

ARBORICULTURAL SURVEY REPORT



Hilltop, Upton Bishop,
Nr Ross-on-Wye

August 2019

Paul Barton

MSc, BSc (Hons), TechCert (ArborA)

MArborA

*Registered Consultant of the
Arboricultural Association*



Barton Hyett Associates
Arboricultural Consultants

Summary table

Site Name:	Hilltop, Upton Bishop, Nr Ross-on-Wye	
Project reference:	K.3203	
Site Address:	Hilltop, Upton Bishop, Nr Ross-on-Wye	
Nearest Postcode:	HR9 7UG	
Central Grid reference:	SO 65346 26642	
Local Planning Authority:	Herefordshire Council	
Relevant planning policies:	Herefordshire Local Plan Core Strategy 2011-2031: LD1 Landscape and townscape; LD2 Biodiversity and geo diversity; LD3 Green infrastructure	
Statutory Controls:	Tree Preservation Order	Conservation Area
	No	No
Soil Type: (Source: BGS online soils map © NERC 2019)	Superficial/Drift	Bedrock
	None recorded	Maughans Formation - Argillaceous Rocks and Sandstone, Interbedded.
Topographical Survey:	File ref: 'Hilltop 1-200 DRAFT'	
Notes:		
Report author:	Paul Barton - Director	
Date of issue:	16th September 2019	

REPORT CONTENTS:

SECTION 1:	SUMMARY AND SITE DETAILS
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SECTION 5:	DESIGN GUIDANCE AND GENERIC ADVICE

1. Instruction

- 1.1. Barton Hyett Associates Ltd have been instructed by architect Christopher Knock, on behalf of Lisa Millman to survey trees located at land around 'Hilltop', Upton Bishop, Hereford ('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 potential planning application at the site and provide written advice on how they inform feasibility and design options for the site. This report is intended for use by the applicant and design team only, and is not for submission to the local planning authority (LPA).

2. Site Description

- 2.1. The site consists of seven fields, covering an area of approximately 9.5 hectares, located to the east of Upton Bishop and north of the B4221 which links Upton Bishop with the M50 motorway.
- 2.2. The topography of the site slopes downwards to the north, giving views of the Malvern Hills in the distance. In parts the gradient is quite steep, particularly in the easternmost field. To the west of the site, there is a small menage and several small stable and shed buildings and horses are kept in a paddock in the same field.
- 2.3. Vehicular access to the site is via the B4221 from the south, and from the single-track country road that runs along the northwest boundary giving access to the paddock and stables.
- 2.4. There are two significant off-site woodlands to the east of the site.

3. Tree Survey Findings

- 3.1. A total of 21 individual trees, 10 groups, 16 hedges and two woodlands 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).


	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	21	4	14	3	-
Groups	10	-	7	3	-
Hedgerows	16	-	15	1	-
Woodland	2	2	-	-	-
Total	49	6	36	7	-

