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BS5837:2012
Trees in relation to design, demolition and construction –
Recommendations

Tree Survey

31 Swains Lane,

Highgate,

London N6 6QL.

16 April 2019

Author: Jon Hartley BSc(Hons) MArborA

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J. B. Annette and C. L. Goodings
31 Swains Lane,
Highgate,
London N6 6QL

16/04/19

Tree Survey Report
31 Swains Lane, Highgate, London N6 6QL

Arbtech Consulting Limited (Arbtech) received written instruction on 9th April 2019 from C. L. Goodings (site) to undertake an arboricultural survey to BS5837:2012 guidance to assess trees, hedges and major shrub groups growing on and within influencing distance of the site and to produce a schedule of trees, tree constraints plan.

I am Jon Hartley, an arboricultural surveyor at Arbtech Consulting Ltd. I undertook the tree survey on 16th April 2019 and subsequently have produced this summary of my findings.

I passed the RFS Certificate of Arboriculture in 2000 after a short time working in the industry. During a six-year spell in Australia, I passed the Australian Qualifications Framework (AQF) level 5 Diploma in arboriculture. I also now hold a BSc(Hons) degree in Arboriculture and Urban Forestry and the obligatory LANTRA Professional Tree Inspector certification. I benefit from professional industry experience spanning 20 years. I have professional memberships with the Consulting Arborist Society and the Arboricultural Association and an associate membership with the Institute of Chartered Foresters.

Tree Survey Executive Summary

A total of 10No individual trees were surveyed, all in the rear garden.

During the survey, I categorised the group of trees using "Table 1 – Cascade chart for tree quality assessment" of the BS5837:2012.

The site is a single occupancy semidetached residence over two floors. There is a front garden containing shrubs not large enough to be recorded in the survey. The rear garden has a gradual gradient down from north to south.

Figure 1: Site Location Sketch (Prime Meridian)

It is likely that arboricultural impacts of a single storey, 4m rear extension can be managed adequately with a suitable arboricultural methodology allowing for the retention of the birch (T08), which is adjacent to the proposed footprint.

Individual notes on each tree's structural and physiological condition are found in the Notes section of the survey schedule.

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BS5837:2012 Scope

This standard recognises that there can be problems for development close to existing trees which are to be retained, and of planting trees close to existing structures. This standard sets out to assist those concerned with trees in relation to construction to form balanced judgements. It does not set out to put arguments for or against development, or for the removal or retention of trees. Where development, including demolition, is to occur, the standard provides guidance on how to decide which trees are appropriate for retention, on the means of protecting these trees during development, including demolition and construction work, and on the means of incorporating trees into the developed landscape.

Definitions

Arboriculturalist

An arboriculturalist (or arboricultural consultant) is a person who has, through relevant education, training and experience, gained recognized qualifications and expertise in the field of trees in relation to construction.

Tree Survey

A tree survey should be undertaken by an arboriculturalist and should record information about the trees on a site independently of and prior to any specific design for development. As a subsequent task, and with reference to a design or potential design, the results of the survey should be included in the preparation of a tree constraints plan, which should be used to assist with site layout design.

Tree Constraints Plan

A TCP is a plan, typically delivered as an AutoCAD drawing (.dxf file format), prepared by an arboriculturalist for the purposes of layout design showing the root protection area and representing the effect that the mature height and spread of retained trees will have on layouts through shade, dominance, etc.

Root Protection Area

An RPA is a layout design tool indicating the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree, shown in plan form in m².

Construction Exclusion Zone (also termed Tree Protection Zone)

A construction exclusion or tree protection zone is an area based on the RPA (in m²), identified by an arboriculturalist, to be protected during development, including demolition and construction work, by the use of barriers and/or ground protection fit for purpose to ensure the successful long-term retention of a tree.

Arboricultural Impact Assessment

This is a study, undertaken by an arboriculturalist, to identify, evaluate and possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of any site layout proposal.

Tree Protection Plan

A TPP is a plan, typically delivered as an AutoCAD drawing (.dwg file format), prepared by an arboriculturalist showing the finalized layout proposals, tree retention and tree and landscape

protection measures detailed within the arboricultural method statement, which can be shown graphically.

Arboricultural Method Statement

This is a methodology for the implementation of any aspect of development that has the potential to result in loss of or damage to a tree. The AMS is likely to include details of an on-site tree protection monitoring regime.

