

ARBTECH

BS5837:2012

**Trees in relation to design, demolition and construction –
Recommendations**

Tree Survey

**10 The Dell,
Bedhampton,
PO9 3JX**

18 June 2019

Author: Aran Nearn

Appendix 1: Schedule of Trees

Nap Construction Ltd
62 Downhouse Road,
Catherington,
Waterlooville
PO8 0TY.

18/06/19

Tree Survey Report 10 The Dell, Bedhampton, PO9 3JX

Arbtech Consulting Limited (Arbtech) received written instruction on 7th June 2019 from Nap Construction Ltd to attend 10 The Dell, Bedhampton, PO9 3JX (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 and a tree constraints plan.

I undertook the tree survey on 18th June 2019 and subsequently have produced this summary of my findings.

I hold the FdSc in Arboriculture and benefit from professional industry experience spanning five years. I also have an associate membership with the Institute of Chartered Foresters and professional membership with the Arboricultural Association.

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.

Tree Survey Executive Summary

A total of 20No individual trees and 1No group of trees were surveyed.

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

The site consists of a plot of land to the rear of 10 The Dell. The site is broadly level and laid to lawn.

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 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.

Figure 1: Site Location (Bing Maps)



Figure 2: Aerial Image (Bing Maps)



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

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

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Recommendations

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.

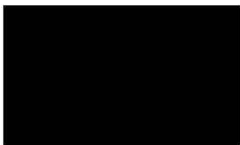
Appendices

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,



Aran Nearn

Arboricultural Consultant

arannearn@arbtech.co.uk

Tree Protection Plan

A TPP is 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. 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 sub category referring to the type of amenity; 1 = Arboricultural; 2 = Landscape; 3 = Cultural including conservation (see Table 1 Cascade chart for tree quality assessment).

Document Production Record

Document number	Editor	Signature	Position	Issue number	Date
Arbtech TSR 01	Aran Nearn		Arboricultural Consultant	1	18/06/2019

Limitations

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Appendix 2: Tree Constraints Plan

Mitigation and construction – Recommendations

Identification on plan	
that their early loss is expected due to collapse, including those that will where, for whatever reason, the loss of companion shelter cannot be mitigated mediate, and irreversible overall decline nd/or safety of other trees nearby, or very low quality trees suppressing dition value which might be desirable to preserve; see 4.5.7.	
scape qualities	3 Mainly cultural values, including conservation
r woodlands of particular visual gricultural and/or landscape	
	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)
	Light green
numbers, usually growing as ands, such that they attract a rating than they might as ees occurring as collectives but make little visual contribution lity	
	Trees with material conservation or other cultural value
	Mild blue
groups or woodlands, but erring on them significantly landscape value; and/or trees ly temporary/transient	
	Trees with no material conservation or other cultural value
	Grey

Mitigation and construction – Recommendations

Identification on plan	
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	Trees with no material conservation or other cultural value
	Grey

Tree and Tag No	Height (m)	Stems No	Stem Ø (mm)	Crown Spread (m)	Clear (m)	Age	RP A (m ²)	Phys Condition	Structural Condition	Preliminary Recommendations	Cat ERC
16 Sycamore <i>Acer pseudoplatanus</i>	10	1	220	N 3.5	1	SM	A: 21.9 R: 2.64	Good	C: Fair S: Good B: Good	Boundary tree.	C.1 20 to 40 yrs
17 Common Walnut <i>Juglans regia</i>	15	2	495 (Eq)	N 6	2	M	A: 110.8 R: 5.93	Good	C: Fair S: Good B: Good	Off-site tree; grows from neighbouring land.	Estimated Measurements B.1 20 to 40 yrs
18 Wild Cherry <i>Prunus avium</i>	15	2	716 (Eq)	N 7	2	M	A: 231.9 R: 8.59	Fair	C: Fair S: Poor B: Fair	Extensive decay in co-dominant stem; future structural failure likely.	U <10 yrs
19 Norway Maple <i>Acer platanoides</i>	12	1	380	N 4	2	SM	A: 65.3 R: 4.55	Good	C: Fair S: Good B: Good	Asymmetrical crown distribution due to suppression from neighbouring tree.	B.1 20 to 40 yrs
20 Common Beech <i>Fagus sylvatica</i>	7	1	150	N 3	2	Y	A: 10.2 R: 1.8	Good	C: Fair S: Good B: Good	Boundary tree.	Estimated Measurements C.1 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 BS5637:2012 definition
	SM	Semi-mature	OM	Over Mature		B	Basal area			

FROM DOTTED
LINE BACK ALL IN
NEIGHBOUR'S
GARDENS

NO 17
STILL THERE
IN NEIGHBOUR'S GARDEN?

