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ARBORICULTURAL SURVEY REPORT & METHOD STATEMENT

Nicholas Way, Northwood, Watford

Report Reference: BG17.132

March 2017

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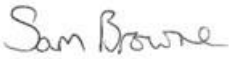
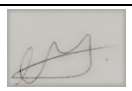
Prepared by	Sam Browne		17/3/17
1st Check by	Emily Major		29/3/17
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Contents

1 Summary

1.1 This report is concerned with trees that have the possibility to be impacted as a result of development proposals at 25-27 Nicholas Way, Northwood, Watford.

1.2 The report and accompanying tree survey schedule is produced in accordance with the guiding principles of British Standard BS5837:2012 *'Trees in Relation to Design Demolition and Construction - Recommendations'.* It is intended to demonstrate the site's realistic arboricultural constraints. The objective is to systematically assess and provide suitable recommendations regarding the proposal's potential impact on trees and vice versa.

1.3 The root protection areas (RPA's) are calculated and recorded in the Tree Survey Schedule where it is expressed both in linear and square meters; it is at this distance /around this area that the tree protective barriers should be erected around any trees to be retained. Where construction is proposed within these areas, special techniques should be employed and general guidance is therefore provided herein.

2 Introduction

2.1 The purpose of this assessment was to provide an assessment of trees which might be implicated in a proposal to develop land 25-27 Nicholas Way, Northwood, Watford. A tree survey Schedule compliant with the guiding principles of British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations' is contained within this report and all survey data is recorded in this Schedule.

2.2 The project area is approximately 0.4 ha in total and incorporates hardstanding in the form of a tennis court, the current large detached residence along with a garden with associated garden shrubs. The site is located in the residential village of Northwood, north of Ruislip Woods and east of the village of Harefield.

2.3 Results and recommendations contained within this report have been prepared by an experienced arboriculturist and are therefore the view of Brindle & Green Limited. The survey is based on information provided by our client, the development proposals, and the results of the desk study and our survey of the site. This report pertains to this information only.

3 Methodology

3.1 Following instruction, the site was surveyed on the 6th March 2017 in accordance with the guidance principles of British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations.' Significant trees omitted from the plan provided were plotted by eye and included within the survey. Pursuant to the agreed brief to focus on the trees around the tennis court. All trees contained within influence of the proposed application were surveyed from ground level and plotted as individual trees. Information recorded in the survey includes;

Species – the species identification is based on visual observations and the common English name of what the trees appeared to be is listed. In the case of groups only the principal species are recorded, other minor species may be omitted.

Tree Heights – are estimated in metres. Estimated mature heights are given in brackets. In the case of groups, the mean current height is recorded.

Crown Height – the height to the lowest branch is estimated in meters. In the case of groups of trees minimum crown height was recorded.

Trunk Diameters – measured at 1.5 meters above ground and recorded in millimetres to the nearest 10mm. However, in accordance with British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations.' where the trunk of any tree divides below 1.5 meters it is considered a multi-stemmed tree and an average is recorded. In the case of groups of trees, the maximum diameter was recorded.

Crown Radius – was recorded in meters along each of the cardinal points. In the case of groups of trees the maximum peripheral spread was recorded.

Crown Height – height from ground level to lowest principal limb.

Age Class – recorded as follows:
Yng – Young tree. <1/3 of normal life expectancy
Mid – Middle aged tree; between 1/3 & 2/3 normal life expectancy
Mat – Mature tree; has attained optimum stature

OM – Over mature tree; declining

Vet – Veteran tree, tree of great age which is of exceptional vale culturally, in the landscape or for nature conservation.

The condition of trees is based upon a preliminary assessment categorised thus:

A – Good
B – Fair
C – Poor
D – Very Poor/Dead

In the case of groups, the category awarded is that typical of the group.

Preliminary Recommendations – works required regardless of development proposals.

Life Expectancy – estimated; i.e. given as follows which corresponds with Table 1 of British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations.'

