Stage 1 Arboricultural Report

For planning purposes at

26 Netherhall Gardens
Camden
London
NW3 5TL

Dated
2nd April 2013

CROWN Consultants

Tree consultants throughout England and Wales

Contents

1. Introduction

1.1. Instruction

1.1.1. We are instructed by Andreas Kaimakamis of Pelican Building Contractors Ltd to undertake an Arboricultural Survey at 26 Netherhall Gardens and produce our findings in a report.

1.2. Scope and Purpose of the Report

1.2.1. This report is designed to accompany a planning application for development proposals at the above site. Its purpose is to assist and inform the design and planning process. It is produced according to the guidance and recommendations within *BS 5837: 2012 - Trees in Relation to Design, Demolition and Construction.* This report does not take into account specific design proposals which are yet to be finalised.

1.3. Drawings

1.3.1. The tree locations shown on the accompanying plans which are reproduced in Appendix 6 have been plotted according to measurements taken on site.

1.3.2. The *Tree Constraints Plan* shows the existing layout. For each tree the stem location is indicated and scaled according to its diameter, the canopy is indicated according to measurements taken along the four cardinal points of the compass. Root protection areas are indicated which are calculated according to the guidelines within BS 5837 (2012).

1.3.3. When using the Tree Constraints Plan for design purposes, the Root Protection Areas should be amended to reflect actual site conditions. Where the circular RPAs extend beneath roads or existing buildings, that part of the RPA should be ignored and the RPA extended a suitable distance in other directions.

2. Site Overview

2.1. Brief Description (Existing Layout)

2.1.1. The site lies within a leafy residential area, 300m due east of Finchley Road Station. The co-ordinates are 51° 33.027'N 0° 10.736'W and the altitude is 74m above sea level. (Co-ordinates may be pasted or typed into the following site: http://maps.google.co.uk/ where maps, satellite imagery and street views may be accessed).

2.1.2. Our survey covered the area indicated in Figure 1.

Figure 1 Extent of the survey (image is not current).

2.1.3. The site comprises a detached house with gardens to front and rear. The ground levels slope upwards from the road to the house and into the rear garden. Steps lead up to the house from Netherhall Gardens. There is only one tree within the front garden (lime – T6) though nearby street trees (T5 and T8) and trees in adjacent front gardens (T7) were also included in our survey.

2.1.4. The rear garden is at a higher level than the house and is retained by a wall close to the house which doubles as a light well for the lower floor windows. The retained land also slopes upwards away from the house and is terraced. Four large trees were included within the survey that are growing in the rear garden (T2 and T3) and in adjacent rear gardens (T1 and T4).

2.1.5. The Tree Constraints Plan and Tree Data Schedule should be referred to for descriptions and locations of all trees.

2.1.6. Photographs of the site are included in Section 6.

3. Tree Survey and Data Schedule

3.1. Survey Details

3.1.1. A ground level survey undertaken on 22nd March 2013 during clear, dry weather conditions. The survey was conducted by Ivan Button. No climbed inspections or specialist decay detection were undertaken. Only trees with a stem diameter over 75mm were included, which lie within the site boundary or relatively close to it.

3.1.2. Where applicable, trees with significant defects have been highlighted and appropriate remedial works have been recommended. However, this report should not be seen as a substitute for a full *Safety Survey* or *Management Plan* which are specifically designed to minimise risk and liability associated with responsibility for trees.

3.1.3. Wherever possible, dimensions are obtained using diameter tapes, logger's tapes, distometers and clinometers. Where obstacles prevent accurate measurement, dimensions are estimated. Trees on privately owned third party are surveyed from the best available vantage point and observations relating to the condition of these trees should be treated accordingly. All height measurements should be regarded as approximate.

3.2. Data Schedule

3.2.1. The findings of the survey are presented in The Tree Data Schedule which is provided as a separate document as well as being appended to the end of this document within Appendix 6.

3.2.2. The Schedule includes scaled tree images based on measurements recorded for stem diameter, crown spread, crown height and overall height. Their purpose is to indicate, at a glance, the relative dimensions of each tree.

3.2.3. A definition of the Retention Categories can be found in Appendix 1. All other terms used within the Tree Data Schedule are defined and explained in Appendix 3.

3.3. Stem Diameters – Multiple Stems

3.3.1. Where a tree has more than one stem, the equivalent-single-stem diameter is usually recorded. This is calculated by adding the squares of the stems and then finding the square root of this total. The radius of the Root Protection Area is then calculated by multiplying the equivalent-stem-diameter by 12.

3.3.2. Occasionally this method is not appropriate (e.g. for coppiced specimens where there are numerous stems). In such cases the diameter at ground level may be recorded or a stem diameter which would provide a suitable Root Protection Area calculation. The form of the tree is recorded in the notes section.

4. Vegetation Overview

This section summarises all the recommendations within the Tree Data Schedule regardless of whether trees are to be retained, felled or pruned to facilitate the proposed development. It does not specify works that may be required to facilitate the development proposals. The protection status of the trees is also reported in this section.

4.1. Preliminary Management Recommendations

4.1.1. The following recommendations are made in order to maintain the trees in an acceptable condition:

4.1.2. The large oak tree, T2, situated in the rear garden has extensive decay to its lower stem. The decay is so soft and extensive that this tree is considered to be potentially hazardous and is recommended for removal as a matter of high priority.

4.1.3. Some trees could not be fully inspected due to the presence of dense ivy. It is recommended that the ivy is removed so that the trees may be re-inspected. Trees included are T1, T4 and T6.

4.1.4. All other trees were deemed to be in an acceptable condition.

4.2. Work Priority and Future Inspections

4.2.1. The table below suggests a schedule for completing the works recommended in the Tree Data Schedule based on the perceived risk:

Work Priority	Definition	Tree Number
Urgent	As soon as possible	None
Very High	Within 1 Month	None
High	Within 3 Months	T2
Moderate	Within 1 year	T1, T4, T6
Low	Within 3 years	None

4.2.2. The table below suggests a schedule of future inspections based on the condition and location of each tree:

Inspection Frequency (years)	Tree Number
0.5	None
1	None
1.5	T1, T4, T6
3	T3, T5, T7, T8

4.2.3. The trees should be inspected sooner if there is a noticeable decline in their condition, or following extreme weather events.

4.3. Tree Protection Status– Site Specific

4.3.1. On 27th March 2013 we were informed by Karl of London Borough of Camden that:

- The site is within a Fitzjohn/Netherhall Conservation Area.
- There is a Tree Preservation Order affecting an Oak tree within the rear garden of either 26 or 28 Netherhall Gardens. We believe this could be T1 or T2 within our report. The local authority were not able to provide more details though the Order may be viewed upon request at the local authority offices.

4.4. Tree Protection – General Notes

4.4.1. Before undertaking works to trees protected by a tree preservation order, consent needs to be obtained from the local authority which will provide application forms and advice to potential applicants. The removal of dead wood is exempt.

4.4.2. Where the works are proposed for reasons of safety or ill health, a report from a suitably qualified arborist will usually be required. Trees that are dead, dangerous or dying are technically exempt from protection, though it would be prudent to give the local authority 5 days' notice of intention and take photographs before undertaking works without prior consent being granted. Fines of up to £20,000 per tree exist for unauthorised works to protected trees.

4.4.3. Where trees are located in a conservation area, works are not permitted without first giving the local authority 6 weeks' notice of intention. During this time the local authority may elect to create a tree preservation order or to inform the applicant that they have no objection to the proposed works. If the local authority does not respond within 6 weeks, then the intended work may be undertaken.

4.4.4. Where planning permission is granted and tree works have been approved as part of the planning consent. No further application is required in respect of protected trees and no further notice is required in respect of trees within a conservation area.

