TREE CONSULTANTS

ARBORICULTURAL REPORT

To BS 5837:2012 at:

Old Hall Lane
Roxby
Lincolnshire
DN15 0BB

Prepared for:
Kirton Consulting Ltd
Tighe Ho
Redbourne Mere
Kirton in Lindsey
Lincolnshire
DN21 4NW

Date: *February 2019*

Reference: *AWA2544*

Institute of Chartered Foresters
Registered Consultant

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Union Forge, 27 Mowbray Street, Sheffield, S3 8EN. AWA Tree Consultants Limited. Company No. 8520123. Registered in England & Wales.

Contents

1. Introduction

1.1 Instructions and Brief

1.1.1 We were instructed by Ian Hutchison of Kirton Consulting Ltd to visit the site and prepare our findings in a report.

1.1.2 The report is required in accordance with *BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations,* to provide detailed, independent, arboricultural advice on the trees present, in the context of potential development.

1.2 Survey Details

1.2.1 The survey took place during February 2019.

1.2.2 The trees were surveyed visually from the ground using "Visual Tree Assessment" techniques and in accordance with the guiding principles of British Standard 5837:2012.

1.2.3 Any additional off-site trees that could impact a new development design have been included in the tree survey parameters.

1.2.4 The tree positions were plotted on Ordinance Survey map base-layer using enhanced GPS technology (1-2m accuracy) and laser distance measurer.

1.2.5 This report has been prepared by Mr Adam Winson Chartered Arboriculturist, MSc, BSc (Hons), MICFor, MArborA, Principle and Director of AWA Tree Consultants Ltd.

1.2.6 The tree survey data collection was carried out by Mr Dave Farmer FdSc (Arb), MArborA, PTI (Lantra). Arboriculturist at AWA Tree Consultants.

1.2.7 Full qualifications and experience are included within **Appendix 1**. Explanatory details regarding the survey methodology are included within **Appendix 2**. A full explanation of the tree data can be found at **Appendix 3**. Full details of all the trees surveyed are found in **Appendix 4**. For tree locations please refer to the Tree Constraints Plan at **Appendix 5.**

