TREE SURVEY IN CONTEMPLATION OF DEVELOPMENT

Title:	**Arboricultural Tree Survey Report**
Instructed by:	**Mr Brian Aldridge** **Brian Aldridge Associates** **Southwood** **Court Road** **Maidenhead** **Berkshire,** **SL6 8LH**
Site Address:	**6 Keats Grove, Hampstead, London, NW3 2RT.**
Date of Site Visit:	**9th April 2009**
Prepared by:	**Andrew Phelps: Professional Member of the Consulting Arborist Society'. (Craftsman in Arboriculture)**
Ref:	**PA.S467**
Date	**9th April 2009**

Bank Chambers, 64
High Street, Epsom, KT19 8AJ Email: info@treeconsult.co.uk

www.treeconsult.co.uk

Report Contents

BRIEF

A Detailed tree survey of all standing trees on the site to the following specification

- Species name, Estimated height, Age Class, Condition key, General arboricultural comments and recommendations
- Comments relating to the retention value of individual trees and tree groups within the delineated area to allow an assessment of development constraints
- All information is to comply with BS 5837 – A guide to trees in relation to construction and BS 3998 – Tree works

B Production of an accompanying tree constraints plan in PDF format / AutoCad (on supplied topographical drawing) detailing; tree numbers, protected areas, special measure areas and protective fencing requirements, in order to allow an assessment of relevant constraints.

C Consideration of the quality of the tree stock, their contribution to public amenity and the suitability of the trees in the context of proposed development.

1 Scope of the Report / Instructions

1.1 My name is Andrew Phelps. I am an associate consultant with Phelps Associates, Arboricultural Consultants, of Bank Chambers, 64 High Street, Epsom, Surrey, KT19 8AJ. I am instructed by Mr Brian Aldridge of Brian Aldridge Associates, Southwood, Court Road, Maidenhead, Berkshire, SL6 8LH to determine a preliminary tree survey in contemplation of possible development of the site at 6 Keats Grove, Hampstead, NW3 2RT.

1.2 The main concerns of this report are to establish tree conditions and suitability to the site and landscape. Both general and specific tree management requirements are presented along with a tree/construction works specification. I am also asked to assess the likely impact of the proposed development on the surrounding trees, and have included details of the working methods to be employed before and during construction. I am asked to recommend ways in which this impact can be prevented or mitigated.

1.3 The site was visited on Wednesday 8th April 2009 and a total of 6 trees and groups of trees (totalling approximately 14/15 trees & shrubs) within 30m of the proposed development were assessed visually in accordance with Visual Tree Assessment (VTA) and compiled in the following survey sheets as numbered individuals and groups. Trees have been inspected from ground level only, and no decay detection equipment has been used.

1.4 No tissue samples were taken nor was any internal investigations of the subject trees undertaken.

1.5 No soil samples were taken.

1.6 The crown spreads were estimated by pacing.

1.7 Each individual tree has been assessed with general regard to condition, health and amenity, development context, retention value and commented upon in the following manner:

- Tree Number
- Tree Species
- Estimated height
- Estimated crown spread
- Diameter at breast height
- Vigour
- Retention value
- Arboricultural condition and recommendations for remedial works

1.8 Comments relate to species content, retention and amenity value, and have been provided with recommendations.

1.9 The trees have been classified according to their "desirability to retain". This rates the amenity conferred by each tree and is based on the assumption that development will occur on the site and having given consideration to the recommendations of this report and BS 5837: 2005 – Table One.
For clarification – the grading system can be summarised as follows:
A – high quality & value, effective for more than 40 years
B – moderate quality & value, effective for more than 20 years
C – low quality & value , effective for 10 years
R – trees for removal (effective for less than 10 years)

1.10 To ascertain the overall condition of a given tree, the survey sheets should be used in conjunction with the condition key (4.1)

1.11 To ascertain the age class of a given tree, the survey sheets should be used in conjunction with the age class key (4.2)

1.12 The trees on the site are subject to a general re-inspection schedule of six months from which a requirement for further monitoring or assessments will be judged.

1.13 Any specified remedial work recommendation is regardless of development plans and is based on current tree condition. Therefore the start date for the implementation of remedial works is as specified and from the date of survey.