4.5. Species Present – Additional Information

4.5.1. The table below contains general information about the tree *species* that were observed within the survey. It does not contain information about the individual trees surveyed. Its purpose is to assist readers who are unfamiliar with the characteristics of the various species.

Species	Typical Height at Maturity	Typical Canopy Spread at Maturity	General Notes
Cherry	8	10	Many cultivars available, bred for their abundance of spring flowers, edible cherries or ornamental bark (e.g. Tibetan Cherry). Usually white or pink flowering, often in very early spring. Usually with a single bole to around 2.5m and multi-stemmed thereafter. Most varieties have excellent autumn colour.
Lime	25	12	Very common street tree. Several species exist; the one most often found in woods is 'common lime' which produces a mass of suckers at the stem base, making it very cheap to propagate. Limes have non-symmetrical heart shaped leaves which are much loved by aphids (hence the sticky honeydew on cars parked beneath). Limes are tolerant of heavy pruning and are often managed as pollards. Old limes tend to support a lot of small dead branches. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Tilia+x+europaea for more info.
Oak	22	18	Deciduous, long lived tree native and common throughout Europe with very durable timber. Excellent habitat tree - provides food and shelter for thousands of native species. Can be very attractive as a mature open grown specimen though not particularly ornamental, having no autumn colour or showy flowers. Responds well to pruning. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Quercus+robur for more info.

Species	Typical Height at Maturity	Typical Canopy Spread at Maturity	General Notes
Silver Maple	30	20	Deciduous tree native to N. E. America. Cut leaved version is regularly planted. Outstanding autumn colour. Irregular, airy domed crown, often with weeping outer branches. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Acer+saccharinum for more info.
Sycamore	25	16	Deciduous tree native to S. Europe, widely naturalised in the UK. Often regarded as a weed species due to its invasive nature and ability to tolerate most conditions. Responds well to pruning. Not a good tree to park beneath in summer due to the sticky sap secreted by aphids. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Acer+pseudoplatanus for more info

4.5.2. The figures quoted regarding typical height and canopy spread should be treated as approximate. Actual heights and spreads vary according to several environmental factors such as soil conditions, climate and presence of competing vegetation.

5. Implications for Development

5.1. Site Specific Issues

5.1.1. I am unaware of the precise details of the proposals at this present time. However I am able to make the following comments:

5.1.2. The large oak, T2 dominates the rear garden, and its roots will proliferate throughout the entire raised planted area. However this tree is in such poor structural condition that it is recommended for removal regardless of development proposals.

5.1.3. The mature oak, T1, also has a large root system which will proliferate through the northern third of the raised area within the rear garden. Any excavation into this raised area of grass and shrubs will have an unavoidable impact on the roots of this tree. The retaining wall close to the house will deter roots from the existing lightwell so this may be developed with minimal impact.

5.1.4. Trees T3 and T4 are quite distant from the house and, as such, do not pose a significant constraint on the site. However, ground levels should ideally be maintained throughout their Root Protection Areas if these two trees are to be retained.

5.1.5. The only significant constraint on the front garden is the lime tree, T6. If this tree is to be retained, the planted area immediately around the base of this tree (surrounded by brick walls and steps) shall need to be retained undisturbed. Any proposal to reconfigure the existing steps and levels will need to take this into account. The small street tree, T5, (cherry) shall have most of its roots beneath the public footway. The retaining wall along the front boundary will have deterred most roots from entering the front garden. However, as this tree matures its influence on soils within the front garden will increase.

5.1.6. The southern site boundary does not appear to accurately match those indicated on the accompanying plans. This may be due to development works which have taken place since the site plan (which formed the basis for our survey) was drafted. Tree locations were measured from the house rather than the southern boundary and are considered to be accurate.

5.1.7. The remainder of this section offers general advice on dealing with tree related constraints on construction sites. Persons familiar with BS 5837 Arboricultural Reports (e.g. tree officers) may wish to skip this section and go straight to the following section.

5.2. Retention Categories

5.2.1. The Tree Constraints Plan indicates the BS 5837 Retention Categories for each tree. These should be taken into account during the design stage of any development proposals according to the following criteria:

5.2.2. Wherever possible, Category A trees should be retained. These are usually large trees with a relatively high amenity value. They are generally in good condition, well suited to their surroundings and with a significant life expectancy.

5.2.3. The retention of Category B trees is also desirable, though these trees are of a lesser quality, or have a reduced life expectancy or are smaller than category A trees.

5.2.4. The retention of Category C trees should be seen as optional. These are usually small trees or trees of no particular merit and are not considered to be a material planning consideration.

5.2.5. Category U trees have been recommended for removal due to their poor condition, and should be removed regardless of development proposals.

5.3. Root Protection Areas

5.3.1. The Tree Constraints Plan indicates the Root Protection Areas of each tree. This does not represent the maximum extent of rooting activity; rather, it defines the area within which the majority of roots are expected to be confined. Wherever possible, this should be left undisturbed for all trees to be retained. Significant disturbances such as changes in ground level, soil compaction caused by vehicles, excavation of trenches, or interference with oxygen and rainwater exchange may have a significant impact on the health of the tree.

5.3.2. Some disturbance of the Root Protection Area may be acceptable but must be kept to a minimum. Construction methods should be adopted that are sympathetic to root requirements:

5.3.3. Concrete strip foundations should be avoided except at the very extremity of the Root Protection Area. Instead, pile/pier and beam foundations or raft foundations should be utilised. These will minimise root severance.

5.3.4. Hard surfaces should be installed with the minimum of excavation. The majority of roots lie within the upper soil horizons and are relatively fine. Roots do not need to be as thick as branches, since they do not have to combat gravity and high winds etc. A root as thin as a finger is able to transport a lot of nutrients. Thus, excavation as shallow as 30cm can have a significant impact on the health of a tree even though large roots might not be severed. Cellular confinement systems help to reduce the amount of excavation required to give a driveway adequate strength.

5.3.5. Hard surfaces should ideally be porous to allow rainwater and oxygen to pass into the soil. Gravel is the ideal medium and can be retained in a cellular system to prevent rutting. Block paving and flagstones without mortar joints are a good alternative. Tarmac is not very porous; the use of a no-fines tarmac is preferable.

5.3.6. Trenches for underground services are commonly overlooked but can cause major damage to trees. Further arboricultural advice should be sought if underground services are to pass within Root Protection Areas. Trenchless techniques can sometimes be utilised but are not usually practical for installing drains.

5.3.7. If ground levels are to be raised, this should always be done with a loose granular material such as gravel or coarse sand. Ground levels must never be raised against the trunks of trees as this may cause them to rot.

5.3.8. It is sometimes possible to mitigate against root disturbance, by above ground pruning or by improving rooting conditions for existing roots. The introduction of mycorrhizal fungi and earth worms significantly improves rooting conditions, as does the removal of competing vegetation such as grass.

5.3.9. Soil compaction occurs when vehicles repeatedly pass over rooting areas without some kind of structure to disperse their weight. Healthy soils will contain approximately 25% airspace. When soils become compacted these air spaces disappear and roots are unable to respire. It is possible to de-compact soils but this is an expensive operation. It is preferable to avoid compaction, by spreading the load of traffic passing over Root Protection Areas with the use of metal road plates or suitable boards.

5.4. Tree Canopies

5.4.1. Where trees are to be retained, adequate space should be allowed between buildings and tree canopies. A minimum distance of 3m is recommended. For high quality trees

(Category A or B) which have not yet reached maturity a further allowance should be made to allow the canopies to mature without the need for extensive pruning.

