

**ARBORICULTURAL
IMPACT
ASSESSMENT**

Cotmoor Solar Farm

March 2020

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Barton Hyett Associates
Arboricultural Consultants

Summary table		
Site Name:	Cotmoor Solar Farm	
Project reference:	J.3180	
Site Address:	Land at Cotmoor Lane, Southwell, Nottinghamshire	
Nearest Postcode:	NG25 0QZ	
Central Grid reference:	SK 67074 53226	
Local Planning Authority:	Newark and Sherwood District Council	
Relevant planning policies:	Amended Core Strategy (adopted 2019)	
Statutory Controls:	Tree Preservation Order	Conservation Area
	None	None
Soil Type: (Source: BGS online soils map © NERC 2019)	Superficial/Drift	Bedrock
	None recorded	Gunthorpe Member
Topographical Survey:	Topographical Survey - 25240_06_170_01.1_MEC Geomatics	
Site Layout:	JBM_20200616_19_3P_49.9MWp_Layout_A - 16/06/20	
Notes:	None	
Report author:	Andrew Cunningham, Arboriculturist	
Date of issue:	19th March 2020	
Revision:	Rev A - 26th June 2020 - Updated layout	

REPORT CONTENTS:

SECTION 1:	SITE DETAILS & IMPACTS ASSESSMENT
SECTION 2:	TREE SURVEY & CONSTRAINTS PLAN
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SECTION 5:	COMBINED TREE RETENTION/REMOVAL & PROTECTION PLAN
SECTION 6:	GENERAL ADVICE

1. Instruction

- 1.1. Barton Hyett Associates Ltd have been instructed by JBM Solar Project 6 Ltd to survey trees located on land to the north of the village of Halloughton, Southwell, Nottinghamshire ('the site') in accordance with BS5837:2012 'Trees in relation to design, demolition and construction - recommendations'.
- 1.2. The scope of the instruction was to inspect trees relevant to a planning application at the site for a solar farm development and to provide an assessment of the potential impact of the proposed development on the site's arboricultural resource.

2. Site Description

- 2.1. The site consists of a large area of farmland which is located to the north of the village of Halloughton, Nottinghamshire between the A612 to the east and B6386 to the north. The village is situated approximately 1 mile to the south-west of the market town of Southwell.
- 2.2. The site consists of a variety of agricultural fields which are being utilised for crop production as well as grazing. The fields are divided by unmanaged/managed hedgerows, linear tree groups and of larger wooded groups. This is consistent throughout the site.
- 2.3. The site undulates slightly throughout with a watercourse (Westhorpe Dumble) located within the central region. There is no designated ancient woodland within the site but Halloughton Wood to the south-west of the site (outside the redline boundary) is designated as 'replanted ancient woodland'.
- 2.4. None of the surveyed trees are protected by Tree Preservation Order, and the site is also located outside of the Conservation Area which covers Halloughton village.
- 2.5. Access into the site is currently from the B6386 in the north which is the main access for New Redley Farm, as well as a farm access from the eastern end of Halloughton village.

3. Tree Survey Findings

- 3.1. A total of 60 trees, 48 groups of trees and 33 hedgerows were surveyed. These are summarised in terms of their quality in accordance with the recommendations of BS5837 below, and shown in more detail on the tree survey and constraints plan (section 2) and within the tree survey schedule (section 3).
- 3.2. The majority of surveyed features were assessed as being of moderate-quality (quality category B). There are also a large number of high-quality (quality category A) items identified (32 in total) and an almost equal number (25 in total) of low-quality items (quality category C).
- 3.3. Four trees were assessed as being unsuitable for retention (quality category U), regardless of development proposals, because of either declining health, standing/fallen dead or evidence of significant decay. Subject to confirmation from the project Ecologist, these trees T13, T16, T38 and T42 should be felled/removed in accordance with good arboricultural management and are irrespective of development proposals.

	Total	A - High-quality trees whose retention is most desirable.	B - Moderate-quality trees whose retention is desirable.	C - Low quality trees which could be retained but should not significantly constrain the proposal.	U - Very poor quality trees that should be removed unless they have high conservation value.
Trees	60	19	27	14	4
Groups	48	13	27	8	-
Hedgerows	33	-	30	3	-
Total	141	32	84	25	4

4. Proposed Development

- 4.1. The proposed development is for a large solar farm development which will incorporate lines of solar arrays, a sub-station, battery storage units and access tracks across the site. The proposed site layout is shown on the proposed PV and storage layout (JBM_20200616_19_3P_49.9MWp_Layout_A).
- 4.2. Access to the site will be via an access point to the south-eastern end of the proposed site. Once complete the operational access tracks will also be from the south.

5. Impact Assessment

- 5.1. The layout has been designed to incorporate the existing trees and boundary vegetation into the scheme. As a result, no trees, tree groups or hedgerows will require removal in their entirety.
- 5.2. However, sectional removals (each of approximately 4-5m) will be required to allow the new access track through the site to be constructed and allow access between fields, as well as minor sections (each of 1m) to allow the new perimeter fence to be installed. These removals are considered very minor and will have little impact on the overall arboricultural resource within the site. Any tree loss can be easily mitigated through additional tree or hedgerow planting as demonstrated by the Biodiversity Management Plan (BMP) calculator submitted as part of the ecology report, which demonstrates a net gain in terms of tree and hedgerow planting. All sectional removals are shown on the combined tree retention/removals and protection plan at section 5 of this report.
- 5.3. As no trees or vegetation will have to be removed in their entirety, the significance of the tree loss is regarded as low when considering the majority of the arboricultural resource being retained.
- 5.4. Impacts on retained trees could potentially occur during the construction phase. There is potential for damage to occur either as impact to stem or canopy, as well as to the associated root systems. These impacts can easily be managed through robust tree protection.

- 5.5. No demolition or site clearance is required to implement the development proposals.
- 5.6. The access will utilise an existing farm track which currently has a low level use. As the location of this track is adjacent to high-quality (category A) tree group G7 and moderate-quality (category B) tree group G1, there is potential for soil compaction to occur when upgrading the existing track. Therefore, within this area (approximately 100 linear metres), a 'no-dig' cellular confinement construction method will be utilised. This will ensure impacts to the root systems of these trees will be prevented during construction, and that gaseous exchange and good soil structure will be maintained in the future.
- 5.7. The 'no-dig' surface should utilise a system such as 'Cellweb' with an approximate 200mm honeycomb 'web' and a washed angular stone fill. This should be installed to the manufacturer's specification and in accordance with an approved arboricultural method statement.
- 5.8. The track within this area should have a sacrificial wearing course which will remain in-situ for the duration of the construction phase and then be replaced with a new and final wearing course on completion.
- 5.9. The perimeter security fencing can offer tree protection in accordance with BS5837:2012 if it is erected before any construction works commence on site. This would mean that tree protection fencing will only be required in certain areas where the security fencing offers insufficient protection to the trees.
- 5.10. Full-specification BS5837:2012 tree protection fencing will be required in areas where construction activities are intensive. However, in areas where construction activities are less intensive a lower specification for fencing would be appropriate. This could be in the form of euro-mesh (orange webbing) fencing which is secured by road pins. This would clearly demarcate the construction exclusion zone and provide a good level of protection.
- 5.11. Facilitation pruning may be required to sections of tree groups G1, G7 and G48 to ensure there is adequate ground clearance for vehicles during the construction phase of the project. These works will be in the form of minor canopy lifting and considered routine. Impact on the overall health of the trees will be minimal.
- 5.12. New service infrastructure (which includes the main substation, transformers and storage units) has been positioned so that it does not impact retained trees, and therefore should have little impact during the construction phase. However, if during construction an unforeseen impact on a retained tree is identified, then advice should be obtained from the Arboriculturist who will assess the impact and set out measures for adequate mitigation.
- 5.13. Ground levels at the site will remain unchanged, and so there is no additional impact to consider. However, if during the development it is found that an unforeseen ground level change (such as grading) is required, advice should be obtained from the Arboriculturist.
- 5.14. Foundations for solar arrays and CCTV camera poles are shown outside the RPAs of retained trees and therefore there will be no impact from their installation.
- 5.15. Hard surfacing in the form of the access track will be required within the RPA of retained trees T26 and T45. Within these locations, there are existing farm tracks. The tracks are in regular use and so compaction and

disturbance is likely to have limited the root growth of adjacent trees into these areas. Installation of the new track will upgrade the existing surface by using crushed stone in the construction. The impact from these works is likely to have a minimal impact on the trees' overall health, and is therefore acceptable.

- 5.16. The RPAs of retained trees, including trees growing outside of, but adjacent to the site boundaries, can be adequately protected with protective barriers. A combined draft tree retention and removal and tree protection plan is included in section 5.
- 5.17. The proposal is feasible from an arboricultural perspective, and if carefully implemented according to an approved arboricultural method statement there would be no or only a low potential negative impact on the retained trees.

6. Recommendations and Summary

- 6.1. The proposed development appears to be feasible from an arboricultural perspective, and retained trees can be adequately protected during construction activities to sustain their health and longevity. The proposed additional hedgerow and tree planting will result in a net gain in trees and hedgerows on site.
- 6.2. An arboricultural method statement and finalised tree protection plan will need to be produced. Where the feasibility of a scheme has been agreed by the Local Planning Authority, this detail can be usually finalised and submitted at a later date by condition of planning consent.

