessment, retention and protection of trees on development sites. The proposed extension complies with the guidance outlined in this document. The quality of the vegetation to be removed is low and these works will not impact on the character and appearance of the tree resource within the locality.

The protection of retained trees on this site during the proposed development works can be achieved by continuing to follow the recommendations in BS5837:2005 and by use of standard planning conditions.

The tree removals necessary to achieve the proposed development will not have an impact on the character or appearance of the area and these removals can be mitigated by replacement planting of appropriate trees in the final landscaping scheme.

With regard to the previously developed nature of the site, it is our opinion that provided the site works are undertaken following our guidelines the proposed development will not adversely affect the overall health and long-term future of the retained trees on or adjacent to the site.

Our assessment of the proposed development is that subject to appropriate tree protection measures the proposal does not conflict with adopted planning policy.

Peter Wilkins BA (Hons) M. Arbor A. 20 March 2012

Tree Condition Survey at 43-45 Fitzjohns Avenue, London, NW3 5JU

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March 2012

Tree Condition Survey at 43-45 Fitzjohns Avenue, London, NW3 5JU

1.0 Introduction

We have been instructed by Kyson to undertake a pre-development tree condition survey. The site was visited in March 2012 and an assessment of the trees' condition was made in accordance with B.S. *5837* 'Trees in Relation to Construction - Recommendations' 2005. We have assessed the condition of trees located within and close to the boundary of the site.

2.0 Survey Methodology

We have surveyed all the individual trees and groups of trees located within and close to the boundary of the site. The objective of the survey is to collect tree data relevant to the proposed redevelopment of the site and to categorise individual trees or tree groups in accordance with BS 5837 '*Trees in Relation to Construction Recommendation'* 2005 based on their condition, quality and future potential.

The purpose of the categories within BS5837 2005, is not to determine whether retention of trees is desirable, '*it is to identify the quality and value of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained should development occur.*' (BS5837 2005 Section 4.3.2). This report should therefore be regarded as an initial appraisal and observations, assessments or recommendations relating to tree protection zones, remedial tree works, protective fencing, foundation design, material specification are beyond the scope of this survey.

We did not have any access into any 3rd party properties and the location and measurements associated with these trees are estimated. We viewed the 3rd party trees from within the site and cannot therefore make detailed assessment of their health and condition.

The location of the trees is shown on the attached drawing. A detailed inspection of individual trees with respect to decay, defects and hazard is not included. However, trees found to be in a structurally dangerous condition are identified.