5.4.2. For residential dwellings, the shade cast by trees should be also taken into account. Particularly where buildings are located north or north-east of sizeable trees. Some species e.g. birch, have light airy canopies so shade is less of an issue. Commonly occurring trees which cast quite dense shade include beech, oak, ash, chestnut, sycamore, lime and most evergreen species. Shade constraints are less of an issue for garages and other non-residential buildings.

5.4.3. The Tree Constraints Plan indicates the shade constraints defined within BS 5837 which is determined according to the existing tree heights. This represents an approximation of the areas most affected by shade throughout the year. It does not reflect the actual shade cast at any one time of the day or at any one time of the year. Ideally, the windows of high occupancy living quarters (kitchens, living rooms and dining rooms) should be located outside of the BS 58937 shade constraints. Where they are located within the shade constraints it is advised that a more detailed assessment is undertaken to ascertain the availability of skylight and sunlight available at key windows. Consideration should also be given to allowing adequate amenity space within gardens that will enjoy some sunshine.

5.4.4. More sources of information regarding the above points can be found within Appendix 5. Crown Consultants will gladly offer any further advice, and you are invited to contact the author of this report on 01422 316660.

5.5. Arboricultural Impact Assessment

5.5.1. When development proposals are available we recommend that an Impact Assessment is carried out before submission to the Local Planning Authority. This will identify any potential issues so that they may be resolved or mitigated against.

5.6. Tree Protection During Construction

5.6.1. BS 5837 recommends that an Arboricultural Method Statement is adhered to which ensures that all retained trees are adequately protected during the construction phase. This should be highly site specific and take into account such things as hard surface design, implementation of services and foundations, storage of materials, scaffolding, use of heavy plant such as cranes or excavators, protective fencing specification, and necessary tree works. Adherence to such a Method Statement will help to minimise the impact of the development.

6. Photographs

Refer to the Tree Constraints Plan for photo locations

Photo 1.

Photo 2.

Photo 3.

Photo 4.

Photo 5.

Photo 6.

Photo 7.

Photo 8.

Photo 9.

Photo 10.

Photo 11.

7. Signature

This report represents a true and factual account of the trees at

26 Netherhall Gardens
Camden
London
NW3 5TL

Signed

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Ivan Button N.C.H. (Arb), FDSc (Arb), BSc (Hons), P.G.C.E., M. Arbor. A.

on behalf of

Crown Consultants Ltd

Dated

2nd April 2013

CROWN Consultants
Tree consultants throughout England and Wales

Appendix 1: BS 5837: 2012 – Guidance Notes

This Standard prescribes the principles to be applied to achieve a satisfactory juxtaposition of trees and structures. It sets out to assist those concerned with trees in relation to design, demolition and construction to form balanced judgements.

It acknowledges the positive contribution trees may offer to a site, as well as the negative aspects of retaining inappropriate trees. It addresses the negative impacts that construction activity may have upon trees and offers mitigation strategies to minimise these impacts.

The Standard suggests a three stage approach to ensure best practice is followed when developing close to trees:

A1.1 Stage 1: Survey of Existing Trees

This identifies the existing trees on and adjacent to the site. Data is recorded for each tree and is presented in a Tree Data Schedule. Each tree is allocated a ***Retention Category*** according to its size, amenity value, condition and safe useful life expectancy. The categories are allocated independently of development proposals. Our interpretation of the Retention Categories is explained below:

A1.1.1 Retention Categories

A Category: Trees of high quality and amenity value. Usually, mature trees with a significant life expectancy which would enhance any development. Retention of these trees is strongly encouraged.

B Category: Trees of moderate quality and amenity value. Usually these are maturing trees or younger trees with exceptional form. Retention of these trees is desirable though the removal of occasional specimens may be acceptable.

C Category: Trees of low quality or small specimens with a relatively low amenity value. These trees are not considered to be a material planning constraint and their removal will generally be seen as acceptable in order to facilitate development.

U Category: Trees of such low quality that their removal is recommended regardless of development proposals.

A1.1.2 Occasionally trees are borderline and do not fall neatly into one of the categories A, B or C. In such cases we apply a superscript (**+/-**) such that:

C^{+} Indicates borderline C/B, though Category C is deemed to be most appropriate.

B^{-} Indicates borderline C/B, though Category B is deemed to be most appropriate.

A1.1.3 The British Standard suggests that each of the A, B and C categories may be further subdivided (A1, A2, A3, B1, B2, B3 etc) such that subcategory 1 denotes mainly arboricultural values, subcategory 2 denotes mainly landscape values and subcategory 3 denotes mainly cultural values (including conservation). Multiple subcategories may be used.

Our experience suggests that these subdivisions lack clarity and can be confusing. Within this report subcategories are **not** denoted. Where appropriate, the use of phrases such as '*Part of a formal group*', or '*Has a high ecological value*', or '*Offers good screening to the site*' are incorporated into the observation section of the Tree Data Schedule. We believe this conveys all relevant landscape and cultural information without any confusion.

A1.1.4 **Tree Constraints Plan (TCP).** This indicates the position, crown spread, Retention Category and Root Protection Area of each tree. It is used to inform where development may proceed without causing damage to trees.

A1.1.5 **Root Protection Area (RPA).** This is the area around each tree likely to contain the majority of roots. It should ideally remain undisturbed to avoid a detrimental impact on tree health. It is calculated according to the formula "radius of RPA" = "12 x stem diameter". This shape can then be modified to take into account site factors which influence rooting activity, e.g. underground structures. Where development works are proposed within the RPA they should be undertaken in a sympathetic manner to minimise root disturbance.

A1.1.5 **Shade Constraints.** BS 5837 suggests that shade constraints should be indicated on the TCP. This is denoted as a circle-segment drawn northwest to due east with a radius equal to the height of the tree. This does not represent the actual shade pattern which varies through the seasons. Rather, it indicates the area most shaded by the tree throughout the course of the year. Ideally habitable room windows should be located outside of these shade constraints.

A1.2 Stage 2: Arboricultural Impact Assessment

After the initial survey and the production of the Tree Constraints Plan, arborists and designers are encouraged to work together to establish a design proposal with minimal impact on the high quality trees. An assessment should be made of all possible impacts including the impact that the trees may have upon the proposal. The arborist may recommend mitigation strategies to minimise these impacts and help achieve a more harmonious juxtaposition between buildings and trees.

A1.3 Stage 3: Arboricultural Method Statement

This type of report specifies the measures necessary to protect trees against damage from construction activity. The Method Statement should be written in a manner that it may be conditioned and enforced by the local authority upon granting of planning permission. The site manager should be familiar with all aspects of the Method Statement and should ensure that all persons working on the site are aware of those aspects which appertain to their work. This includes service installation engineers and operators of plant machinery.

Appendix 2: Explanation of Tree Data & Glossary

This section explains the terms used in the **Tree Data Schedule** within Section 3.

A4.1 General Observations

A4.1.1 **Numbering System:** Each item of vegetation has its own unique number prefixed by a letter such that T1=Tree 1, G2=Group 2, H3=Hedge 3 and W4=Woodland 4, S5=Shrub 5.

A4.1.2 **Age Categories:**

Young	Usually less than 10 years old.
Semi-Mature	Significant future growth to be expected, both in height and crown spread (typically below 30% of life expectancy).
Early-Mature	Full height almost attained. Significant growth may be expected in terms of crown spread (typically 30-60% of life expectancy).
Mature	Full height attained. Crown spread will increase but growth increments will be slight (typically 60% or more of life expectancy).
Veteran	A level of maturity whereby significant management may be required in order to keep the tree in a safe condition.
Over Mature	As for veteran except management is not considered worthwhile.

A4.1.3 **Species:** Common names and Latin names are given.

A4.1.4 **Height:** Measured from ground level to the top of the crown.