Andrew Cunningham FdSc (arb), Tech Cert (AA), M.ArborA

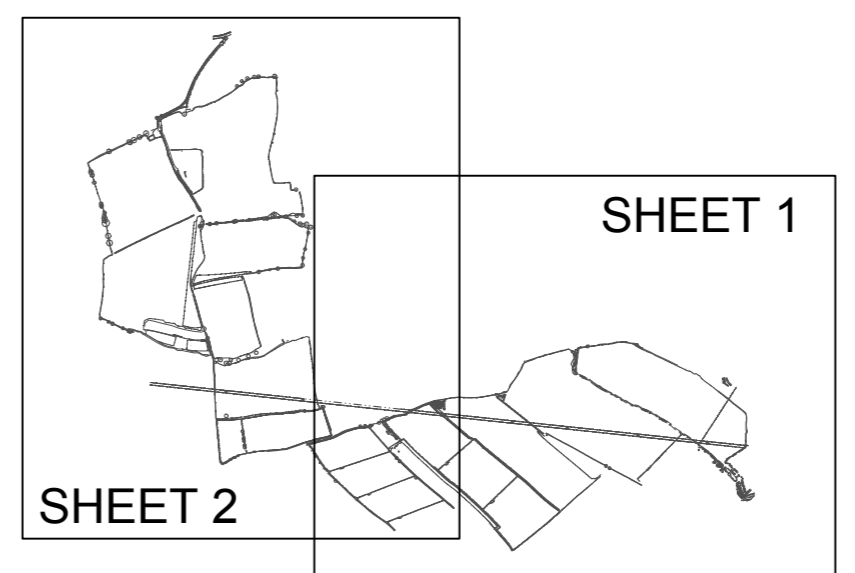


Arboriculturist



Tree No	Ht (m)	Species	Life Stage	RPA Radius (m)	RPA Area (m ²)
T1	9.5	Oak (English)	EM	2.6	137
T2	11	Ash (common)	M	6.6	200
T3	18	Oak (English)	M	9.1	423
T4	8	Ash (common)	EM	6.1	118
T5	5.5	Horse chestnut	SM	2.8	24
T6	5	Horse chestnut	SM	2.8	24
T7	8	Maple (Norway)	EM	3.8	46
T8	5.5	Horse chestnut	SM	2.8	24
T9	5.5	Horse chestnut	SM	2.8	24
T10	5.5	Beech (common)	SM	2.4	18
T11	11.5	Ash (common)	M	7.2	163
T12	11	Ash (common)	EM	6.8	147
T13	11	Ash (common)	EM	6.8	147
T14	10.5	Ash (common)	EM	6.4	82
T15	8.5	Oak (English)	EM	2.8	24
T16	14	Ash (common)	M	9.6	113
T17	14	Ash (common)	M	7.8	191
T18	12.5	Oak (English)	M	7.2	163
T19	13.5	Oak (English)	M	7.8	191
T20	13.5	Oak (English)	M	7.8	191
T21	4.5	Maple (Norway)	SM	6.9	248
T22	16	Oak (English)	EM	6.4	122
T23	15	Oak (English)	M	9.6	200
T24	14	Oak (English)	M	9.6	200
T25	13	Oak (English)	M	9.6	200
T26	13	Horse chestnut	M	6.6	200
T27	12	Ash (common)	M	6.4	127
T28	11	Willow	M	7.8	163
T29	14	Ash (common)	M	7.2	163
T30	13	Oak (English)	M	6.6	200
T31	5.5	Oak (English)	EM	2.8	24
T32	13	Ash (common)	EM	6.8	147
T33	11	Ash (common)	EM	7.4	174
T34	10	Oak (English)	EM	4.9	76
T35	12	Oak (English)	EM	6.4	122
T36	15	Ash (common)	EM	15	107
T37	15	Oak (English)	M	9.7	297
T38	13	Ash (common)	M	6.4	127
T39	9	Hawthorn	M	5	80
T40	10	Oak (English)	M	7.2	163
T41	13	Field maple	M	6.5	228
T42	8	Willow	M	7.2	163
T43	10	Oak (English)	M	7.2	163
T44	14.5	Oak (English)	EM	6	113
T45	16	Willow (sedge)	EM	9	156
T46	18	Ash (common)	M	9.6	200
T47	6	Ash (common)	M	7.2	163
T48	18	Ash (common)	M	9.6	200
T49	15	Ash (common)	M	9.6	200
T50	8.5	Elm	EM	4.2	56
T51	17.5	Oak (English)	M	9	255
T52	17.5	Oak (English)	EM	7.8	191
T53	13.5	Ash (common)	M	7.2	163
T54	8.5	Field maple	EM	4.2	56
T55	16	Ash (common)	M	9.6	200
T56	10	Oak (English)	M	9.6	200
T57	19	Ash (common)	M	11	383
T58	17	Oak (English)	M	9.6	200
T59	17	Ash (common)	M	7.2	163
T60	7	Hawthorn	M	7	163
T61	11	Ash (common)	EM	6	113
T62	6	Ash (common)	SM	1.6	26
T63	6	Ash (common)	SM	1.2	15
T64	11	Field maple	M	7.2	163
T65	15	Ash (common)	M	10.8	163
T66	12	Ash (common)	M	9.6	200
T67	16	Oak (English)	M	15	107
T68	7	Ash (common)	EM	6.8	147
T69	6	Elm	EM	4.8	72
G1	3-14	Ash, Oak, Hazel, Elm, Beech, Field maple, Sweet chestnut	EM	3.6	41
G2	10-14	Cherry, Beech, Sycamore, Ash, Oak, Hawthorn, Scots Pine, Horse chestnut, Willow	EM	5.4	82
G3	3-6	Hawthorn, Oak, Horse chestnut, Spindle	EM	2.4	18
G4	3-9	Apple	EM	3	28
G5	4-7	Hawthorn, Ash, Field maple	EM	3.3	35
G6	4-6	Hawthorn	EM	1.3	5
G7	6-16	Ash, Scots Pine, Oak, Holly, Beech, Alder, Hawthorn, Cherry, Field maple, Privet, Sweet chestnut	EM	7.2	163
G8	5-12	Larch, Norway maple	EM	6.6	137
G9	5-7	Ash (common)	EM	2.4	18
G10	4-12	Ash, Horse chestnut, Oak, Scots Pine	EM	3.3	35
G11	1-2	Ash (common)	EM	1.2	15
G12	2-14	Oak, Ash, Scots Pine, Beech, Field maple	EM	3.6	41
G13	9	Oak (English)	EM	5.4	82
G14	9	Oak (English)	EM	6	113
G15	6-10	Ash (common)	EM	4.8	72
G16	2-15	Scots Pine, Ash, Oak, Field maple, Hawthorn, Norway maple, Beech, Blackthorn	EM	4.2	55
G17	15-18	Oak, Beech, Ash	M	9.6	200
G18	7-9	Oak, Field maple	EM	2.6	41
G19	12-14	Poplar (grey)	M	8.4	222
G20	10-13	Poplar (grey)	M	7.2	163
G21	12-14	Willow (white)	M	7.2	163
G22	10-12	Oak	M	7.8	191
G23	4-16	Blackthorn	M	5.4	82
G24	5	Elm, Willow, Hawthorn	M	2.4	18
G25	16-19	Willow (sedge), Ash	M	12	452
G26	16-18	Willow (sedge), Hawthorn, Willow, Elder	M	7.2	163
G27	2-9	Ash, Field maple, Hawthorn, Willow, Elder	M	4.2	55
G28	12-14	Ash, Oak	M	4.4	222
G29	4-17	Ash, Oak, Willow	M	7.2	163
G30	5-6	Field maple, Hazel	EM	3.3	41
G31	18	Ash, Willow (white), Hazel	M	10.8	306
G32	6-12	Willow (sedge), Ash	M	15	107
G33	5-11	Willow (sedge)	M	12	452
G34	5-11	Willow (sedge), Blackthorn, Oak, Ash, Hawthorn, Hazel, Field maple, Spindle, Vitex	EM	3	28
G35	6-14	Willow, Field maple, Ash, Blackthorn	M	9	113
G36	1	Oak	EM	4.8	72
G37	1	Field maple	EM	3	28
G38	9-18	Elm, Ash, Hawthorn, Blackthorn, Willow, Oak	M	12	452
G39	3-7	Field maple, Hawthorn, Elm, Blackthorn, Willow	EM	2.4	18
G40	7-8	Field maple	M	6	113
G41	7-14	Ash, Beech, Oak, Pine, Field maple, Cherry, Hazel, Ash, Elm, Sweet chestnut, Oak	EM	3	28
G42	4-19	Hawthorn, Elm, Cherry	M	6.4	222
G43	2-18	Hazel, Ash, Willow, Field maple, Blackthorn	M	7.2	163
G44	6-10	Ash, Oak	EM	6.6	137
G45	10-12	Ash, Field maple	EM	3.6	41
G46	9-10	Field maple	M	4.8	72
G47	5-7	Field maple	SM	1.3	5
G48	15-18	Horse chestnut, Oak	M	9.6	200
H1	5.0	Hawthorn, Blackthorn, Hazel, Holly, Ash, Field maple	M	1.8	10
H2	2.0	Privet, Hawthorn, Holly, Elm, Blackthorn	EM	1.3	5
H3	2.8	Hawthorn	M	1.3	5
H4	2.2	Hawthorn	M	1.3	5
H5	5.0	Hawthorn, Field maple, Hazel, Elm	M	1.8	10
H6	4.9	Blackthorn, Oak, Norway maple, Elm, Willow	M	3.6	41
H7	2.7	Blackthorn, Oak, Elder, Hawthorn	M	1.8	10
H8	2.0	Hawthorn, Blackthorn, Rose, Field maple	M	1.3	5
H9	2.5	Hawthorn, Elder, Field maple, Rose	M	1.3	5
H10	2.5	Hawthorn, Blackthorn, Field maple, Hazel	M	1.3	5
H11	3-9	Ash, Field maple, Blackthorn, Hazel, Blackthorn, Cherry, Oak, Horse chestnut	M	5	113
H12	5-10	Oak, Willow, Horse chestnut, Field maple, Blackthorn, Hazel	M	6	113
H13	4-8	Hawthorn, Field maple, Elder, Oak, Blackthorn	M	4.2	55
H14	2-6	Hawthorn, Blackthorn, Field maple, Elm, Ash	M	2.4	18
H15	2.3	Hawthorn	M	2.1	14
H16	2.5	Hawthorn, Field maple	M	1.3	5
H17	2.0	Hawthorn, Field maple	M	1.3	5
H18	5.0	Field maple, Hawthorn, Rose, Elder, Elm, Sycamore, Ash, Willow, Hazel	M	2.4	18
H19	2.0	Elder, Hawthorn, Hazel, Field maple	M	1.3	5
H20	2-5	Holly, Ash, Elm, Elder	M	1.3	5
H21	2-4	Elm, Hawthorn, Elder, Hazel	M	1.3	5
H22	2-3	Hawthorn, Elder, Willow, Rose	M	1.3	5
H23	3-5	Hawthorn, Hazel, Elder, Field maple	M	1.8	10
H24	2-6	Hawthorn, Hazel, Blackthorn, Elder, Field maple	M	2.4	18
H25	2-5	Hawthorn, Hazel, Blackthorn, Lilac, Dogwood	M	2.4	18
H26	3.0	Hawthorn, Field maple, Blackthorn	M	1.3	5
H27	3-4	Field maple, Hawthorn, Blackthorn	M	1.8	10
H28	2-5	Hazel, Hawthorn, Holly, Blackthorn	M	1.3	5
H29	2-5	Blackthorn, Hawthorn, Field maple	M	1.3	5
H30	2.5	Elder, Hawthorn, Elm, Ash, Field maple, Blackthorn, Spindle, Chest	M	1.3	5
H31	5-7	Field maple, Elm, Ash, Blackthorn, Hawthorn	EM	2.4	18
H32	2-6	Dogwood, Hawthorn, Field maple, Blackthorn, Ash	M	1.8	10
H33	6.0	Oak, Hawthorn, Elm, Hazel, Field maple, Blackthorn, Spindle, Privet	M	1.3	5

- KEY**
- Category A Tree - High quality (Retention highly desirable)
 - Category A - Hedgerow, Group, Woodland - High quality (Retention highly desirable)
 - Category B Tree - Moderate quality (Retention desirable)
 - Category B - Hedgerow, Group, Woodland - Moderate quality (Retention desirable)
 - Category C Tree - Low quality (May be retained but should not constrain development)
 - Category C - Hedgerow, Group, Woodland - Low quality (May be retained but should not constrain development)
 - Category U Tree - Very low quality (Mostly unsuitable for retention)
 - Category U - Hedgerow, Group, Woodland - Very low quality (Mostly unsuitable for retention)
 - Root Protection Area (RPA) - Layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and soil volume to maintain the tree's viability
 - Shrub/massifite treatment of scope (COS)



Note: The original of this drawing was produced in colour – a monochrome copy should not be relied upon. This drawing should be interpreted with reference to the accompanying tree schedule and written advice

SHEET 1

SHEET 2

PROJECT TITLE: **Cotmoor Solar Farm (J.3180)**

DRAWING TITLE: **Tree Survey & Constraints Plan**

SCALE: **1:2500 @ A1** DRAWING NUMBER: **BHA_665_01**

DRAWN BY: **SD** APPROVED BY: **AC** REVISION: **-** SHEET: **1/2** DATE: **12/11/2019**

LAYOUT USED WITHIN DRAWING: **n/a**

CLIENT: **JBM Solar Projects 6 Ltd**

COORDINATE SYSTEM / DATUM: **British National Grid / Newlyn Datum (ADD)**

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TREES

Ref	Species	Height (m)	No. of Stems	Est diam?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. Canopy Height (m)	1st branch ht (m)	1st branch dir.	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²
T1	Oak (English)	10	1	-	550	4-4-4.5-5	4.0	4	S	EM	None	Obvious larger tree located within hedgerow, epicormic growth to stem. Typical form.	Fair	Good	40	B1	7	137
T2	Ash (common)	11	1	#	800	6-5-4-5	6.0	3	E	M	None	Off-site tree located beyond boundary hedgerow. Good form. Limited access. Signs of ash dieback.	Fair	Fair	10	B2	10	290
T3	Oak (English)	18.0	1	#	1000	9-9-9-9.5	5.0	2	S	M	None	Mature hedgerow tree. Good form, ivy obscuring stem. Limited access to stem. Typical form. Minor deadwood throughout.	Good	Good	40	A2	12.0	452
T4	Ash (common)	8	3	-	510	5-5-5-5	4.0	1.5	NE	EM	None	Multi-stemmed tree located on the edge of drainage ditch, stunted form, dieback within canopy.	Fair	Fair	10	C1	6	118
T5	Horse chestnut	6	1	-	230	2.5-2.5-2.5-2.5	1.0	1	S	SM	None	Individual tree located on the edge of field and adjacent to drainage ditch. Bleeding canker to stem. Typical form.	Fair	Good	10	B2	3	24
T6	Horse chestnut	5	1	-	230	2.5-3-2-2	1.0	1.5	W	SM	None	Individual tree located on field boundary and adjacent to drainage ditch. Typical form.	Good	Good	20	B2	3	24
T7	Maple (Norway)	8	1	-	320	4.5-4-3.5-4.5	1.0	1.5	W	EM	None	Individual tree located on field boundary and edge of drainage ditch. Stem leaning to east. Typical form.	Good	Fair	20	B2	4	46
T8	Horse chestnut	5.5	1	-	250	3-3.5-3-3	1.0	0.5	S	SM	None	Individual tree located on field boundary. Drainage ditch to the north. Some dieback within canopy.	Fair	Good	10	B2	3.0	28
T9	Horse chestnut	6	1	-	220	2.5-2.5-2-2.5	2.0	1.5	NE	SM	None	Individual tree located on southern edge of ditch. Canker to stem, dieback within canopy.	Fair	Fair	10	C1	3	22
T10	Beech (common)	6	1	-	200	2.5-2.5-1.5-2	1.5	1.5	E	SM	None	Individual tree located on edge of ditch. Good form.	Good	Good	20	B2	2	18