NO 20
BOTH STILL THERE
NO 19

NO 16
STILL THERE
CHEERLY TREE
GONE CUT DOWN
NO 18

NEIGHBOUR'S
BOTH STILL
THERE
NO 14
NO 15

THIS TREE
NEVER HAD
TPO BUT HAS
BEEN CUT DOWN
NO 12

THIS TREE
HAS HAD TPO
TAKEN OFF
AND CUT
DOWN
NO 13

THIS TREE
STILL HAS TPO
BUT IS SHOWING
SIGNS OF
DIE BACK
NO 11

Red line
IS THE
BOUNDARY



Tree Categories

There are three categories of trees in the site plan, which are defined as follows:

- Category 1:** Trees that are considered to be of high value and are likely to be retained. These trees are shown with a solid black outline.
- Category 2:** Trees that are considered to be of medium value and are likely to be retained. These trees are shown with a dashed black outline.
- Category 3:** Trees that are considered to be of low value and are likely to be removed. These trees are shown with a dotted black outline.

Root Protection Areas

The Root Protection Area (RPA) is the area around a tree that is considered to be essential for its health and growth. The RPA is shown as a dashed circle around the tree. The size of the RPA is determined by the size of the tree and its age.

Tree Survey Report

This report provides a detailed survey of the trees on the site. It includes information on the location, size, age, and health of each tree. The survey was conducted on 10th June 2019 by ARBTECH.

ARBTECH

Unit 10, 10th June 2019, 10th June 2019, 10th June 2019

10 The Dell,
Barnhampton,
PO1 3JX

Client:
NAT Construction Ltd

Drawing No:
Tree Constraints Plan

Issue date:
05/11/19

Scale:
1:200 @ A1

Date:
June 2019

Author:
Arlene TOP 01

Checker:
Arlene TOP 01

Drawn by:
Arlene TOP 01

Scale:
1:200 @ A1

Date:
June 2019

Tree and Tag No	Species	Height (m)	Stems No	Ø (mm)	Crown Spread (m)	Clear (m)	Age	RP A (m ²)	Phys Condition	Structural Condition	Preliminary Recommendations	Cat ERC
10	Common Ash <i>Fraxinus excelsior</i>	25	1	790	N E S W	7 7 6 6	3 3 3 3	M A: 282.4 R: 9.48	Poor	C: Fair S: Good B: Good	Extensive deadwood in lower crown; up to 100mm diameter; several cavities in stem, up to 150mm diameter, no extensive decay visible from ground.	B.1 20 to 40 yrs
11	Common Ash <i>Fraxinus excelsior</i>	25	1	650	N E S W	6 7 4 7	6 6 6 6	M A: 191.2 R: 7.8	Good	C: Fair S: Good B: Good	Extensive deadwood in lower crown; up to 100mm diameter; several cavities in stem, up to 150mm diameter, no extensive decay visible from ground.	B.1 20 to 40 yrs
12	Common Ash <i>Fraxinus excelsior</i>	20	1	680	N E S W	3 6 6 5	4 4 4 4	M A: 209.2 R: 8.16	Good	C: Fair S: Good B: Good	Previously heavily reduced; wound diameter up to 100mm, regrowth diameter up to 50mm; poor branch attachment; reduce back to previous pruning points.	B.1 20 to 40 yrs
13	Common Ash <i>Fraxinus excelsior</i>	30	1	750	N E S W	10 10 10 10	3 3 3 3	M A: 254.5 R: 9	Good	C: Good S: Good B: Good	Previously heavily reduced, to approx. 3m from stem, regrowth diameter up to 200mm; extended growth on lateral limbs; cavity on lowest lateral, potential for structural failure.	B.1.2 20 to 40 yrs
14	Common Ash <i>Fraxinus excelsior</i>	7	1	300	N E S W	1.5 1.5 1.5 1.5	2 2 2 2	M A: 40.7 R: 3.59	Fair	C: Fair S: Fair B: Not Visible	Estimated Measurements	C.1 10 to 20 yrs
15	Common Ash <i>Fraxinus excelsior</i>	7	1	200	N E S W	1.5 1.5 1.5 1.5	2 2 2 2	M A: 18.1 R: 2.4	Fair	C: Fair S: Fair B: Not Visible	Estimated Measurements	C.1 10 to 20 yrs