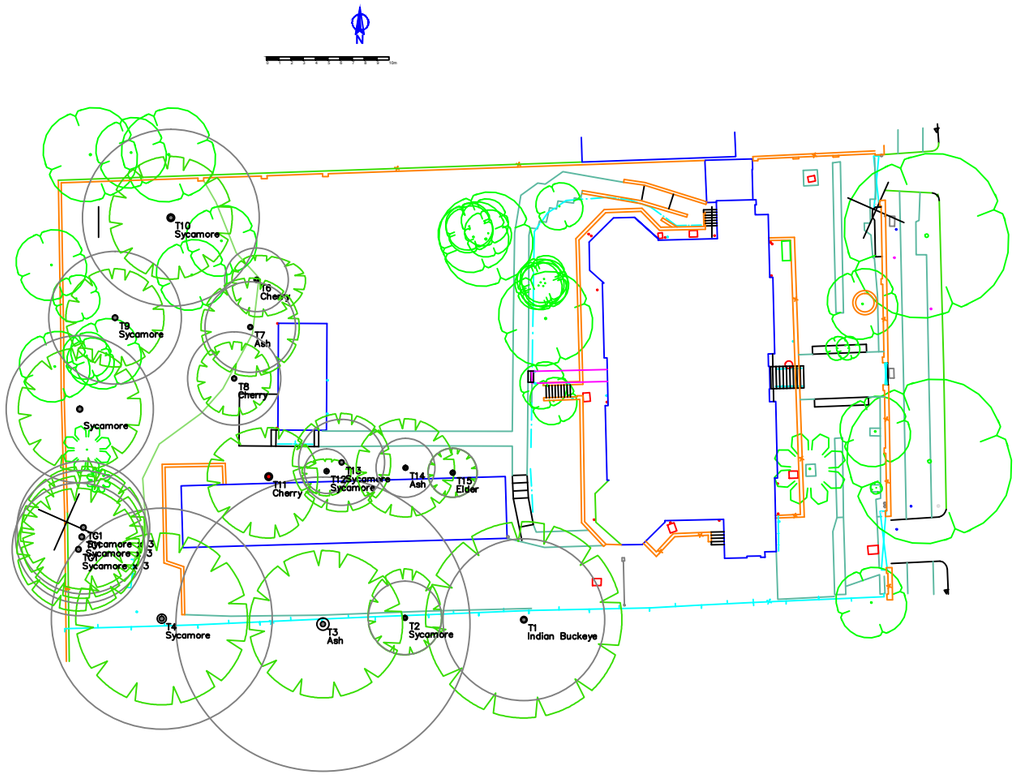
TABLE 1

Tree No.	Species	Hgt (m)	Dia. @ 1.5m (m)	No of stems	CS N (m)	CS E (m)	CS S (m)	CS W (m)	ER CY	Vig.	Form	Age Class	Description	Recommendations	BS Cat
T1	Indian Buckeye	16	0.55	1	8	8	8	8	20-39	M	A	A	A mature tree growing beyond the southern boundary of the site. This tree has an ivy clad lower stem preventing a close inspection of the lower stem. The canopy extends over the neighbouring building and driveway to the flank of the garage.	No Works	C1
T2	Sycamore	16	0.25	1	4	3	3	3	40+	SM	A	A	A semi-mature tree growing beyond the southern boundary of the site.	No Works	C1
T3	Ash	18	1.00*	1	6	6.5	6	6	20-39	M	A	A	A mature tree growing beyond the southern boundary of the site. This tree has been subject to crown reduction works approximately 5 years ago. The canopy extends over the driveway to the flank of the garage. The stem of this tree has a tight union at 1m.	No Works	C1
T4	Sycamore	16	0.75	1	7	7	7	7	40+	M	A	A	A mature tree growing close to the southern boundary of the site. This tree is located beyond a low retaining wall. The stem of this tree has a tight union at 1m.	Remove to allow for proposed development.	C1
T5	Sycamore	16	0.5	1	5	5	5	5	40+	M	A	A	An early-mature tree growing close to the western boundary of the site. This tree has lost a lower limb. The main stem of the tree and lower unions are ivy covered. This tree does form part of a screen to the boundary of the site however they are poor quality trees and we recommend that consideration be given to their removal and planting with more appropriate specimens.	Sever Ivy	C1
T6	Cherry	5	0.22	1	2	4	3	2	10-19	M	P	A	A small suppressed tree with a leaning stem.	No Works	C1
T7	Ash	15	0.31	1	4	4	4	4	40+	SM	A	A	A semi-mature tree growing to the rear of the garden room.	No Works	C1
T8	Cherry	13	0.32	1	3	3	3	3	40+	M	A	A	A mature tree growing to the rear of the garden room.	Remove to allow for proposed development.	C1

Tree No.	Species	Hgt (m)	Dia. @ 1.5m (m)	No of stems	CS N (m)	CS E (m)	CS S (m)	CS W (m)	ER CY	Vig.	Form	Age Class	Description	Recommendations	BS Cat
T9	Sycamore	15	0.45	1	4	4	4	4	40+	EM	A	A	An early-mature tree growing within the overgrown area to the western boundary of the site. The main stem of the tree and lower unions are ivy covered. This tree does form part of a screen to the boundary of the site however they are poor quality trees and we recommend that consideration be given to their removal and planting with more appropriate specimens.	Sever Ivy	C1
T10	Sycamore	18	0.6	1	5	5	5	5	40+	EM	A	A	As per T9	Sever Ivy	C1
T11	Cherry	14	0.6	2	4	4	5	5	40+	M	P	A	A mature twin-stemmed tree growing in close proximity to the rear of the garage. 1 stem extends over the garage and is in contact with the roof. The lower union of this tree is poor and regardless of the proposed development, we recommend this tree is removed to prevent damage to the garage structure.	Remove due to poor form.	R
T12	Sycamore	15	0.15	1	1	2	2	2	40+	SM	A	A	A semi-mature tree growing to the rear of the garage block	Remove to allow for proposed development.	C1
T13	Sycamore	14	0.35	M/s	4	4	4	4	40+	SM	A	A	A semi-mature multi-stemmed tree growing to the rear of the garage block	Remove to allow for proposed development.	C1
T14	Ash	13	0.2	1	4	4	4	4	40+	SM	A	A	A semi-mature multi-stemmed tree growing to the rear of the garage block	Remove to allow for proposed development.	C1
T15	Elder	5	0.2	M/s	2	2	2	2	10-19	SM	A	A	A mature multi-stemmed ivy covered shrub growing to the rear of the garage block	Remove to allow for proposed development.	C1
TG1	Sycamore x 3	16	0.45	1	5	5	5	5	40+	M	A	A	A group of 3 early mature trees growing to the western boundary of the site. These trees have ivy covered lower stems and have damaged lower limbs. These trees do form a screen the boundary of the site however they are poor quality trees and we recommend that consideration be given to their removal and planting with more appropriate specimens.	Sever Ivy	C1