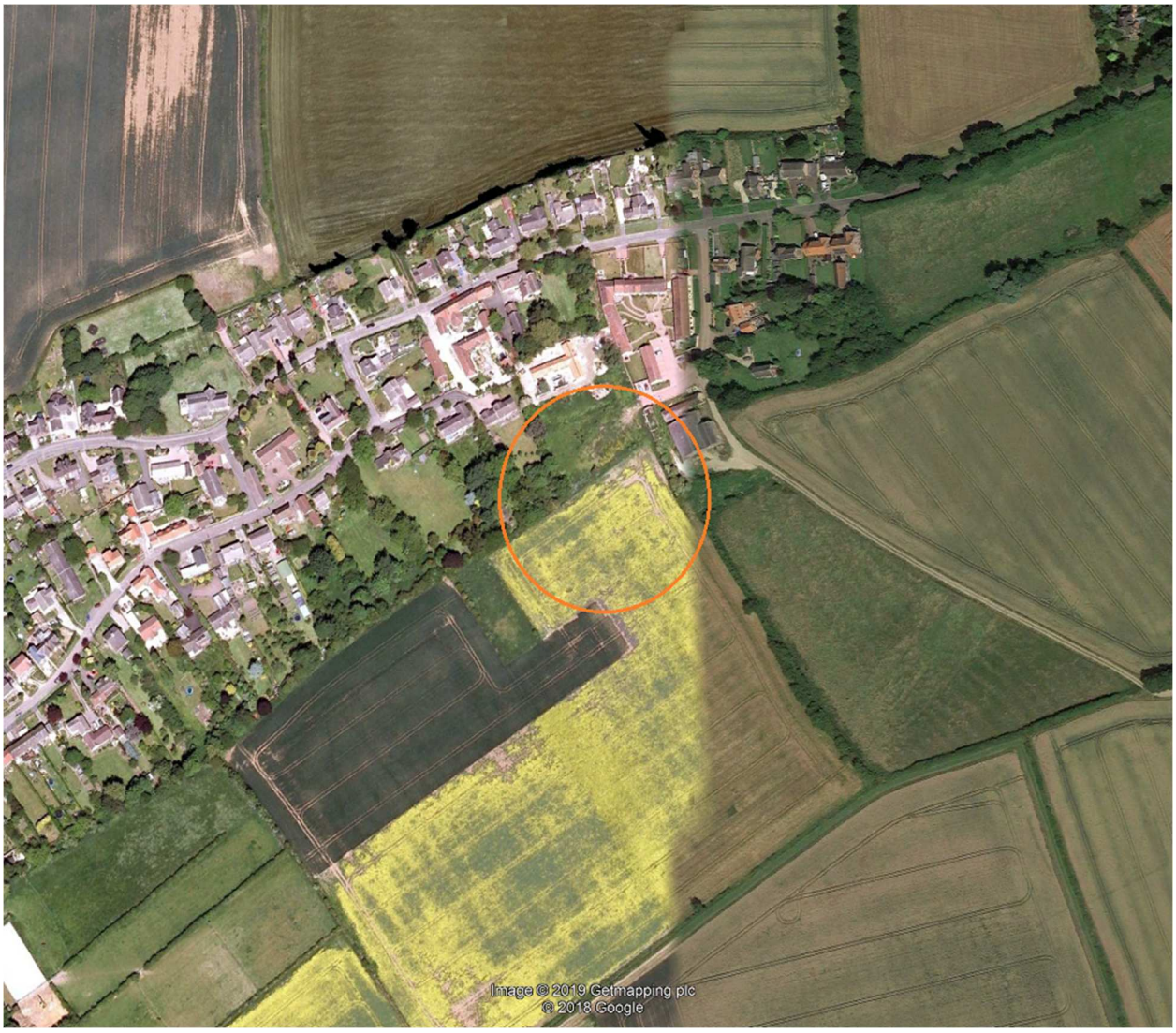
2. The Site

2.1 Location & Description

2.1.1 The site is located in Roxby, a village in North Lincolnshire, approximately 4 miles north from the town of Scunthorpe.

2.1.2 The site currently consists unused open fields to the centre of the site surrounded by large woodland groups situated to the boundaries and surrounding areas.

2.1.3 The approximate survey area has been highlighted in the (2009) image below:



3. The Trees

3.1 Legal

3.1.1 Due to the large potential penalties for illegally carrying out work to protected trees, before authorising any tree works a check should be made with the Local Planning Authority to see if the trees are covered by a Tree Preservation Order or if they are within a Conservation Area. If either applies, then statutory permission is required before any works can take place.

3.1.2 When appointing a tree surgeon, only properly qualified and experienced companies should be used, who have adequate Public Liability and Employer's Liability Insurance. All tree work should be carried out according to British Standard 3998:2010 *Tree Work - Recommendations*.

3.2 Tree Survey Results

3.2.1 The tree survey revealed 15 items of woody vegetation, comprised of 12 individual trees and 3 shrub/hedge groups.

3.2.2 Of the surveyed trees: 1 tree is retention category 'B'; and the remaining 11 trees and 3 groups are retention category 'C' (explanatory details regarding the retention categories are included within Appendix 3).

3.2.3 The significant tree cover within the site consists mainly of individual trees and hedgerow groups close to the boundary lines, both within the site and in adjacent land.

3.2.4 The central areas of the site contain little of arboricultural significance, generally consisting of open grassland and occasional small self-set shrubs.

3.2.5 Species diversity at the site is fair, with several Blackthorn, Hawthorn and Willow, and the occasional Ash, Elder, Hazel and Holly.

3.2.6 Most of the trees are semi-mature with only the occasional early mature tree.

3.2.7 The site's most significant tree is T8, an Ash situated to the west of the site in an adjacent residential garden. This tree is prominent throughout the site and surrounding area and provides a good level of amenity value.

3.2.8 The remaining trees at the site are lower value retention category 'C'. These trees collectively provide some amenity value and screen the site from the surrounding areas; however, none of the trees should pose a significant constraint on the future development of the site.

3.2.9 Some trees were covered in dense Ivy or were inaccessible (as detailed in appendix 4) in such cases measurements were estimated and the condition values are indicative only.