A4.1.5 **Stem Diameter:** Taken at 1.5m above ground level where possible. On multi-stemmed trees this measurement may be taken at ground level, though usually an indication of the number of stems and average diameter is given, e.g. 3 x 30cm.

A4.1.6 **Crown Height:** Measured from ground level to the height at which the main crown begins. Where the crown is unbalanced it is measured on the side deemed to be most relevant. This is usually the side facing the area of anticipated development.

A4.1.7 **Tree Diagram:** This scaled drawing is computer generated based on measurements taken for stem diameter, crown height and spread, and overall height. It is designed to help the reader rapidly assess the data. It is not an accurate representation of the form of the tree.

A4.1.8 **Crown Spread:** Measured N, E, S & W, taken from the centre of the stem and usually rounded up to the nearest metre.

A4.1.9 **Observations:** If a tree's position is considered to be relevant it will be commented upon (e.g. overhanging a children's play area). Tree form and pruning history are also recorded along with an account of any significant defects. Defects and descriptive terms are dealt with in more detail at the end of this section.

A4.1.10 **Recommendations:** Usually based on any defects observed and intended to ensure that the tree is in an acceptable condition.

A4.1.11 **Priority Scale:** Depending upon the threat posed by the tree, and the likelihood of failure, recommendations should be carried out according to the following priority scale:

Urgent	To be carried out as soon as possible.
Very High	To be carried out within 1 month.
High	To be carried out within 3 months.
Moderate	To be carried out within 1 year.
Low	To be carried out within 3 years.

A4.1.12 **Inspection Frequency:** An interval of 6 months, 1 year, 1.5 years or 3 years is allocated before the next inspection is due. Wherever practical, consideration should be given to seasonal changes so that deciduous trees are not always surveyed in winter when they have no leaves, or in summer when leaves may obscure branches within the upper crown.

A4.1.13 **Vigour:** An indication of growth rate and the tree's ability to cope with stresses:

High	Having above average vigour.
Moderate	Having average vigour.
Low	Having below average vigour.
Very Low	Tree is struggling to survive and may be dying.

A4.1.14 **Physiological Condition:**

Good	Healthy and with no symptoms of significant disease.
Fair	Disease present or vigour is impaired.
Poor	Significant disease present or vigour is extremely low.
Very Poor	Tree is dying.

A4.1.15 **Structural Condition:**

Good	Having no significant structural defects.
Fair	Some defects observed though no high priority works are required.
Poor	Significant defects found. Tree requires monitoring or remedial works.
Very Poor	Major defects which will usually require significant remedial works or tree removal.

A4.1.16 **Amenity Value:**

Very High	Exceptional specimen, observable by a large number of people.
High	Attractive specimen, observable by a significant number of people.
Moderate	One of the above factors is not applicable.
Low	Unattractive specimen or largely hidden from view.

A4.1.17 **Life Expectancy:** The estimated number of years before the tree may require removal. Classified as (<10), (10 – 20), (20 – 40), or (40+).

A4.1.18 **Retention Category:** These are explained in detail in Appendix 1.

A4.2 Evaluation of Defects

A4.2.1 Cavities, wounds, deadwood etc are all evaluated as follows:

Major	Such that structural integrity is, or will become, compromised and the tree is, or will inevitably become, hazardous.
Significant	A defect that may over time become a major defect, though not necessarily so. This will depend on the vigour of the tree and its ability to deal with decay etc.
Minor	A defect that is not likely to compromise the tree's structural integrity.

General Glossary

Adaptive growth	In tree biomechanics, the process whereby wood formation is influenced both in quantity and quality by the action of gravitational forces and mechanical stresses on the cambial zone.
Aerobic	Conditions in which oxygen is freely available, or to biomechanical processes that depend on the presence of oxygen.
Anaerobic	A condition marked by the absence of oxygen; Generally such areas are unsuitable for normal life and growth of plant tissues. These sites tend to be populated by bacteria capable of surviving low oxygen conditions often associated with Slime Flux.
Arboriculture	The culture and management of trees as groups and individuals primarily for amenity and other non-forestry purposes.
Arborist	A person possessing the technical competence through experience and related training to provide management of trees or other woody plants in a landscape setting. Generally involved with the development or management of trees for visual amenity or land management rather than the growth of trees for product or profit.
Barrier zone	A layer within an annual increment of wood which contains abnormal xylem cells, laid down by the cambium in response to wounding or other trauma.
Body language	In trees, the outward display of growth responses and or deformation in response to mechanical stress.
Bole	Or Trunk, the main stem of a tree below its first major branch.
Bracket	A type of fruiting body produced by various fungal species, plate like to hoof like in shape and often a one sided attachment to the wood or bark.
Branch bark ridge	A ridged area located at the union of a branch to a trunk or stem.
Branch Collar	Trunk tissue that forms around the base of a branch between the main stem and the branch, or between a main branch and a lateral branch. As a branch decreases in vigour or begins to die, the collar usually becomes more pronounced and completely encircles the branch.
Brown Rot	Form of decay where cellulose is degraded, while lignin is only modified.
Buttress Root	Roots that emerge from the base of the tree stem, normally large and well developed that rapidly reduce in diameter to create the Root Plate this offers structural support for the tree. Buttress roots divide rapidly forming the connection between the stem and the transport roots.
Cabling Bracing	Installing cables within the crown of a tree to prevent collapse.
Callus	Undifferentiated cells often formed at the edges of recent injuries. This tissue quickly becomes differentiated, forming cells of the type characteristic of that position on the tree (e.g. forming wood, bark, roots, etc.) see wound response tissue.
Cambium	A thin layer of actively growing and dividing cells, located between the xylem (sapwood) and bark of a plant; the part responsible for radial growth of a tree stem or branch.
Canopy	The topmost layer of twigs and foliage in a woodland, tree or group of trees.
Canker	A localised area of dead bark and cambium on a stem or branch, caused by fungal or bacterial organisms, characterised by woundwood development on the periphery. This may be annual or perennial.
Cavity	An open and exposed area of wood, where the bark is missing and internal wood has been decayed and dissolved.
Chlorotic	Also Chlorosis. A condition of the plant marked by yellowing of normally green foliage, often indicating nutrient deficiency or plant dysfunction.
Clinometer	Devices that measures vertical angles, and provides direct height measurements of objects by triangulation.
Co-dominant stems/trunk	Are forked branches or trunks of nearly the same size in diameter and lacking a normal branch union.
Compacted soils	Soils in which the air-space (oxygen space) has been reduced or eliminated, reducing water infiltration and percolation, reducing root presence and inhibiting new root development.
Compartmentalisation	The physiological process that creates the chemical and mechanical boundaries that act to limit the spread of disease and decay organisms.
Compression Failure	Localized buckling of fibres and other longitudinal elements produced by compression of wood along the grain; compression failures sometimes develop in standing trees.
Compression Strength	The ability of a material or structure to resist failure when subjected to compressive loading; measurable in trees using special drilling devices
Compression Wood	Abnormal wood formed on the lower side of branches and curved stems, with physical properties different from normal wood.
Conservation Area	In Great Britain, designated areas of architectural or historical interest, in which there are special procedures for planning applications. Additionally tree works cannot generally be undertaken without prior notification (Currently 6 weeks) to the relevant local planning authority. See also Tree Preservation Orders.
Core Sample	A sample of wood extracted from a trunk or branch, using an increment borer tool. The resulting core can be analysed for characteristics of growth, wood strength, structure, decay, and for species identification.
Crotch	The union of two or more branches; the auxiliary zone between branches.
Crown	The upper canopy of a tree, including upper trunk, scaffold branches, secondary branches, stems and leaves.
Crown lifting / raising	Crown Lift The removal of the lowest branches, usually to a given height. It allows more residual light and greater clearance underneath for vehicles etc.
Crown reduction	The reduction of a tree's height or spread while preserving its natural shape.
Crown thinning	The removal of some of the density of a tree's crown, usually 5-25% allowing more light through its canopy and reducing wind resistance.
Deadwood (noun)	Deadwood is often present within the crown or on the stems of trees. It may be an indication of ill health, however, it may also indicate natural growth processes. If a target is present beneath the tree, deadwood may fall and cause injury or damage and should be removed, otherwise deadwood can remain intact for conservation purposes (insects, fungi, birds etc.).
Deadwood (verb)	The removal of dead branches from a tree's canopy, usually of a specified size (in diameter).
Decay	Progressive deterioration of organic tissues, usually caused by fungal or bacterial organisms, resulting in loss of cell structure, strength, and function. In wood, the loss of structural strength.
Decay Detection	The assessment of decay within a tree has been traditionally difficult, but recent advances have made it possible to achieve accurate representations of the internal section of a tree in both 2D and 3D, removing doubt over the condition of the tree and allowing accurate management decisions.
Decurrent	In trees a, system of branching in which the crown is borne on a number of major widely spreading limbs of similar size. In fungi relates to toadstools whose gills run down the stem and leaves and other plant organs, which extend down the stem.
Defect	In relation to tree hazards, any feature of a tree which detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment.
Defoliation	The losing of plants foliage.