A – Trees of a high quality and value, including public visual amenity value. It is usual for such trees to be retained unless the planning merits of a particular scheme or layout over-ride.

B – Trees of moderate quality and value, including public visual amenity value. Such trees should be considered for retention.

C – Trees with a stem diameter of less than 150mm or which are of low quality/value, including public visual amenity value and/or have a life expectancy of less than 10 years value. The retention of Category C trees should not be allowed to impose a constraint on development. Trees with a stem diameter of less than 150mm are classified as Retention Category C, they should be considered for transplanting.

U – Trees in such a condition that they are unsuitable for retention. Where category U trees have identifiable conservation, heritage or landscape value, even though only for the short term (less than 10 years), they may be retained where they are (or can be) sited such that concerns over safety are at (or can be reduced to) acceptable levels.

It must be noted that retention categories are awarded purely on arboricultural/amenity grounds and that in some instances the planning merits of a particular scheme may well over-ride the retention of even those trees qualifying for Retention Category 'A'.

Root Protection Area - In respect of all trees surveyed, the RPA has been calculated and is given in the Tree Survey Schedule. The figures given represents both the radial distance, from the trees trunk, at which the barriers should be erected and the entire area which should be encompassed by the barriers.

4 Results

Statutory Protection - According to the London Borough of Hilingdon website the trees in this property and the adjacent are protected by Tree Preservation Order 36.

Trees - The objective assessment resulted in BS5837 Category “B” being attributed to 1 oak tree; Category “C” being attributed to 4 trees and a U category attributed to one oak tree. Appendix 2 shows the details of all the trees on the site and Appendix 1 shows their location.

Arboricultural impact assessment

The proposed development is partially impacting on Oak tree T1. There is a considerable impact to T04 in the neighbouring property, although it has been classified as a C, it is in decline and with the neighbours’ consent could be removed. Oak tree T05 is partially impacted by the proposal, but also it is in decline and could be removed. Oak tree T06 is in severe decline and has been categorised as a U for removal.

Tree Preservation Order consent implications:

A) Removal of oak tree T04 should be permissible on approval of the application with this report and it provides little amenity since it has suffered from the extension in no 23. Consent will also be required by the owners and a suitable replacement tree can be planted as part of condition.

B) Removal of oak tree T05 should also be permissible on approval of this report due to its decline. A semi mature oak tree could be planted in the same position as condition of approval.

C) Oak tree T06 is practically dead and so is exempt from TPO protection.

5 Evaluation

This development proposal of the new residence on the current footprint of the house impacts on the surrounding trees within the redline boundary. Due to their condition, 3 of the oak trees should be removed. Only one oak tree T01 is partially impacted but the incursion could be offset by the wider area at the rear in which it has to grow. In order to ensure that T01 does not follow the same fate as T04 a method statement and Tree Protection Plan will be required as part of conditions to ensure its RPA is protected. The landscape proposals will also need to consider the RPA of T01 to ensure the roots are not damaged.

6 Tree Survey Schedule

7 Tree Plan

Ref	Species	Num. Stems	Height (m)	Stem Diam (mm)	Crown Clearance (m)	Physical Condition	Life Stage	N	S	E	W	Rem. Contrib.	General Observations	RPA (m)	Retention Category	Recommendations
T1	Oak	1	24	750	6	Good	Mature	7	7	7	7	50 +	Deadwood in crown	9	B	remove deadwood greater than 50 mm
T2	Conifer	1	10	300	0	Good	Mature	2	2	2	2	10+		3.6	C	No action
T3	maple	1	120	110	2	Good	Semi-mature	1	1	1	1	10+		1.32	C	No action
T4	Oak	1	20	600	6	Poor	mature	6	6	6	6	10+	outside site	7.2	C	remove

Ref	Species	Num. Stems	Height (m)	Stem Diam (mm)	Crown Clearance (m)	Physical Condition	Life Stage	N	S	E	W	Rem. Contrib.	General Observations	RPA (m)	Retention Category	Recommendations
T5	Oak	1	18	600	6	Poor	mature	6	6	6	6	10+		7.2	C	remove
T6	Oak	1	18	600	6	Poor/dead	mature	6	6	6	6		poor condition - outside site		U	remove

*RPA = The minimum distance, measured from the trees trunk, at which tree protective barriers should be erected.