Methodology

The methodology used to assess the trees was the British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendations' tree survey method. The aim of the survey is to establish which trees are moderate and good quality; suitable for retention and justifying protection. And, which trees are low or poor quality; either undesirable or unsuitable to retain and protect.

The tree survey includes all trees included in the land survey red line boundary plan, as well as any that may have been missed, and it should categorize trees or groups of trees, including woodlands for their quality and value within the existing context, in a transparent, understandable and systematic way. Where the arboriculturalist has deemed it appropriate, the trees have been tagged with small metal or plastic tags, placed as high as is convenient on the stem of each tree.

Whilst master plan proposals for the development of the site might be available, the trees have been surveyed without taking these into consideration. All detailed design work on site layout should take into consideration the results of the tree survey (and the TCP).

Trees forming groups and areas of woodland (including orchards, wood pasture and historic parkland) are identified and considered as groups where the arboriculturalist has determined that this is appropriate, particularly where they contain a variety of species and age classes that could aid long-term management. It is often expedient to assess the quality and value of such groups of trees as a whole, rather than as individuals. However, an assessment of individuals within any group has been undertaken if they are open-grown or if there is a need to differentiate between them.

The quality and value of each tree or group of trees has been recorded by allocating it to one of the four categories; A, B, C, or U (highest to lowest quality respectively). The categories are differentiated on the tree survey plan by colour, or by suffixing the category adjacent to the tree identification number on the TCP.

The survey schedule lists all the trees or groups of trees. The following information is also provided:

   I. reference number (to be recorded on the tree survey plan);
  II. species (common or scientific names);
 III. height in metres (m);
  IV. stem diameter in millimetres (mm) at 1.5 m above adjacent ground level or immediately above the root flare for multi-stemmed trees;
   V. branch spread in metres taken at the four cardinal compass points;
  VI. the height of crown clearance above adjacent ground level in metres (m);
 VII. age class (Newly planted, Young, Semi-mature, Early mature, Mature, Over mature);
VIII. physiological condition (e.g. good, fair, poor, decline and dead);
  IX. structural condition (e.g. good, fair, poor and ivy);
   X. preliminary management recommendations, including further investigation of suspected defects that require more detailed assessment and potential for wildlife habitat; and
  XI. The retention category referring to the quality and useful contribution in years; U = <10yrs; A = >40yrs; B = >20yrs; C = >10yrs. The retention subcategory referring to the type of amenity; 1 = Arboricultural; 2 = Landscape; 3 = Cultural including conservation (see Table 1 Cascade chart for tree quality assessment).

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BS5837:2012 Trees in relation to design, demolition and construction – Recommendations

Table 1	Cascade chart for tree quality assessment		
Category and definition	**Criteria (including subcategories when 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 serious, irremediable, structural defects, 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 might be desirable to preserve; see 4.5.7.		Dark red
	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)	Light green
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 remedial defects, including unsympathetic management and storm damage), such that they are unlikely to be suitable for retention of 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	Mid blue
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 150mm	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 value	Trees with no material conservation or other cultural value	Grey

Recommendations

With the benefit of making an assessment of your planning proposals, we make the following recommendation to ensure that no conditions relating to arboriculture are attached to any planning consent secured; obtain an arboricultural report to include:

a) An arboricultural impact assessment (AIA);

b) An arboricultural method statement (AMS); and

c) A tree protection plan drawing (TPP).

Limitations

Trees were inspected from using visual observation from ground level only. Trees were not climbed or inspected below ground level. Inaccessible trees will have best estimates made about the location, physical dimensions and characteristics. Trees have been grouped where BS5837 guides us that it is expedient to do so. Trees have been excluded from the survey if they are found by us to be sufficiently far away from the proposed developable area or if they are outside of the red line boundary plan showing the expectations of our Client for the extent of the survey. BS5837 does not draw any distinction between trees subject to statutory protection, such as a Tree Preservation Order ("TPO"), and those trees without. This is principally because a detailed planning consent overrides any TPO protection. Consequently, we do not seek to offer any comparison between or infer any difference in the quality or importance of TPO trees and other trees.

Appendices

The following documents were released to the Client as appendices to this report:

- Survey Schedule (PDF)
- Tree Constraints Plan drawing (DXF & PDF)

If you require clarification of information contained herein, please do not hesitate to contact us via 01244 661170.