Dieback	**Progressive death of buds, twigs and branch tissues, on individual limbs resulting in Deadwood, or throughout the canopy, extreme cases can result in Stag Heading.**
Dripline	**A projected line on the ground that corresponds to the spread of branches in the canopy; the farthest spread of branches.**
Epicormic shoots	**Fast growing, weakly attached shoots/branches that often grow as a response to stress factors upon a tree or branch removal.**
Excurrent	**In trees, a system of branching that a single leader remains dominant, through the control of lateral branches.**
Failure	**In connection with tree hazards, a partial or total fracture within the wood tissue or loss of cohesion between roots and soil. (In total failure affected parts will snap or tear away completely, Partial failure there is a crack or deformation, which results in an altered distribution of mechanical stress.**
Feeder Roots	**Fine fibrous Water and nutrient absorbing roots located in the outer root system.**
Flush-Cut	**In trees and shrubs, a pruning cut close to the parent stem, which removes the branch bark ridge.**
Foliage	**The live leaves or needles of the tree; the plant part primarily responsible for photosynthesis.**
Formative pruning	**The trimming of a tree to remove weaknesses and irregularities which may lead to problems. The formative pruning operation is aimed at reducing the potential for future weaknesses or problems within the tree's crown.**
Gall	**An abnormal, disorganized growth of plant tissues, caused by parasitic or infectious organisms such as insects, fungi, bacteria, or viruses.**
Girdling	**In woody plants, any form of damage that destroys the bark and / or the Cambium all the way around the stem, branch or root, normally resulting in death of the damaged section.**
Girdling Root	**In woody plants, a root that grows across the buttress, or across other roots, eventually causing constriction of the radial growth.**
Growth Increment	**The incremental growth added as new annual ring develops each season over existing wood. This is seen as (growth) rings in cross-sections of wood.**
Hazard beam	**An upwardly curved branch in which strong internal stresses may occur without the compensatory formation of extra wood (longitudinal splitting may occur in some cases).**
Heartwood	**Inner non functioning tissues that provide structural support to trunk.**
Heave	**In relation to shrinkable clay soils, expansion due to rewetting of a volume of soil previously subjected to the removal or water by plant / trees following felling or root severance. Also in relation to root growth, the lifting of pavements and other structures by radial expansion. Also in relation to tree stability, the lifting of one side of a wind rocked root plate.**
Herbicide	**A chemical compound that causes the death of a plant.**
Included Bark	**Bark that becomes embedded in a crotch between branch and trunk or between co-dominant stems, usually found in narrow or tight crotches, and causes a weak structure.**
Increment Borer	**A tool that cuts and extracts a narrow cylinder of wood from a tree for analysis of the wood tissue and growth increments.**
Leader	**The primary terminal shoot or trunk of a tree.**
Limb	**A large lateral branch growing from the main trunk or from another larger branch.**
Lion Tailing	**Often the result of poor pruning practices; the main leader or branches are largely devoid of side branches, growth is restricted to the end of branches and is likely to suffer damage through end loading.**
Lopping	**In trees, a general term that related to the removal of branches from a tree.**
Monitoring	**Due to the relative life span of trees in relation to our own, long-term monitoring provides a valuable insight to the health of trees, identifying decline and or stabilisation and or improvement.**
Mulch	**A material laid over the root system of a tree to help conserve moisture within the soil. Additionally it may help control the development of weeds close to the tree.**
Mycelium	**A mass of growing filaments (hyphae) formed by fungi.**
Mycorrhizae	**The symbiotic relationship between roots and certain beneficial fungi. Mycorrhizae are the combined root / fungal growth.**
Natural Pruning	**The shedding of a branch or twig that has died back naturally and has become decayed at or near its base.**
Necrosis	**The failure and subsequent death of a branch, leader or tree.**
Negligence	**A failure to take reasonable action to deal with a hazard to prevent damage to property or person.**
Nutrient	**Substances that are absorbed by living organisms for the maintenance of internal processes.**
Occluding tissue	**The general tern of wood, cambium and bark that develop around the site of a wound on a woody plant**
Pathogen	**A microorganism that causes diseases within another organism.**
Phloem	**The principle conductive tissue that the products of Photosynthesis are transported around the plant**
Photosynthesis	**The process were light energy is used to create energy (Carbohydrate) for use within the plant.**
Pollard	**A term for a pollarded tree.**
Pollard head	**The swollen section of branch / stem that forms behind the pollarding cut.**
Pollarding	**The complete or partial removal of the crown of a young tree so as to encourage the development of numerous branches either for amenity or historically as fodder, repeated management is required cyclically to maintain the feature**
Prune or Pruning	**Selective removal of woody plant parts of any size, using saws, Loppers, Secateurs, or other pruning tools.**
Reaction Wood	**Wood with distinctive anatomical characteristics, formed in parts of leaning or crooked stems and in branches to provide additional strength / support. In hardwoods, tension wood usually forms. In conifers, compression wood is usually found.**
Reaction Zone	**A zone normally darker than surrounding wood that denoted the boundary often a defensive one between functional sapwood and dysfunctional or decaying wood.**
Re-grading	**The raising or lowering of a soil profile from its original grade.**
Rejuvenation pruning	**Where historically or environmentally important trees are to be retained, their life spans can be significantly extended through the adoption of particular pruning regimes.**
Rejuvenation root treatment	**Management of the root zone can have a significant positive effect upon the health of trees. Physical, mechanical and biological approaches are available and can be prescribed in accordance within the constraints of individual sites.**
Remedial pruning	**The removal of old stubs, deadwood, epicormic growth, rubbing or crossing branches and other unwanted items from the tree's crown.**
Resistograph	**Invasive decay detection technique whereby the resistance offered by the timber to a spinning probe is measured and plotted.**
Rib	**In tree body language, a long narrow, axial protuberance which often over lays a crack.**
Ring Barking	**Artificial Girdling of the stem, to result in the death of a tree. May be used in habitat creation were the retention of dead standing trees is required.**
Rod Bracing / Bolting	**Traditionally, this has relied upon the Installation of steel rods or bolts through the stems or limbs, to reduce twisting or splitting of the wood. The installation of such features does require legal interpretation.**
Root Barriers	**Both Buildings and services can benefit from the installation of root barriers to protect a soil volume from the ingress of roots.**
Root Collar	**The basal area of the tree; transition zone from trunk to root. Also sometimes called trunk flare.**