**RPA = The minimum area in M^2 around which tree protective barriers should be erected.

#Access restricted, inspection limited, dimensions limited.

8 Tree retention – General Guidance

6.1 Below Ground Constraints: to achieve any development various construction activities are required and great care and consideration needs to be given as to how such activity can proceed whilst avoiding damage to retained trees.

6.2 In order to avoid damage to their roots, trees should be protected using protective barriers as are detailed in British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations' and as illustrated in Figures 1 and 3. Such barriers should be erected around the RPA prior to the commencement of the demolition/construction activity; it must remain in situ and intact until completion. The area within these barriers should, with some exceptions be considered sacrosanct, and no work should be permitted within them. In an effort to ensure any tree protective barriers remain during construction, it is further advised that they carry signage as per Figure 2 and that the Site Agent is briefed accordingly.

Tree Protective Barriers should also be erected, prior to the commencement of construction, around those areas identified for soft landscaping/tree planting so as to protect the soil from compaction and denaturing. Correct setting out of the barriers and ground protection should be confirmed on site by the project arboriculturist prior to the commencement of any other operations on site.

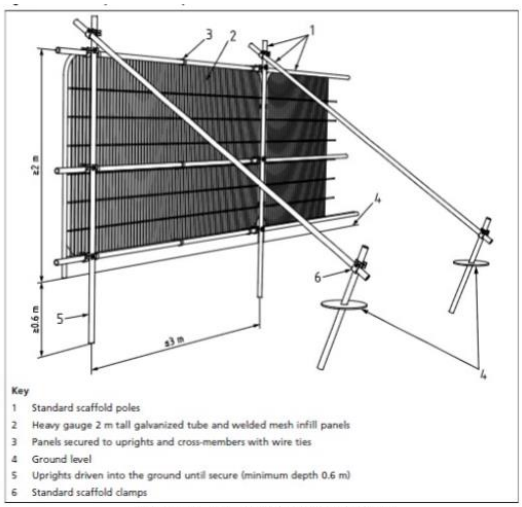


Figure 1 - Tree Protection Barrier
British Standard 5837, (2012), '*Trees in Relation to Construction: Recommendations*', *Page 20.*

Figure 2 - Barrier Notice

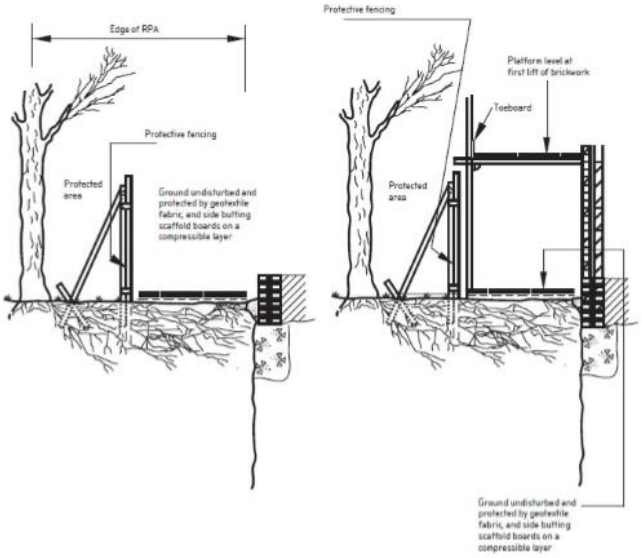


Figure 3
Adapted Barrier Incorporating Temporary Ground Protection

6.3 Where space is required within the RPA to facilitate the erection of scaffold this may be satisfactorily achieved incorporating ground protection within the scaffold structure as illustrated in Figure 3 above