2 Tree Works

2.1 All tree pruning and felling identified within the pruning regime shall be carried out in accordance with BS 3998 Recommendations for tree work and The International Society of Arboriculture Tree Pruning Guideline 1995.

2.2 All tree work should be undertaken by a suitably qualified Arboricultural Contractor. No works shall be carried out until permission has been granted by the relevant Local Planning Authority. The Forestry Authority should be contacted to check as to whether a Felling License is required.

3 Limitations

3.1 No assessment has been made of soil conditions/implications of soil conditions and root extent is indeterminate from this survey. We would urge that soil type is ascertained and tree related implications are assessed such as foundation type/depth in accordance with N.H.B.C. guidelines.

3.2 No information is available to assess any tree implications of service lines; we would recommend this information is assessed for tree significance.

3.3 The survey boundaries have been taken from the supplied drawing. Boundary clarification will be required at various locations as recommended by this report.

3.4 No information has been provided regarding the existence of any Tree Preservation Orders on site and I have not contacted the local planning authority to determine whether any TPO covers trees on site, or to determine if the site is within a Conservation Area. Before undertaking any work to any of the trees, it would be advisable to check whether any of these planning controls are in operation. If they are, it would be necessary to obtain consent (or in the case of a Conservation Area give six weeks notice of intent) before undertaking any such work. This falls under the 'Town and Country Planning (Trees) Regulations 1999', this came into force on 2nd August 1999.

3.5 No liability can be assumed to rest with Phelps Associates should conditions alter following our inspection of the site. Therefore we must be informed immediately of any alterations to plans upon which our assessments and conclusions/recommendations have been based.

4 CONDITION, AGE, VIGOUR, AMENITY & RETENTION VALUE KEYS

Condition Key

4.1 For the purposes of ascertaining the general overall arboricultural condition of the trees / compartments referred to in the survey sheets the following key should be used.

Good	Generally classed as having good overall structural and physiological condition. Specimens in good/excellent condition. They generally have few and less significant arboricultural defects than those trees classed as "B" or "C". Usually contribute significantly to the local or site amenity.
Moderate	Generally classed as having reasonable structural and physiological condition. They may contain smaller areas of included bark within either major or minor fork junctions. They may be subject to single or multiple fungal invasions, bacteria or virus. In the case of fungal invasion or bacteria the Latin name of the species has been stated. They may be subject to minor crown dieback, unusually pale or smaller foliage or have been subjected to outside influences such as restriction of rooting spread, vandalism or mechanical damage, but should be viewed as in generally good overall condition.
Poor	Generally classed as having poor overall structural or physiological condition. They may contain large areas of included bark either within major or minor fork junctions. They may be subject to single or multiple fungal invasions, bacteria or virus. In the case of fungal invasion or bacteria the Latin name has been stated. They may contain splits or cracks throughout the branching structure. They may be subject to significant crown dieback or exhibit unusually pale or small foliage, be defoliated or dead. They may be subject to outside influences such as restriction of rooting spread, vandalism or mechanical damage and costly to retain.

4.2 **Age Class Key**

NP	Newly planted
Y	Young - Tree/shrub in first third of life expectancy
MM	Middle Mature – Tree in 2nd third of life expectancy
M	Mature - In final third of life expectancy
OM	Over Mature – Declining in physiological functions

4.3 Amenity Value Classifications

High (`A`)	Significant contribution to either local landscape, landscape within site or both. Tree cover in this category should be carefully managed to ensure that the contribution played by the tree within the landscape is not compromised.
Moderate (`B`)	Indicates that the tree provides some contribution to the local landscape or landscape within site. Consideration should be given to enhancing the landscape with planting if required and management should aim to further enhance the local landscape.
Low (`C`)	Indicates little, no or a negative contribution to the local landscape.

4.4 Growth Vitality Key

N	Normal
M	Moderate (below normal)
P	Poor (sparse, weak)
D	Dead

4.5 Retention Value Key

The trees have been classified according to a desirability to retain. This rates the amenity conferred on each tree / tree group and is based on the assumption that development will occur and given consideration to the main report findings. The categories are contained in the table - Table 1: Retention Value Key found in Appendix 3 of this report.

