



Arboricultural Survey to BS5837:2012

Michael Falzon

**Kilnwood Cottage,
Huntsland,
Turners Hill Road,
Crawley Down,
West Sussex,
RH10 4HB.**

10 January 2022

Chris Wren BSc (Hons) MArborA

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If this report has been released electronically the appendices referred to herein can be found in the annexed zip folder/s as .pdf files. If this report has been released in hard copy the appendices will be bound into the back of this report. Plans are annexed separately as A0, A1, A2 or A3 as appropriate.

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1. Introduction

Arbtech Consulting Limited (Arbtech) received written instruction on 6th September 2021 from Michael Falzon to attend Kilnwood Cottage, Huntsland, Turners Hill Road, Crawley Down, West Sussex, RH10 4HB; grid reference, TQ 33751 37553 (site) to undertake an arboricultural survey a 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, Arboricultural Impact Assessment, Arboricultural Method Statement and Tree Protection Plan.

I am Chris Wren, an arboricultural consultant at Arbtech Consulting Ltd. I undertook the tree survey on 5th January 2022 and subsequently have produced this summary of my findings.

I have ten years of industry experience and hold a BSc (Hons) in arboriculture and urban forestry. I am a professional member of the Arboricultural Association as well as an associate member of the Institute of Chartered Foresters.

The advice below and appended is underwritten by our Professional Indemnity insurance for the business practice of Arboricultural Consultancy in the sum of one million Pounds Sterling in each and every claim.

Table 1: Documents referred to.

2. Survey

Survey: An arboricultural survey to BS5837 of all trees within impacting distance of the site was undertaken by Chris Wren on 5th January 2022.

During the survey I categorised the trees using “Table 1 – Cascade chart for tree quality assessment” of the BS5837:2012 (see Appendix 1).

A total of 11No individual trees, 3No groups of trees and 3No hedges were surveyed. Details for each of the trees surveyed are provided in the Schedule of Trees (see Appendix 2).

Multiple small trees and shrubs also occupy the site, none of which meet the minimum diameter requirements to be considered for this survey.

Table 2: Documents upon which this tree survey has been based.

Limitations: The survey was made at ground level using visual observation only. Detailed examinations, such as climbing inspections and advanced decay detection equipment were not employed, though may form part of the survey's management recommendations. Measurements were taken using specialist tapes, laser, and GPS devices. Where this was not possible, measurements are estimated.

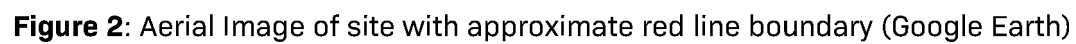
Scope: Pre-development tree surveys make arboricultural management recommendations based exclusively upon the individual tree or group of trees condition relative to their present context (*i.e. not in relation to the proposed development*).

Legal Status: No statutory protection check has been performed. 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.

* For more information on the surveyed trees please see Arbtech Consulting Ltd, Tree Survey Schedule (Appendix 1), Tree Survey Report and Tree Constraints Plan.

Site description

The site is a residential property situated to the West of Crawley Down and is surrounded by rural residential properties. The site sits on a south to north incline with a maximum change of 2.8m. The incline has been formally managed through the use of retaining walls at the front of the property.



Proposed scheme

It has been proposed to extend the Eastern side of the home, adding a second story and expanding the footprint north to mirror the western side of the building.

It is likely that arboricultural impacts can be addressed with arboricultural methodology or minor amendments to the proposal.

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3. 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.

4. Methodology

The methodology used to assess the trees was the British Standard 5837:2012 ‘Trees in Relation to Construction’ 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 arboriculturist 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 arboriculturist 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:

- a) reference number (to be recorded on the tree survey plan);
- b) species (common or scientific names);
- c) height in meters (m);
- d) stem diameter in millimetres (mm) at 1.5m above adjacent ground level or immediately above the root flare for multi-stemmed trees;
- e) branch spread in meters taken at the four cardinal compass points;
- f) height of crown clearance above adjacent ground level in meters (m);
- g) age class (newly planted, young, semi-mature, early mature, mature, over mature);
- h) physiological condition (e.g. good, fair, poor, decline and dead);
- i) structural condition (e.g. good, fair, poor or not visible);
- j) comment about the tree, its location and preliminary management recommendations, including further investigation of suspected defects that require more detailed assessment and potential for wildlife habitat;
- k) 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 Appendix 1 Cascade chart for tree quality assessment).

