

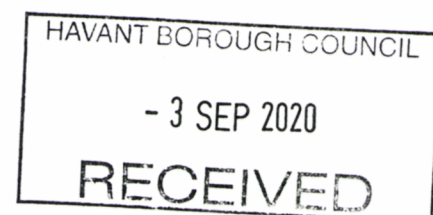
ARBTECH

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

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.

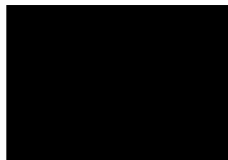
Appendices

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

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 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 <i>NOTE Category U trees can have existing or potential conservation value which might be desirable to preserve; see 4.5.7.</i>	Dark red
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 dominate and/or principal trees within an avenue)	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	
Category C Trees of low quality with an estimated remaining 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	Mid blue
	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	Grey
	Trees present in groups or woodlands of particular visual importance as arboricultural and/or landscape features	Light green
	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
	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	Light green
	Trees with no material conservation or other cultural value	Grey

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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).

Appendix 2: Tree Constraints Plan

Document Production Record

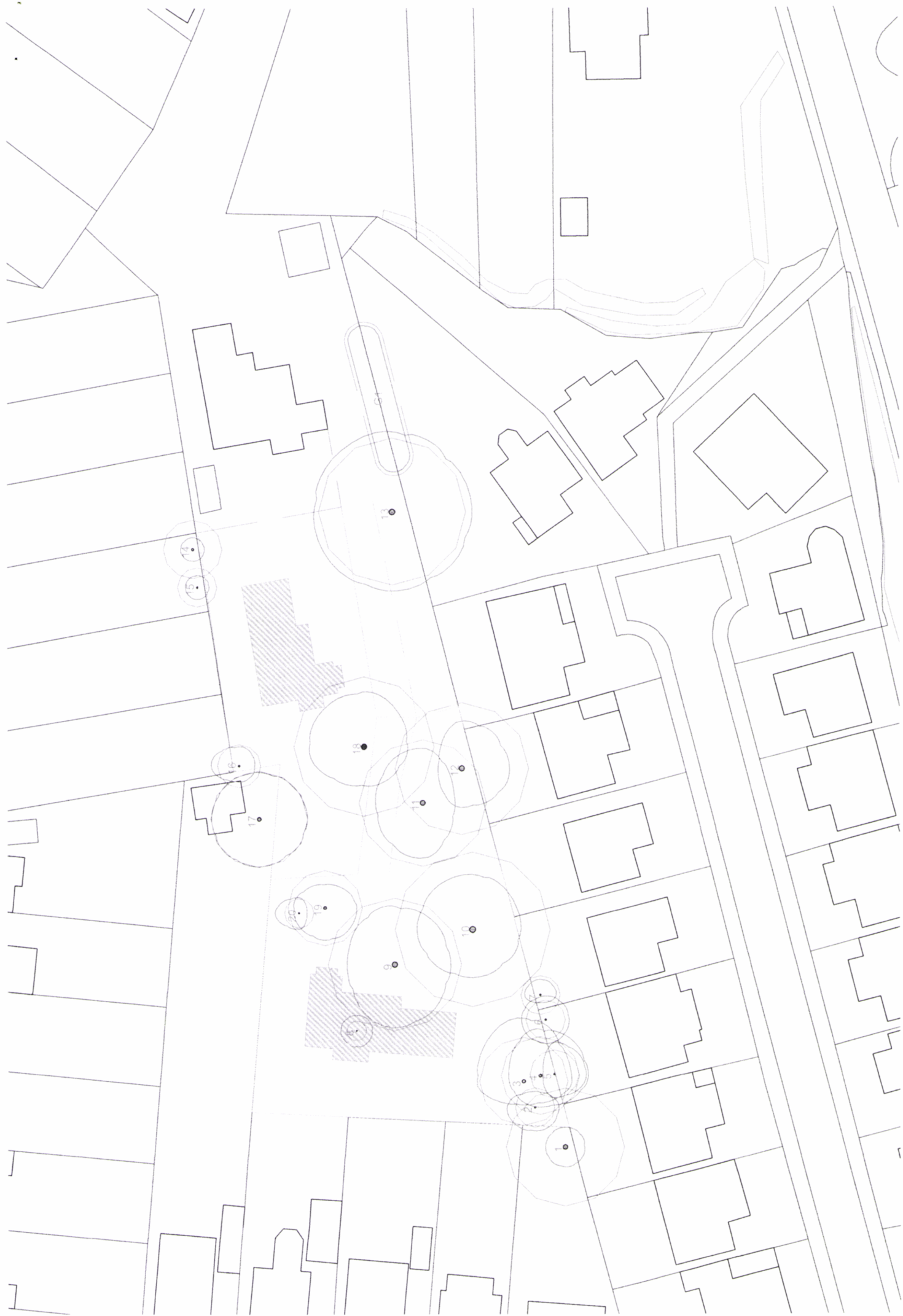
Document number	Editor	Signature	Position	Issue number	Date
Arbtech TSR 01	Aran Nearn		Arboricultural Consultant	1	18/06/2019