Ref	Species	Height (m)	No. of Stems	Est diam?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. Canopy Height (m)	1st branch ht (m)	1st branch dir.	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²
T11	Ash (common)	12	1	-	600	6-6-5-4.5	5.5	4	S	M	None	Individual tree located on field edge and at end of hedgerow. Inonotus infection with internal decay - woodpecker holes. Sparse canopy.	Fair	Fair	10	C1	7	163
T12	Ash (common)	11	2	-	570	4.5-3.5-4.5-5.5	4.0	3	W	EM	None	Twin stemmed tree located at end of hedgerow. Sparse canopy. Stunted form.	Fair	Fair	10	C1	7	147
T13	Ash (common)	11	1	-	490	6-6-5-6	4.0	4	E	EM	None	Almost standing dead tree. Low bud density. Deadwood throughout.	Poor	Poor	<10	U	6	109
T14	Ash (common)	10.5	1	-	450	4.5-5-4-6	2.0	4	W	EM	None	Tree located within hedgerow. Cavities to stem with decay pockets. Typical form.	Fair	Fair	10	C1	5.4	92
T15	Oak (English)	7	1	-	230	3.5-3-3-3	2.5	2	NE	SM	None	Hedgerow tree, good form.	Good	Good	20	B2	3	24
T16	Ash (common)	14	1	-	500	7-7-6-6	5.0	5	S	M	None	Individual tree located on field edge. Major cavity at base with minimal adaptive growth. Declining foliage.	Poor	Poor	<10	U	6	113
T17	Ash (common)	14	1	#	650	7-6.5-8-5.5	5.0	4	N	M	None	Individual tree located on edge of field. Drainage ditch to north. Epicormic growth to stem. Declining/sparse canopy.	Fair	Fair	10	C1	8	191
T18	Oak (English)	13	1	#	600	7.5-7-7-6	4.0	4	W	M	None	Hedgerow tree, good form, ivy obscuring stem. Typical form.	Good	Good	40	A2	7.2	163
T19	Oak (English)	14	1	#	650	8-8-9-7.5	4.0	4	SE	M	None	Mature hedgerow tree, ivy obscuring stem. Good form.	Good	Good	40	A2	8	191
T20	Oak (English)	13.5	2	#	740	7.5-7-7-7	4.0	2.5	W	M	None	Twin-stemmed tree located within boundary hedgerow, ivy obscuring stem. Minor deadwood. Typical form.	Good	Fair	40	A2	8.9	248
T21	Maple (Norway)	4.5	1	-	160	3-2.5-2-2.5	2.5	2	S	SM	None	Semi-mature field edge tree.	Good	Good	20	C1	2.0	12
T22	Oak (English)	16.0	1	-	800	8.5-8-7-8	4.0	4.5	S	M	None	Obviously larger tree located on edge of wooded area. Good form.	Good	Good	40	A2	9.6	290
T23	Oak (English)	15.0	1	#	700	7.5-8-6-8	4.0	2.5	W	M	None	Obviously larger tree located on edge of woodland. Good form.	Good	Good	40	A2	8.4	222

Ref	Species	Height (m)	No. of Stems	Est diam?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. Canopy Height (m)	1st branch ht (m)	1st branch dir.	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²
T24	Oak (English)	14.0	1	-	800	8-8-8-7	2.5	3	S	M	None	Large mature tree located within hedgerow. Historic lightning strike but with good adaptive growth. Good form.	Good	Fair	40	B1	9.6	290
T25	Oak (English)	14.0	1	-	800	8-8-8-6	4.0	2	W	M	None	Large mature tree located within boundary group. Typical form. Some deadwood within canopy.	Good	Fair	40	A2	9.6	290
T26	Horse chestnut	13.0	1	#	800	5-5-5-6-6	2.5	4	SW	M	None	Mature tree located within hedgerow. Epicormic growth at base. Typical form.	Good	Good	20	B	9.6	290
T27	Ash (common)	12.0	1	-	530	7-8-6-5	3.0	1	N	M	None	Boundary hedgerow tree. Stems obscured by ivy. Some dieback within canopy.	Fair	Fair	20	B2	6.4	127
T28	Willow	11.0	10	-	630	5-5-5-5	2.0	1	W	EM	None	Multi-stemmed tree located adjacent to farm track. Typical form.	Good	Fair	10	C2	7.6	180
T29	Ash (common)	14.0	1	-	600	6-7-7.5-7	3.5	2	S	M	None	Mature hedgerow tree, twin stemmed at 2m. Some decline within canopy.	Fair	Good	20	B2	7.2	163
T30	Oak (English)	13.0	1	-	800	6-7-9-8	3.5	2.5	W	M	None	Mature hedgerow tree located adjacent to existing farm track. Broad canopy.	Good	Good	40	A2	9.6	290
T31	Oak (English)	5.5	1	-	240	3.5-3-3.5-3.5	2.0	2	S	EM	None	Hedgerow tree, good form.	Good	Good	40	B2	2.9	26
T32	Ash (common)	13.0	1	-	570	6-4.5-4.5-5	3.0	2	N	EM	None	Hedgerow tree, epicormic growth from base, thinning canopy. Potential ash die back infection.	Fair	Fair	10	C1	6.8	147
T33	Oak (English)	11.0	1	-	620	7-7-8-7.5	3.5	2	E	EM	None	Hedgerow tree, good form. Twin-stemmed at 2m.	Good	Good	40	A2	7.4	174
T34	Oak (English)	10.0	1	-	410	5-4-3-3.5	3.0	2.5	W	EM	None	Hedgerow tree. Close to larger tree, canopies cohesive. Suppressed.	Good	Fair	40	B2	4.9	76
T35	Oak (English)	12.0	1	-	700	6-8-8.5-9	2.5	3	S	M	None	Larger hedgerow tree, typical form.	Good	Good	40	A2	8.4	222
T36	Ash (common)	15.0	21	-	1920	6-6-4-6	3.5	2.5	W	EM	None	Twin-stemmed hedgerow tree, some dieback within canopy	Fair	Good	20	B2	15.0	707
T37	Oak (English)	15.0	1	-	810	6-9-9-7.5	2.5	4	W	M	None	Twin-stemmed tree located on field boundary. Suppressed form.	Good	Fair	40	A2	9.7	297

Ref	Species	Height (m)	No. of Stems	Est diam?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. Canopy Height (m)	1st branch ht (m)	1st branch dir.	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²
T38	Ash (common)	13.0	1	-	450	3-3-3-3	6.0	5	S	EM	None	Tree in serious decline, mostly dead.	Poor	Poor	<10	U	5.4	92
T39	Hawthorn	8.0	2	-	420	2-2-2-2.5	4.0	2	NW	M	None	Declining tree located on edge of woodland.	Fair	Fair	10	C1	5.0	80
T40	Oak (English)	10.0	1	#	750	5-7-6-6	2.0	2	W	M	None	Open grown tree close to field boundary. Good squat form.	Good	Good	40	A2	9.0	255
T41	Field maple	13.0	3	-	710	6-5-5-5	4.5	4	N	M	None	Mature hedgerow tree. Not on topo. Good multi-stemmed form. Limited access to base.	Good	Fair	20	B1	8.5	228
T42	Willow	8.0	1	#	600	4-4-5-4	1.0	2	S	M	None	Fallen dead tree.	Dead	Dead	<10	U	7.2	163
T43	Oak (English)	10.0	1	#	600	7-7-8-7	4.0	4.5	S	M	None	Small mature tree adjacent to watercourse. Good squat form. Limited access.	Good	Good	40	A2	7.2	163
T44	Oak (English)	14.5	1	-	500	7-4-6-4	5.0	5	S	EM	None	Tree located adjacent to farm track, canopy lifted in past. Some lower dead branches.	Good	Fair	40	B1	6.0	113
T45	Willow (crack)	16.0	1	-	750	8-6-7-7	5.0	1.5	W	M	None	Tree located on edge of group and adjacent to watercourse. Typical form, prominent.	Good	Fair	20	B1	9.0	255
T46	Ash (common)	18.0	1	-	800	7-9-9-9	2.5	3	NE	M	None	Mature hedgerow tree. Typical hedgerow tree form. Evidence of past branch failure with minimal decay. Inonotus brackets on lower scaffold branches. Some dieback in canopy.	Fair	Fair	20	B1	9.6	290
T47	Ash (common)	6.0	1	#	600	2.5-5-3-3	3.0	1	E	M	None	Mature tree located within hedgerow. Failed at 3m in past, now with moderate regrowth.	Good	Fair	20	C1	7.2	163
T48	Ash (common)	18.0	1	#	800	6-8-7-8	2.0	3	W	M	None	Mature hedgerow tree. Historic limb failure with cavities. Some dieback within canopy. Prominent.	Fair	Fair	10	B2	9.6	290
T49	Ash (common)	15.0	1	#	800	9-6-6-6	3.0	3	E	M	None	Mature hedgerow tree. Past high pollard with re-growth. Evidence of past failures- limb hung up in canopy. Epicormic growth at base. Consider re-pollard.	Fair	Poor	10	C1	9.6	290

Ref	Species	Height (m)	No. of Stems	Est diam?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. Canopy Height (m)	1st branch ht (m)	1st branch dir.	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²
T50	Elm	8.5	1	-	350	5-5-4-4	3.0	2.5	N	EM	None	Standard tree located within hedgerow. Ivy obscuring stem.	Good	Good	10	C1	4.2	55
T51	Oak (English)	17.5	1	-	750	10-10-10-8	2.0	2.5	SW	M	None	Mature tree located adjacent to ditch, some branch failures within upper canopy. Canopy weighted to the south.	Good	Fair	40	A2	9.0	255
T52	Oak (English)	17.5	1	-	650	7-8-8-7	3.5	6	S	EM	None	Tree located within boundary group. Good form, drainage ditch to the north of stem.	Good	Good	40	A2	7.8	191
T53	Ash (common)	13.5	1	-	650	7-6-6.5-7	5.0	5	N	M	None	Hedgerow tree, good form.	Good	Good	20	A2	7.8	191
T54	Field maple	6.5	3	-	350	3-3-3-3	4.0	2	W	EM	None	Multi-stemmed hedgerow tree. Good form	Good	Good	20	B2	4.2	55
T55	Ash (common)	16.0	3	-	780	10-9-10-9	5.0	3	N	M	None	Tri-stemmed tree located adjacent to site boundary. Spreading form. Deadwood within canopy.	Fair	Fair	20	B1	9.4	275
T56	Oak (English)	10.0	1	-	800	8-7-7-7	3.0	3	N	M	None	Squat mature tree located within hedgerow. Good form. Ivy to stem.	Good	Good	40	A2	9.6	290
T57	Ash (common)	19.0	1	-	920	7-10-8-8	1.0	4	S	M	None	Mature tree on edge of group, good form. Recent branch failure. Good form.	Good	Fair	20	B1	11.0	383
T58	Oak (English)	17.0	1	-	800	8-8-5-8	2.5	3.5	N	M	None	Mature tree located on the edge of a wooded group. Good typical form.	Good	Good	40	A2	9.6	290
T59	Ash (common)	17.0	1	#	600	6-6-5-7	3.5	5	W	M	None	Mature tree within boundary group, ivy obscuring stem. Typical form, some deadwood.	Fair	Good	20	B1	7.2	163
T60	Hawthorn	7.0	2	#	350	2-3-3-3	2.0	2	W	M	None	Tree located on edge of watercourse. Limited access to stem.	Good	Good	20	B2	4.2	55
T61	Ash (common)	11.0	3	-	500	6-7-6-6	4.0	3	N	EM	None	Twin-stemmed tree located within hedgerow. Watercourse to north of stems, some dieback.	Fair	Fair	10	C1	6.0	113
T62	Ash (common)	6.0	2	-	130	2-2-2-2	3.0	3	E	SM	None	Twin-stemmed tree located within hedgerow.	Fair	Fair	10	C1	1.6	8
T63	Ash (common)	6.0	1	-	180	3-4-3-2.5	3.0	3	E	SM	None	Hedgerow tree. Good form.	Good	Good	20	B2	2.2	15

Ref	Species	Height (m)	No. of Stems	Est diam?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. Canopy Height (m)	1st branch ht (m)	1st branch dir.	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²
T64	Field maple	11.0	1	#	600	5-6-6-6	2.5	2.5	S	M	None	Hedgerow tree, epicormic growth at base. Good form.	Good	Good	20	B1	7.2	163
T65	Ash (common)	15.0	1	-	900	9-11-10-12	4.0	4	SW	M	None	Mature hedgerow tree, some failed limbs within canopy. Some cavities forming from past branch failures. Good form.	Fair	Good	20	B1	10.8	366
T66	Ash (common)	12.0	1	#	800	7-6-8-8	4.0	3	SE	M	None	Mature hedgerow tree, ivy to stem, dieback within canopy. Some past failures.	Fair	Good	20	B2	9.6	290
T67	Oak (English)	16.0	1	-	1320	7-10-11-9	5.0	2.5	W	M	None	Mature tree. Good spreading form, some dead branches within canopy.	Fair	Good	40	A2	15.0	707
T68	Ash (common)	7.0	2	#	570	3-3-3-3	4.0	1	W	M	None	Failed mature tree with moderate regrowth. Decay to stem.	Fair	Poor	10	C1	6.8	147
T69	Elm	6.0	4	#	400	3-3-3-3	3.0	2	N	EM	None	Multi-stemmed hedgerow tree.	Fair	Fair	10	C1	4.8	72

GROUPS OF TREES

Ref	Species	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Canopy Height (m)	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)
G1	Ash, Oak, Hazel, Elm, Beech, Field maple, Privet, Lime, Apple, Hawthorn, Blackthorn, Sweet chestnut	2-14	1000	-	300	2.5	1.0	EM	None	Plantation, mostly Ash and Oak. Ash showing signs of dieback. Good collective form. Some mature trees contained within. Contains managed hedgerow around site boundary-not on topo.	Good	Good	40	B2	3.6
G2	Cherry, Beech, Sycamore, Ash, Oak, Hornbeam, Scots Pine, horse chestnut., Willow.	10-14	50	-	450	4	1.0	EM	None	Linear planted group. Good collective form but trees suppressed and drawn up. Drainage ditch to the east.	Good	Good	40	B2	5.4
G3	Hawthorn	3-6	3	-	200	3	0.5	M	None	Three trees located in small group on edge of ditch. Sides flailed.	Fair	Fair	10	C2	2.4
G4	Ash, Hawthorn, Oak, Horse chestnut, Spindle, Apple	3-9	10	#	250	3	0.3	EM	None	Small linear group on edge of drainage ditch. Sides flailed. Declining Ash within group. Fell declining Ash.	Fair	Good	10	C2	3.0
G5	Hawthorn, Ash, Field maple	4-7	10	-	280	3	0.3	EM	None	Small group of trees straddling drainage ditch. Better collective form. Flailed on edges.	Good	Good	20	B2	3.3
G6	Hawthorn	4-6	10	-	100	2.5	0.3	EM	None	Linear group of trees on northern edge of drainage ditch. Sides flailed.	Good	Good	20	B2	1.3
G7	Ash, Scots Pine, Oak, Holly, Beech, Alder, Hawthorn, Cherry, Field maple, Privet, Sweet chestnut	6-16	500	-	600	6	1.0	EM	None	Linear group of similar sized trees located on field edge. Good collective form. Trees becoming large to the east. Good collective form and prominent.	Good	Good	40	A2	7.2
G8	Ash, Scots Pine, Beech, Horse chestnut, Larch, Norway maple	8-12	300	-	550	4	2.0	EM	None	Wooded group. Good collective form. Prominent Arboricultural feature.	Good	Good	40	A2	6.6
G9	Ash (common)	5-7	7	#	200	2.5	2.0	SM	None	Group of similar sized individual trees located within hedgerow. Some trees with minor dieback.	Fair	Good	20	B2	2.4