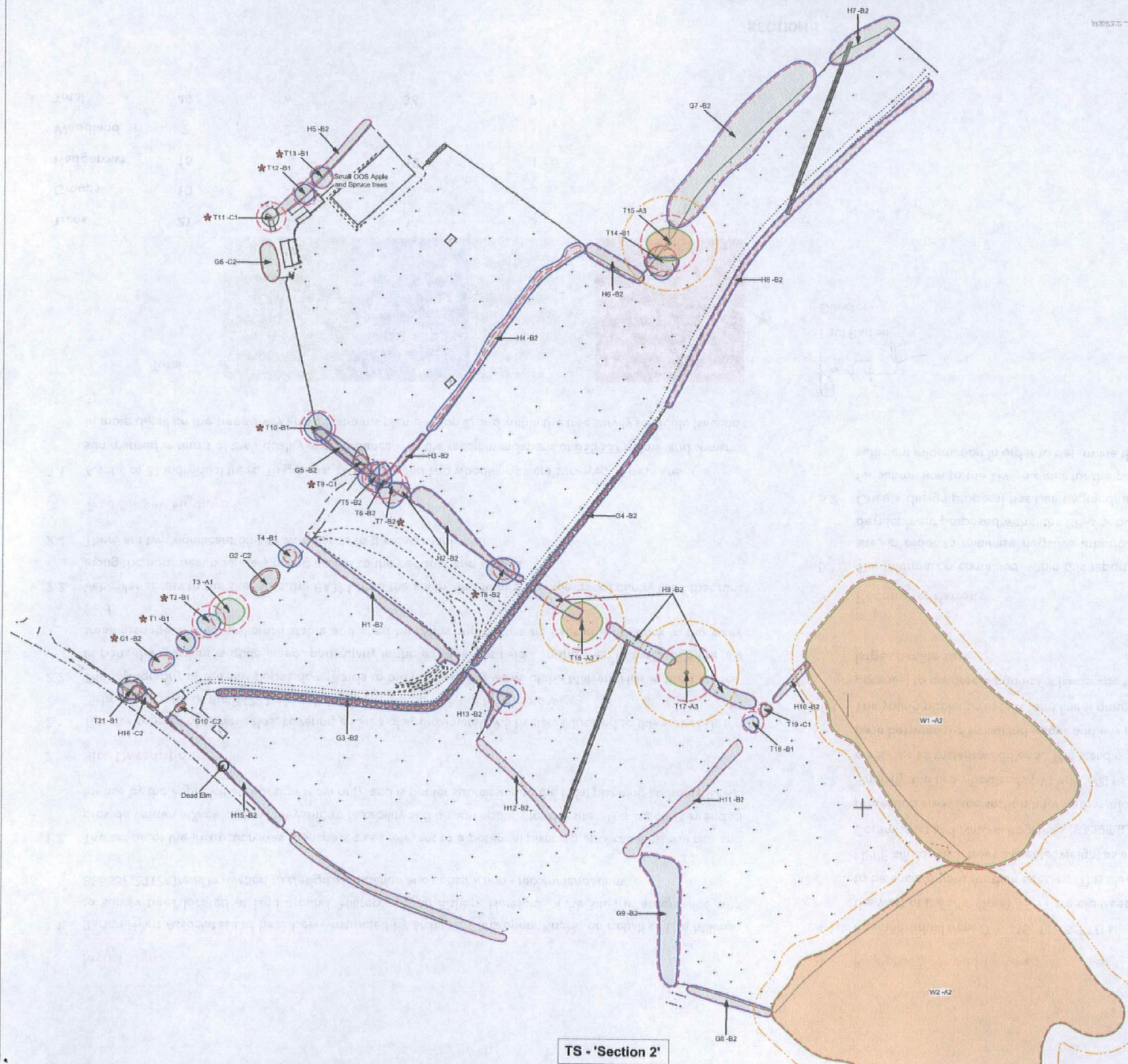
4. Key arboricultural features

- 4.1. Four individual trees (T3, T15, T16 & T17) are high quality trees. T3 is an off-site oak tree in a rear garden to the west of the site. Trees 15-17 are old trees which by virtue of their very large trunk girths, are considered to be ancient trees for their species. This elevates their importance in planning terms, as section 175 of the NPPF affords such trees a greater weight as a planning constraint. Using the advice provided in the Forestry Commission and Natural England's 'standing advice', buffers are shown on the plan beyond the BS5837 root protection areas (see section 5 for further information).
- 4.2. Similarly, the two woodlands (W1 and W2) to the west of the site are recorded on DEFRA's 'magic map' resources as ancient woodland. The standing advice therefore recommends a minimum 15 metre buffer zone between the woodland edges and any potential development.
- 4.3. The young poplar trees that form linear groups G3 and G5 to the east of the internal access track have the potential to become a significant landscape feature in the future as the trees are fast-growing and have a large ultimate size.

5. Recommendations

- 5.1. The information contained within this report should be used in the preparation of design proposals for the site, in order to minimise negative arboricultural impacts. Unless it is unavoidable, there should be no development proposed within the RPAs or buffer zones of trees shown on the tree constraints plan.
- 5.2. Once a design proposal has been agreed, an arboricultural impacts assessment report should be prepared for submission to the LPA in order for the planning application to be validated and to provide the LPA with sufficient information in order to determine the application.