3.2.10 The tree Root Protection Area (RPA) detailed on the Tree Constraints Plan at Appendix 5, has been used as a layout design tool, to inform on the area around a tree where the protection of the roots and soil structure is treated as a priority.

3.2.11 The lower value hedge and shrub groups do not have RPAs detailed on tree plans. The detailed extent and spread of the low value groups, in conjunction with the tree schedule, is sufficient to assess the associated potential constraints.

3.2.12 The RPA for each tree has been plotted as a polygon centred on the base of the stem. Due to the presence of structures, topography (and past tree management) the RPA is likely to be a simplified representation of the tree roots actual morphology and disposition. However, detailed modifications to the shape of the RPA would largely be based on conjecture and so have been avoided.

3.3 Arboricultural Development Advice

3.3.1 Most of the sites central area has no significant trees and so is free of any significant arboricultural impacts for any new development.

3.3.2 The higher value retention category 'B' tree should be retained, where possible, and incorporated into any new development design.

3.3.3 Where suitable, those category 'C' trees and groups with reasonable future prospects (as detailed in Appendix 4) should be retained as part of any new development. However, care should be taken to avoid misplaced tree retention; attempts to retain too many or unsuitable trees on a site can result in excessive pressure on the trees during demolition or construction work, or post-completion demands for their removal.

3.3.4 If required by the development proposals, occasional lower value, retention category C trees and groups could be removed, and replacement planting would largely mitigate their losses.

3.3.5 The tree Root Protection Area (RPA) detailed on the Tree Constraints Plan at Appendix 5, should be used as a layout design tool, to inform on the area around a tree where the protection of the roots and soil structure is treated as a priority.

3.3.6 If construction of new buildings is required within the RPA of retained trees it may be possible to employ special foundation design such as mini/micro pile and suspended beam or a cantilevered foundation.

3.3.7 Construction of hard surfaces, for drives and paths, within the RPA, can have negative impacts on tree roots. However, the potential negative impacts can often be overcome or minimised by employing a 'no-dig' type construction methods with a porous final surface.

3.3.8 The design of the new development should consider the trees crown position in relation to any new development. Whilst either shade or sunlight might be desirable, depending on the potential use of the area affected, the design should avoid unreasonable obstruction of light and should give adequate provision for future tree growth.

3.4 Protection of the Retained Trees

3.4.1 The retained trees may require protection by fencing in accordance with BS 5837:2012, during the development phase.

3.4.2 If required by the Local Planning Authority, an associated Arboricultural Method Statement, detailing protective fencing specifications and construction methods close to the retained trees can be provided.

4. Signature

I trust this report provides all the required information.

Signed

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Adam Winson, *Chartered Arboriculturist, MSc, BSc (Hons), MICFor, AIEEM.*

20th February 2018

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Appendices

Appendix 1: Authors Qualifications & Experience

Mr Adam Winson *Chartered Arboriculturist, MSc, BSc (Hons), MICFor, MArborA, ACIEEM, QTRA Registered.*

Adam is the company Director and Principle Consultant. He has a mix of the highest level academic qualifications and relevant work experience. He has worked within the tree care profession for over 20 years, and was awarded an MSc in Arboriculture and Urban Forestry, with distinction. Adam is a Chartered Arboriculturist and a Registered Consultant with the Institute of Chartered Foresters, a Professional Member of the Arboricultural Association and has original research published by the UK Forestry Commission. His work ranges from individual expert tree inspections to managing trees on major multimillion pound housing developments and infrastructure projects. His work often involves trees with preservation orders or litigation, and he has appeared as a tree expert, at planning appeal hearings up to the Crown Court.

Mr James Brown *BSc (Hons) Arboriculture, MArborA.*

James has a BSc (Hons) in Arboriculture, attaining first class honours, as well as being awarded the Institute of Chartered Forester's Student award. He is a Professional Member of the Arboricultural Association and an Associate of the Institute of Chartered Foresters. James previously worked in Europe's largest tree nursery and has experience of Local Authority tree officer work. His main work consists of tree surveys for development projects and preparing Tree Protection Schemes to BS 5837:2012.