6.4 Above Ground Constraints: Consideration must also be given to the aerial parts of the tree in relation to any construction; particularly residential buildings. Conflict frequently arises where dwellings are placed close to trees giving rise to concerns relating to shade, falling debris such as leaves and twigs and from apprehension arising from a perceived threat of tree failure. These concerns can often be overcome, in part at least, by carefully ensuring adequate useable garden space is provided and is not dominated by trees and that principal windows face away from trees; in some instances it may be appropriate to locate glazed panels into the roof structure. The LPA are likely to resist any proposal that results in built structures close to trees or that

makes inadequate provision for their future growth. Usually, and particularly in the case of immature trees, the distances required to avoid conflict will be greater than those expressed as the RPA. It is however, equally important to note that issues arising from shade are often overstated and that some shade is not only tolerable but may be beneficial. It is also important to bear in mind that different tree species cast different shade patterns depending upon juxtaposition, size, habit, canopy density, evergreen/deciduous. The following guidance is given by the Building Research Establishment (BRE): "Tree locations are … important; deciduous species are best because they are leafless when solar gains are most valuable, while providing some shade in summer." (BR380 Page 69) "Deciduous trees give shade in summer but allow access to sunlight in winter." (BR 209 page 22).

"The question of whether trees … should be included in the (solar gain*) calculation depends upon the type of shade they produce. Normally, trees and shrubs need not be included, partly because their shapes are impossible to predict, and partly because the dappled shade of a tree is more pleasant than the deep shadow of a building. This applies especially to deciduous trees." (BR209 page 13) (* - My edit).

6.5 ARBORICULTURALLY ACCEPTABLE CONSTRUCTION METHODS WITHIN RPA

6.5.1 Foundations: in order to maximise a sites development potential, it may be possible to employ special foundation design such as mini/micro pile and suspended beam or a cantilevered foundation. These designs enable construction within the RPA as they limit excavation to a minimum. The location of any mini piles would need to be flexible so as to avoid damage to major roots and the necessary excavation for the piles may need to be carried out by hand; the piles should be sleeved so as to contain concrete which contains 'tree-toxic' chemicals. In these circumstances a suspended floor slab will need to be incorporated and the void beneath should be externally vented so as not to inhibit gaseous exchange, in some instances i.e. where more than 20% of the RPA is to be covered, there will need to be provision for the redistribution of rainwater beneath the slab. Where pile foundations are to be employed, consideration needs to be given to the selection of the type of piling rig so as to avoid conflict with low, overhanging tree branches.

6.5.2 Hard Surfacing: New: It is permissible to construct hard surfacing for drives and paths within the RPA; however, it can have implications for tree roots. These implications can often be overcome and/or minimised by employing a 'no-dig' construction (see

Appendix 3) methods. These techniques result in structures which are load bearing and negate the need for deep excavation. Any final surface must be porous so as to permit gaseous exchange and moisture percolation. Further advice of a structural engineer must be sought to design the final specification in accordance with these parameters, with the final design being agreed with a Chartered Arboriculturist.

6.5.3 Existing: Where hard surfacing exists within the area defined as the RPA, it is acceptable to erect protective barriers at the extent of that hard surface, since the surface itself will afford protection to any tree roots beneath. However, where is proposed to remove/regrade existing hard surfacing care must be taken to avoid collision between overhanging tree branches and passing construction traffic. It is advised that to minimise root disturbance the existing surface is broken and gathered for disposal using hand operated tools, any backfilling must utilise top quality top soil laid at approximately 50mm deep with a composted bark mulch laid over that to a maximum depth of 75mm; in the long term this approach brings a positive arboricultural impact.

6.5.4 Temporary Site Accommodation – Note 2 Page 20 of BS 5837 (2012) advises that in some circumstances it is appropriate to use site cabins as components of the tree protective barriers where they can serve as an effective means of protecting the soil from many of the construction related activities. Further advice of a Chartered Arboriculturist should be sought should this matter be of relevance or advantageous.