5. Definitions

Arboriculturist

An arboriculturist (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 arboriculturist 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 plan, typically delivered as an AutoCAD drawing (.DWG file format), prepared by an arboriculturist 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 arboriculturist, 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 (AIA)

This is a study, undertaken by an arboriculturist, 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 (TPP)

A TPP is plan, typically delivered as an AutoCAD drawing (.DWG file format), prepared by an arboriculturist 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 (AMS)

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.

6. Recommendations

We have not seen the proposed scheme, therefore, we make the following recommendation to ensure that there are no irrevocable issues to the proposed retained trees and so 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).
- c) A tree protection plan drawing (TPP).

7. 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.

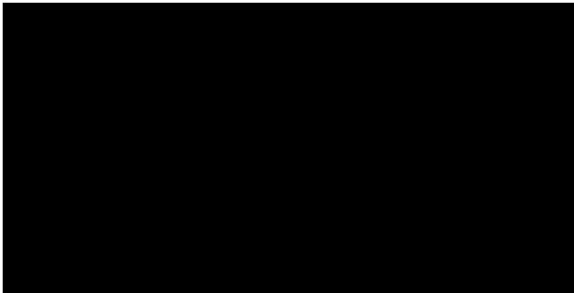
8. Appendices

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

- Survey Schedule (.PDF)
- Tree Constraints Plan drawing (.DWG & .PDF)

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

Yours Sincerely,



Appendix 1: Table 1 Cascade chart for tree quality assessment

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
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Trees unsuitable for retention (see Note)

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1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation
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Trees to be considered for retention

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Appendix 2: Schedule of Trees

Client: Michael Falzon
Project: Kilnwood Cottage, Huntsland, Turners Hill Road,
Crawley Down, West Sussex, RH10 4HB
Survey Date: 05/01/2022
Surveyor: Chris Wren



Unit 3, Well House Barns
Chester Road
Chester
Cheshire
CH4 0DH
Phone: 01244 661170

Tree and Tag No Species	Hght (m)	Stems		Crown		RP A (m ²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
		No	Ø (mm)	Spread (m)	Clear (m)					
Leyland Cypress <i>X Cupressocyparis leylandii</i>	5	1	260	N 2	0	M A: 30.6 R: 3.12	Good	C: Good S: Not visible B: Not visible	Estimated Measurements Off site group. Western side of canopy formally maintained as screening. Stems and basal area obscured by canopy. Dimensions recorded represent average for the group.	C.2 40+ yrs
Various <i>See comments for details</i>	7	10	190 (Eq)	N 5 E 4 S 4 W 5	4 3 3 3 3 3	M A: 16.3 R: 2.27	Good	C: Good S: Not visible B: Not visible	Estimated Measurements Off site group of hawthorn and hazel. Stems and basal area obscured by undergrowth. Dimensions recorded represent average for the group.	C.2 20+ yrs
Various <i>See comments for details</i>	6	1	200	N 2 E 2 S 2 W 2	0 0 0 0 0 0	M A: 18.1 R: 2.4	Good	C: Good S: Not visible B: Not visible	Estimated Measurements Boundary group primarily comprising of cherry laurel, western red cedar and Leylandii. Eastern canopy formally maintained as screening. Dimensions recorded represent average for the group.	B.2 20+ yrs
Various <i>See comments for details</i>	2	1	80	N 0.5 E 0.5 S 0.5 W 0.5	0 0 0 0 0 0	M A: 2.9 R: 0.96	Good	C: Good S: Good B: Good	Formally maintained hedge primarily comprising of rhododendron and red robin. Dimensions recorded represent average for the group.	C.2 40+ yrs