Table 2 – Trees in Relation to Construction - Recommendations BS 5837 2005 Cascade chart for tree quality assessment

TREES FOR REMOVAL				
Category and definition	**Criteria**			**Identification on plan**
Category R	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other R category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)			**RED**
Category R Those in such a condition that any existing value would be lost within 10 years and which should in the current context, be removed for reasons of sound arboricultural management	• Trees that are dead or are showing signs of significant. immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g. Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality NOTE: - Habitat reinstatement may be appropriate (e.g. R category tree used as a bat roost: installation of bat box in nearby tree)			
TREES TO BE CONSIDERED FOR RETENTION				
	Criteria – Subcategories (1,2,3)			**Identification on plan**
Category and definition	**1 Mainly arboricultural values**	**2 Mainly landscape values**	**3 Mainly cultural values, including conservation**	
Category A **Category A** Those of high quality and value: - in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested)	**A1** Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	**A2** Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups)	**A3** Trees. groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood pasture)	**GREEN**
Category B **Category B** Those of moderate quality and value: - those in such a condition as to make a significant contribution (a minimum of 20 years is suggested)	**B1** Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage)	**B2** Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality.	**B3** Trees with clearly identifiable conservation or other cultural benefits	**BLUE**
Category C **Category C** Those of low quality and value: - currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150 mm.	**C1** Trees not qualifying in higher categories	**C2** Trees present in groups or woodlands. but without this conferring on them significantly greater landscape value, and/or trees offering low or only a temporary screening benefit.	**C3** Trees with very limited conservation or other cultural benefits	**GREY**
	NOTE: - Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150 mm. should be considered for relocation.			



Tree Survey Key

Extent of Tree Canopy
Theoretical Root Protection Area (BS5837)
BS 5837 Category
Tree Survey Number
Tree Name

43-45 Fitzjohns Avenue
London
NW3 5JU

Tree Survey Plan (Existing)
For
Kyson

MWA Arboriculture Ltd
Bloxham Mill Business Centre
Barford Rd,
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office@mwaarboriculture.co.uk

Scale	NTS
Date	20/03/2012
Project No.	0312 02 PW
Dwg. No.	TPP-01

Drawn by: PW
Checked by: *

Appendix 2

Tree Protection Plan

Games Court

St.Mary's School

Electrical Sub-Station

Fitzjohns Avenue

Tennis Court

Tennis Court

Belsize New Tunnel

Air Shaft

52

50

48

46

47

45

39

39

54

50

46

T5 Sycamore

T6 Cherry

T7 Yew

T8 Sycamore

T9 Sycamore

T10 Sycamore

T11 Cherry

T12 Sycamore

T13 Sycamore

T14 Ash

T15 Elder

T4 Sycamore

T3 Ash

T2 Sycamore

T1 Indian Buckeye

N

Tree Survey Key

No-Dig Zone

Tree Protection Zone

Tree to be removed

Extent of Tree Canopy
Theoretical Root Protection Area (BS5837)
BS 5837 Category
Tree Survey Number
Tree Name

43-45 Fitzjohns Avenue
London
NW3 5JU

Tree Protection Plan
For
Kyson

MWA Arboriculture Ltd
Bloxham Mill Business Centre
Barford Rd,
Bloxham
Banbury
OX15 4FF
0844 243 7899
office@mwaarboriculture.co.uk