Mr Dave Farmer *FdSc (Arb), MArborA, PTI (Lantra).*

Dave has a Foundation Degree in Arboriculture (with Distinction) and is qualified in Professional Tree Inspection. He is a Professional Member of the Arboricultural Association and an Associate of the Institute of Chartered Foresters. Dave has many years of experience within the tree care profession, including lecturing in arboriculture. His work focuses on diagnosing potential tree risk problems, and recommending appropriate treatments and work programmes.

Dr Felicity Stout *Ph.D, MA, BA (Hons), Cert Ed (Forestry), TechArborA.*

Felicity has worked in the tree care profession for the last 10 years. She has a Certificate in Higher Education in Forestry, with a focus on Urban Forestry. She has practical arboricultural contractor experience and is a qualified and experienced Social Forestry practitioner. Felicity has a PhD in History, with a particular interest in the history of woodland and tree management and has published in The Arboricultural Journal on this subject.

Mr Patrick Rowntree Cert Arb L3, TechArborA.

Patrick is a trained arborist with 5 years of experience in both the private and commercial sectors and is a technician member of the Arboricultural Association. Having travelled the world, both working as an arborist and playing professional rugby, Patrick was awarded a Distinction in the Extended Diploma in Forestry & Arboriculture. Patrick now uses his work and education experience at AWA, focusing on accurate tree data collection for tree surveys for development projects and assisting the team in the preparation of tree reports and tree plans to BS 5837:2012.

Appendix 2: Survey Methodology and Limitations of Report

The survey was undertaken in accordance with British Standard 5837:2012 *Trees in relation to design, demolition and construction – Recommendations.* The trees were assessed objectively and without reference to any proposed site layout. The trees were surveyed from the ground using 'Visual Tree Assessment' (VTA) methodology. VTA is appropriate and is endorsed by industry guidance. It is used by arboriculturists to evaluate the structural integrity of a tree, relying on observation of trees biomechanical and physiological features. Measurements are obtained using a diameter tape, clinometer, laser distometer and loggers tape. Where this is not practical measurements are estimated. Tree groups have been identified in instances as defined in BS 5837:2012. Shrubs and insignificant trees may have been omitted from the survey.

This report represents a BS5837 tree survey and should not be accepted as a detailed tree safety inspection report; however, tree related hazards are recorded and commented upon where observed, yet no guarantee can be given as to the absolute safety or otherwise of any individual tree. All recommended tree work must be to BS 3998:2010 - '*Tree Work: Recommendations'*.

The findings and recommendations contained within this report are valid for a period of twelve months from the date of survey. The author shall not be responsible for events which happen after this time due to factors which were not apparent at the time, and the acceptance of this report constitutes an agreement with these guidelines and terms.

Appendix 3: Explanation of Tree Descriptions

HEIGHT of the tree is measured from the stem base in metres. Where the ground has a significant slope the higher ground is selected.

CROWN HEIGHT is an indication of the average height at which the crown begins and includes information of the first significant branch and direction of growth.

STEM DIAMETER is measured at 1.5 metres above (higher) ground level. Where the tree is multi-stemmed at this point; the diameter is measured close to ground level or else a combined stem diameter is calculated.

CROWN SPREAD is measured from the centre of the stem base to the tips of the branches in all four cardinal points.

AGE CLASS of the tree is described as young, semi-mature, early-mature, mature, or over-mature.

PHYSIOLOGICAL CONDITION is classed as good, fair, poor, or dead. This is an indication of the health of the tree and takes into account vigour, presence of disease and dieback.

STRUCTURAL CONDITION is classed as good, fair or poor. This is an indication of the structural integrity of the tree and takes into account significant wounds, decay and quality of branch junctions.

LIFE EXPECTANCY is classed as; less than 10 years, 10-20 years, 20-40 years, or more than 40 years. This is an indication of the number of years before removal of the tree is likely to be required.

Retention Categories

A (marked green on Appendix 5) = retention most desirable. These trees are of very high quality and value with a good life expectancy.

B (marked in blue on Appendix 5) = retention desirable. These trees are of good quality and value with a significant life expectancy.