Root Plate	**The primary support area for the tree; an area of the root system close to the base that structurally anchors the tree to the soil.**
Root Rot	**Either a general term for decay within the wood of the lower stem / buttress roots, or a disease in which the fine roots are killed.**
Root System	**The portion of the tree containing the root organs, including buttress roots, transport roots, and fine absorbing roots; all underground parts of the tree.**
Root Zone	**The area and volume of soil around the tree in which roots are expected. May extend to three or more times the branch spread of the tree, or several times the height of the tree.**
Sail Area	**That area or the tree subjected to wind load.**
Sanitation	**In plant disease control, the removal of material that could a source of infection by a pathogen. Removal of diseased plant parts, such as fallen leaves and twigs, and pruning of dead and diseased branches. Diseased parts should be burned or buried under soil or active compost.**
Sapwood	**Xylem wood tissue, usually light in colour, representing the outer growth rings of the wood. Usually living, reactive wood tissue, in a healthy tree. See heartwood**
Scaffold limbs / scaffold Branches	**The branches that from the main network framework of the crown of a tree.**
Senescent	**A decline in growth and vigour due to age or stress factors.**
Shrub	**A woody plat that branches at or close to the ground level and so does not have a single stem.**
Slime Flux	**Relating to a toxic condition from the spreading of bacteria or their products from a source of infection; characterized by malodorous gases, or salt deposits upon the bark. If these products enter the sap stream, localised vessel necrosis can result, usually associated with anaerobic conditions.**
Soft Rot	**A kind of wood decay, were a fungi degrades cellulose within the cell wall, without causing overall degradation.**
Soil Compaction	**The compression of soil, causing a reduction of pore space and an increase in the density of the soil. Air is squeezed out and nutrients become locked. Tree roots cannot grow in compacted soil.**
Soil Profile	**The characteristics of a soil as regards to relative depth; the changes in soil texture and composition that occur with depth.**
Soil Texture	**The classification of the constituent particles of soil; includes sand, silt and clay particles. Directly related to soil porosity, permeability, and aeration.**
Sonic Decay Detection	**Non invasive method whereby sound waves are passed through the tree and the speed is measured. Slow speeds indicate decay and a tomography picture representing the inner stem is produced.**
Stag Heading	**In a tree, a state of dieback were dead branches protrude beyond the current living crown.**
Stress	**In plant physiology, conditions were one or more physiological functions Are not working within normal parameters.**
Stump Grinding	**The removal of a tree stump using a specialist grinding machine.**
Subsidence	**In relation to vegetation, the removal of water by plant growth resulting in localised shrinkage in the soil volume.**
Sucker	**Same as sprout.**
Suppressed	**Trees which are dominated by surrounding vegetation and whose crown development is restricted from above.**
Systemic	**Affecting the whole plant or organism. A systemic compound is carried throughout the entire plant to all parts through the vascular system.**
Target	**Any person or object within reach of a falling tree or part of a tree that may be injured or damaged.**
Target Pruning	**The pruning of a branch were the wound affects only branch material, often result in a target shaped wound.**
Tension Wood	**Reaction wood typically formed on the upper side of limbs or curved stems; characterized by lack of cell wall lignifications (higher ratios of cellulose to lignin).**
Tight Union / Tight Crotch	**Also, narrow crotch. A crotch with a narrow angle between branches, often having included bark.**
Tomography	**The comparison of sound or stress waves through the tree allows the creation of a 2D or 3D representation of the internal structure of a stem or branch section and highlights areas of damage. Virtually non-injurious.**
Topography	**The configuration of surface features, including the vertical and horizontal relationships of the ground and other features.**
Topping	**Cutting large limbs back severely, without regard to form or habit of the tree. Cuts are usually made between lateral branch nodes. This practice is extremely injurious to trees, and promotes decay and structural weakness within the crown.**
Tree	**A woody plant that typically has a single stem, at maturity has a height of a least 4 metres and a stem diameter at breast height of at least 75mm.**
Tree Preservation Order	**In Great Britain, an order made by the local planning authority, were consent must be gained before undertaking all but exempt works to a tree.**
Trunk Flare	**The basal area of the trunk that flares or widens, and merges with the main roots. See root collar**
Veteran Tree	**Veteran trees are often found in large parks or estates and commonly affected by extensive decay or have been subject to extensive works. These trees are retained for historical importance and often pose greater risk than normal, which is generally justified. They need careful management and often propping or bracing to support them, some require fencing to limit access.**
Vigour	**Active, healthy growth of plants: ability to respond to stress factors.**
Visual Tree Assessment (VTA)	**An assessment of the mechanical condition of trees based upon their 'body language'. Trees are dynamic and respond to faults / decay / environmental factors in various ways, these responses can be indicative of structural integrity.**
Wetwood	**An infection caused by bacteria living inside the plant tissues. The bacteria ferment the plant fluids, resulting in death of nearby cells, and often causing exudations of fluid from the bark, often referred to as a Slime Flux.**
White Rot	**A kind if wood decay were a fungi attacks the lignin within the wood matrix**
Wind loading	**Forces placed upon tree canopy, branches, trunk and roots of a tree under windy conditions.**
Wind Throw	**The failure of a tree due to wind loading.**
Witches Broom	**A deformed or unusual growth of twigs from adventitious buds, caused by insects, disease, or dieback of twigs and buds.**
Wood	**Secondary Xylem; the main structural support and water conducting tissue of trees and shrubs.**
Wound Response Tissue	**Also Occluding Tissue, Wound Wood or Callus. Differentiated wood tissue that grows around the margins of a wound or injury.**
Wound Wood	**Wood with atypical features, formed in the vicinity of a wound and a term to describe the occluding tissues around a wound**
Xylem	**Plant tissues with special function of translocation of water and dissolved nutrients.**

Appendix 3: Survey Methodology

A2.1 Ground level visual surveys are carried out using the *Visual Tree Assessment* technique described by Mattheck and Broeler (1994) and endorsed by the Arboricultural Association (LANTRA Professional Tree Inspection course, 2007).

A2.2 Structural condition is assessed by inspecting the stem and scaffold branches from all angles looking for weak branch junctions or symptoms of decay. Particular attention is paid to the stem-base. Cavities are explored using a metal probe in order to assess the extent of any decay. If this is not possible further inspection is recommended in the form of a climbed inspection or using specialist decay detection equipment.

A2.3 The physiological condition is assessed by inspecting the stem, branches and foliage for symptoms of disease. The overall vigour of the tree is also taken into account.

A2.4 Where significant defects are observed, recommendations are made according to a scale of priority in order to reduce the likelihood of structural failure. The position of the tree and its potential targets are taken into account.

A2.5 Measurements are obtained using a diameter tape, clinometer, distometer and loggers tape. Where this is not practical measurements are estimated.

A2.6 Some trees are surveyed as groups, though this is usually avoided close to areas likely to be developed.

A2.7 Finally, a *Retention Category* is allocated as described in Appendix 1.1.1.

Appendix 4: Author's Qualifications

Qualifications & Experience of Ivan Button N.C.H. (Arb), FDSc (Arb), BSc (Hons), P.G.C.E., M. Arbor. A.

Construction

Between 1983 and 1995 Ivan worked primarily within the construction industry and received training in a broad range of practical building skills and general construction principles. During this time he obtained a BSc (Hons) at Leeds University followed by a P.G.C.E at The University of Wales.

Arboriculture

He obtained a NCH (Arboriculture) at the University of Lincoln and became a member of the Arboricultural Association. He then worked for an Arboricultural Consultancy for one year before establishing a tree surgery and landscaping business in 1998. In 2005 Ivan commenced full time employment with a leading Arboricultural Association approved consultancy and soon adopted a senior role responsible for five consultants.