Tree and Tag No Species	Hght (m)	Stems		Crown		RP A (m ²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
		No	Ø (mm)	Spread (m)	Clear (m)	Age				
Common Holly <i>Ilex aquifolium</i>	3	1	160	N 0.5	0	M	Good	C: Good	Formally maintained boundary hedge primarily comprising of holly. Stems and basal area obscured by canopy. Dimensions recorded represent average for the hedge.	C.2 40+ yrs
Leyland Cypress <i>X Cupressocyparis leylandii</i>	4	1	150	N 0.5	0	M	Good	C: Good	Off site formally maintained hedge. Stems and basal area obscured by canopy. Dimensions recorded represent average for the hedge	C.2 40+ yrs
Common Oak <i>Quercus robur</i>	11	1	610	N 8	2	M	Good	C: Good	Asymmetrical crown due to proximity of companion trees. Major deadwood (>75mm diameter and/or longer than 2m) throughout crown. Tree situated on boundary bank adjacent to road and driveway, likely restricting rooting area.	B.1 40+ yrs
Common Oak <i>Quercus robur</i>	14	1	1220	N 9	6	M	Good	C: Good	Off site tree. Major deadwood (>75mm diameter and/or longer than 2m) throughout crown, typical of species and age. Lower 7m of stem and basal area obscured by understorey of cherry laurel.	A.1 40+ yrs
Common Ash <i>Fraxinus excelsior</i>	10	1	530	N 9	4	M	Good	C: Good	Asymmetrical crown due to proximity of companion trees. Stem divides into 4 codominant stems at 3.5m, unions obscured. Lower 5m of stem and stem unions obscured by understorey of cherry laurel.	B.1 20+ yrs

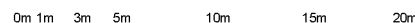
Tree and Tag No Species		Hght (m)		Stems		Crown		RP A (m ²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment		Cat ERC	
No	Ø (mm)	Spread (m)	Clear (m)	Age				Estimated Measurements						
Common Oak <i>Quercus robur</i>														
12	1	1010	N	8	6	M	A: 461.5 R: 12.12	Good	C: Good	Off site tree. Western crown historically reduced to reduce the overhang over the property. Pruning wounds up to 90mm diameter with callus wood to 30mm. Major deadwood (> 75mm diameter and/or longer than 2m) throughout crown typical of species and age. Stem and basal area obscured by boundary hedge.				B.1 40+ yrs
Common Oak <i>Quercus robur</i>														
14	1	920	N	6	2	M	A: 383 R: 11.04	Good	C: Good	Major deadwood (>75mm diameter and/or longer than 2m) throughout crown. Physical wound on northern side of stem at 2m. Wound approx. 390mm diameter with callus wood to 140mm.				B.1 40+ yrs
Common Oak <i>Quercus robur</i>														
11	1	340	N	5	3	EM	A: 52.3 R: 4.08	Good	C: Good	Asymmetrical crown due to proximity of companion tree. Exposed roots on western side of stem to 1m. Roots likely exposed by animal action.				B.1 40+ yrs
Apple <i>Malus sp.</i>														
4	1	90	N	1	2	EM	A: 3.7 R: 1.08	Good	C: Good	Asymmetrical crown due to proximity of companion trees.				C.1 20+ yrs
Oak <i>Quercus sp.</i>														
9	1	250	N	5	4	EM	A: 28.3 R: 3	Good	C: Good	Asymmetrical crown due to proximity of companion trees. Stem grows at 20° from vertical to the north to apex.				B.1 20+ yrs

Tree and Tag No Species	Hght (m)	Stems		Crown		RP A (m ²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations		Cat ERC	
		No	Ø (mm)	Spread (m)	Clear (m)				Age	Survey Comment		
Estimated Measurements												
Common Beech <i>Fagus sylvatica</i>	12	1	440	N	5	4	M	A: 87.6 R: 5.28	Good	C: Good S: Fair B: Not visible	Off site tree. Historically topped at 5m, regrowth up to 120mm diameter and 8m long. Unions and pruning wounds not visible.	B.1 20+ yrs
				E	5	5						
				S	5	3						
				W	5	4						
Estimated Measurements												
Norway Maple <i>Acer platanoides</i>	9	3	312 (Eq)	N	4	5	M	A: 44 R: 3.74	Good	C: Good S: Not visible B: Not visible	Off site tree. Stem and basal area obscured by adjacent group.	B.1 20+ yrs
				E	4	5						
				S	4	5						
				W	4	5						
Estimated Measurements												
Common Oak <i>Quercus robur</i>	15	1	1000	N	9	6	M	A: 452.4 R: 12	Good	C: Good S: Not visible B: Not visible	Off site tree. Crown historically reduced at 2m inside current dimensions. Pruning wounds up to 90mm diameter with callus wood to 40mm. Major deadwood (>75mm diameter and/or longer than 2m) throughout crown typical of species and age.	A.1 40+ yrs
				E	9	6						
				S	9	6						
				W	9	5						

Appendix 3: Tree Constraints Plan

Indicative only

Journal of Management Inquiry 22(1)



9. Document Production Record

Limitations

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