C (marked in grey on Appendix 5) = trees which could be retained. These trees are of low or average quality and value, and are in adequate condition to remain until new planting could be established.

U (marked in red on Appendix 5) = trees for removal. These trees are in such a condition that any existing value would be lost within 10 years.

Appendix 4: Tree Data

	Tree Species		Measurements					Crown (m)					Tree Condition							Value		Management
Tree ID	*Common Name*	*Latin Name*	*Maturity*	*Height (m)*	*Stems*	*Stem Dia (mm)*	*Estimated*	*Ave Height*	*N*	*E*	*S*	*W*	*Roots*	*Stem*	*Crown*	*Comments*	*Physiological*	*Structural*	*Life Expectancy*	*Amenity*	*Category*	*Works*
T1	Willow	*Salix caprea*	Semi-mature	10	1	330	No	1	4	3.5	3	4.5	No visual defects, Ground level changes	Multiple stemmed at 1.5m, Vertical	Normal	Growing within the footprint of an old barn structure.	Good	Good	20 to 40 yrs	Moderate	**C**	No works required in current site context
T2	Willow	*Salix caprea*	Semi-mature	10	1	190	No	1.5	1	3	3.5	3	No visual defects, Ground level changes	Twin stemmed at 3m, Vertical	Normal	Growing within the footprint of an old barn structure.	Good	Good	20 to 40 yrs	Low	**C**	No works required in current site context
T3	Willow	*Salix caprea*	Semi-mature	10	1	150	No	1	0.5	2	3.5	3	No visual defects, Ground level changes	Single stemmed, Slight Lean	Normal	Growing within the footprint of an old barn structure.	Good	Good	20 to 40 yrs	Low	**C**	No works required in current site context
T4	Hawthorn	*Crataegus monogyna*	Semi-mature	6.5	1	250	Yes	0.5	3	3	2.5	2.5	No visual defects, Soil erosion	Vertical, Stubs, Epicormic growths, Ivy covered	Old pruning wounds, Minor deadwood	Growing on opposite bank of drainage channel. Ivy prevented detailed inspection and accurate stem measurement.	Fair	Fair	>40 yrs	Low	**C**	No works required in current site context
G5	Hawthorn	*Crataegus monogyna*	Semi-mature	3	6	120 avg	No	0.5	See Plan				No visual defects, Soil erosion	Single & Multiple stemmed at base, Vertical, Old pruning wounds, Stubs, Epicormic growths, Ivy covered	Old pruning wounds, Minor deadwood	Potentially the remains of an old hedgerow. Now becoming overgrown and overcome with ivy, relatively sparse.	Poor	Good	10 to 20 yrs	Low	**C**	No works required in current site context

	Tree Species		Measurements					Crown (m)					Tree Condition							Value		Management
Tree ID	*Common Name*	*Latin Name*	*Maturity*	*Height (m)*	*Stems*	*Stem Dia (mm)*	*Estimated*	*Ave Height*	*N*	*E*	*S*	*W*	*Roots*	*Stem*	*Crown*	*Comments*	*Physiological*	*Structural*	*Life Expectancy*	*Amenity*	*Category*	*Works*
T6	Elder	*Sambucus nigra*	Semi-mature	3.5	2	100, 80	No	1.5	2	2.5	1.5	1	No visual defects	Multiple stemmed, Slight lean, Stubs, Ivy covered	Minor dieback, Minor deadwood	Dense ivy prevented detailed inspection.	Fair	Fair	10 to 20 yrs	Low	**C**	No works required in current site context
T7	Elder	*Sambucus nigra*	Semi-mature	3.5	6	70 avg	No	1.5	1.5	2	1.5	1	No visual defects	Multiple stemmed, Slight lean, Stubs, Ivy covered	Minor dieback, Minor deadwood	Dense ivy prevented detailed inspection.	Fair	Fair	10 to 20 yrs	Low	**C**	No works required in current site context
T8	Ash	*Fraxinus excelsior*	Early-mature	10	1	320	Yes	1	3.5	6	5.5	5	No visual defects, Limited access around base	Single stemmed, Vertical, Old pruning wounds, Tight union	Normal, Minor deadwood		Good	Good	>40 yrs	Moderate	**B**	No works required in current site context
T9	Hazel	*Corylus avellana*	Semi-mature	8	10+	80 avg	Yes	1	4	6	6.5	3	No visual defects	Multiple stemmed at base, Vertical, Epicormic growths, Tight union, Partially included bark	Normal		Good	Fair	20 to 40 yrs	Moderate	**C**	No works required in current site context
T10	Holly	*Ilex aquifolium*	Semi-mature	8	1	200	Yes	0	3.5	3.5	3.5	3.5	No visual defects, Limited access around base	Single stemmed, Vertical	Normal	Dense foliage prevented detailed inspection.	Good	Good	20 to 40 yrs	Low	**C**	No works required in current site context
T11	Hawthorn	*Crataegus monogyna*	Early-mature	7.5	3	270, 210, 180	Yes	2	3	4.5	4	3	Decay, Damage to buttress roots	Multiple stemmed at base, Slight lean, Old pruning wounds, Stubs, Moderate cavities, Moderate decay	Minor dieback, Moderate deadwood	Several wounds with decay at the base of all stems and at 1.5m on western stem.	Fair	Fair	10 to 20 yrs	Low	**C**	No works required in current site context