Paul Barton
Director



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 D Tree - Very low quality (Mostly unsuitable for retention)
- Category D - Hedgerow, Group, Woodland - Very low quality (Mostly unsuitable for retention)
- Road 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/feature break of slope (COS)
- Approximate Location - not on topographic survey
- Ancient Tree / Woodland or Veteran Trees
- Ancient tree/woodland or Veteran tree: Important trees that require special consideration
- Ancient tree/woodland or Veteran tree buffer: As per published standing advice from Natural England and the Forestry Commission

Tree No.	Ref.	Species	Life Stage	RPA Radius (m)	RPA Area (m²)
T1	11	Ash	TM	6.1	297
T2	20	Cherry	TM	6	113
T3	17	English oak	TM	10.2	327
T4	8	Hazel	TM	3.3	28
T5	19	Ash	TM	6.8	147
T6	15	Ash	TM	5.5	285
T7	10	Ash	TM	5.5	225
T8	14	Ash	TM	5.4	92
T9	7	Shrub willow	TM	3.3	38
T10	18	Ash	TM	5.9	249
T11	11	Leyland cypress	TM	7.6	185
T12	14	Ash	TM	6	113
T13	10	Sycamore	TM	5.9	109
T14	14	English oak	TM	7.9	197
T15	20	English oak	TM	15	757
T16	17	English oak	TM	15	767
T17	18	Small leaved lime	LM	15	767
T18	8	Hawthorn	TM	3.1	31
T19	12	Field maple	TM	3.4	175
T20	14	Ash	TM	1.5	25
G1	3	Field maple	TM	3.6	41
G2	4-7	Witcham, hazel, blackthorn	TM	1.8	15
G3	3-9	Cherry	TM	2.4	18
G4	3-9	Cherry	TM	2.4	18
G5	3-5	Field maple, hazel	TM	4.2	55
G6	7-8	Willow, goat willow, silver birch	TM	3.6	41
G7	20-22	Hornbeam	TM	3.1	28
G8	4-9	Ash, sycamore, field maple	TM	4.1	41
G9	10-13	Ash, silver birch, weeping willow, birch, English oak	TM	4.8	72
G10	6	Cherry	TM	1.8	15
H1	18-20	English oak, birch, ash, field maple, hazel	TM	6	225
H2	10-20	Ash, sycamore, ash, oak, hazel, hawthorn	TM	6	113
H3	6	Hazel, hawthorn, holly	TM	1.8	15
H4	6	Hazel, cherry, ash, goat willow	TM	1.8	15
H5	7	Hazel, hawthorn, field maple	TM	2.4	18
H6	8	Hazel, hawthorn, ash, field maple	TM	2.4	18
H7	5	Hazel, hawthorn	TM	1.3	15
H8	5	Hazel, hawthorn, blackthorn	TM	1.3	15
H9	6	Hazel, hawthorn, holly	TM	1.8	15
H10	5	Hazel, hawthorn, blackthorn	TM	1.8	15
H11	7	Hazel, hawthorn, ash	TM	2.4	18
H12	7	Hazel, hawthorn, holly, field maple, blackthorn	TM	2.4	18
H13	8	Hazel, hawthorn, field maple	TM	2.4	18
H14	4	Sycamore, goat willow, hawthorn, ash, hazel	TM	1.8	15
H15	5	Hazel, sycamore, goat willow, ash	TM	2.4	18
H16	4	Hazel, holly, blackthorn	TM	0.8	2

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

PROJECT TITLE
Hilltop, Upton Bishop, Ross on Wye (K.3203)