Yours Sincerely,

Jon Hartley BSc(Hons) MArborA

Senior Consultant

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07860951396

Appendix 1: Schedule of Trees

Client: J. B. Annette and C. L. Goodings
Project: 31 Swain's Lane, Highgate, London N6 6QL
Survey Date: 16/04/2019
Surveyor: Jon Hartley

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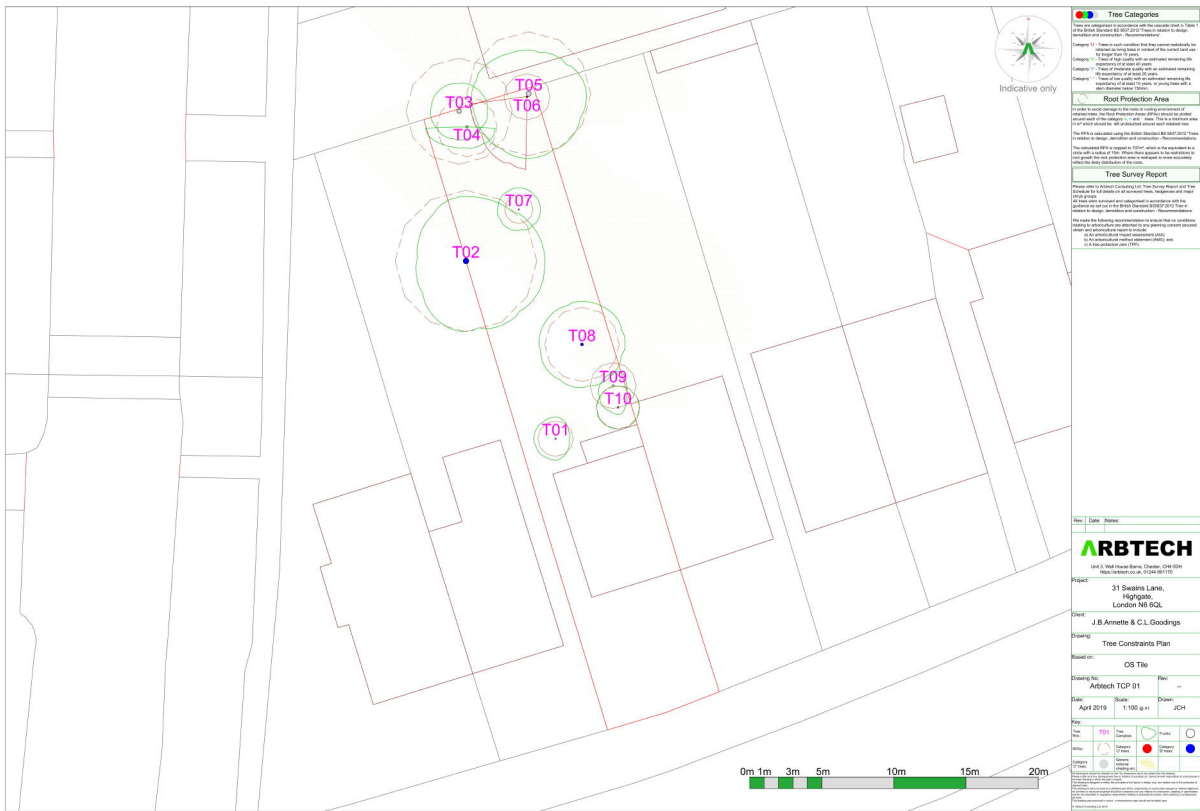
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Tree and Tag No / Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations / Survey Comment	Cat ERC
T01										*Estimated Measurements*	
Camellia *Camellia sp.*	2.5	1	100	N 1.5 E 1 S 1.5 W 1.5	0 0 0 0	SM	A: 4.5 R: 1.19	Good	C: Good S: Good B: Good	Stem diameter taken at 0.1m; of good quality and low value.	**C.1** 10 to 20 yrs
T02										*Estimated Measurements*	
Common Ash *Fraxinus excelsior*	12	1	400	N 4.5 E 5.5 S 5 W 3.5	4.5 2 4 2.5	SM	A: 72.4 R: 4.8	Good	C: Fair S: Good B: Not visible	Base and stem not visible for inspection from ground level to 2m on west side; boundary tree with boundary fence abutting, galvanised fence hardware becoming occluded at base, 250mm, 850mm and 1500mm; disused washing line also occluded at 2m; historically topped at 8m with regrowth up to 100mm diameter; historically crown lifted on west side to 6m by removal of primary branches, regeneration up to 100mm diameter; of fair quality and value.	**B.1.2** 20 to 40 yrs
T03											
Leyland Cypress *X Cupressocyparis leylandii*	16	1	300	N 2 E 2 S 2 W 2	1 1 1 1	SM	A: 40.7 R: 3.59	Good	C: Good S: Good B: Good	No significant features noted; grows within 3m of adjacent dwelling with incumbent restrictions upon unimpeded crown development; of good quality and limited value.	**C.1.2** 10 to 20 yrs
T04											
Paper Birch *Betula papyrifera*	11	1	170	N 0 E 2 S 1.5 W 3	1.5 1.5 1.5 1.5	SM	A: 13.1 R: 2.04	Good	C: Good S: Good B: Good	Asymmetrical crown distribution due to proximity of companion tree; of fair quality an value.	**C.1.2** 20 to 40 yrs