He obtained a FDSc in arboriculture at the University of Lancashire, which he passed with distinction and is now a Director and Principal Consultant of Crown Consultants Ltd. He is accredited as a LANTRA *Professional Tree Inspector*. A qualification produced in association with the Arboricultural Association and generally recognised as appropriate for all levels of tree inspection.

He is a member of the Consulting Arborist Society and is listed within their areas of professional expertise for QTRA and as an expert witness.

Ivan is a professional member of the Arboricultural Association and the International Society of Arboriculture.

He is a licensed Quantified Tree Risk Assessment user.

Ivan has undertaken professional expert witness training and has been registered as a Sweet and Maxwell Checked Expert Witness since 2008.

Throughout 2009 acted as the principal Tree Officer for Barnsley Metropolitan Borough Council.

Ivan has produced several hundred Arboricultural Reports for the purposes of Development, Safety, Management, Mortgage, Subsidence, Mitigation and Litigation.

Appendix 5: Further Information

Building Near Trees – General

National Joint Utilities Group publication # 10 (1995), *Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees. Downloadable at www.njug.demon.co.uk/pdf/NJUG%20Publication10.pdf*

NHBC Standards Chapter 4.2., *Trees and Buildings.*

Horticulture LINK project 212. (*University of Cambridge,* 2004), *Controlling Water Use of Trees to Alleviate Subsidence Risk.*

Tree Planting and aftercare

See www.trees.org.uk/leaflets.php# for downloadable leaflets on selecting a garden tree, planting, aftercare and veteran tree management.

British Standards

BS 5837: 2012. Trees in Relation to Design, Demolition and Construction – Recommendations.
Bs 3998: 2010. Recommendations for Tree Work.
BS 3936: 1992. Nursery Stock. Part 1: Specification for Trees and Shrubs.
BS 3936: 1992. Nursery Stock. Part 10: Specification for Groundcover Plants.
BS 4043: 1989. Transplanting Root-balled Trees.
BS 8004: 1986. Foundations.
BS 8103: 1995. Structural design of Low-Rise Buildings.
BS 8206: 1992. Lighting for Buildings.
BS 3882: 2007. Topsoil.
BS 4428: 1989. General Landscaping Operations (excluding hard surfaces).

Permission to do Works to Protected Trees / Tree Law

Forestry Commission (Edinburgh, 2003), *Tree Felling – Getting Permission.* Country Services Division - Forestry Commission. Downloadable at www.forestry.gov.uk/website/pdf.nsf/pdf/wgsfell.pdf/$FILE/wgsfell.pdf

Transport and the Regions (Department of the Environment, 2000), *Tree Preservation Orders, A Guide to the Law and Good Practice.* Downloadable at www.communities.gov.uk/publications/planningandbuilding/tposguide

C. Mynors, *The Law of Trees, Forests and Hedgerows* (Sweet and Maxwell, London, 2002)

Communities and Local Government website with numerous downloadable documents, from: http://www.communities.gov.uk/planningandbuilding/planning/treeshighhedges/

Lighting Levels

P.J. Littlefair, *B.R.E. 209: Site layout planning for daylight and sunlight A guide to good practice.* B.R.E. Bookshop, London.

British Standards Institution. Code of practice for day lighting. *British Standard* BS 8206: Part 2 (1992).

Chartered Institution of Building Services Engineers. *Applications manual: Window Design* (London, 1987).

NBA Tectonics. A study of passive solar housing estate layout. *ETSU Report* S-1126. Harwell, Energy Technology Support Unit (1988).

I.P. Duncan; D. Hawkes, Passive solar design in non-domestic buildings. *ETSU Report* S-1110. Harwell, Energy Technology.

P. J. Littlefair, Measuring Daylight, *BRE Information Paper 23/93 f3.50.* (Advises on measuring daylight under the real sky or an artificial sky, allowing for the changing nature of sky light).

High Hedges

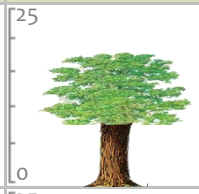
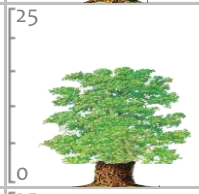
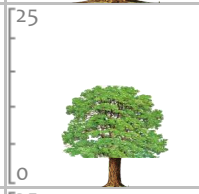
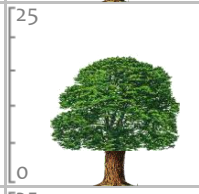
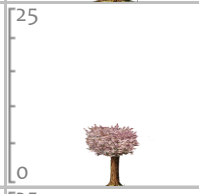
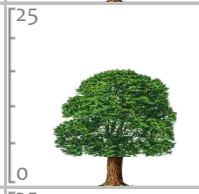
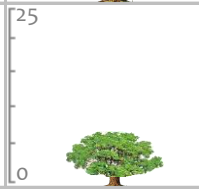
Communities and Local Government website with numerous downloadable documents, from: http://www.communities.gov.uk/planningandbuilding/planning/treeshighhedges/

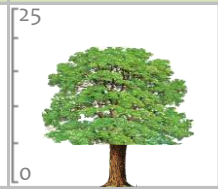
Tree Specific Websites

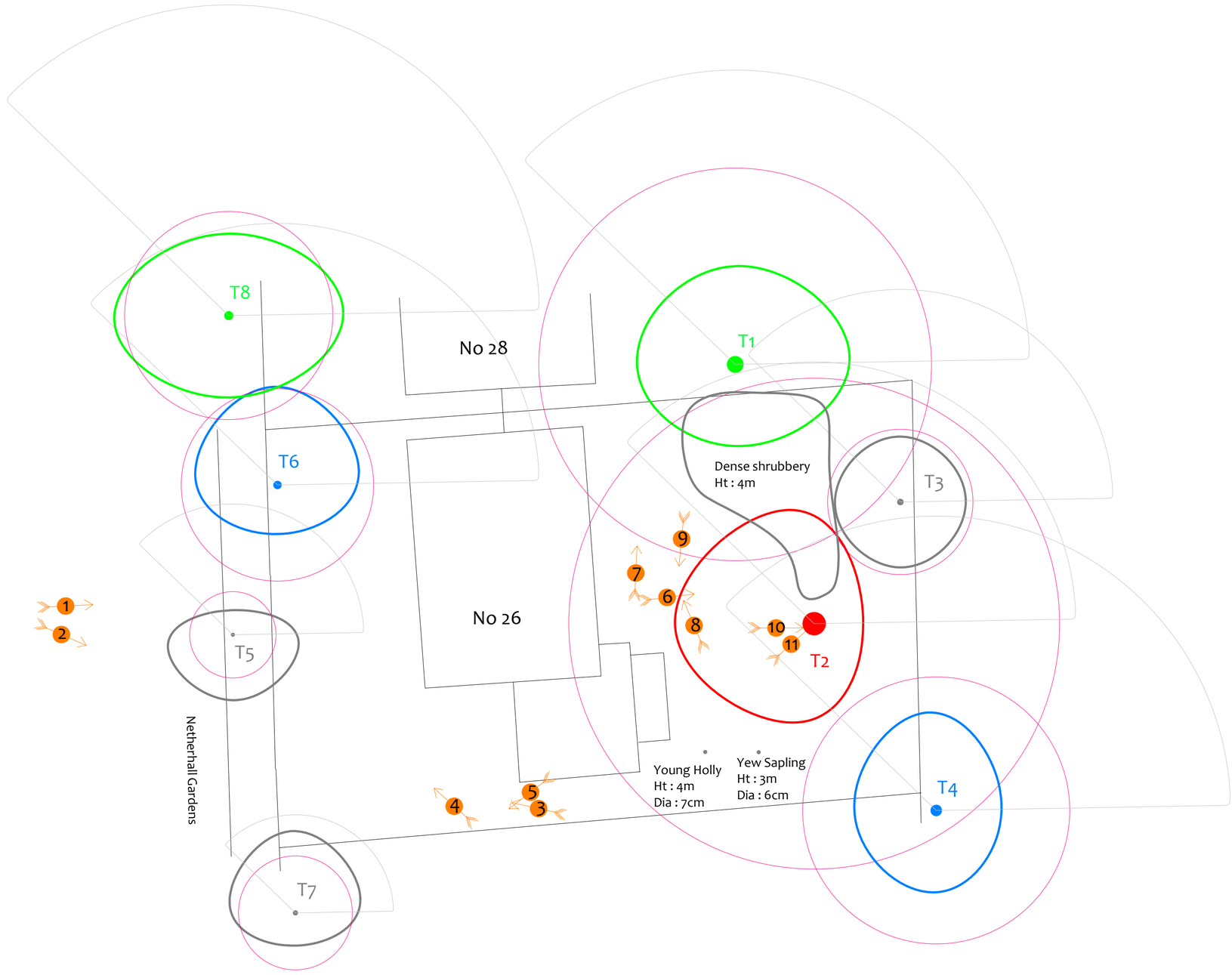
www.crowntrees.co.uk	Crown Consultants site containing useful information
www.trees.org.uk	Arboricultural Association
www.rfs.co.uk	Royal Forestry Society of England, Wales and N. Ireland
www.treehelp.Info	The Tree Advice Trust
www.woodland-trust.org.uk	The Woodland Trust
www.treecouncil.org.uk	The Tree Council