DRAWING TITLE
Tree Survey & Constraints Plan

SCALE
1:2000 @ A3

DRAWING NUMBER
BHA_618_01

DRAWN BY
SD

APPROVED BY
PB

REVISION
A

SHEET
-

DATE
17/09/2019

LAYOUT USED WITHIN DRAWING
n/a

CLIENT
Lisa Millman

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

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TREE SURVEY SCHEDULE

HILLTOP, UPTON BISHOP

PROJECT NO: K.3203

SURVEYOR: PAUL BARTON

CLIENT: CHRISTOPHER KNOCK ARCHITECTS

SURVEY DATE: AUGUST 2019



INDIVIDUAL 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	Ash	11	1	#	500	5.0-4.0-5.0-6.0	3.5	4	W	EM	None	Off-site tree in adjacent garden. Stone patio in rooting area to west.	Good	Good	20+	B1	6.0	113
T2	Douglas fir	20	1	#	700	4.0-6.0-7.0-6.0	6.0	4	NW	M	None	Off-site tree in adjacent garden. Base not visible. Crown appears in good condition.	Good	Fair	20+	B1	8.4	222
T3	English oak	17	1	#	850	7.0-8.0-7.0-7.0	2.0	2	SW	M	None	Off-site tree close to boundary stock fence. Buttress root cut to install fence. Good form and condition.	Good	Good	40+	A1	10.2	327
T4	Hazel	8	10	#	280	6.0-6.0-6.0-6.0	1.0	-	-	M	None	Off-site tree. Typical multi stemmed form.	Good	Good	20+	B1	3.3	35
T5	Ash	19	2	-	570	8.0-2.0-8.0-9.0	4.0	6	W	M	None	Asymmetrical form due to adjacent ash. Growing within field boundary hedgerow. Minor deadwood typical for species and age.	Good	Fair	20+	B2	6.8	147
T6	Ash	19	1	#	800	9.0-4.0-4.0-8.0	4.0	5	N	M	None	Good crown vitality. Old failed branch wound at 6m on south side. Minor ivy on trunk.	Good	Fair	20+	B2	9.6	290
T7	Ash	18	1	-	720	2.0-9.0-11.0-8.0	3.0	3	S	M	None	Large tree forming a cohesive canopy with adjacent ash trees T5-6. Prolific ivy. No significant issues observed.	Good	Fair	20+	B2	8.6	235
T8	Ash	14	3	-	450	6.0-8.0-8.0-9.0	3.5	2	W	EM	None	Multi stemmed tree within hedgerow. Good form and condition.	Good	Good	40+	B2	5.4	92
T9	Goat willow	7	1	-	290	8.0-4.0-1.0-4.0	1.0	0.5	N	EM	None	Collapsed tree with upright regenerating crown. Leans strongly to north. Swing attached to low branch.	Good	Fair	10+	C1	3.5	38

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T10	Ash	18	3	#	740	8.0-7.0-7.0-7.0	1.5	0	N	M	None	Large multi stemmed tree at top of embankment. Low limbs overhanging field to north. Treehouse structure attached to stems. No significant issues observed.	Fair	Fair	20+	B1	8.9	248
T11	Leyland cypress	11	5	-	630	5.0-4.0-5.0-5.0	2.0	1.5	E	M	None	Multi stemmed tree adjacent vehicle access point. Crown overhangs adjacent shipping container. No significant issues observed. Species incongruous with rural character.	Good	Fair	20+	C1	7.6	180
T12	Ash	14	1	#	500	5.0-5.0-5.0-5.0	3.0	-	-	EM	None	Roadside hedgerow tree behind existing stables. No access to trunk. Crown condition indicates good health.	Good	Fair	20+	B1	6.0	113
T13	Sycamore	10	6	#	490	5.0-6.0-6.0-5.0	3.0	3	E	EM	None	Multi stemmed from base. Good crown structure and condition.	Good	Good	20+	B1	5.9	109
T14	English oak	14.0	1	-	660	2.0-9.0-10.0-9.0	6.0	5	S	M	None	Asymmetrical form due to adjacent oak. No significant issues observed.	Good	Fair	40+	B1	7.9	197
T15	English oak	20.0	2	#	1650	8.0-12.0-9.0-12.0	5.0	3.5	N	M	Ancient	A large old tree with twin stems from 2m. Minor deadwood in lower crown but otherwise in good health.	Good	Good	40+	A3	15.0	707
T16	English oak	17.0	1	-	1460	10.0-11.0-11.0-11.0	2.5	5	E	LM	Emerging veteran	An old lapsed coppice. Large girth with cavities and Ganoderma decay fungal brackets. Compact crown in good condition. Not enough veteran features to be classified as a true veteran tree, but has the potential to become one.	Good	Fair	40+	A3	15.0	707
T17	Small leaved lime	18.0	1	#	1800	10.0-10.0-8.0-11.0	1.5	2	NE	LM	Ancient	A lapsed old pollard with extensive trunk cavitation on east side. Crown has excellent vitality. Apply Veteran Tree Buffer in addition to standard RPA.	Good	Fair	40+	A3	15.0	707