5 Site/Description of Proposed Development

5.1 It is proposed to demolish the existing single garage, located at the end of the rear garden and build a new double garage with a basement area to be used for car parking. There are a number of medium and small sized trees growing on the road side boundary which have been assessed for their quality and value. The proposed garage will encroach into the rear garden and excavation works will be carried out to provide a basement area for parking.

6 Arboricultural Survey – Tree Details & Observations.

6.1 The attached Tree Survey Schedule (see Appendix 1) details the significant trees in respect of their dimensions and quality in accordance with the methodology set out in the British Standard BS 5837:2005 'Trees in relation to Construction. Recommendations'. Appropriate and relevant comments are also provided. The removal of dead, dying and dangerous trees is considered to be appropriate tree management irrespective of development.

6.2 In the following paragraphs I have provided further information relating to specific trees and their management in the context of any proposed development.

6.3 T.6 Weeping Ash has been recorded as being retention 'Category 'A' of high quality and value, mainly due to it being a good example of its species, and somewhat unusual. Although I was unable to look at the tree closely there was no visible evidence of any structural or physiological defects which would forseeably reduce its normal life expectancy or pose any risks to safety.

6.4 T.1, 3 & 5 have been recorded as that of retention 'Category 'B' of moderate quality and value making a significant contribution to the landscape.

6.5 T.2G & T.4 have been recorded as that of retention 'Category 'C' of low quality and value, and this is primarily because they have a stem diameter of less than 150mm. (As suggested by BS 5837)

6.6 **A summary table of tree quality is provided:**

	A Grade	B Grade	C Grade	R Grade
No. of trees	1	3	2	0
% of total	17	50	33	0

6.7 **Trees & Groups of trees to be retained**

Category	A Grade	B Grade		R Grade
Trees	**T.6**	**T.1,3 & 5**	**T.2G Various**	**0**
Number of Trees	**1**	**3**	**8/9**	**0**

6.8 **Trees & Groups of trees to be removed**

Category	A Grade	B Grade		R Grade
Trees	**0**	**0**	**T.2G Various & T.4**	**0**
Number of Trees	**0**	**0**	**6/7**	**0**

6.9 It is proposed to remove only Category 'C' trees, which are all of relatively low value and growing within the site boundary.

6.10 All other trees are being retained and can be protected throughout the development process.

7 Assessment of Proposed Development – Implications for Roots.

7.1 The British standard recommends a minimum area around retained trees which should be protected from disturbance "in order to avoid damage to the roots or rooting environment." This 'Root Protection Area' (RPA) is calculated, using Table 2 of the British Standard, as an area equivalent to that of a circle with a radius 12 times the stem diameter for single-stemmed trees, and 10 times the basal diameter for trees with more than one stem arising below 1.5m above ground level.

7.2 The proposed garage is being extended into the rear garden and excavation works carried out to provide a lower level for car parking. The existing ground level will be increased to accommodate the new double garage, and then from garage level stepped down to a lowered garden level.

7.3 It has been decided to retain T.3 Cherry Laurel which has a root protection area of 3.5m. The nearest elevation of the proposed new building is just over three metres from the tree (T.3) and thus its RPA will pop inside the build footprint. However it is suggested at Clause 5.2.4 of the Standard, that for open grown trees the RPA may be offset by up to 20% or the shape of the RPA may be changed, but not its area (m^2), whilst still providing adequate protection for the root system. Therefore in my judgement if protective fencing is erected just outside the tree canopy edge, it will be adequately protected throughout the construction process.

7.4 T.6 Ash. Regarded as being of high value with a RPR of 6.6m is growing in the neighbours garden and is over 10m from the proposed garage and therefore will in my view be unaffected by construction.

7.5 T.5 Ash. Also growing in neighbour's garden with a RPR of 5.4m, and stands approximately 5.0m from the proposal. This tree has recently been re-shaped and its species type is known to be particularly tolerant to pruning. The existing wall between the two gardens will act as adequate protection for the tree throughout the construction process.

7.6 T.1 Eucalyptus. A relatively young tree growing in a poor position close to the property and boundary fence, and with a potential to reach heights in excess of 20m. A hardy species and unlikely to be affected by any development on site. However bearing in mind its unsuitable position I would recommend its removal and replacement with a more suitable species.

7.7 T.4 Tulip. Although potentially a quality specimen, it has a stem diameter of less than 150mm and should not be allowed to dominate site layout

considerations. Relocation is always an option but in this instance I feel the high cost would not warrant the rewards. Therefore its removal is recommended and replacement within the landscape proposal to mitigate its loss.