Ref	Species	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Canopy Height (m)	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)
G10	Ash, Horse chestnut, Oak, Scots Pine	4-12	25	-	280	4	2.0	EM	None	Small triangular shaped copse. Good collective form although all trees drawn up and suppressed. Some declining horse chestnut- fell declining trees.	Good	Good	20	B2	3.3
G11	Ash (common)	12	4	-	250	4	4.0	EM	None	Linear group contained within boundary hedgerow. Typical form. Some decline.	Fair	Good	10	C2	3.0
G12	Oak, Ash, Scots Pine, Beech, Field maple	2-14	50	-	300	5	3.0	EM	None	Small copse on field edge. Good collective form. Trees suppressed and drawn up in form.	Good	Fair	20	B2	3.6
G13	Oak (English)	9	2	-	450	5	4.0	EM	None	Two similar sized trees located on field boundary.	Good	Good	20	B2	5.4
G14	Oak (English)	9	2	-	500	6	1.0	EM	None	Three tree group located within boundary hedgerow. Canopy lifted in past.	Good	Good	20	B2	6.0
G15	Ash (common)	6-10	5	-	400	5	2.0	EM	None	Hedgerow trees. Limited access to stem bases.	Fair	Good	20	B2	4.8
G16	Scots Pine, Ash, Oak, Field maple, Hawthorn, Norway maple, Beech, Blackthorn	2-15	100	-	350	5	2.0	EM	None	Mixed linear wooded group. Good collective form. Some standing dead trees contained within. Most trees suppressed and drawn up.	Good	Good	40	A2	4.2
G17	Oak, Beech, Ash	15-18	10	#	800	8	4.0	M	None	Obvious linear group on edge of larger group of trees. Significant Arbicultural feature.	Good	Good	40	A2	9.6
G18	Oak, Field maple	7-9	10	-	300	4	3.0	EM	None	Small group of trees within boundary hedgerow. Better collective form.	Good	Fair	20	B2	3.6
G19	Poplar (grey)	12-14	3	#	700	7	4.0	M	None	Two obviously larger trees contained within boundary hedgerow, limited access to base. Suckering form.	Good	Fair	10	C2	8.4
G20	Poplar (grey)	10-16	8	-	600	8	4.0	M	None	Small group of similar sized trees located on field boundary. Suppressed and drawn up form.	Good	Fair	10	C2	7.2
G21	Willow (white)	12-14	3	-	600	7	2.5	M	None	Mature tree contained within boundary group. Drawn up form. Adjacent to farm track. Cavities at base with some decay.	Good	Fair	10	C2	7.2
G22	Oak	10-12	4	#	650	6	4.0	M	None	Obvious group of larger trees contained within boundary hedgerow. Cohesive canopies. Good collective form.	Good	Good	40	A2	7.8
G23	Willow, Field maple, Ash, Hawthorn, Blackthorn	4-16	30	#	450	5	3.0	M	None	Linear group of trees, mostly Hawthorn with ash/ willow standards.	Fair	Fair	20	B2	5.4

Ref	Species	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Canopy Height (m)	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)
G24	Elder, Willow, Hawthorn	5	20	#	200	3	1.0	M	None	Scrubby group of trees straddling watercourse. Limited access.	Fair	Fair	10	C2	2.4
G25	Ash, Willow	16-19	4	#	1000	8	4.0	M	None	Group of mature trees straddling watercourse. Good collective form. Prominent	Good	Fair	20	A2	12.0
G26	Willow (crack), Ash	16-18	3	#	600	7	6.0	M	None	Group of trees straddling watercourse. Typical form. Limited access to base.	Good	Fair	20	B2	7.2
G27	Ash, Field maple, Hawthorn, Willow, Elder Blackthorn	2-9	100	-	350	3	0.5	M	None	Scrubby group of trees located adjacent and straddling watercourse. Better collective form. Some dead trees contained within.	Good	Fair	20	B2	4.2
G28	Ash, Oak	12-14	3	#	700	7	5.0	M	None	Group of three trees, suppressed and drawn up form. Better collectively.	Good	Fair	20	A2	8.4
G29	Ash, Oak, Willow	4-17	10	-	600	7	3.0	M	None	Obviously larger tree group contained within larger group. Straddling watercourse. Typical drawn up form. Cohesive canopies. Better collectively. Some willows subsiding.	Good	Fair	20	A2	7.2
G30	Field maple, Hazel	5-6	2	-	300	4	3.0	EM	None	Two obviously larger trees contained within hedgerow.	Good	Good	20	B2	3.6
G31	Ash, Willow (white), Hazel	18	4	-	900	9	6.0	M	None	Obvious group of mature trees located adjacent to watercourse. Drawn up form. Cohesive canopies. Evidence of past failures. Some dieback to Ash. Understorey of Hazel.	Good	Fair	20	A2	10.8
G32	Willow (crack), Ash	6-12	20	#	1500	8	3.0	M	None	Linear group of mostly willow. Some trees historic pollards. Fire damage to some trees but recovering well. Subsiding, past failures. Re-pollard and retain.	Good	Fair	20	B3	15.0
G33	Willow (crack)	5-11	8	#	1000	5	4.0	M	None	A number of similar sized trees located within boundary hedgerow. Some trees historic pollards. Stems obscured by ivy. Consider re-pollard.	Good	Fair	10	B2	12.0
G34	Willow, lime, Blackthorn, Oak, Ash, Hawthorn, Hazel, Field maple, Spindle, Viburnum	5-11	100	-	250	4	1.0	EM	None	Small copse area, good collective form. Good Arboricultural feature.	Good	Good	20	B2	3.0

Ref	Species	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Canopy Height (m)	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)
G35	Willow, Field maple, Ash, Blackthorn, Hawthorn	6-14	20	-	500	7	3.0	M	None	Small wooded area. Good collective form. One large ash and field maple.	Good	Fair	20	B2	6.0
G36	Oak		4	#	400	4	2.0	EM	None	Small group of off-site trees. Cohesive canopies.	Good	Good	40	B2	4.8
G37	Field maple		3	-	250	4	3.0	EM	None	Three individual trees contained within hedgerow.	Good	Good	20	B2	3.0
G38	Elm, Ash, Hawthorn, Blackthorn, Willow, Oak	9-18	100	-	1000	7	2.0	M	None	Linear group of trees of varying age and species. Straddling watercourse. Good collective form. Some failures within.	Good	Good	40	A2	12.0
G39	Field maple, Hawthorn, Elm, Blackthorn, Willow	3-7	50	#	200	4	1.0	EM	None	Linear group along access track. Good collective form.	Good	Fair	20	B2	2.4
G40	Field maple	7-8	2	-	500	5	4.0	M	None	Two similar size trees located adjacent to access drive.	Good	Good	20	B2	6.0
G41	Ash, Beech, Oak, Pine, Field maple, Cherry	7-14	100	#	250	4	1.0	EM	None	Early-mature wooded copse around farmhouse. Good collective form. Prominent within local/wider landscape.	Good	Good	40	A2	3.0
G42	Hazel, Ash, Elm, Sweet chestnut, Oak, Hawthorn, Elm, Cherry	4-19	200	-	700	6	1.0	M	None	Good collective form. Prominent Arboricultural feature. Mainly Ash.	Good	Good	40	A2	8.4
G43	Hazel, Ash, Willow, Field maple, Blackthorn	2-18	100	#	600	7	1.0	M	None	Linear group of trees straddling watercourse. Good collective form. Mostly Willow. Some subsiding trees.	Good	Fair	20	B2	7.2
G44	Ash, Oak	6-10	3	-	550	5	3.0	EM	None	Small group of 2 trees, hung up branches within canopy. Better collectively remove hung up limb..	Good	Good	40	B2	6.6
G45	Ash, Field maple	10-12	5	-	300	5	4.0	EM	None	Obvious larger trees contained within unmanaged hedgerow.	Good	Good	20	B2	3.6
G46	Field maple	9-10	6	-	400	5	3.0	M	None	Hedgerow trees, similar size and form.	Good	Good	20	B2	4.8
G47	Field maple	5-7	2	-	100	3	1.0	SM	None	Self set trees adjacent barn.	Good	Good	10	C2	1.3
G48	Horse chestnut, Oak	15-18	20	#	800	6	6.0	M	None	Group of trees close to site entrance. Good collective form.	Good	Fair	40	A2	9.6

HEDGEROWS

Ref	Species	Av. Height (m)	Av. width (m)	Av. Stem diam (mm)	Avg. Canopy Height (m)	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)
H1	Hawthorn, Blackthorn, Hazel, Holly, Ash, Field maple	5.0	3.0	150	0.1	M	Managed hedgerow located on field boundary. Sides recently flailed. Continuous form but becoming gappy to west. Contains standard trees to 8m.	Good	Good	20	B2	1.8
H2	Privet, Hawthorn, Holly, Elm, Blackthorn	2.0	2.0	100	0.2	EM	Managed boundary hedgerow. Recently flailed to current dimensions. Laid in past. Diverse.	Good	Good	20	B2	1.3
H3	Hawthorn, Dogwood	2-8	2.5	100	0.3	M	Managed boundary hedgerow flailed to current dimensions. Some standard trees contained within.	Good	Good	20	B2	1.3
H4	Hawthorn	2.5	2.5	100	0.1	M	Managed boundary hedgerow flailed to current dimensions.	Good	Good	20	B2	1.3
H5	Hawthorn, Field maple, Hazel, Elm	6.0	4.0	150	0.1	M	Unmanaged boundary hedgerow. Ditch to the south of stems.	Good	Good	20	B2	1.8
H6	Hawthorn, Hazel, Ash, Field maple, Blackthorn, Oak, Norway maple, Elm, Willow	4-9	6.0	300	2.0	M	Unmanaged hedgerow. Field side has recently been flailed. Some declining Ash contained within. Monitor declining Ash.	Good	Good	20	B2	3.6
H7	Blackthorn, Oak, Elder, Hawthorn	2-7	4.0	150	0.3	M	Managed boundary hedgerow located on field boundary. Field edges flailed. Continuous form.	Good	Good	20	B2	1.8
H8	Hawthorn, Blackthorn, Rose, Field maple	2.0	2.5	100	0.1	M	Managed boundary hedgerow. Continuous form.	Good	Good	20	B2	1.3
H9	Hawthorn, Elder, Field maple, Rose	2.5	2.5	100	0.1	M	Managed boundary hedgerow. Drainage ditch to the north of stem.	Good	Good	20	B2	1.3
H10	Hawthorn, Blackthorn, Field maple, Hazel	2-5	3.0	100	0.3	M	Unmanaged boundary hedgerow. Mostly continuous form.	Good	Good	20	B2	1.3
H11	Ash, Field maple, Blackthorn, Hazel, Blackthorn, Cherry, Oak, Horse chestnut	3-9	5.0	500	0.2	M	Unmanaged boundary hedgerow. Good collective form. Contains some larger Ash trees.	Good	Good	20	B2	6.0
H12	Oak, Willow, Horse chestnut, Field maple, Blackthorn, Hazel	5-10	5.0	500	3.0	M	Unmanaged boundary hedgerow with some standard trees to 9m. Drainage ditch to west.	Good	Good	20	B2	6.0
H13	Hawthorn, Field maple, Elder, Oak, Blackthorn	4-8	4.0	350	3.0	M	Boundary hedgerow, sides flailed. Drawn up form. Continuous form.	Good	Good	20	B2	4.2
H14	Hawthorn, Blackthorn, Field maple, Elm, Ash	2-6	4.0	200	0.1	M	Boundary hedgerow. Gaps in places. Standing dead Elm trees contained within. Better towards west.	Fair	Good	20	B2	2.4