	Tree Species		Measurements					Crown (m)					Tree Condition							Value		Management
Tree ID	*Common Name*	*Latin Name*	*Maturity*	*Height (m)*	*Stems*	*Stem Dia (mm)*	*Estimated*	*Ave Height*	*N*	*E*	*S*	*W*	*Roots*	*Stem*	*Crown*	*Comments*	*Physiological*	*Structural*	*Life Expectancy*	*Amenity*	*Category*	*Works*
G12	Blackthorn	*Prunus spinosa*	Semi-mature	7.5	10+	120 avg	No	1	See Plan				No visual defects, Soil erosion	Single stemmed, Slight lean, Stubs, Epicormic growths, Tight union	Normal, Minor deadwood	Average 2m spacings, planted in rows, with self set saplings to south. Several partially failed and decaying stems to north.	Good	Fair	20 to 40 yrs	Moderate	**C**	No works required in current site context
G13	Blackthorn	*Prunus spinosa*	Semi-mature	5	10+	70 avg	No	0.5	See Plan				No visual defects, Soil erosion	Single stemmed, Slight lean, Stubs, Epicormic growths, Tight union	Normal, Minor deadwood	Linear group growing on opposite bank of stream.	Fair	Fair	20 to 40 yrs	Low	**C**	No works required in current site context
T14	Hazel	*Corylus avellana*	Semi-mature	8	10+	80 avg	Yes	1	4	6	6.5	3	No visual defects, Soil erosion, Exposed roots	Multiple stemmed at base, Vertical, Epicormic growths, Tight union, Partially included bark	Normal, Minor deadwood		Good	Fair	20 to 40 yrs	Moderate	**C**	No works required in current site context
T15	Hawthorn	*Crataegus monogyna*	Semi-mature	4	1	170	Yes	1	2	3.5	2	2	No visual defects, Soil erosion	Multiple stemmed at 1m, Old pruning wounds, Stubs, Epicormic growths	Minor deadwood		Fair	Fair	20 to 40 yrs	Low	**C**	No works required in current site context

T1
T2
T3
T15
T14
G13
G12
T11
T10
T9
T8
T4
G5
T6
T7
NORTH

AWA
TREE CONSULTANTS

Appendix 5:
Tree Constraints Plan

Old Hall Lane, Roxby, DN15 0BB
Ref: AWA2544

BRITISH STANDARD 5837:2012
RETENTION CATEGORIES
Definitions of these catagories can be found in Appendix 2 of the report.

SCALE: 1:500 PAPER: A3

	CATEGORY A: HIGH VALUE RETENTION MOST DESIRABLE
	CATEGORY B: MODERATE VALUE RETENTION DESIRABLE
	CATEGORY C: LOWER VALUE COULD BE RETAINED
	CATEGORY U: FOR REMOVAL
	RPA: ROOT PROTECTION AREA
	TREE STEM