7.8 T.2G Various species including, Hawthorn, Cherry, Shrubs. Growing along the boundary fence with stem diameters of less than 150mm can be lost without considerable landscape impact, and replaced within the landscape proposal.

8 Underground Services/Protective Measures

8.1 The proposed Scheme can make use of existing services and there is no requirement for new excavations in the vicinity of retained trees.

8.2 TPF (Tree Protective Fencing) suitable for low intensity development should be erected as shown on the tree protection plan, and shall comprise of 1.2m high cleft chestnut paling, securely mounted onto firmly driven wooden posts. (Appendix 5). The site manager or other suitably qualified appointed person will be responsible for inspecting the protective fencing on a daily basis; any damage to the fencing or breaches of the fenced area will be rectified immediately. This fencing should be erected immediately prior to any of the following taking place:

- Plant and materials delivery
- Soil stripping
- Construction works
- Utility instillation
- Landscaping

8.3 Inside the exclusion area of the fencing, the following prohibitions shall apply:

- No linear mechanical excavation whatsoever
- No excavation by any other means without arboricultural site monitoring
- No hand digging without a written Method Statement having first been approved by the project arboriculturist
- No construction of a sealed hard surface (except where agreed with the project arboriculturist)
- No storage of plant or materials
- No storage or handling of any chemical including cement washings
- No vehicular access
- No fire lighting

9 Future Relationship between Trees and Development

9.1 On completion of construction, future pruning may be required to avoid conflict between trees and building. This would be likely to involve a cyclical pruning programme at 2-3 yearly intervals.

9.2 All tree work operations now or in the future would be undertaken in accordance with the recommendations of BS3998:1989 'British Standard Recommendations for Tree Work'. All necessary tree work will be detailed in a schedule of work and would be undertaken, initially, to provide safe access to the site (recommendations key 10). All tree pruning would reflect the character of the species and would not reduce the amenity value of retained trees.

10	**Recommended Schedule of Tree works (Initial Tree Works)**
1.	T.4 Tulip	Fell to ground level, grind out stump if required
2.	T.2G x Various	Fell to ground level, grind out stump if required

11 Reporting Damage to Trees and Tree Protective Fencing

11.1 Should any damage occur to trees this shall be reported to the site agent immediately? The site agent shall report up the chain of responsibility to the project Arboriculturist, to allow any measures to be implemented as necessary.

11.2 Should fences become damaged so as to impair their function in protecting trees, all work shall cease in the vicinity of the damage until the fence has been returned to standard.

12 Conclusions

12.1 T.5 & T.6 Growing in the neighbours garden will be unaffected by the proposed development.

12.2 T.4 Tulip has a stem diameter of less than 150mm and can be lost without a significant landscape impact.

12.3 T.1 Eucalyptus. The removal of this tree is recommended due to its future potential size and the physical constraints in which it is growing.

12.4 Mitigation for the removal of this tree will consist of replacement planting of at least one new tree and various shrubs and plants, species being native to the area, details of which will be agreed with the LPA before any works commence. This tree will be an Extra Heavy Standard containerised tree with a girth of 14/16cm and staked and tied in accordance with current best practice. This new planting will ensure that the character and amenity of the locality are maintained, improve the age class balance of the trees on site, and re-establish a framework for the ongoing greening of the area.

12.5 T.2G Various. The removal of some of these trees could be seen as acceptable as they are 'Category 'C' trees and regarded as low value.

12.6 The necessary precautions to prevent damage to retained trees and to protect them during construction can be assured by the erection of appropriate protective fencing (Appendix 5). Therefore the retention of T.3 is possible if low intensity fencing is erected at the edge of the canopy. (Just over 3m from tree) as shown on the tree protection plan.

12.7 The design of the scheme accords with the relevant BS for trees and development (5837:2005) and for the vast bulk of the proposal exceeds the guidelines produced in this document.

12.8 Subject to the above requirements being met, I consider that the good health of all retained trees growing on and off site will be unaffected by the proposed development.

I hope that you find this report satisfactory, please do not hesitate to contact me if I can be of further assistance.

Signed ..... Date.....

