Tree Survey and Constraints Assessment BS5837:2012

EDEN ARBORICULTURE
Professional Tree Consultancy

Prepared By: Chris Garner – Principal Consultant

Date: 20 February 2018

Site: The Ramshorn Holiday Estate, Ramshorn Road, Oakamoor, ST10 3BZ

Ref: EA-2018-005 (AIA)

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1 INTRODUCTION

1.1 Instruction

1.1.1 The report is produced at the instruction of William Bidwell. The instruction was received by e-mail on the 12th January 2018 (via Louise Hinsley) after earlier discussions by e-mail and phone.

1.1.2 The instruction is to produce a tree survey and constraints plan as stage 1 a formal report in accordance with BS5837:2012 to be submitted as part of an application for full planning consent. The survey produced at present is base line data only and is to be used as a design layout tool to assist in producing the most appropriate layout with the trees in mind.

1.2 Tree Survey

1.2.1 The tree survey is undertaken by a suitable qualified Arboriculturist (see appendix 2) and was produced independent of any proposed layout. The completed survey will be used to identify trees on the site and categorise those which are most suitable for retention in order to enhance the development. Detail on tree categorisation can be viewed in appendix 4.

1.2.2 The tree survey was carried out on the 11th February 2018.

1.2.3 The tree survey collected relevant information in accordance with BS5837:2012 which are as follows:

a) Tree identification number (which is linked to the plan)

b) Species using common names. Scientific names will be identified in appendix 3

c) Height (Metres) measured with a laser distometer

d) Stem diameter (mm) at 1.5M above ground measured with a girthing tape.

e) Branch spread to the four cardinal points (Metres) measured with a laser distometer

f) Existing height above ground of first branch and direction. (Metres)

g) Existing height above ground of canopy. (Metres)

h) Life Stage. Young, Early Mature, Mature, Over Mature. See appendix 3 for definitions.

i) General observations

j) Estimated remaining contribution in years. <10, 10+, 20+, 40+

k) Grading category as per appendix 4.

l) RPA (expressed as a radius)

m) RPA (expressed in square metres)

1.2.4 Full detail of the tree survey which informs the quality and value of the trees can be found within appendix 3.

1.3 Scope of the Report

1.3.1 The aim of the report is to give guidance and recommendations on the relationship between trees, design, demolition and construction activities with the purpose of creating a harmonious and sustainable situation in which trees and built structures can co-exist.

1.3.2 The report will aim to identify the value and quality of woody vegetation on and around the site. The data gathered during the survey will be used to identify the impact that the vegetation will have on the proposed development and vice versa (at stage 2)

1.3.3 As a result, the information gained will be used to make recommendations to ensure the protection of all existing vegetation which is to be retained. (at stage 2)

1.3.4 It will also give an indication of which trees are to be removed and provide a suitable justification and make recommendations for mitigation planting where appropriate. (at stage 2)

1.3.5 Subsequent to, and depending on the results of the report, there may be a requirement to produce an Arboricultural Method Statement in order to secure the protection of the trees through the construction phase and into the future. (stage 3)

1.4 Limitations and Copyright

1.4.1 The content of the tree survey is intended to inform the most appropriate way forward in terms of development. It is not intended to be used as a detailed tree risk management survey. All observations were made from ground level only and are visual in nature. Should trees with significant defects which present an imminent danger be identified during the survey, this will be brought to the attention of the client immediately and as a separate matter. Should trees require a more detailed inspection (e.g. aerial inspection or decay detection) but the condition is not considered to be imminently dangerous, then this will be identified within the survey and addressed through preliminary management recommendations.

1.4.2 The report does not make reference to protected species (e.g. Bats) and the investigation of the presence of such species remains the responsibility of the client. The disturbance of such species may carry heavy penalties and the client is advised to seek professional advice before implementing any of the recommendations contained within the report (or Arboricultural Method Statement) if their presence is suspected.

1.4.3 No samples were taken from site for lab analysis or for any other purpose.

1.4.4 Copyright – all rights to the report are reserved by the author. No parts of the report are to be sold, lent or hired to any third party not directly involved with the site or the planning application without the written consent of the author.