Age Classifications:	N	Newly planted	EM	Early Mature	Condition:	C	Crown	Stems:	Ø	Diameter
	Y	Young	M	Mature		S	Stem		(Eq)	Equivalent stem diameter using BS5837:2012 definition
	SM	Semi-mature	OM	Over Mature		B	Basal area			

Tree and Tag No / Species	Hght (m)	Stems No	Ø (mm)	Crown Spread (m)	Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations / Survey Comment	Cat ERC
T05										Estimated Measurements	
Common Ash *Fraxinus excelsior*	15	1	350	N 3 E 4 S 4.5 W 4	5 5 5 5	SM	A: 55.4 R: 4.19	Fair	C: Not visible S: Not visible B: Not visible	Ivy wholly obscures inspection of the stem and primary branch unions from base to 10m; extension growth appears limited to around 20mm throughout the crown; grows within 2.5m of adjacent dwelling with incumbent restrictions upon unimpeded crown development.	**C.1.2** 10 to 20 yrs
T06										Estimated Measurements	
Common Lilac *Syringa vulgaris*	4	3	130 (Eq)	N 0 E 0 S 5 W 4	2 1	M	A: 7.6 R: 1.55	Fair	C: Fair S: Fair B: Poor	Ivy obscures inspection of tree from base to apex; main stem has died with regeneration from base; of low quality and value.	**U.1** <10 yrs
T07											
Saucer Magnolia *Magnolia soulangiana*	4	1	80	N 1.5 E 1.5 S 1.5 W 1.5	1.5 1.5 1.5 1.5	Y	A: 2.9 R: 0.96	Good	C: Good S: Good B: Good	No significant features noted; of high quality and low value.	**C.1** 20 to 40 yrs
T08											
Silver Birch *Betula pendula*	12	1	210	N 3 E 3 S 3 W 3	2 2 2 2	SM	A: 20 R: 2.52	Good	C: Good S: Good B: Good	Surface roots visible in lawn to 4m from the base; no significant features notes; of high quality and fair value.	**B.1.2** 20 to 40 yrs
T09											
Apple *Malus Unknown*	2.5	1	130	N 1.5 E 0.5 S 1.5 W 1.5	1 1 1 1	SM	A: 7.6 R: 1.55	Good	C: Good S: Good B: Not visible	Stem angled at 45Â° from base trending south; regularly maintained to current dimensions; of low quality and value.	**C.1** 10 to 20 yrs
T10										Estimated Measurements	
Leyland Cypress *X Cupressocyparis leylandii*	5	3	122 (Eq)	N 1.5 E 1.5 S 1.5 W 1.5	2 2 0 0	Y	A: 6.7 R: 1.46	Good	C: Good S: Fair B: Fair	Three codominant stems from near base with included bark typical of the species; of low quality and value.	**C.1** 10 to 20 yrs

Age Classifications:	N Newly planted	EM Early Mature	Condition:	C Crown	Stems:	Ø Diameter
	Y Young	M Mature		S Stem		(Eq) Equivalent stem diameter using BS5837:2012 definition
	SM Semi-mature	OM Over Mature		B Basal area		

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Appendix 2: Tree Constraints Plan

T05
T06
T03
T04
T07
T02
T08
T09
T10
T01

Indicative only

0m 1m 3m 5m   10m   15m   20m

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