Scale	NTS	Drawn by	PW
Date	20/03/2012	Checked by	*
Project No.	0312 04 PW		
Dwg. No.	TPP-01		

Games Court

St.Mary's School

Electrical Sub-Station

Fitzjohns Avenue

Tennis Court

Tennis Court

Belsize New Tunnel

Air Shaft

52

50

48

46

47

45

39

39

54

50

46

T5 Sycamore

T6 Cherry

T7 Yew

T8 Sycamore

T9 Sycamore

T10 Sycamore

T11 Cherry

T12 Sycamore

T13 Sycamore

T14 Ash

T15 Elder

T4 Sycamore

T3 Ash

T2 Sycamore

T1 Indian Buckeye

N

Tree Survey Key

No-Dig Zone

Tree Protection Zone

Tree to be removed

Extent of Tree Canopy
Theoretical Root Protection Area (BS5837)
BS 5837 Category
Tree Survey Number
Tree Name

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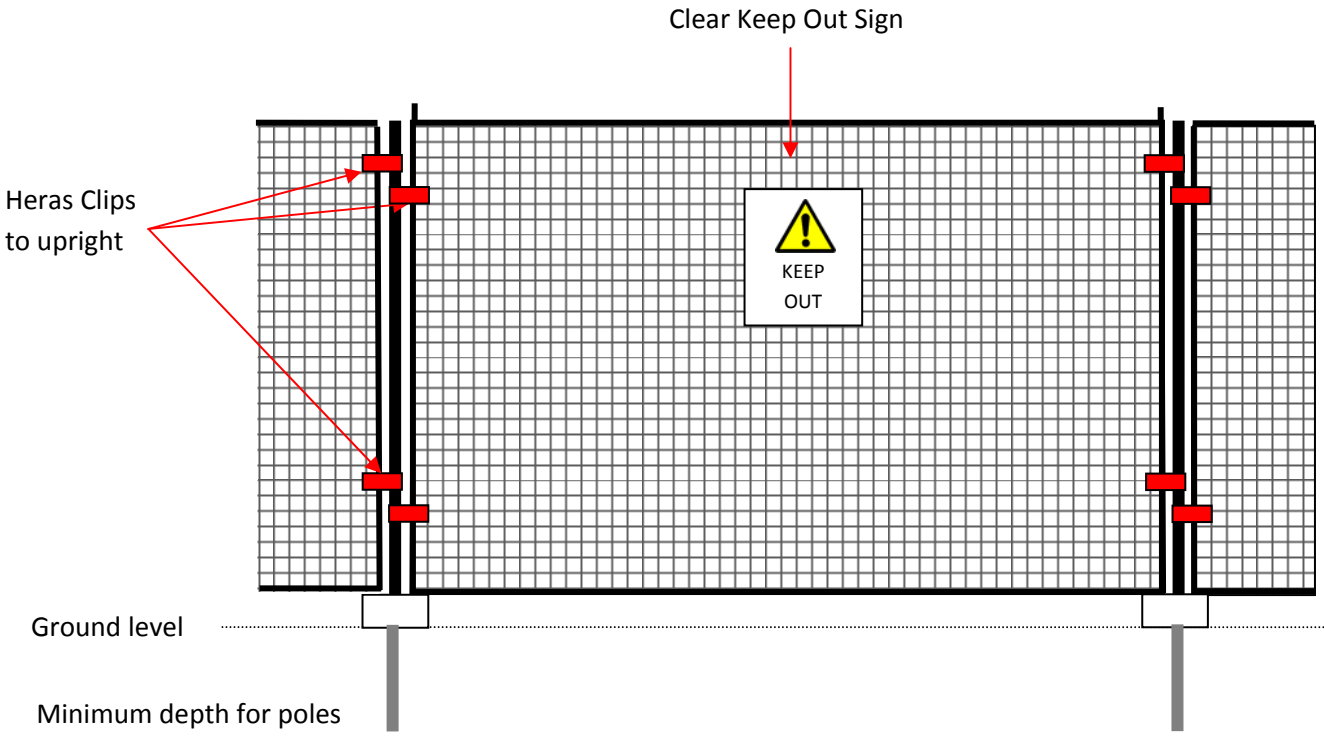
Appendix 3