Limitations

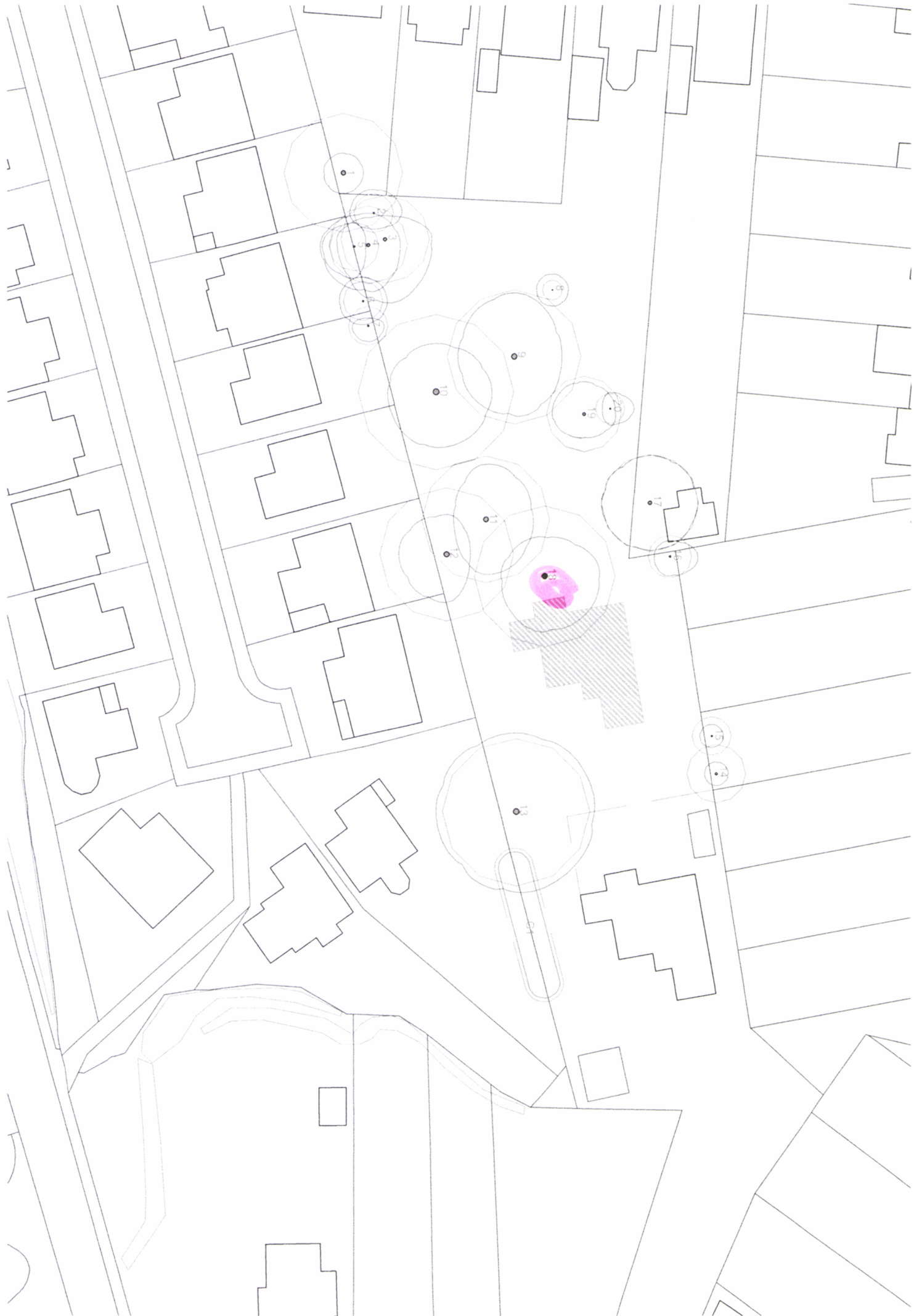
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Client: Nap Construction Ltd
Project: 10 The Dell
Survey Date: 18/06/2019
Surveyor: Aran Nearn

BS5837:2012 Tree Survey

Arbtech Consulting Limited

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



Tree and Tag No	Species	Height (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Clear (m)	Age	RP A (m ²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
G1											Estimated Measurements	
A Group		6	1	130	N	2	1	SM	A: 7.6	Fair	C: Fair	C.1.2
See comments for details												
					E	2	1		R: 1.55		S: Fair	20 to 40 yrs
					S	2	1				B: Fair	
					W	2	1					
1											Estimated Measurements	
Common Ash		14	2	602 (Eq)	N	2.5	7	M	A: 164	Good	C: Fair	B.1
					E	2.5	7		R: 7.22		S: Good	20 to 40 yrs
					S	2.5	7				B: Not Visible	
					W	2.5	7				Off-site tree; grows from neighbouring land; base not visible from site; previously high pollarded.	
2											Estimated Measurements	
Common Yew		6	1	200	N	3.5	2	Y	A: 18.1	Good	C: Fair	B.1
					E	2	2		R: 2.4		S: Good	>40 yrs
					S	3	2				B: Good	
					W	3	2				Off-site tree; vertical suppression from neighbouring tree.	
3											Estimated Measurements	
Common Ash		15	1	450	N	6	2	M	A: 91.6	Fair	C: Fair	B.1
					E	8	2		R: 5.39		S: Good	20 to 40 yrs
					S	6	2				B: Good	
					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				