1.4.5 Comments made in relation to tree health are reflective of their physical condition at the time of the survey. Changes in condition may occur due to external influences (e.g. construction

activities, pathogens, climatic events, etc.) and the author cannot take responsibility for changes in condition once the site visit has been completed.

1.4.6 The report is valid for a period of 1 year.

1.4.7 I have not checked with the local planning authority for the existence of any TPO's or the presence of a designated conservation area. Written consent may therefore be required from the LPA before implementing any of the works contained within the report, if either of these planning restrictions are in place. This remains the responsibility of the client.

1.4.8 Disclaimer. Should any part of the report be altered or tampered with in any way, then this will invalidate the entire document.

1.5 Documents Provided

1.5.1 I was provided with the following documents by the client's agent (Ms Louise Hinsley) via e-mail:

- Previous site plans (PDF)

2 SITE DESCRIPTION

2.1 The site is located within a rural area approximately 12m east of Stoke-on-Trent. The area immediately surrounding the site is native woodland dominated by Oak and Birch, as is the site itself. Access to the site is along a woodland track off Ramshorn Road.

2.2 The site is a mature woodland with mainly Oak and Pine as the climax species, with birch pioneers grown between. The area surveyed is an undeveloped part of the Ramshorn Holiday Estate. To the south east are a number of luxury lob cabins installed via previous planning applications. There is a small derelict cottage at the north west part of the survey area.

2.3 The site slopes gradually up to the north from the access point on the existing drive.

2.4 I have not been provided with any information on soil type or modified plasticity index at this time.

3 VEGETATION DESCRIPTION

3.1 The area surveyed is dense woodland with trees far too closely grown to survey individually with any real meaning. As such a walk-over survey was carried out within the instructed areas with the better trees selected and recorded.

3.2 The majority of the trees picked up by the survey are oak, pine and birch of varying quality.

3.3 The surrounding area is dominated by closely grown birch, pine, and oak. The majority of these smaller trees have stem diameters of up to 250mm. The woodland as a whole would have a retention category of A2.

4 TREE CONSTRAINTS GUIDANCE

4.1 The tree constraints plan provided with this introductory report gives an indication of the extent of the root protection areas (RPA), the canopy spreads, and predicted shading patterns. These should be given due consideration when deciding the most appropriate layout for the site. Building within RPA's is likely to require special engineering solutions and although a technical solution may be available, this should be avoided where possible.

4.2 Consideration should also be given to the position of the tree canopies and the requirement for access facilitation pruning. Heavy pruning is likely to be resisted by the LPA.

4.3 Indicative shading is provided so as to allow the architect an insight into the affect the trees will have on the site in terms of blocked sunlight. Heavily shaded gardens and main living windows will most likely be viewed negatively by the LPA.

4.4 The following potential impacts should be consideration when deciding the layout:

- Installation of foundations. (Damage from)
- Installation of hard surfaces. (Damage from)
- Installation of services. (Damage from)
- The impact of tree removals. As advised category A and B trees should be retained.
- The impact of tree pruning. Requirement for heavy pruning should be avoided.
- Damage to root systems.
- Damage to above ground part of trees.
- Pressure for future tree removals. Allow sufficient space so that trees do not dominate.
- Appropriate storage areas, not near trees.
- Space for future tree developments.
- The impact of demolition works.
- Changes in level should be avoided within RPA's.
- Potential for tree root damage. Appropriate engineering and spacing.
- The effect of shading on main living areas and gardens.
- Screening should be maintained.
- These are just some of the issues I will have to address in the impact assessment so if we can keep the impacts low the transition should be smoother.

Appendices

1 TERMS AND DEFINITIONS

Access facilitation pruning

A one-off tree pruning operation, the nature and effects of which are without significant adverse impact on the tree(s) physiology or amenity value, which is directly necessary to provide access for operations on site.

Arboricultural Method Statement

A methodology for the implementation of any aspect of development that is in the RPA, or has the potential to result in loss or damage to a tree to be retained.

Arboriculturist

A person who has through relevant education, training and experience, gained expertise in the field of trees in relation to construction.

Competent Person

A person who has had training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached.

Construction

A site-based operation with the potential to affect existing trees.