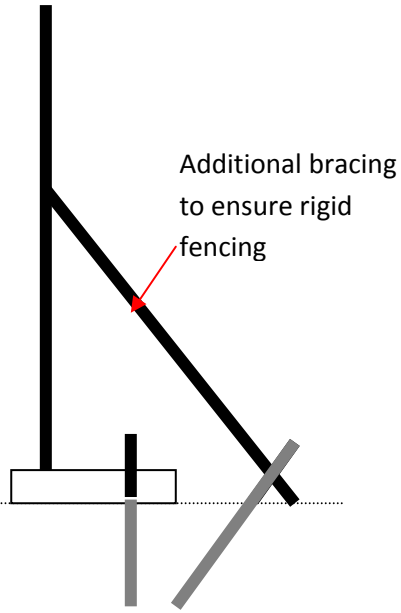
Tree Protection Specification and Notice

Tree Protection Fencing Specification

Elevation



Section



If concrete or rubber feet are used these must be pinned to the ground to help prevent movement of the fencing.

Tree Protection Fencing should be erected as per the Tree Protection Plan prior to any works commencing or materials being delivered to site.

TREE PROTECTION AREA

Tree Protection Area

PLEASE KEEP OUT

Appendix 4

Local Authority Tree Related Planning Policy

Shaping Camden New Basement Development and Extensions to Existing Basement Accommodation Guidance Note
by London Borough of Camden (February 2009)

Camden Planning Guidance 2006 *Landscaping and trees*
by London Borough of Camden (2006).

LONDON'S LIVING PLACES AND SPACES
Policy 7.21 Trees and woodlands
The London Plan 2011

Shaping Camden
New Basement Development and Extensions to Existing Basement Accommodation
Guidance Note
London Borough of Camden
February 2009

PLANNING & DESIGN CONSIDERATIONS

15 The Council recognises that there can be benefits from basement development, but is concerned to ensure that such development does not harm the recognised architectural character of buildings and surrounding areas, including gardens and nearby trees, and that conservation area character is preserved or enhanced; that the biodiversity value of the site is conserved; that there is no detriment to the water environment; that there is no undue harm to the amenity of neighbouring properties; and that sustainable development is achieved.

Size of development

17 These include, for example, harm caused to any trees on or adjoining the site, where the development would restrict future planting and mature development of trees typical to the area, if the basement development would remove more than 50% of the amenity space (garden or front court yard), and any impact to the water environment. The permissible size of a basement development will therefore be guided by the characteristics of the site.

18 A basement development that is modest in size such that it does not extend beyond the footprint of the original building and is no deeper than one full storey below ground level (approximately 3 metres in depth) is often the most appropriate way to extend a building below ground, provided that the internal environment is fit for the intended purpose (See Residential Development Standards below), and there is no impact to any trees on or adjoining the site, or to the water environment.

Landscape and biodiversity

47 Proposals for basement development that take up the whole front and / or rear garden of a property are very unlikely to be acceptable. Sufficient margins should be left between the site boundaries and any basement construction to enable natural processes to occur and for vegetation to grow naturally, and usually wide enough sustain the growth and mature development of the characteristic tree species of the area. The Council will seek to ensure that gardens maintain their biodiversity function for flora and fauna and that they are capable of continuing to contribute to the landscape character of an area so that this can be preserved and enhanced.

Trees

49 When designing underground structures, trees on or adjacent to the site must be given full consideration, including street trees and the required root protection zones of these trees (further information on the protection of existing trees is included in paragraph 23.4 to 23.10 of the CPG). Where there are trees on or adjacent to the site, including any street trees, an arboricultural report will be required with the submission of a planning application. This should set out the measures to be adopted during construction works to protect any trees on or adjoining the site, and the justification for removing any trees. Further guidance is provided in BS5837:2005 'A guide for trees in relation to construction', or by contacting the Council's Tree Officer on 020 7974 5616.

Camden Planning Guidance 2006

Landscaping and trees

PURPOSE

23.1. The purpose of this guidance is to ensure the appropriate protection of trees and landscaping and promote a high quality of landscaping to ensure an attractive, sustainable and ecologically diverse environment.