Ref	Species	Av. Height (m)	Av. width (m)	Av. Stem diam (mm)	Avg. Canopy Height (m)	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)
H15	Hawthorn, Field maple	2-3	1.5	175	0.3	M	Boundary hedgerow, managed. Gaps in places.	Good	Fair	20	C2	2.1
H16	Hawthorn, Field maple	2.5	2.0	100	0.2	M	Managed boundary hedgerow. Continuous.	Good	Good	20	B2	1.3
H17	Hawthorn, Field maple	2.0	2.0	100	0.2	M	Managed boundary hedgerow, recently flailed to current dimensions.	Good	Good	20	B2	1.3
H18	Field male, Hawthorn, Rose, Elder, Elm, Sycamore, Ash, Willow, Hazel	5.0	2.5	200	0.2	M	Past managed hedgerow, gaps in places. Some small dead standing trees. Remove dead trees. Some trees to 9m.	Fair	Good	20	B2	2.4
H19	Elder, Hawthorn, Hazel, Field maple	2.0	1.5	100	0.1	M	Managed hedgerow along field boundary. Recently flailed. Gappy in places.	Fair	Good	10	C2	1.3
H20	Holly, Field maple, Hawthorn, Hazel, Ash	2-5	2.5	100	0.1	M	Historic managed hedgerow. Some standard trees to 5m. Gaps in places.	Good	Good	20	B2	1.3
H21	Elm, Hawthorn, Elder, Hazel	2-4	1.5	100	0.2	M	Managed boundary hedgerow, gaps in places. Some standing dead trees. Fell dead trees.	Fair	Fair	20	B	1.3
H22	Hawthorn, Elder, Willow, Rose	2-3	1.5	100	0.1	M	Managed gappy hedgerow below larger trees. Flailed recently.	Fair	Fair	10	C2	1.3
H23	Hawthorn, Hazel, Elder, Field maple	3-5	2.0	150	0.2	M	Managed boundary hedgerow. Mostly continuous form.	Good	Good	20	B2	1.8
H24	Hawthorn, Hazel, Blackthorn, Elder, Field maple	2-6	2.0	200	0.2	M	Managed boundary hedgerow	Good	Good	20	B2	2.4
H25	Hawthorn, Hazel, Blackthorn, Lilac, Dogwood, Holly, Ash, Elm, Elder	2-5	2.5	200	0.2	M	Managed hedgerow adjacent to access road. Mostly Continuous form, some standards to 5m.	Good	Good	20	B2	2.4
H26	Hawthorn, Field maple, Blackthorn	3.0	2.5	100	0.3	M	Managed boundary hedgerow, good continuous form	Good	Good	20	B2	1.3
H27	Field maple, Hawthorn, Blackthorn	3-4	3.0	150	0.3	M	Hedgerow located adjacent to access track. Mostly continuous form.	Good	Good	20	B2	1.8
H28	Hazel, Hawthorn, Holly, Blackthorn	2-5	5.0	100	0.2	M	Unmanaged boundary hedgerow.	Good	Good	20	B2	1.3
H29	Blackthorn, Hawthorn, Field maple	2.5	2.5	100	0.3	M	Managed boundary hedgerow. Watercourse to north of stems.	Good	Good	20	B2	1.3
H30	Elder, Hawthorn, Elm, Hazel, Field maple, Blackthorn, Spindle, Privet	2.5	2.0	100	0.2	M	Managed boundary hedgerow. Continuous form.	Good	Good	20	B2	1.3
H31	Field maple, Elm, Ash, Blackthorn, Hawthorn	5-7	5.0	200	0.5	EM	Unmanaged boundary hedgerow. Continuous form.	Good	Good	20	B2	2.4

SECTION 3

Ref	Species	Av. Height (m)	Av. width (m)	Av. Stem diam (mm)	Avg. Canopy Height (m)	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)
H32	Dogwood, Hawthorn, Field maple, Blackthorn, Ash	2-6	3.0	150	0.4	M	Managed boundary hedgerow. Continuous form. Straddles ditch. Some dead trees - remove dead trees.	Good	Good	20	B2	1.8
H33	Elder, Hawthorn, Elm, Hazel, Field maple, Blackthorn, Spindle, Privet	6.0	4.0	100	0.1	M	Unmanaged boundary hedgerow adjacent access drive. Good continuous form.	Good	Good	20	B2	1.3



PHOTO 1: Route of the proposed new access route in to the site from the south. It is proposed that a 'no-dig' cellular confinement system will be utilised within this location.



PHOTO 2: Looking north-west along moderate-quality hedgerow H2 with high-quality tree group G8 beyond.



PHOTO 3: Category U tree T42 located adjacent to watercourse. This tree was identified as being dead and fallen.



PHOTO 4: Looking north-west along moderate-quality hedgerow H8 towards high-quality individual trees T18-20.



PHOTO 5: Looking south at moderate-quality trees T44 (left of centre) and T45 (right of centre). Note existing farm access between stems.



PHOTO 6: Existing access track to New Radley Farm in the northern section of the site. Note already compacted stone road surface.

- The tree survey was carried out with reference to the methodology set out in BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'.
- Trees were surveyed individually or as groups where it was considered that they had grown together to form cohesive arboricultural features either aerodynamically (trees that provide companion shelter), visually (eg avenues or screens) or culturally (including for biodiversity). However, where it was considered that there was an arboricultural need to differentiate between attributes trees within groups/woodlands were also surveyed as individuals
- The full tree survey findings are recorded in the following tree survey schedule.
- Within the tree survey schedule, each surveyed TREE (T), GROUP (G), HEDGEROW (H), WOODLAND (W) or SHRUB MASS on or adjacent to the site is given a reference number which refers to its position on the tree survey and constraints plan.
- TREE SPECIES are listed by common name.

The **DIMENSIONS** taken are:

- STEM-No. Indicates the number of main stems (i.e. whether the trunk divides at or below 1.5m; (Used in the calculation of RPA.) "m-s" = Multi-stemmed.
- STEM DIAMETER (in millimetres), obtained from the girth measured at approx.1.5m. For trees with 2 to 5 sub-stems, a notional figure is derived from the sum of their cross-sectional areas. For multi-stemmed trees the notional diameter may be estimated on the basis of the average stem size x the number of stems. (A notional diameter may be estimated where measurement is not possible.)
- HEIGHT, are measured in metres. They are recorded to the nearest half metre for dimensions up to 10m and to the nearest whole metre for dimensions over 10m.
- The CROWN SPREAD are taken at the four cardinal points to derive an accurate representation of the tree crown. They are recorded up to the nearest half metre for dimensions up to 10m and to up the nearest whole metre for dimensions over 10m.
- CROWN CLEARANCES are expressed both as existing height above ground level of first significant branch along with its direction of growth (eg 2.5m-N), and also in terms of the overall canopy. Measurements are recorded to the nearest half metre for dimensions up to 10m and to the nearest whole metre for dimensions over 10m.
- ESTIMATES. Where any measurement has had to be estimated, due to inaccessibility for example, this is indicated by a "#" suffix to the measurement as shown in the tree survey schedule.

LIFE STAGE is defined as follows:

- Y Young: normally stake dependent, establishing trees. Should be growing fast, usually primarily increasing in height more than spread, but as yet making limited impact upon the landscape.
- SM Semi-mature: Established young trees, normally of good vigour and still increasing in height, but beginning to spread laterally. Beginning to make an impact upon the local landscape & environment. Semi-Mature (still capable of being transplanted without preparation, up to 30cm girth and not yet sexually mature).

- EM Early-mature: Not yet having reached 75% of expected mature size. Established young trees, normally of good vigour and still increasing in height, but beginning to spread laterally. Beginning to make an impact upon the local landscape & environment.
- M Mature: Well-established trees, still growing with some vigour, but tending to fill out and increase spread. Bark may be beginning to crack & fissure. In the middle half of their safe, useful life expectancies.
- LM Late-Mature: In full maturity but possibly beyond mature and in a state of natural decline). Still retaining some vigour but any growth is slowing.
- A Ancient: A tree that has passed beyond maturity and is old./aged compared with other trees of the same species. Typically having a very wide trunk and a small canopy.

PHYSIOLOGICAL CONDITION (HEALTH & VITALITY):

Essentially a snapshot of the general health of the tree based upon its general appearance, its apparent vigour and the presence or absence of symptoms associated with poor health, physiological stress etc. (Fungal infections may be recorded here but decay giving rise to structural weakness would be recorded under 'Structural Condition' – see next parameter):

- Good: No significant health issues.
- Fair: indications of slight stress or minor disease (e.g. the presence of minor dieback/deadwood or of epicormic shoot growth)
- Poor: Significant stress or disease noted; larger areas of dieback than above
- Dead: (or Moribund)

STRUCTURAL CONDITION:

Defects affecting the structural stability of the tree, including decay, significant dead wood, root-plate instability or significant damage to structural roots, weak forks (e.g. those where bark is included between the members) etc. Classified as:

- Good: No obvious structural defects: basically sound
- Fair: Minor, potential or incipient defects
- Poor: Significant defect(s) likely to lead to actual failure in the medium to long-term
- Dead: (or Moribund)

REMAINING USEFUL LIFE EXPECTANCY:

An estimate of the length of time in years that a tree might be expected to continue to make a useful contribution to the locality at an acceptable level of risk (based on an assumption of continued routine maintenance)

- less than 10 years
- 10+ years
- 20+ years
- 40+ years

SPECIAL IMPORTANCE:

Trees that are particularly notable as high value trees such as ancient trees/woodland, or veteran trees. Such trees may be regarded as the principal arboricultural features of a site, and pose a significant constraint to potential development.

An ancient tree is one that has passed beyond maturity and is very old compared with other trees of the same species. Very few trees reach the ancient life-stage. Veteran trees are often very old, but not necessarily so; they may be regarded as 'survivors' that have developed some of the characteristic features of an ancient tree but have not necessarily lived as long. All ancient trees are veterans but not all veteran trees are ancient.

QUALITY CATEGORY:

Trees are classed as category U, A, B or C, based on criteria given in BS5837:2012; summary definitions as follows (see BS5837 for further details). Categories A, B and C are further characterised by the use of sub-categories, which attempt to identify what aspect of the tree is the main source of its perceived value:

- (1) arboricultural qualities
- (2) landscape qualities, and
- (3) cultural, historic or ecological/conservation qualities.

Examples of these qualities for each of the three categories are given below, although these are indicative only.

Note: This is NOT a health and safety classification; the classification does not take into account any requirement for remedial tree care or ongoing maintenance apart from that which may affect the trees' general suitability for retention.

CATEGORY U: UNSUITABLE:

Trees likely to prove to be unsuitable for retention for longer than 10 years should any significant increase in site usage arise as a result of development.

E.g. dead or moribund trees; those at risk of collapse or in terminal decline; trees that will be left unstable by other essential works such as the removal of nearby category U trees; trees infected by pathogens that could materially affect other trees; low quality trees that are suppressing better specimens

(Category U trees may have conservation values that it might be desirable to preserve.

It may also include trees that should be removed irrespective of any development proposals.)

CATEGORY A: HIGH-QUALITY:

Trees or groups whose retention should be given a particularly high priority within the design process. Normally with an expected useful life expectancy of at least 40 years.

A1: Notably fine specimens; rare or unusual specimens; essential component trees within groups, semi-formal or formal plantings (e.g. dominant trees within an avenue etc.)

A2: Trees, groups or woodlands of particular visual importance as landscape features.

A3: Trees, groups or woodlands of particular significance by virtue of their conservation, historical, commemorative or other value (e.g. veteran trees or wood pasture.)

CATEGORY B: MODERATE-QUALITY:

Trees or groups of some importance with a likely useful life expectancy in excess of 20 years. Their retention would be highly desirable; selective removal of certain individuals may be acceptable, but only after full consideration of all alternative courses of action.

B1: Fair quality but not exceptional; good specimens showing some impairment (e.g. remediable defects, minor storm damage or poor past management.)

B2: Acceptable trees situated such as to have little visual impact within the wider locality. Also numbers of trees, perhaps in groups or woodlands, whose value as landscape features is greater collectively than would warrant as individuals (such that the selective removal of an individual would not impact greatly upon the trees' overall, collective value).

B3: Trees, groups or woodlands with clearly identifiable conservation or other cultural benefits.

CATEGORY C: MINOR VALUE:

Trees or groups of rather low quality, although potentially capable of retention for at least approx. 10 years. Also small trees with stems below 15cm diameter. Potentially retainable, but not of sufficient value to be regarded as a significant planning constraint.