Appendix 1 – Tree Survey Schedule

4.1 Tree Survey Schedule

Site:	6 Keats Grove, Hampstead, London, NW3 2RT	Surveyor:	Andrew Phelps
Date of Survey:	9th April 2009	Ref:	PA S467

Tree No	English Name	Height	Crown Spread	Ground Clearance	Age Class	Stem Diameter (mm)	Protection Multiplier	Protection Radius (Metres)	Vigour (Growth Vitality)	Structural Condition	Amenity Landscape Contribution	B.S Cat Ret Value	Sub Cat	Useful Life	Structural Condition/Observations
T.1	Eucalyptus	10	4	5	Middle Mature	190	12	2.3	Normal	Good	Moderate	B	2	<20	Potentially a 20m plus tree, it will outgrow its position.
T.2G	Various, Hawthorn, Privet, Cherry, Shrubs	5	2	3	Mature	Less 150	10	1.7	Normal	Good	Moderate	C	2	20	No visible defects
T.3	Cherry Laurel	6	3	2	Mature	290	12	3.5	Normal	Good	Moderate	B	2	40	Regarded as that of moderate quality and value, making a significant landscape contribution.
T.4	Tulip	11	2.5	3	Young	140	12	1.7	Normal	Good	Moderate	C	2	40	No visible defects
T.5	Ash	14	5	7	Mature	450	12	5.4	Normal	Good	Moderate	B	2	40	Neighbours property
T.6	Weeping Ash	9	7	5	Mature	550	12	6.6	Normal	Good	Moderate	A	2	40	Neighbours property

Notes:

1. Height describes the approx. height of the tree in metres from ground level.
2. Crown spread refers to the crown radius in metres from the stem centre and is expressed as an average of NESW if symmetrical
3. Ground Clearance is the height in metres of crown clearance above adjacent ground level.
4. Diameter Breast Height (DBH) is the diameter of the stem measured in mm at 1.5m from ground level for single stemmed trees or at ground level for multi-stemmed trees. DBH may be estimated where access is restricted.
5. Age Class is the tree's relative age to its species and is expressed as Newly planted (NP) Young (Y), Middle Mature (MM), Mature (M) and Over Mature (OM).
6. Protection Multiplier is 12 for single stemmed and 10 for multi-stemmed trees and is the number used to calculate the trees protection radius and area.
7. Protection Radius is a radial distance in metres measured from the trunk centre.
8. Growth Vitality - Normal ; Moderate (below normal); Poor (sparse, weak); Dead (dead or dying tree)
9. Structural/Arboricultural Condition – Good (no or only minor defects); Moderate (remediable defects); Poor (major defects present). See Condition Key (4.1) for detail
10. Landscape Contribution – High (prominent landscape feature); Medium (visible in landscape); Low (secluded/among other trees)
11. B.S Cat refers to (BS 5837:2005 Table 1) and refers to tree/group quality and value; 'A' – High; 'B' – Moderate; 'C' – Low; 'R' – Remove. **See Table 1 - Retention Value Key**
12. Sub Cat refers to the retention criteria values where 1 is arboricultural, 2 is landscape and 3 is cultural including conservational, historic and commemorative.
13. Useful Life is the tree's estimated remaining contribution in years.

Appendix 2 – Tree Protection Plan

Appendix 3 – Retention Value Key

TREES FOR REMOVAL				
Category and definition	**Criteria**			**Identification on Plan**
Category R Those I 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 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) • 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).			**Dark Red** 0
TREES TO BE CONSIDERED FOR RETENTION				
	Criteria – Subcategories			
Category and definition	**1. Mainly arboricultural values**	**2. Mainly landscape values**	**3. Mainly cultural values (including conservation)**	
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)	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)	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)	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	**Light Green** 1
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)	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)	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 (e.g. trees of moderate quality within an avenue that includes better, A category specimens) or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality	Trees with clearly identifiable conservation or other cultural benefits	**Mid Blue** 3
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 150mm	Trees not qualifying in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value and/or trees offering low or only temporary screening benefit	Trees with very limited conservation or other cultural benefits	**Grey** 2Groups (App15)
	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 150mm should be considered for relocation			

Appendix 4 – Hand Digging In the Vicinity of Trees

Appendix 5 – Protective Fencing

Appendix 6 – Common Causes of Tree Death