Construction Exclusion Zone

An area based on the RPA from which access is prohibited for the duration of the project.

Root Protection Area (RPA)

A layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.

Service

Any above- or below- ground structure or apparatus required for utility provision.

Stem

The principal above-ground structural component(s) of a tree that supports its branches.

Structure

Manufactured objects, such as a building, carriageway, path, wall, service run and built or excavated earthworks.

Tree Protection Plan

A scale drawing, informed by descriptive text where necessary, based upon the finalised proposals, showing trees for retention and illustrating the tree and landscape protection measures.

2 AUTHORS QUALIFICATIONS AND EXPERIENCE

Qualifications:

Level 6 Diploma in Arboriculture	2014
Technicians Certificate in Arboriculture (Merit)	2009
Lantra Accredited – Professional Tree Inspector	2006
NCH Arboriculture (Merit)	1998
City and Guilds (Phase 2) Amenity and Landscape Horticulture	1992
City and Guilds (Phase 1) Amenity Horticulture	1991

Experience:

Arboricultural Consultant. (Eden Arboriculture)	2013 – present
Local Authority Tree Officer. (Planning / Tree Preservation)	2010 – present
Local Authority Tree Officer. (Risk Management / Asset Management)	2005 – 2010
Chargehand Arborist	2002 – 2005
Arborist (Tree Surgeon)	1998 – 2002
Horticulturalist	1992 – 1997
Trainee Horticulturalist	1990 – 1992

Continuing Professional Development:

Mortgage Report Writing Workshop (Treelife)	2014
Report Writing for Mortgage and Insurance Purposes	2013
Getting to Grips with Subsidence	2013
Engaging Arboricultural Contractors	2006
Bats and Arboriculture – A Guide for Practitioners	2004
Location and Avoidance of Underground Apparatus	2003

Memberships:

In order to stay up to date with current issues, Chris is a member of the following organisations:

1. The Arboricultural Association – Professional Member.
2. The Consulting Arborists Society – Professional Member.
    - Accredited Tree Inspection Expert.
    - Accredited Mortgage and Insurance Expert. (AMIUG)
    - Accredited TPO Expert
3. The Institute of Chartered Foresters.

3 TREE SURVEY

Key to scientific names:

Common Names	***Scientific Names***
Birch	*Betula pendula*
Oak	*Quercus robur*
Pine	*Pinus sp.*
Rowan	*Sorbus aucuparia*

Key to Life Stage description:

Young	Newly planted
Semi Mature	Large nursery stock which can be newly planted or still in the stages of establishment
Early Mature	Tree in the first third of its life cycle, growing quickly
Mature	Tree in the second third of its life cycle, maintaining its ultimate size with minimal annual growth
Over Mature	Tree in the final third of its life cycle, starting to show signs of decline