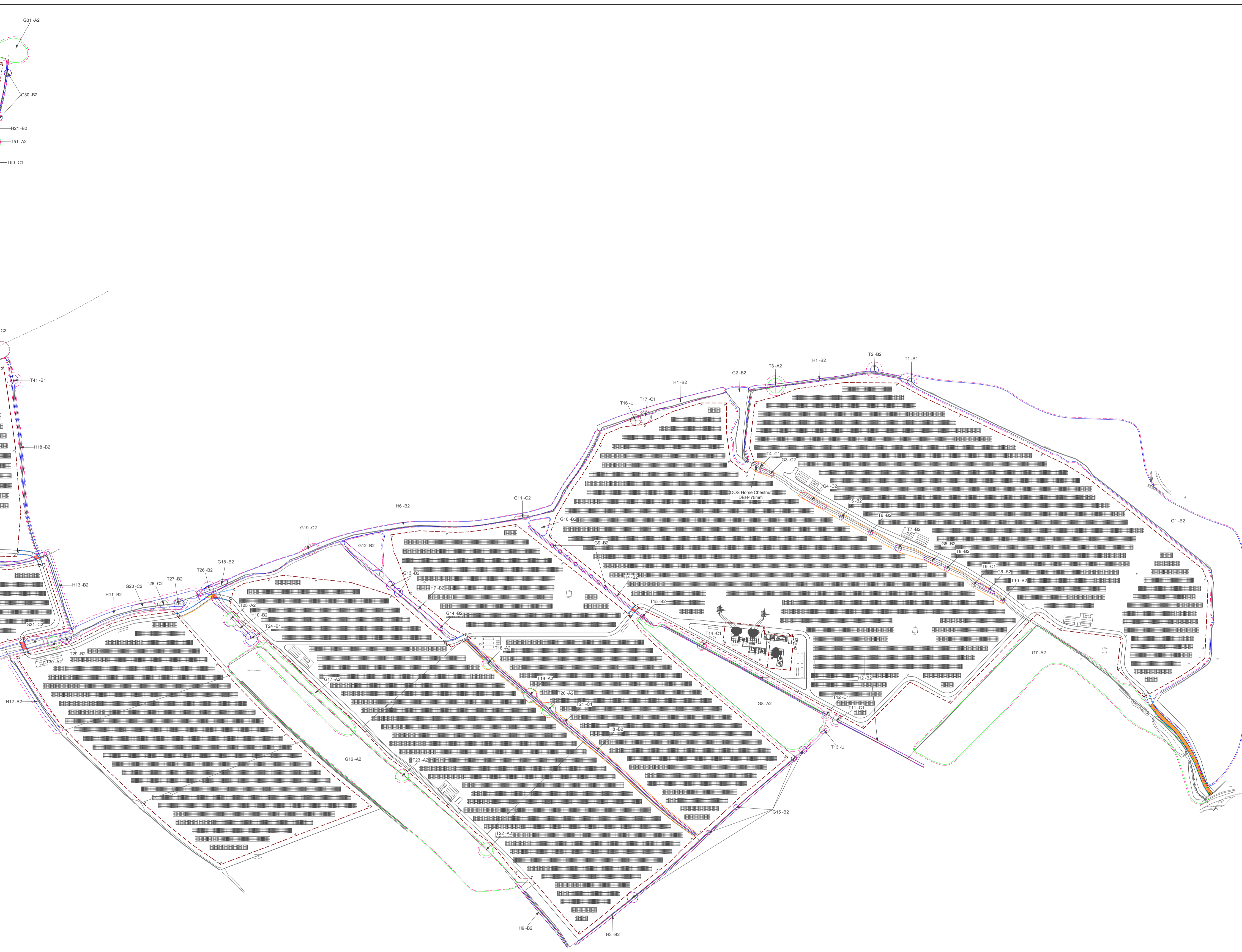
C1: Unremarkable trees of very limited merit or of significantly impaired condition.

C2: Trees offering only low or short-term landscape benefits; also secondary specimens within groups or woodlands whose loss would not significantly diminish their landscape value.

C3: Trees with extremely limited conservation or other cultural benefit.

ROOT PROTECTION AREA (RPA):

These are normally represented as a circle centred on the base of each tree stem with a radius of 12 times stem diameter measured at 1.5m above ground level, but the shape of the RPA may be altered where site conditions dictate that there are sound reasons to do so.



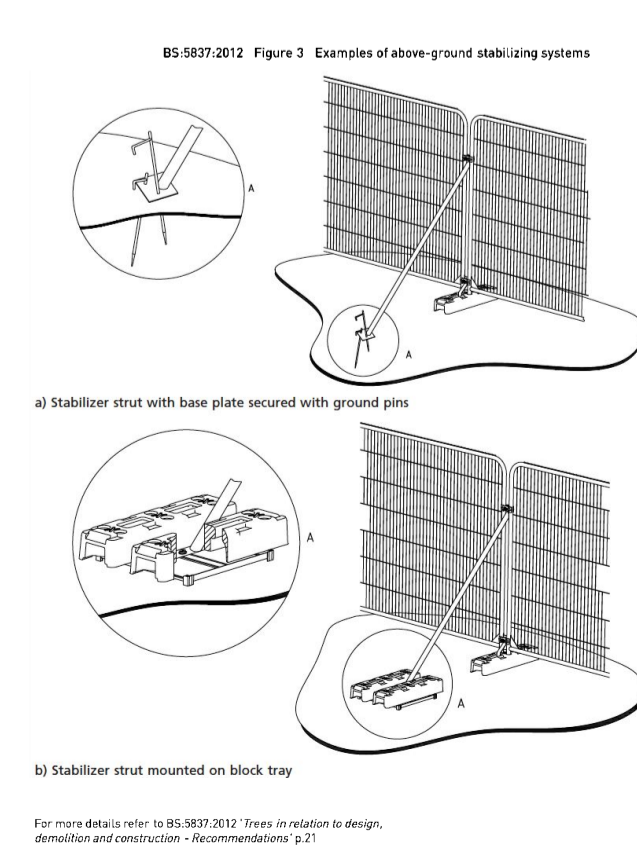
Tree No.	Ht (m)	Species	Life Stage	RPA Radius (m)	RPA Area (m ²)
T1	8.5	Oak (English)	EM	6.5	137
T2	11	Ash (common)	EM	9.6	290
T3	18	Oak (English)	EM	12	462
T4	8	Ash (common)	EM	6.1	118
T5	8.5	Horse chestnut	SM	2.8	24
T6	5	Horse chestnut	SM	2.8	24
T7	8	Maple (Norway)	EM	3.8	46
T8	8.5	Horse chestnut	SM	3	28
T9	8.5	Horse chestnut	SM	2.6	22
T10	8.5	Beech (common)	SM	2.4	18
T11	11.5	Ash (common)	M	7.2	163
T12	11	Ash (common)	EM	8.8	147
T13	11	Ash (common)	EM	8.9	149
T14	10.5	Ash (common)	EM	8.4	92
T15	8.5	Oak (English)	SM	2.8	24
T16	14	Ash (common)	M	6	113
T17	14	Ash (common)	M	7.8	191
T18	12.5	Oak (English)	M	7.2	163
T19	13.5	Oak (English)	M	7.8	191
T20	13.5	Oak (English)	M	8.9	218
T21	4.5	Maple (Norway)	SM	2	12
T22	16	Oak (English)	M	9.6	290
T23	15	Oak (English)	M	8.4	222
T24	14	Oak (English)	M	9.6	290
T25	13	Horse chestnut	M	9.6	290
T26	12	Ash (common)	M	8.4	127
T27	11	Willow	EM	7.8	163
T28	14	Ash (common)	M	7.2	163
T29	13	Oak (English)	M	9.6	290
T30	13	Ash (common)	EM	8.8	147
T31	13	Ash (common)	EM	8.8	147
T32	13	Ash (common)	EM	8.8	147
T33	11	Ash (common)	EM	7.4	174
T34	10	Oak (English)	EM	4.9	76
T35	12	Oak (English)	EM	8.4	222
T36	15	Ash (common)	EM	15	707
T37	15	Oak (English)	M	9.7	297
T38	13	Ash (common)	EM	8.4	127
T39	8	Hawthorn	M	5	80
T40	10	Oak (English)	M	9	255
T41	13	Field maple	M	8.5	225
T42	8	Willow	M	7.2	163
T43	10	Oak (English)	M	7.2	163
T44	14.5	Oak (English)	EM	6	113
T45	16	Willow (crack)	M	9.6	290
T46	18	Ash (common)	M	9.6	290
T47	6	Ash (common)	M	7.2	163
T48	18	Ash (common)	M	9.6	290
T49	15	Ash (common)	M	9.6	290
T50	8.5	Elm	EM	5	55
T51	17.5	Oak (English)	M	9	255
T52	17.5	Oak (English)	EM	7.8	191
T53	13.5	Ash (common)	M	7.8	191
T54	8.5	Field maple	EM	4.2	55
T55	16	Ash (common)	M	8.4	222
T56	10	Oak (English)	M	9.6	290
T57	19	Ash (common)	M	11	383
T58	17	Oak (English)	M	9.6	290
T59	17	Ash (common)	M	7.2	163
T60	7	Hawthorn	M	4.2	55
T61	11	Ash (common)	EM	6	113
T62	6	Ash (common)	SM	1.6	8
T63	6	Ash (common)	SM	2.2	19
T64	11	Field maple	M	7.2	163
T65	15	Ash (common)	M	9.6	290
T66	12	Ash (common)	M	9.6	290
T67	16	Oak (English)	M	15	707
T68	7	Ash (common)	M	8.8	147
T69	8	Elm	EM	4.8	72
G1	2-14	Ash, Oak, Hazel, Elm, Beech, Field maple, Privet, Lime, Apple, Hawthorn, Blackthorn, Sweet chestnut	EM	3.6	41
G2	10-14	Willow	EM	5.4	92
G3	3-6	Hawthorn	M	2.4	18
G4	3-9	Ash, Hawthorn, Oak, Horse chestnut, Spindle, Apple	EM	3	28
G5	4-7	Hawthorn, Ash, Field maple	EM	3.3	35
G6	4-8	Hawthorn, Cherry, Field maple, Privet, Sweet chestnut	EM	3.3	35
G7	6-16	Ash, Scots Pine, Beech, Horse chestnut, Larch, Norway maple	EM	7.2	163
G8	8-12	Ash (common)	EM	6.6	137
G9	5-7	Ash (common)	SM	2.4	24
G10	4-12	Ash, Horse chestnut, Oak, Scots Pine	EM	3.3	35
G11	12	Ash (common)	EM	3	28
G12	2-14	Oak, Ash, Scots Pine, Beech, Field maple	EM	3.6	41
G13	9	Oak (English)	EM	5.4	92
G14	8	Oak (English)	EM	4	113
G15	6-10	Ash (common)	EM	4.8	72
G16	2-15	Scots Pine, Ash, Oak, Field maple, Hawthorn, Norway maple, Beech, Blackthorn	EM	4.2	55
G17	15-18	Oak, Beech, Ash	M	9.6	290
G18	1-9	Oak, Field maple	EM	1.6	41
G19	12-14	Prunella (garry)	M	8.4	222
G20	10-16	Pagrus (garry)	M	7.2	163
G21	12-16	Willow (crack)	M	7.2	163
G22	10-12	Oak	M	7.8	191
G23	4-16	Blackthorn	M	5.4	92
G24	16-19	Elm, Willow, Hawthorn	M	2.4	18
G25	16-19	Ash, Willow	M	12	462
G26	16-18	Willow (crack), Ash	M	7.2	163
G27	2-9	Ash, Field maple, Hawthorn, Willow, Elder	M	4.2	55
G28	12-14	Ash, Oak	M	8.4	222
G29	4-17	Ash, Oak, Willow	M	7.2	163
G30	5-6	Field maple, Hazel	EM	3.6	41
G31	16	Ash, Willow, Hazel	M	9.6	290
G32	6-12	Willow (crack), Ash	M	15	707
G33	5-11	Willow (crack)	M	12	462
G34	5-11	Willow, sedge, Blackthorn, Oak, Ash, Hawthorn, Hazel, Field maple, Spindle, Viburnum	EM	3	28
G35	6-14	Willow, Field maple, Ash, Blackthorn	EM	6	113
G36	6	Oak	EM	4.8	72
G37	6	Field maple	EM	3	28
G38	9-18	Elm, Ash, Hawthorn, Blackthorn, Willow, Oak	M	12	462
G39	3-7	Field maple, Hawthorn, Elm, Blackthorn	EM	2.4	18
G40	7-8	Field maple	M	6	113
G41	7-14	Ash, Beech, Oak, Pine, Field maple, Cherry	EM	3	28
G42	4-19	Hawthorn, Elm, Cherry	M	8.4	222
G43	2-18	Hazel, Ash, Elm, Sweet chestnut, Oak	M	2.2	163
G44	6-10	Ash, Oak	EM	6.6	137
G45	10-12	Ash, Field maple	EM	3.6	41
G46	6-10	Field maple	M	4.8	72
G47	5-7	Field maple	SM	1.3	5
G48	15-18	Horse chestnut, Oak	M	9.6	290
H1	5.0	Hawthorn, Blackthorn, Hazel, Holly, Ash, Field maple	M	1.8	10
H2	2.0	Privet, Hawthorn, Holly, Elm, Blackthorn	EM	1.3	8
H3	2.8	Hawthorn, Dogwood	M	1.3	5
H4	3.0	Hawthorn	M	1.3	5
H5	6.0	Hawthorn, Field maple, Hazel, Elm	M	1.8	10
H6	4-9	Hawthorn, Hazel, Ash, Field maple, Blackthorn, Oak, Norway maple, Elm, Willow	M	3.6	41
H7	2.7	Blackthorn, Oak, Elder, Hawthorn	M	1.8	10
H8	2.0	Hawthorn, Blackthorn, Rose, Field maple	M	1.3	5
H9	2.5	Hawthorn, Elder, Field maple, Rose	M	1.3	5
H10	2.5	Hawthorn, Blackthorn, Field maple, Hazel	M	1.3	5
H11	3-9	Oak, Willow, Horse chestnut, Field maple, Blackthorn, Cherry, Oak, Horse chestnut	M	6	113
H12	5-10	Blackthorn, Hazel	M	6	113
H13	4-8	Hawthorn, Field maple, Elder, Oak, Blackthorn	M	4.2	56
H14	2-6	Hawthorn, Blackthorn, Field maple, Elm, Ash	M	2.4	18
H15	2-3	Hawthorn, Field maple	M	2.1	14
H16	2.5	Hawthorn, Field maple	M	1.3	5
H17	2.0	Hawthorn, Field maple	M	1.3	5
H18	5.0	Field maple, Hawthorn, Rose, Elder, Elm, Sycamore, Ash, Willow, Hazel	M	2.4	18
H19	3.0	Elder, Hawthorn, Hazel, Field maple	M	1.3	5
H20	2.5	Holly, Field maple, Hawthorn, Hazel, Ash	M	1.3	5
H21	2.4	Elm, Hawthorn, Elder, Hazel	M	1.3	5
H22	2.3	Hawthorn, Elder, Willow, Rose	M	1.3	5
H23	3.5	Hawthorn, Hazel, Blackthorn, Elder, Field maple	M	1.8	10
H24	2-6	Hawthorn, Hazel, Blackthorn, Elder, Field maple	M	2.4	18
H25	2-5	Hawthorn, Hazel, Blackthorn, Lonic, Dogwood, Holly, Ash, Elm, Elder	M	2.4	18
H26	3.0	Hawthorn, Field maple, Blackthorn	M	1.3	5
H27	3-4	Field maple, Hawthorn, Blackthorn	M	1.8	10
H28	2-5	Hazel, Hawthorn, Holly, Blackthorn	M	1.3	5
H29	2.5	Blackthorn, Hawthorn, Field maple	M	1.3	5
H30	2.5	Blackthorn, Elm, Hazel, Field maple	M	1.3	5
H31	0.7	Field maple, Elm, Ash, Blackthorn, Hawthorn	EM	1.3	5
H32	2-6	Dogwood, Hawthorn, Field maple, Blackthorn	M	1.8	10
H33	6.0	Elder, Hawthorn, Elm, Hazel, Field maple, Blackthorn, Spindle, Privet	M	1.3	5