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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 m²
T18	Field maple	9.0	1	-	470	3.0-3.0-5.0-5.0	1.0	1.5	S	M	None	Some basal decay. Good vitality.	Good	Fair	20+	B1	5.6	100
T19	Hawthorn	8.0	2	-	260	2.5-4.0-4.0-2.0	3.0	-	-	EM	None	Slender upswept form. Ivy on stems.	Fair	Fair	10+	C1	3.1	31
T20	Field maple	12.0	6	-	780	6.0-6.0-5.0-5.0	2.5	2	S	M	None	An old multi stemmed tree previously coppice as part of a hedgerow. Good form and condition.	Good	Good	20+	B1	9.4	275
T21	Ash	14.0	2	-	380	5.0-8.0-5.0-7.0	4.0	2.5	E	EM	None	Off-site roadside tree in verge. Ivy covered stem.	Good	Fair	20+	B1	4.5	65

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	Field maple	8	3	#	300	5	3.0	SM	None	Off-site trees in adjacent garden. Crowns overhang site by up to 4m.	Good	Good	40+	B2	3.6
G2	Hawthorn, hazel, blackthorn	4-7	3	-	150	3	0.0	SM	None	Informal group with dense blackthorn and bramble understorey. Hawthorn has sparse crown.	Poor	Fair	10+	C2	1.8
G3	Grey poplar	3-9	37	-	200	4	2.0	Y	None	Young trees planted along fenceline adjacent to access track. Some suppressed and of poor form, but collectively becoming a strong landscape feature.	Fair	Fair	40+	B2	2.4
G4	Grey poplar	3-9	30	-	200	4	2.0	Y	None	Young trees planted along fenceline adjacent to access track. Some suppressed and of poor form and many of multi stemmed form. Collectively becoming a strong landscape feature.	Fair	Fair	40+	B2	2.4
G5	Field maple, hazel	5-8	6	-	350	4	1.0	EM	None	Linear belt of trees along top of embankment. One hawthorn has collapsed in to northern field. Dense ruderal vegetation under tree crowns.	Good	Fair	20+	B2	4.2
G6	Wild cherry, goat willow, silver birch.	7-8	6	-	300	4	2.0	SM	None	Off-site group behind existing stables and timber sheds. Low branches resting on roofs; some clearance pruning recommended.	Good	Fair	20+	C2	3.6
G7	Hybrid black poplar	20-22	50	#	250	4	7.0	EM	None	Off-site trees with smaller ash and willow understorey. Closely spaced, slender trees. Significant landscape feature.	Good	Fair	20+	B2	3.0
G8	Ash, sycamore, field maple.	4-9	~8	#	300	4	1.0	SM	None	Linear belt of trees of varying size along south boundary near road. Sycamore at east end is most dominant. Potential for ash to succumb to ash dieback in next 5-10 yrs.	Fair	Fair	20+	B2	3.6

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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)
G9	Ash, silver birch, weeping willow, larch, English oak.	10-15	~25	-	400	4	2.0	EM	None	Off-site trees within adjacent residential garden. Regularly trimmed hawthorn hedge on boundary under tree crowns.	Good	Good	40+	B2	4.8
G10	Grey poplar	8	2	-	150	4	2.5	Y	None	Two young trees overhanging the existing vehicle access. Potential to become large specimens.	Good	Fair	40+	C2	1.8