6.5.5 Temporary Ground Protection - In some instances it may be advantageous to work within the RPA e.g. access a site, either for pedestrians or machinery. BS5837 (2012) acknowledges this as a possibility and systems which dissipate any load applied, thus avoiding soil compaction and denaturing, are to be used, also new temporary ground protection could comprise one of the following:

a) For pedestrian movements only, a single thickness of scaffold boards should be placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile.

b) For pedestrian operated plant up to a gross weight of 2t, proprietary, inter-linked ground protection boards could be placed on top of a compression resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile.

c) For wheeled or tracked construction traffic exceeding 2t gross weight, an alternative system (e.g. pre-cast reinforced concrete slabs) could be employed.

An engineer should be consulted regarding the design of a temporary access with the final specification being agreed with a Chartered Arboriculturist.

6.6 OTHER CONSIDERATIONS

6.6.1 Trees Subject to Statutory Controls: No attempt has been made to establish the existence of any statutory controls; the following is given as guidance. Trees and hedgerows can be subject to statutory control and severe penalties can result from unauthorised works or damage. It is recommended that prior to commencement of any tree works the Local Planning Authority (LPA) are contacted. When proposing to do works to trees within a Conservation Area, with some exceptions, eg the implementation of works directly necessary to implement a full planning permission, six weeks written notice must be given to the LPA, this notice need not take any form other than a written specification of what is proposed and a plan illustrating the position of the tree(s). This notice is often referred to as a Section 211 Notice. Many LPA's prefer that their standard pro-forma is submitted to ensure the necessary detail is included in the notice; whilst such cannot be strictly required it can assist in a speedy outcome.

Having received the notice the LPA has essentially only one of two options at its disposal i.e.:

- Impose a TPO in respect of those trees/some of those trees subject to the notice. This prevents any works being carried out without the express, written consent of the LPA, Or
- Do nothing. It is considered best practice for an LPA to acknowledge receipt of the notice but there is no obligation for it to do so. After six weeks of serving the notice the tree owner may proceed with the works detailed in the Section 211 Notice. The LPA cannot, in response to a Section 211 Notice, issue a conditional consent. TPO's are made in the interests of preserving amenity, usually taken to mean public visual amenity. Trees largely removed from public view and which have little visual impact are not usually made the subject of a TPO. The written consent of the LPA must be obtained prior to undertaking works to trees subject to TPO unless, as with trees in Conservation Areas, certain exemptions apply. With regard to trees subject to TPO's it is a requirement that a standardized application form is used; this form is available from the LPA. Where trees are protected Brindle & Green Limited are happy to act

as the client's agent, liaising as necessary with the LPA and producing the written submissions/notices/applications as required.

6.6.2 Trees and Wildlife: Trees play host to nesting birds many of which are protected by law. All British bat species are also protected and can be found in trees. Great care needs to be taken to avoid disturbance and consideration should be given to the timing of tree works in order to avoid disturbance. Where the presence of protected species is suspected, Natural England should be contacted for advice.