Tree No.	Species (Common Name)	Height (m)	Stem Dia. @ 1.5m (mm)	Branch Spread (m) N-E-S-W				Height of First Branch (m) and Direction	Canopy Height (m)	Life Stage. Y, SM, EM, M, OM	General Observations. Condition and Management Recommendations	Estimated remaining Contribution (Yrs) <10, 10+, 20+, 40+	Retention Category	RPA - radius (m)	RPA (m2)
T1	Oak	16	1000	12	10	10	10	3-S	2	M	Deadwood within canopy, previous failures - remove dead and defect branches	40+	A1	12	452
T2	Birch	16	270	3	4	4	4	n/a	7	M	Previous failures and decay within upper trunk at point of failure	<10	U	3.3	34
T3	Rowan	7	250	3	3	4	4	n/a	2	M	Dieback within canopy	10+	C1	3	28
T4	Birch	16	350	3	4	4	4	n/a	3	M	No significant defects	20+	C1	4.2	55
T5	Birch	16	240	3	2	2	4	n/a	7	M	No significant defects, suppressed by adjacent vegetation	20+	C1	3	28
T6	Oak	12	320 x 2	5	6	6	6	2-S	<1	M	Trunk bifurcates at 1m, No significant defects	40+	B1	5.4	92
T7	Pine	14	350	5	4	4	4	n/a	2	EM	Deadwood within canopy - minor	40+	B1	4.2	55
T8	Oak	12	310 + 420	9	8	8	9	1-N	<1	M	No significant defects, minor deadwood within canopy, low canopy	40+	A1	6.3	124
T9	Oak	16	480	8	7	6	7	n/a	3	M	Minor deadwood, No significant defects	40+	A1	5.7	102
T10	Pine	15	390	4	4	4	4	n/a	7	M	Wound at base, no decay	20+	B1	4.8	72
T10a	Pine	15	400	5	5	5	5	n/a	3	m	Deadwood within canopy	40+	A1	4.8	72
T10b	Pine	16	510	5	5	5	5	n/a	4	M	Deadwood - no target	40+	A1	6	113
T11	Oak	16	400	7	7	7	6	2-W	2	EM	No significant defects	40+	B1	4.8	72
T12	Birch	12	200 + 150	4	5	4	1	n/a	2	EM	No significant defects, Low quality	20+	C1	3	28
T12a	Birch	12	290	5	5	5	5	n/a	4	M	Deadwood within canopy - minor	20+	B1	3.6	41
T13	Pine	12	330	4	4	4	4	n/a	3	EM	Deadwood within canopy - minor	20+	B1	3.9	48
T14	Pine	12	480	4	5	5	4	3-S	3	EM	Top failed previously, deadwood over track - remove deadwood	20+	C1	5.7	102
T15	Pine	16	530	7	6	7	7	n/a	2	M	Deadwood and hanging branch - remove deadwood and hanging branch	40+	A1	6.3	124
T16	Pine	18	370	3	3	3	3	n/a	5	M	Deadwood within canopy - minor	40+	B1	4.5	64
T17	Pine	18	520	4	4	5	4	4-W	7	M	Deadwood and hanging branch - remove deadwood and hanging branch	40+	B1	6.3	124

Tree No.	Species (Common Name)	Height (m)	Stem Dia. @ 1.5m (mm)	Branch Spread (m) N-E-S-W				Height of First Branch (m) and Direction	Canopy Height (m)	Life Stage. Y, SM, EM, M, OM	General Observations. Condition and Management Recommendations	Estimated remaining Contribution (Yrs) <10, 10+, 20+, 40+	Retention Category	RPA - radius (m)	RPA (m2)
T18	Oak and Birch	16	500 + 340	3	5	7	5	n/a	<1	M	Trunks fussed	20+	C1	7.2	163
T19	Rowan	6	210	2	3	3	3	n/a	1	M	No significant defects	20+	C1	2.4	18
T20	Pine	18	510	4	4	4	4	n/a	6	M	Deadwood and hanging branch - no target	40+	A1	6	113
T21	Birch	16	340	5	4	5	3	n/a	4	M	No significant defects	20+	B1	4.2	55
T22	Birch	14	240	4	3	3	3	n/a	4	M	No significant defects, low quality	20+	C1	3	28
T23	Birch	16	290	0	4	7	4	n/a	10	M	Leans south, deadwood within canopy with *Piptoporus* brackets present	20+	C1	3.6	41
T24	Birch	16	320 x 2	6	6	6	6	n/a	6	M	Deadwood present, compression forks at base	10+	C1	5.4	92
T25	Rowan	7	250 + 350	4	4	2	3	n/a	2	M	*Nectria* canker present, poor condition - fell	<10	U	5.1	81
T26	Birch	16	350	6	4	2	4	n/a	6	M	Necrotic bark - fell	<10	U	4.2	55
T27	Oak	12	540	5	5	6	5	3-W	4	M	Deadwood over road, dieback within canopy, minor cavities - remove deadwood	40+	B1	6.6	137
T28	Oak	16	690	7	7	10	8	6-S	6	M	Deadwood over road, dieback within canopy, minor cavities - remove deadwood	40+	A1	8.4	222
T29	Oak	16	610	7	7	7	7	n/a	<1	M	Deadwood within canopy	40+	A1	7.2	163
T30	Birch	10	300	4	4	4	4	n/a	<1	EM	No significant defects	20+	C1	3.6	41
T31	Oak	18	690	8	8	8	8	5-N	3	M	Deadwood within canopy and previous failures - low risk	40+	A1	8.4	222
T32	Oak	16	480	6	7	6	5	n/a	2	M	Deadwood and hangers present - low risk	40+	A1	5.7	102
T33	Oak	6	150	4	3	3	3	n/a	<1	SM	No significant defects	40+	C1	1.8	10
T34	Birch	14	450	4	4	4	4	n/a	4	M	Dead branch stub, minor cavities, deadwood	10+	C1	5.4	92
G35	Birch x 3	14	450	4	4	4	4	n/a	4	M	Deadwood present and cavities, fell southern tree - significant cavity	10+	C1	5.4	92
G36	Birch and Oak	12	300	4	4	4	4	n/a	<1	EM	Low quality group, fell defect trees within falling distance of track - low risk	10+	C1	3.6	41
T37	Birch	16	420	5	4	5	5	n/a	6	M	No significant defects	20+	B1	5.1	81