23.2. This guidance relates to Replacement Unitary Development Plan policies SD6 -Amenity for occupiers and neighbours, B1 - General design principles, B2 - Design and layout of developments large enough to change their context, B3 - Alterations and extensions, B7 - Conservation areas, N5 - Biodiversity, N7 - Protected species and their habitats, N8 - Ancient Woodlands and trees and T9 - Impact of parking.

APPLICATION

23.3. This guidance applies to all proposals effecting or including landscaping works and proposals and works effecting protected trees.

GUIDANCE

Protection of existing trees and landscape

23.4. Vegetation of all types (tree, shrub or field layer) is at a premium in Camden. In addition to ecological, aesthetic, microclimatic, social and economic benefits, established vegetation serves to integrate architecture with the urban landscape and contributes to the character and distinctiveness of an area. Trees are the largest and most prominent elements of vegetation in the Borough and are considered to be a significant element in the urban design qualities of Camden. The Borough's tree canopy and other existing vegetation should be regarded as an integral element of site development. While the Council will seek replacements for any trees felled and new planting to develop the tree canopy of a site, the starting point for the design of new development should be the retention of existing mature trees and vegetation, which often require less maintenance and management than new planting. The retention of existing trees and vegetation is also considered to make an important contribution to sustainable design by reducing the impacts and energy usage of, for example, new plant provision, transportation and irrigation. Existing species can also serve as a pointer to additional species selection in order to enhance site characteristics and integration. Therefore, on and off-site vegetation, particularly trees, should, where possible, be retained.

23.5. The principles and practices for the integration of existing trees into new development are set out in BS 5837: 2005 "Trees in relation to construction". In summary, initial site planning should establish which trees are of value and should be retained. This should form the basis of a Tree Constraints Plan (TCP) for the site. The TCP is essential to the site planning process as it provides the parameters of, for example, site layout and building lines, levels changes, foundation design and service provision where root zones and the crown spread of trees are to be protected. A TCP should also identify the provision of sufficient space for new planting to mature and develop and existing trees to continue to grow.

23.6. Where trees are identified as being retained, it is imperative that appropriate contracting and site supervision procedures are in place to ensure that trees are properly protected and that there is no damage during and after construction. This will normally require a method statement. Particular care should be taken in planning the construction process in accordance with the TCP including the provision of site accommodation, storage areas, site access, positioning, heights and gib arcs of cranes and excavation methods. All contracting, subcontracting and site supervisory staff should be informed of the tree protection requirements. This must be stressed as an integral aspect of the design and implementation of development.

Tree Preservation Orders

23.7. Many trees in Camden are covered by Tree Preservation Orders (TPOs). The TPO regulations and the law relating to them are in Part VIII of the Town and Country Planning Act 1990 although other Acts also relate to this legislation. TPOs offer protection to a tree and any proposed works to such trees require permission from the Local Planning Authority.

Trees in Conservation Areas

23.8. All trees in conservation areas with a trunk diameter of 75mm (3 inches) or greater taken at 1.5m above ground level, are protected by section 211 of the Town and Country Planning Act 1990. Under this legislation, anyone proposing to cut down or carry out any pruning work to a tree is required to give the Local Planning Authority six weeks notice of their intention to do so.

23.9. A further application is not required for any works to trees covered by a TPO or in a conservation area where works to trees are required for the implementation of a planning permission. Such tree works should be included in any submissions provided with the planning application.

23.10. Unauthorised works to protected trees is a criminal offence, which may result in prosecution and, upon conviction, a fine.

The London Plan 2011 LONDON'S LIVING PLACES AND SPACES

Policy 7.21 Trees and woodlands states:

Strategic

A Trees and woodlands should be protected, maintained, and enhanced, following the guidance of the London Tree and Woodland Framework (or any successor strategy). In collaboration with the Forestry Commission the Mayor will produce supplementary guidance on tree strategies to guide each borough's production of a tree strategy covering the audit, protection, planting and management of trees and woodland. This should be linked to the borough's open space strategy.

Planning decisions

B Existing trees of value should be retained and any loss as the result of development should be replaced following the principle of 'right place, right tree'. Wherever appropriate, the planting of additional trees should be included in new developments, particularly large-canopied species.

LDF preparation

C Boroughs should follow the advice of PPS 9 to protect 'veteran' trees and ancient woodland where these are not already part of a protected site.