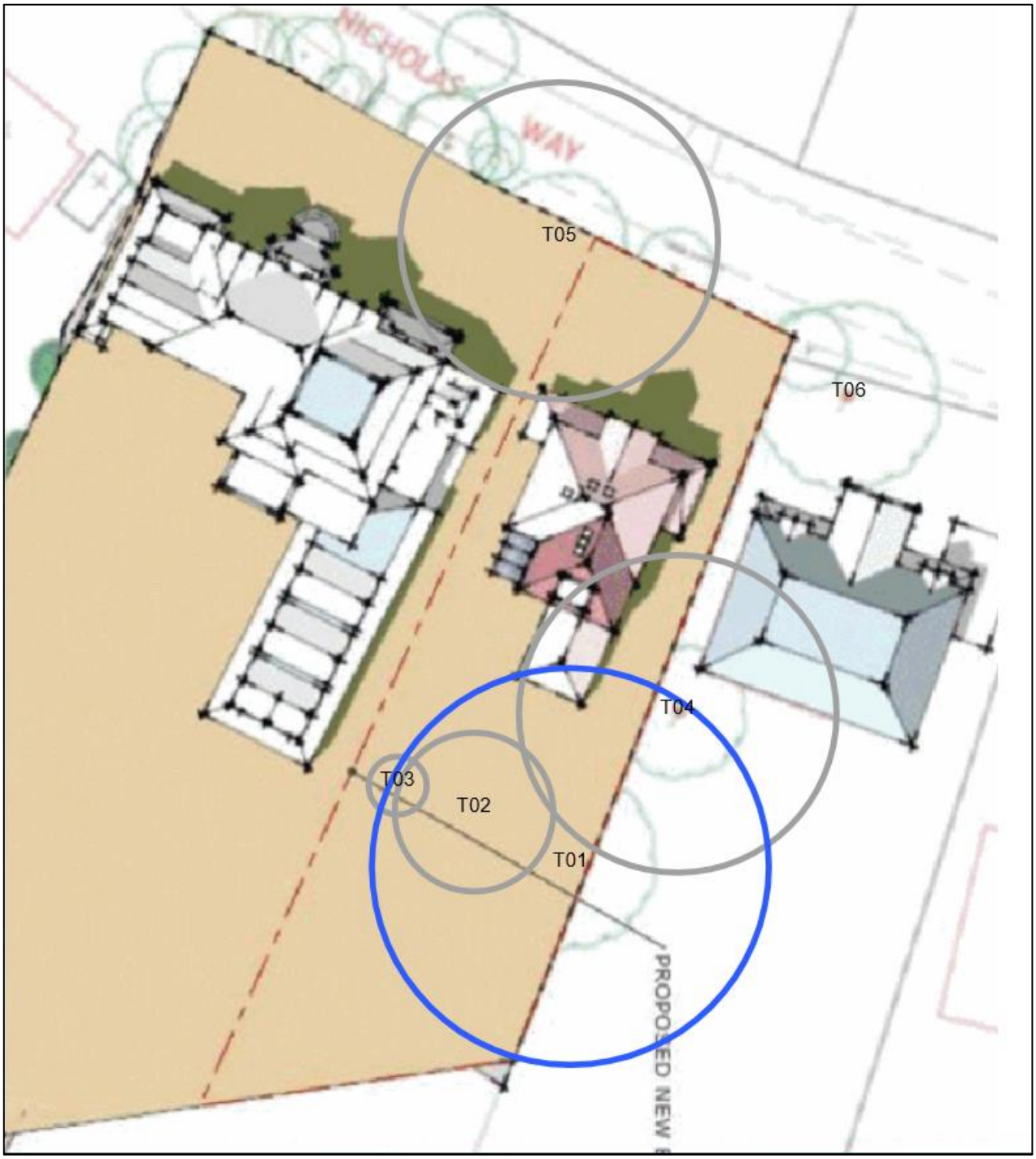
6.6.3 Implementation of Tree Works: Guidance on hiring an Arborist is available from Brindle & Green Ltd. Also, the Arboricultural Association's Register of Contractors is available free from Ullenwood Court, Ullenwood, Cheltenham, Gloucestershire, GL53 9QS (Telephone 01242 522152 , www.trees.org.uk). Any appointed contractor should carry out all tree works to BS 3998 (2010) 'Recommendations for Tree Work.'

6.6.4 New Planting: It is possible that any planning permission issued will carry a condition requiring new tree planting, particularly in instances where a proposal involves the removal of trees. Further advice is available upon request.

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• 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 category U trees (e.g. 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, or very low quality trees suppressing adjacent trees of better quality *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.*			See Table 2
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	See Table 2
Category C **Trees of low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

9 Appendix 1. Trees on Site With RPAs



10 Appendix 2. Photographs

Photo 1: T01

Photo 2: T04

Photo 3: T06

Photo 4: T05