KEY

- Category A Tree - High quality (Retention highly desirable)
- Category A - Hedgerow, Group, Woodland - High quality (Retention highly desirable)
- Category B Tree - Moderate quality (Retention desirable)
- Category B - Hedgerow, Group, Woodland - Moderate quality (Retention desirable)
- Category C Tree - Low quality (May be retained but should not constrain development)
- Category C - Hedgerow, Group, Woodland - Low quality (May be retained but should not constrain development)
- Category U Tree - Very low quality (Mostly unsuitable for retention)
- Category U - Hedgerow, Group, Woodland - Very low quality (Mostly unsuitable for retention)

Protection Measures

- Tree Protection Barrier
- Down graded tree protection fencing such as 'euro-mesh' type fencing. To be until I send in low construction activity areas.
- Security Fence
- Circular confinement to dig surface. To be installed in accordance with manufacturers method statements and specifications.
- Access road through RPA to utilise existing farm access track - see AIA for details.



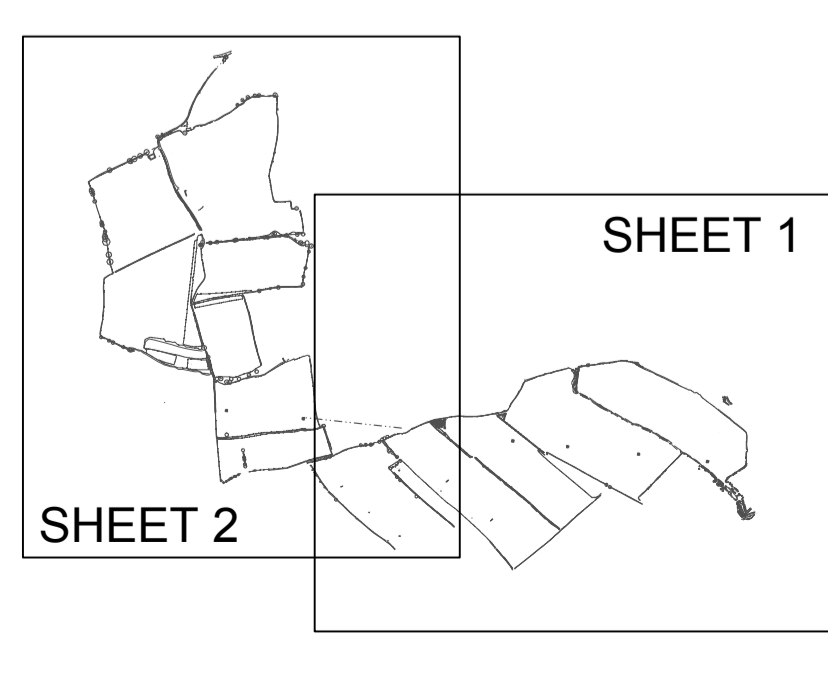
The protective measures specified on this Tree Protection Plan must be used in combination with an approved Arboricultural Method Statement, and with reference to the overarching conditions of planning consent.

CONSTRUCTION EXCLUSION ZONE - NO ENTRY

THIS FENCE MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED TREE PROTECTION PLAN AND ARBORICULTURAL METHOD STATEMENT FOR THIS DEVELOPMENT.

EUROMESH FENCING

TP - 'Section 5'



PROJECT TITLE
Cotmoor Solar Farm (J.3180)

DRAWING TITLE
Tree Retention/Removal & Protection Plan

SCALE
1:2500 @ A1

DRAWING NUMBER
BHA_665_02

DRAWN BY SD **APPROVED BY** RH **REVISION** A **SHEET** 1/2 **DATE** 24/06/2020

LAYOUT USED WITHIN DRAWING
JBM_20200616_19_3P_49.9MWP_Layout_A

CLIENT
JBM Solar Projects 6 Ltd

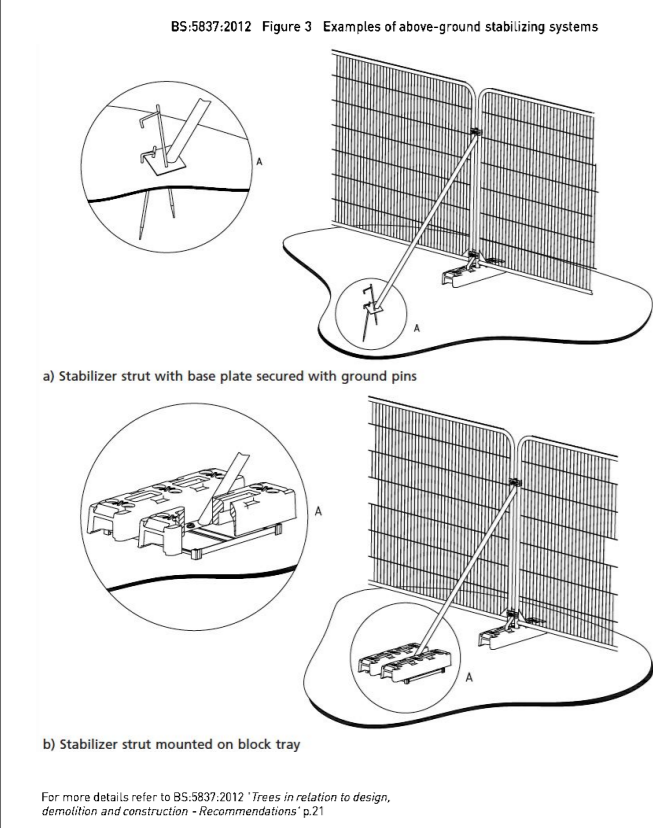
COORDINATE SYSTEM / DATUM
British National Grid / Newlyn Datum (AOD)

Note: The original of this drawing was produced in colour – a monochrome copy should not be relied upon. This drawing should be interpreted with reference to the accompanying free schedule and written advice.

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Address: Barn 2, Opens Farm, Varworth, Cheltenham, Gloucestershire, GL54 3QE



Tree No	Ht (m)	Species	Life Stage	RPA Radius (m)	RPA Area (m ²)
T1	9.5	Oak (English)	EM	2.6	137
T2	11	Ash (common)	M	6.6	200
T3	18	Oak (English)	EM	9.1	423
T4	8	Ash (common)	EM	6.1	118
T5	5.5	Horse chestnut	SM	2.8	24
T6	6	Horse chestnut	SM	2.8	24
T7	8	Maple (Norway)	EM	3.8	46
T8	5.5	Horse chestnut	SM	2.8	24
T9	5.5	Horse chestnut	SM	2.8	24
T10	5.5	Beech (common)	SM	2.4	18
T11	11.5	Ash (common)	M	7.2	163
T12	11	Ash (common)	EM	6.8	147
T13	11	Ash (common)	EM	6.8	147
T14	10.5	Ash (common)	EM	6.4	92
T15	8.5	Oak (English)	EM	3.8	46
T16	14	Ash (common)	M	9.6	296
T17	14	Ash (common)	M	9.6	296
T18	12.5	Oak (English)	EM	4.4	109
T19	13.5	Oak (English)	M	7.8	191
T20	13.5	Oak (English)	M	7.8	191
T21	13.5	Oak (English)	M	7.8	191
T22	13.5	Oak (English)	M	7.8	191
T23	13.5	Oak (English)	M	7.8	191
T24	13.5	Oak (English)	M	7.8	191
T25	13.5	Oak (English)	M	7.8	191
T26	13.5	Oak (English)	M	7.8	191
T27	13.5	Oak (English)	M	7.8	191
T28	13.5	Oak (English)	M	7.8	191
T29	13.5	Oak (English)	M	7.8	191
T30	13.5	Oak (English)	M	7.8	191
T31	13.5	Oak (English)	M	7.8	191
T32	13.5	Oak (English)	M	7.8	191
T33	13.5	Oak (English)	M	7.8	191
T34	13.5	Oak (English)	M	7.8	191
T35	13.5	Oak (English)	M	7.8	191
T36	13.5	Oak (English)	M	7.8	191
T37	13.5	Oak (English)	M	7.8	191
T38	13.5	Oak (English)	M	7.8	191
T39	9	Hawthorn	M	5	80
T40	10	Oak (English)	M	5	80
T41	13	Field maple	M	6.5	228
T42	8	Willow	M	2.2	163
T43	10	Oak (English)	M	2.2	163
T44	14.5	Oak (English)	EM	6	113
T45	16	Willow (grey)	EM	9	255
T46	18	Ash (common)	M	9.6	296
T47	8	Ash (common)	M	7.2	163
T48	18	Ash (common)	M	9.6	296
T49	15	Ash (common)	M	8.6	200
T50	8.5	Elm	EM	3.2	50
T51	17.5	Oak (English)	M	9	255
T52	17.5	Oak (English)	EM	7.8	191
T53	13.5	Ash (common)	M	7.8	191
T54	8.5	Field maple	EM	4.2	95
T55	11	Ash (common)	EM	7.4	174
T56	10	Oak (English)	EM	6.6	200
T57	19	Ash (common)	M	11	363
T58	17	Oak (English)	M	9.6	296
T59	17	Ash (common)	M	7.2	163
T60	7	Hawthorn	M	6.8	147
T61	11	Ash (common)	EM	6	113
T62	6	Ash (common)	EM	1.6	36
T63	6	Oak (common)	EM	2.2	163
T64	11	Field maple	M	7.2	163
T65	15	Ash (common)	M	10.8	363
T66	12	Ash (common)	M	9.6	296
T67	16	Ash (common)	M	10.8	363
T68	7	Ash (common)	M	15	474
T69	6	Elm	EM	4.8	72
G1	3-14	Ash, Oak, Hazel, Elm, Beech, Field maple, Prunel, Lime, Apple, Hawthorn, Blackthorn, Sweet chestnut	EM	3.6	41
G2	10-14	Cherry, Beech, Sycamore, Ash, Oak, Hornbeam, Scots Pine, Horse chestnut, Willow	EM	5.4	92
G3	3-6	Ash, Hawthorn, Oak, Horse chestnut, Spindle	EM	2.4	18
G4	3-9	Apple	EM	3	28
G5	4-7	Hawthorn, Ash, Field maple	EM	3.3	36
G6	4-6	Hawthorn	EM	1.3	5
G7	6-16	Ash, Scots Pine, Oak, Holly, Beech, Alder, Hawthorn, Cherry, Field maple, Prunel, Sweet chestnut	EM	7.2	163
G8	5-12	Ash, Scots Pine, Beech, Horse chestnut, Larch, Norway maple	EM	6.6	137
G9	5-7	Ash (common)	EM	2.4	18
G10	4-12	Ash, Horse chestnut, Oak, Scots Pine	EM	3.3	36
G11	12	Ash (common)	EM	3.6	41
G12	2-14	Oak, Ash, Scots Pine, Beech, Field maple	EM	5.4	92
G13	9	Oak (English)	EM	5.4	92
G14	9	Oak (English)	EM	5.4	92
G15	6-10	Ash (common)	EM	4.8	72
G16	2-15	Oak, Pine, Ash, Oak, Field maple, Hawthorn, Norway maple, Beech, Blackthorn	EM	4.2	55
G17	15-18	Oak, Beech, Ash	M	9.6	296
G18	7-9	Oak, Field maple	EM	4.2	55
G19	12-14	Poplar (grey)	M	8.4	222
G20	10-15	Poplar (grey)	M	7.2	163
G21	12-14	Willow (white)	M	7.2	163
G22	10-12	Oak	M	7.8	191
G23	4-16	Willow, Field maple, Ash, Hawthorn, Blackthorn	M	5.4	92
G24	5	Elm, Willow, Hawthorn	M	1.4	18
G25	16-19	Ash, Willow	M	12	452
G26	16-18	Willow (grey), Ash	M	7.2	163
G27	2-9	Ash, Field maple, Hawthorn, Willow, Elder	M	4.2	55
G28	12-14	Ash, Oak	M	4.4	222
G29	4-17	Ash, Oak, Willow	M	7.2	163
G30	5-6	Field maple, Hazel	EM	3.6	41
G31	18	Ash, Willow (white), Hazel	M	10.8	363
G32	5-12	Willow (grey), Ash	M	10	307
G33	5-11	Willow (grey), Ash	M	12	452
G34	5-11	Willow, Elm, Blackthorn, Oak, Ash, Hawthorn, Hazel, Field maple, Spindle, Vitamin	EM	3	28
G35	6-14	Willow, Field maple, Ash, Blackthorn, Hawthorn	M	9	113
G36	6-14	Oak	EM	4.8	72
G37	11	Field maple	EM	3	28
G38	9-18	Elm, Ash, Hawthorn, Blackthorn, Willow, Oak	M	12	452
G39	3-7	Field maple, Elm, Blackthorn, Willow	EM	2.4	18
G40	7-8	Field maple	M	6	113
G41	7-14	Ash, Beech, Oak, Pine, Field maple, Cherry	EM	3	28
G42	4-19	Hawthorn, Elm, Cherry	M	8.4	222
G43	2-18	Hazel, Ash, Willow, Field maple, Blackthorn	M	7.2	163
G44	6-10	Ash, Oak	EM	6.6	137
G45	10-12	Ash, Field maple	EM	3.6	41
G46	9-10	Field maple	M	4.8	72
G47	5-7	Field maple	EM	1.3	5
G48	15-19	Horse chestnut, Oak	M	9.6	296
H1	5.0	Hawthorn, Blackthorn, Hazel, Holly, Ash, Field maple	M	1.8	10
H2	2.0	Prunel, Hawthorn, Holly, Elm, Blackthorn	EM	1.3	5
H3	2.8	Hawthorn	M	1.3	5
H4	2.5	Hawthorn	M	1.3	5
H5	5.0	Hawthorn, Field maple, Hazel, Elm	M	1.8	10
H6	4.9	Blackthorn, Oak, Norway maple, Elm, Willow	M	2.6	41
H7	2.7	Blackthorn, Oak, Elder, Hawthorn	M	1.8	10
H8	2.0	Hawthorn, Blackthorn, Rose, Field maple	M	1.3	5
H9	2.5	Hawthorn, Elder, Field maple, Rose	M	1.3	5
H10	2.5	Hawthorn, Blackthorn, Field maple, Hazel	M	1.3	5
H11	3-9	Ash, Field maple, Blackthorn, Hazel, Hawthorn, Cherry, Oak, Horse chestnut	M	5	113
H12	5-10	Oak, Willow, Horse chestnut, Field maple, Blackthorn, Hazel	M	9	113
H13	4-8	Hawthorn, Field maple, Elder, Oak, Blackthorn	M	4.2	55
H14	2-6	Hawthorn, Blackthorn, Field maple, Elm, Ash	M	2.4	18
H15	2.3	Hawthorn	M	1.4	18
H16	2.5	Hawthorn, Field maple	M	1.3	5
H17	2.0	Hawthorn, Field maple	M	1.3	5
H18	5.0	Field maple, Hawthorn, Rose, Elder, Elm, Sycamore, Ash, Willow, Hazel	M	2.4	18
H19	2.0	Elder, Hawthorn, Hazel, Field maple	M	1.3	5
H20	2-5	Holly, Field maple, Hawthorn, Hazel, Ash	M	1.3	5
H21	2-4	Elm, Hawthorn, Elder, Hazel	M	1.3	5
H22	2-3	Hawthorn, Elder, Willow, Rose	M	1.3	5
H23	3-5	Hawthorn, Hazel, Elder, Field maple	M	1.8	10
H24	2-6	Hawthorn, Hazel, Blackthorn, Elder, Field maple	M	2.4	18
H25	2-5	Hawthorn, Hazel, Blackthorn, Lilac, Dogwood	M	2.4	18
H26	3.0	Hawthorn, Field maple	M	1.3	5
H27	3-4	Field maple, Hawthorn, Blackthorn	M	1.8	10
H28	2-5	Hazel, Hawthorn, Holly, Blackthorn	M	1.3	5
H29	2-5	Blackthorn, Hawthorn, Field maple	M	1.3	5
H30	2-5	Elder, Hawthorn, Elm, Hazel, Field maple, Blackthorn, Spindle, Chest	M	1.3	5
H31	5-7	Field maple, Elm, Ash, Blackthorn, Hawthorn	EM	2.4	18
H32	2-6	Dogwood, Hawthorn, Field maple, Blackthorn, Ash	M	1.8	10
H33	8.0	Oak, Hawthorn, Elm, Hazel, Field maple, Blackthorn, Spindle, Prunel	M	1.3	5