Age Classifications:

N Newly planted
Y Young
SM Semi-mature
EM Early Mature
M Mature
OM Over Mature

Condition:

C Crown
S Stem
B Basal area

Stems:

Ø Diameter

(Eq) Equivalent stem diameter using BS5637:2012 definition

TreeMinder

Tree and Tag No	Species	Height (m)	Stems No	Stem Ø (mm)	Crown Spread (m)	Clear (m)	Age	RP A (m ²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
4	Common Ash <i>Fraxinus excelsior</i>	15	1	400	N 4 E 6 S 6 W 4	2	M	A: 72.4 R: 4.8	Fair	C: Fair S: Good B: Not Visible	Estimated Measurements Off-site tree; grows as part of group; dieback in lower crown.	B.1 20 to 40 yrs
5	Common Ash <i>Fraxinus excelsior</i>	15	1	250	N 1.5 E 4 S 4 W 3	6	SM	A: 28.3 R: 3	Good	C: Fair S: Good B: Good	Estimated Measurements Off-site tree; grows from group.	B.1 20 to 40 yrs
6	Common or Black Elder <i>Sambucus nigra</i>	7	1	200	N 3 E 3 S 3 W 3	2	SM	A: 18.1 R: 2.4	Fair	C: Fair S: Fair B: Not Visible	Off-site tree; grows from neighbouring land.	C.1 10 to 20 yrs
7	Common Hawthorn <i>Crataegus monogyna</i>	5	1	200	N 2 E 2 S 2 W 1	2	SM	A: 18.1 R: 2.4	Fair	C: Fair S: Ivy B: Not Visible	Off-site tree; grows from neighbouring land.	C.1 10 to 20 yrs
8	Bird Cherry <i>Prunus padus</i>	4	1	100	N 2 E 2 S 2 W 2	1	Y	A: 4.5 R: 1.19	Fair	C: Fair S: Fair B: Good	Boundary tree; dieback in upper crown.	C.1 10 to 20 yrs
9	Common Walnut <i>Juglans regia</i>	16	1	680	N 6 E 7.5 S 7 W 8	2	M	A: 209.2 R: 8.16	Good	C: Fair S: Good B: Good	Minor dieback in lower crown.	B.1 20 to 40 yrs
NEIGHBOURS												
STICK THERE												

Age Classifications:												
N	Newly planted	EM	Early Mature	Condition:	C	Crown	Stems:	Ø	Diameter	(Eq)	Equivalent stem diameter using BS6837:2012 definition	
Y	Young	M	Mature		S	Stem						
SM	Semi-mature	OM	Over Mature		B	Basal area						

Client: Nap Construction Ltd
 Project: 10 The Dell
 Survey Date: 18/06/2019
 Surveyor: Aran Nearn

BS5837:2012 Tree Survey

ARBTECH

Arbtech Consulting Limited

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

Tree and Tag No	Species	Height (m)	Stems No	Stem Ø (mm)	Crown Spread (m)	Clear (m)	Age	RP A (m ²)	Phys Condition	Structural Condition	Preliminary Recommendations	Cat ERC
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A Group
 See comments for details

G1		6	1	130	N	2	1	SM	A: 7.6	Fair	C: Fair	Estimated Measurements
					E	2	1		R: 1.55		S: Fair	C.1.2
					S	2	1				B: Fair	20 to 40 yrs
					W	2	1					

Linear boundary group of hawthorn elder and bay; previously topped at 5m; stem and crown dimensions recorded are the largest represented within the group.

1	Common Ash	14	2	602 (Eq)	N	2.5	7	M	A: 164	Good	C: Fair	Estimated Measurements
					E	2.5	7		R: 7.22		S: Good	B.1
					S	2.5	7				B: Not Visible	20 to 40 yrs
					W	2.5	7					

Off-site tree; grows from neighbouring land; base not visible from site; previously high pollarded.

2	Common Yew	6	1	200	N	3.5	2	Y	A: 18.1	Good	C: Fair	Estimated Measurements
					E	2	2		R: 2.4		S: Good	B.1
					S	3	2				B: Good	>40 yrs
					W	3	2					

Off-site tree; vertical suppression from neighbouring tree.

3	Common Ash	15	1	450	N	6	2	M	A: 91.6	Fair	C: Fair	Estimated Measurements
					E	8	2		R: 5.39		S: Good	B.1
					S	6	2				B: Good	20 to 40 yrs
					W	3	2					

Off-site tree; grows as part of group; dieback in lower crown.

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			