Tree and Tag No		Stems		Crown		RP		Phys		Structural		Preliminary Recommendations		Cat	
Species	Height (m)	No	Ø (mm)	Spread (m)	Clear (m)	Age	A (m²) R (m)	Condition	Condition	Condition	Survey Comment	ERC			
Estimated Measurements															
4	Common Ash <i>Fraxinus excelsior</i>	15	1	400	N 4 E 6 S 6 W 4	2 2 2 2 2 2	M A: 72.4 R: 4.8	Fair	C: Fair S: Good B: Not Visible	Off-site tree; grows as part of group; dieback in lower crown.		B.1 20 to 40 yrs			
Estimated Measurements															
5	Common Ash <i>Fraxinus excelsior</i>	15	1	250	N 1.5 E 4 S 4 W 3	6 6 6 6 6 6	SM A: 28.3 R: 3	Good	C: Fair S: Good B: Good	Off-site tree; grows from group.		B.1 20 to 40 yrs			
Estimated Measurements															
6	Common or Black Elder <i>Sambucas nigra</i>	7	1	200	N 3 E 3 S 3 W 3	2 2 2 2 2 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			
Estimated Measurements															
7	Common Hawthorn <i>Crataegus monogyna</i>	5	1	200	N 2 E 2 S 2 W 1	2 2 2 2 2 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			
Estimated Measurements															
8	Bird Cherry <i>Prunus padus</i>	4	1	100	N 2 E 2 S 2 W 2	1 1 1 1 1 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			
Estimated Measurements															
9	Common Walnut <i>Juglans regia</i>	16	1	680	N 6 E 7.5 S 7 W 8	2 2 4 4 2 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			
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		Crown		Age	RP A (m ²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
		No	Ø (mm)	Spread (m)	Clear (m)						
10 Common Ash <i>Fraxinus excelsior</i>	25	1	790	N E S W	7 7 6 6	3 3 3 3	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	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	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	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	A: 40.7 R: 3.59	Fair	C: Fair S: Fair B: Not Visible	Off-site tree; pollarded at 6m.	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	A: 18.1 R: 2.4	Fair	C: Fair S: Fair B: Not Visible	Off-site tree; pollarded at 6m.	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 BS5837:2012 definition											

Tree and Tag No Species	Hght (m)		Stems		Crown		Age	RP A (m ²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC																																							
	No	Ø (mm)	Spread (m)	Clear (m)	Ø (mm)	Clear (m)																																													
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: <table> <tr> <td>N</td><td>Newly planted</td><td>EM</td><td>Early Mature</td><td colspan="2">Condition:</td><td>C</td><td>Crown</td><td colspan="2">Stems:</td><td>Ø</td><td>Diameter</td><td></td></tr> <tr> <td>Y</td><td>Young</td><td>M</td><td>Mature</td><td colspan="2"></td><td>S</td><td>Stem</td><td colspan="2"></td><td>(Eq)</td><td>Equivalent stem diameter using BS5837:2012 definition</td><td></td></tr> <tr> <td>SM</td><td>Semi-mature</td><td>OM</td><td>Over Mature</td><td colspan="2"></td><td>B</td><td>Basal area</td><td colspan="2"></td><td></td><td></td><td></td></tr> </table>													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					
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																																												

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.

Appendix 1: Schedule of Trees

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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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.

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.



Tree Categories

There are three categories of trees in this plan. The categories are defined as follows:

- Category 1 - Trees which are considered to be of high value and which are likely to be retained.
- Category 2 - Trees which are considered to be of medium value and which are likely to be retained.
- Category 3 - Trees which are considered to be of low value and which are likely to be removed.

Root Protection Area

The Root Protection Area (RPA) is the area around the base of a tree which is considered to be of high value and which is likely to be retained. The RPA is defined by a dashed line around the base of the tree.

Tree Survey Report

This report provides a detailed survey of the trees on the site. The survey was carried out on 10th June 2019. The survey was carried out by ARBTECH Ltd. The survey was carried out in accordance with the British Standard BS5837:2012.

ARBTECH

Unit 3, Mill House Farm, Churchfields, Beddington, PO9 3JX

10 The Dell, Beddington, PO9 3JX

Map Construction Ltd

Tree Constraints Plan

OS Tile

Arbtech TCP 01

June 2019 1:200 @ A1

Scale

Drawn

AIN

Check

Approved

10 The Dell, Beddington, PO9 3JX

Map Construction Ltd