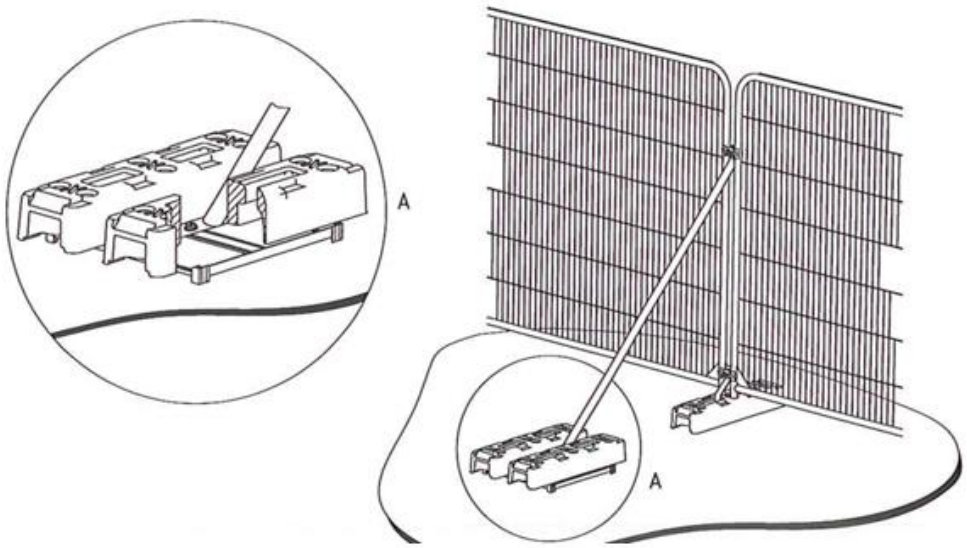
Tree No.	Species (Common Name)	Height (m)	Stem Dia. @ 1.5m (mm)	Branch Spread (m) N-E-S-W				Height of First Branch (m) and Direction	Canopy Height (m)	Life Stage. Y, SM, EM, M, OM	General Observations. Condition and Management Recommendations	Estimated remaining Contribution (Yrs) <10, 10+, 20+, 40+	Retention Category	RPA - radius (m)	RPA (m2)
G38	Rowan and Birch Group	16	400	5	5	5	5	n/a	6	M	Minor cavities and deadwood	20+	B1	4.8	72
T39	Pine	18	580	5	5	5	5	n/a	4	M	Deadwood	40+	A1	6.9	150
W40	Mixed woodland	16	400	5	5	5	5	n/a	<1	M	Birch, oak, and rowan - lower quality trees	20+	C1	4.8	72

4 TREE CATEGORISATION TABLE (BS5837:2012)

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

5 SPECIFICATION FOR TREE PROTECTION BARRIERS



Specification:

1. **Two metre tall weld mesh panels secured on rubber or concrete feet.**
2. **Panels joined together using and minimum of two anti-tamper couplers secured in a way that they can only be removed from the inside.**
3. **Distance between the couplers should be at least 1m and uniform throughout fence.**
4. **Panels to be supported on the inside by stabiliser struts.**

6 REFERENCES

1. Anon. **(2012)** *BS5837:2012. Trees in relation to design, demolition, and construction – recommendations*. British Standard Institute. London, UK.