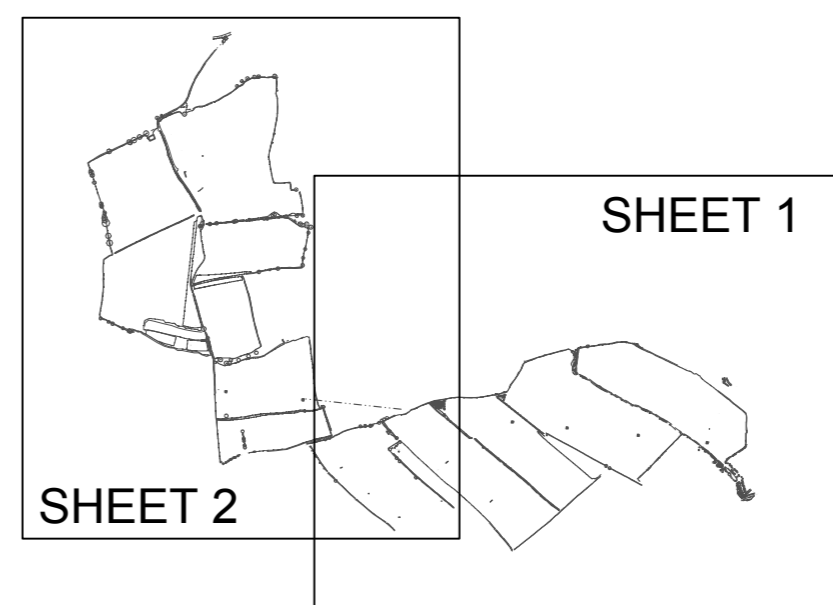


The protective measures specified on this Tree Protection Plan must be used in combination with an approved Arboricultural Method Statement, and with reference to the overarching conditions of planning consent.



- KEY**
- Category A Tree - High quality (Retention highly desirable)
 - Category A - Hedgerow, Group, Woodland - High quality (Retention highly desirable)
 - Category B Tree - Moderate quality (Retention desirable)
 - Category B - Hedgerow, Group, Woodland - Moderate quality (Retention desirable)
 - Category C Tree - Low quality (May be retained but should not constrain development)
 - Category C - Hedgerow, Group, Woodland - Low quality (May be retained but should not constrain development)
 - Category U Tree - Very low quality (Mostly unsuitable for retention)
 - Category U - Hedgerow, Group, Woodland - Very low quality (Mostly unsuitable for retention)
 - Root Protection Area (RPA) - Layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and soil volume to maintain the tree's viability
 - Shrub mass/offset tree/out of scope (OOS)
 - Trees to be removed to implement development proposals
- Protection Measures**
- Tree Protection Barrier
 - Down-graded tree protection fencing such as 'euro-mesh' type fencing. To be used in low construction activity areas.
 - Security Fence
 - Cellular confinement to dg/ surfaces. To be installed in accordance with manufacturers method statements and specifications.
 - Access road through RPA to utilise existing farm access track - see AIA for details.

TP - 'Section 5'



Note: The original of this drawing was produced in colour - a monochrome copy should not be relied upon. This drawing should be interpreted with reference to the accompanying tree schedule and written advice.

GRID NORTH

PROJECT TITLE: **Cotmoor Solar Farm (J.3180)**

DRAWING TITLE: **Tree Retention/Removal & Protection Plan**

SCALE: **1:2500 @ A1** DRAWING NUMBER: **BHA_665_02**

DRAWN BY: **SD** APPROVED BY: **RH** REVISION: **A** SHEET: **1/2** DATE: **24/06/2020**

LAYOUT USED WITHIN DRAWING: **JBM_20200616_19_3P_49_MWp_Layout_A**

CLIENT: **JBM Solar Projects 6 Ltd**

COORDINATE SYSTEM / DATUM: **British National Grid / Newlyn Datum (AOD)**

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Arboricultural Consultants

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Address: Barn 2, Oxpens Farm, Yamworth, Cheltenham, Gloucestershire, GL54 9QE

THE IMPORTANCE OF TREES

Wider benefits:

There is a growing body of evidence that trees bring a wide range of benefits to the places people live.

Some *Economic* benefits of trees include:

- Trees can increase property values
- As trees grow larger, the lift they give to property values grows proportionately
- They can improve the environmental performance of buildings by reducing heating and cooling costs, thereby cutting bills
- Mature landscapes with trees can be worth more as development sites
- Trees create a positive perception of a place for potential property buyers
- Urban trees improve the health of local populations, reducing healthcare costs

Some *Social* benefits of trees include:

- Trees help create a sense of place and local identity
- They benefit communities by increasing pride in the local area
- They can create focal points and landmarks
- They have a positive impact on people's physical and mental health
- They can have a positive impact on crime reduction

Some *Environmental* benefits of trees include:

- Urban trees reduce the 'urban heat island effect' of localised temperature extremes
- They provide shade, making streets and buildings cooler in summer
- They help remove dust and particulates from the air
- They help to reduce traffic noise by absorbing and deflecting sound
- They help to reduce wind speeds
- By providing food and shelter for wildlife they help increase biodiversity
- They can reduce the effects of flash flooding by slowing the rate at which rainfall reaches the ground
- They can help remediate contaminated soil

On new development sites:

Trees bring many benefits to new development. Where retained successfully they can form important and sustainable elements of green infrastructure, contribute to urban cooling and reduce energy demands in buildings. Their importance is acknowledged in relation to adaptation to the effects of climate change. Other benefits brought by trees include:

- increasing property values;
- visual amenity
- softening, complementing and adding maturity to built form
- displaying seasonal change
- increasing wildlife opportunities in built-up areas
- contributing to screening and shade
- reducing wind speed and turbulence

NATIONAL PLANNING POLICY

The National Planning Policy Framework 2019 (NPPF paragraph 175) states that:

'development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused unless there are wholly exceptional reasons, and a suitable compensation strategy exists.'

In this respect the following definitions apply:

'Ancient woodland: An area that has been wooded continuously since at least 1600 AD. It includes ancient semi-natural woodland and plantations on ancient woodland sites (PAWS)', and an

'Ancient or veteran tree: A tree which, because of its age, size and condition, is of exceptional biodiversity, cultural or heritage value. All ancient trees are veteran trees. Not all veteran trees are old enough to be ancient, but are old relative to other trees of the same species. Very few trees of any species reach the ancient life-stage.'

Note: Further information from the National Planning Policy Guidance Suite and Standing Advice is provided in the design guidance section.

STATUTORY CONTROLS

Statutory tree protection

Works to trees which are covered by Tree Preservation Orders (TPOs) or are within a Conservation Area (CA) require permission or consent from the Local Planning Authority. Where information is available on any Statutory designations such as this they are identified within the summary table in Section 1 and on the Tree Survey and Constraints Plan at Section 2.

Notwithstanding specific exceptions and in general terms, a TPO prevents the cutting down, uprooting, topping, lopping, wilful damage or wilful destruction of protected trees or woodlands without the prior written consent of the LPA.

Penalties for contravention of a TPO tend to reflect the extent of damage caused but can, in the event of a tree being destroyed, result in a fine of up to £20,000 if convicted in a Magistrates' Court, or an unlimited fine if the matter is determined by the Crown Court.

Similarly, and again notwithstanding specific exceptions, it is an offence to carry out any works to a tree in a Conservation Area with a trunk diameter greater than 75mm diameter at 1.5 height without having first provided the LPA with 6 weeks written notification of intent to carry out the works.

On many non-residential sites (excluding specific exemptions) there is also a statutory restriction relating to tree felling that relates to quantities of timber that can be removed within set time periods. In basic terms, it is an offence to remove more than 5 cubic metres of timber in any one calendar quarter without having first obtained a felling licence from the Forestry Commission.

Any proposed tree works that are planned to be carried out on site must be carried out in accordance with the statutory controls outlined.

Statutory Wildlife Protection

Although preliminary visual checks from ground level of likely wildlife habitats are made at the time of surveying, detailed ecological assessments of wildlife habitats are not made by the arboriculturist and fall outside of the scope for this report.

Trees which contain holes, splits, cracks and cavities could potentially provide a habitat for protected species such as bats in addition to birds and small mammals. It is advised that in some instances specialist ecological advice may be required. This may result in tree works being carried out following a

detailed climbing inspection to the tree to ensure that protected species or their nests/roosts are not disturbed. If any are found, the site manager, site owner or consulting arboriculturist should be informed and appropriate action taken as recommended by the appointed Ecologist or Natural England.

It is advised that tree/hedgerow works are carried out with the understanding that birds will generally nest in trees, hedges and shrubs between March and August. This time period only provides an indication of likely nesting times and as such diligence is required when undertaking tree works at all times.

Irrespective of the time of year, and other than any actions approved under General Licence, it is an offence to intentionally kill, injure or take any wild bird or to intentionally take, damage or destroy the nest or eggs of any wild bird. Ideally, tree operations should be avoided during the likely bird nesting period. However, any tree works should always only be carried out following a preliminary visual check of the vegetation.

For information, the Wildlife and Countryside Act 1981 (as amended), The Countryside and Rights of Way Act 2000 (as amended) and the Conservation of Habitat and Species Regulations 2010, form the basis of the statutory legislation for flora and fauna in England and Wales. A different legislative framework applies in Scotland and Northern Ireland.

Any proposed tree works that are planned to be carried out on site must be carried out in accordance with any relevant statutory controls, outlined above.