HEDGES

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	Hazel, blackthorn	4.0	2.5	70	0.0	EM	Linear field boundary hedge on embankment between fields. Predominantly hazel with small sections of blackthorn.	Good	Good	20+	B2	0.8
H2	Hazel, hawthorn, holly,	6.0	4	100	0.0	EM	Unmanaged row of trees forming linear field boundary hedge. Contains several dead holly trees. Ash towards southeast end recorded separately.	Fair	Fair	20+	B2	1.3
H3	Hazel, cherry, elm, goat willow	6.0	5	150	1.0	SM	Linear belt of trees forming field boundary hedge. Cherry trees likely to become dominant crowns above main hedge canopy. Dead elm to north next to field gate.	Fair	Fair	20+	B2	1.8
H4	Hazel, hawthorn, field maple.	7.0	8	200	1.0	M	Linear belt of unmanaged trees forming field boundary hedgerow. Largest specimen is a field maple towards the north end.	Good	Fair	20+	B2	2.4
H5	Hazel, hawthorn, ash, field maple.	8.0	5	200	1.5	EM	Roadside hedgerow overhanging site by up to 4m. Several ash emerging as dominant trees. Dense ivy on stems.	Good	Good	20+	B2	2.4
H6	Hazel, hawthorn	8.0	6	200	1	M	Unmanaged trees forming field boundary hedge. Hawthorn quite sparse in upper crown.	Fair	Fair	20+	B2	2.4
H7	Hazel	5.0	4	100	0	SM	Dense hazel hedge under power lines.	Good	Good	20+	B2	1.3
H8	Hazel, hawthorn, blackthorn.	5.0	4	100	0	EM	Predominantly hazel with pockets of hawthorn and blackthorn. Adjacent compacted access track.	Fair	Fair	20+	B2	1.3
H9	Hazel, hawthorn, holly.	6.0	4	200	0	EM	Hedge with gaps around mature trees; in three sections along north field boundary. Predominantly hazel.	Good	Good	20+	B2	2.4
H10	Hazel, hawthorn, blackthorn.	5.0	4	150	0	EM	Unmanaged field boundary hedgerow.	Fair	Fair	20+	B2	1.8
H11	Hazel, hawthorn, elder.	7.0	5	200	0	M	Linear belt of trees forming cohesive hedgerow along field boundary. Several hawthorns have sparse upper crowns.	Fair	Good	20+	B2	2.4
H12	Hazel, hawthorn, holly, field maple, blackthorn.	7.0	5	200	1	M	Mixed species hedgerow on sloping embankment between fields. Unremarkable but a strong visual screen.	Fair	Fair	20+	B2	2.4

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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)
H13	Hazel, hawthorn, field maple	8.0	6	200	0	M	Unremarkable field boundary hedgerow. Dying hawthorn at north end. Dense brambles.	Fair	Fair	20+	B2	2.4
H14	Sycamore, goat willow, hawthorn, ash, hazel.	4.0	4	150	0	SM	Roadside hedgerow consisting of a mixture of saplings and coppice trees. Under LV power line. Effective screen but otherwise unremarkable.	Fair	Fair	20+	B2	1.8
H15	Hazel, sycamore, goat willow, elm	6.0	4	200	0	SM	Roadside hedgerow. Largest tree is a goat willow near to electricity pole. One dead elm leaning over road should be removed to reduce risk - tree location marked on plan.	Fair	Fair	20+	B2	2.4
H16	Hazel, holly, blackthorn.	4.0	3.0	70	0.0	SM	Unremarkable roadside hedgerow.	Fair	Fair	20+	C2	0.8

WOODLAND

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)
W1	English oak, lime, ash, field maple, hazel	18-20	100	-	750	8	2.0	M	Ancient semi-natural woodland (ASNW)	Off-site woodland to north. Crowns overhang site by up to 10m. Understorey of hazel screen views in to site but main woodland area is devoid of shrub layer and young trees.	Good	Good	40+	A2	9.0
W2	Ash, sycamore, sessile oak, elm, hazel, hawthorn.	10-20	100	#	500	6	2.0	M	Ancient woodland (replanted)	Off-site woodland on sloping ground to east of site. Largest, dominant trees are ash and sessile oak. Understorey of hazel along boundary.	Good	Good	40+	A2	6.0

SELECT IMAGES FROM THE TREE SURVEY

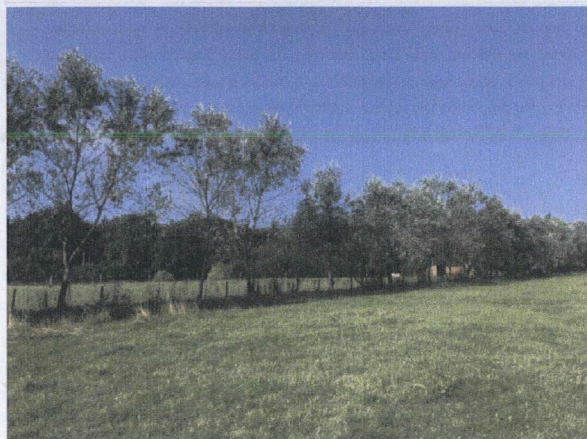


PHOTO 1: young poplars forming group G3 in the southern field.