Appendix 6: Tree Data Schedule and Site Plan(s)

The Tree Data Schedule and all plans accompanying this report follow this page. They are also provided as separate documents for ease of printing and referring between when viewing on a screen.

Reference (G = Group, H = Hedge)	Age & Species	Height (m)	Crown Ht (m)	Diameter (cm)	Crown Spread (m) W N E S	Scaled Tree Diagram (m)	Notes	Recommendations (independent of proposals) Priority	Inspect Freq (yrs)	Vigour / Physiological Condition / Structural Condition	Amenity Value / Life Expectancy (yrs) / Retention Category
T1	Mature **Oak** Quercus robur.	18	9	Est 100	W 6, N 6, E 7, S 5		Position: Situated on third party land. Form: Twin-stemmed at 3m with a balanced crown. History: Reduced. **Defects: No defects observed.** Other: Ivy prevented detailed inspection.	Remove ivy and inspect stem for defects.	Moderate / 1.5	Moderate / Good / Good	High / 40+ / A
T2	Mature **Oak** Quercus robur.	16	3	140	W 8.5, N 7, E 3, S 6		Position: Situated within the rear garden. Form: Single stemmed and vertical with a well-formed crown. History: No evidence of significant pruning. **Defects: Major advanced decay to stem (ground level to 1m, 40% of stem diameter).** Other: Decay is extensive, **hazardous** tree.	Remove.	High / N/A	Moderate / Good / **Very Poor**	High / <10 / **U**
T3	Semi-Mature **Sycamore** Acer pseudoplatanus.	13	4	37	W 4, N 4, E 4, S 4		Position: Situated within the rear garden. Distance to property is 17.6m. Form: Twin-stemmed at 2.5m with a balanced crown. History: No evidence of significant pruning. **Defects: No significant defects.**	No action required.	n/a / 3	High / Good / Good	Low / 40+ / C
T4	Mature **Lime** Tilia sp.	18	5	68	W 5, N 6, E 4, S 5		Form: Single stemmed and vertical with a slightly unbalanced crown. History: No evidence of significant pruning. **Defects: No defects observed.** Other: Ivy prevented detailed inspection.	Remove ivy and inspect stem for defects.	Moderate / 1.5	Moderate / Fair / Fair	Moderate / 40+ / B
T5	Semi-Mature **Cherry** Prunus sp.	8	4	22	W 4, N 1.5, E 4, S 4		Position: Street tree. Form: Single stemmed and vertical with a well-formed crown. History: No evidence of significant pruning. **Defects: No significant defects.** Other: Bark wound at base.	No action required.	n/a / 3	High / Good / Good	Moderate / 40+ / C +
T6	Early-Mature **Lime** Tilia sp.	16	4	49	W 5, N 6, E 5, S 3		Position: Situated within the front garden. Form: Twin-stemmed at ground level with a balanced crown. History: No evidence of significant pruning. **Defects: No defects observed.** Other: Ivy prevented detailed inspection.	Remove ivy and inspect stem for defects.	Moderate / 1.5	High / Good / Fair	High / 40+ / B
T7	Semi-Mature **Sycamore** Acer pseudoplatanus.	6	1	29	W 4, N 5, E 4, S 2		Position: Situated on third party land. Form: Multi-stemmed at 2m with a slightly unbalanced crown. History: No evidence of significant pruning. **Defects: No significant defects.**	No action required.	n/a / 3	High / Good / Fair	Low / 40+ / C

Reference (G = Group, H = Hedge)	Age & Species	Height (m)	Crown Ht (m)	Diameter (cm)	Crown Spread (m) N / W / E / S	Scaled Tree Diagram (m)	Notes	Recommendations (independent of proposals)		Vigour / Physiological Condition / Structural Condition	Amenity Value / Life Expectancy (yrs) / Retention Category
								Priority	Inspect Freq (yrs)		
T8	Early-Mature **Silver Maple** Acer saccharinum.	19	6	53	N 5 / W 7 / E 7 / S 5		Position: Street tree. Form: Single stemmed and vertical with a well-formed crown. History: No evidence of significant pruning. **Defects: No significant defects.**	No action required. n/a	3	High Good Good	High 40+ **A**



N

Tree Constraints Plan

(Existing Layout)

Tree Ref.	Species	Height (m)	Root Protection Area		
			Radius (m)	m²	Square (m)
T1	Oak	18	12.0	452	21.3
T2	Oak	16	16.8	887	29.8
T3	Sycamore	13	4.4	62	7.9
T4	Lime	18	8.2	209	14.5
T5	Cherry	8	2.6	22	4.7
T6	Lime	16	5.9	109	10.4
T7	Sycamore	6	3.5	38	6.2
T8	Silver Maple	19	6.4	127	11.3

Drawing No:	CCL 08927 / TCP Rev: 1
Title:	Tree Constraints Plan (Existing Layout)
Site:	26 Netherhall Gardens Camden, NW3 5TL

Scale: 1:200 0 5 10m Paper Size: A2

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Tree Retention Categories
Stems & canopies shown

- Category A tree — Trees of high quality with an estimated life expectancy of 40+ years. Usually large trees with significant presence or smaller trees with excellent form. Retention of these trees is highly desirable.
- Category B tree — Trees of moderate quality with a life expectancy of 20+ years. Usually maturing trees, or younger trees with good form. Retention of these trees is desirable though less than Category A trees
- Category C tree — Unremarkable trees of low quality and merit. Individual specimens are not considered to be a material planning consideration.
- Category U tree — Trees unsuitable for retention due to their very poor condition.

Tree Constraints Plan

BS 5837 Root Protection Area (radius = 12xstem diameter)

Root Protection Area needing amendment due to site conditions, e.g. presence of exising road or building.

Root Protection Area having been amended to account for for site conditions

T1 = Tree No 1 G2 = Group No 2 H3 = Hedge No 3

BS 5837 Shade Pattern

Photo 1

Tree to be removed to facilitate the proposal

Tree to be removed due to its low quality

Proposed pruning

MN = Measured North:

Canopy spreads are sometimes measured to an approximate N defined by site features. Often more accurate, especially where rows of trees are not aligned N-S or E-W.