PHOTO 2: looking northwest at mature ash trees T5, 6 and 7 on the corner boundary three fields on the west side of the site.



PHOTO 3: looking northwest at G6 and T11 behind the existing stables and sheds in the paddock field.

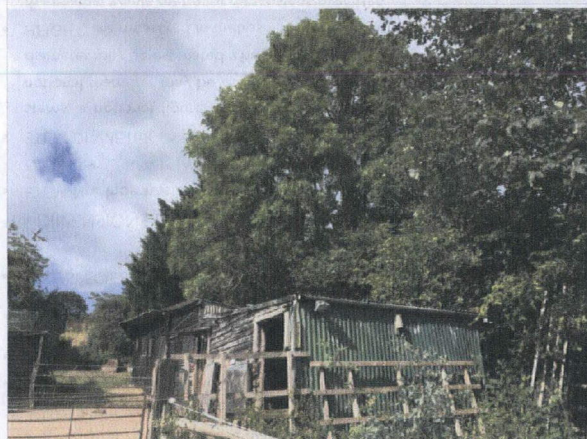


PHOTO 4: looking west at trees T12 and T13 to the rear of stables on the northwest boundary.



PHOTO 5: looking north at ancient oak tree T16.



PHOTO 6: looking north at ancient lime tree T17.

- 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

TREE SURVEY METHODOLOGY

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.

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 the relevant Statutory Nature Conservation Organisation (SNCO): Natural England, Scottish Natural Heritage or Natural Resources Wales.

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.

DESIGN GUIDANCE

Approach

The approach adopts the guidelines set out in the British Standard BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations. The process is broken down to coordinate with the key elements within both the RIBA Plan of Work (2013) and British Standard 5837:2012 as set out in Table 1 below.

Table 1. Staged approach with cross references to key guidance

Information Stage	RIBA Stage	BS5837
Stage A – Tree Survey	2: Concept	4: Feasibility
Stage B – Arboricultural Impact Assessment	3: Developed design	5: Proposals
Stage C – Arboricultural Method Statement	4: Technical design	6: Technical Design
Stage D – Arboricultural Site Supervision	5: Construction	7: Demolition and construction

A hierarchical approach is adopted in order to achieve optimum use of the Site and location of built structures. This is set out below:

Avoid

The starting point of Site layout design should be to avoid the RPA of retained trees and provide suitable clearance from above ground constraints [tree canopies]. Where possible building lines should be at least 2m outside the RPA to provide working space for construction. However, protection measures can be taken if such clearance is not achievable.

Mitigate

Where intrusion within the RPA is unavoidable then its impact on the tree can be mitigated by specialist measures:

Foundations that avoid trenching e.g. screw piles, suspended floor slabs or casting at ground level for lightweight structures such as bin and cycle stores.

Limited use may be made for parking, drives or hard surfaces within the root protection areas, subject to advice from a qualified arboriculturist. Cellular confinement systems that enable hard surfaces to be built above existing soil levels are acceptable methods subject to site-specific soil conditions.

Service runs that cannot be routed outside the RPA(s) can be installed by, for example, thrust boring, directional drilling, air excavation or hand digging. These operations often require supervision by the project arboriculturist.

Compensate

Replacement planting can ensure the continuity of tree cover where tree removal is unavoidable or desirable. Off-site provision may be considered in some circumstances but this will require negotiation with the local planning authority.

Considerations:

For proposed residential developments, consideration must be given to numerous factors future tree growth and orientation.

Tree constraints

Root Protection Area:

With reference to BS5837:2012, a root protection area (RPA) is defined as “a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree’s viability, and where the protection of the roots and soil structure should be treated as a priority”. “The default position [when considering design layout in relation to RPAs] should be that structures are located outside the RPAs of trees to be retained”.

BS5837:2012 states (4.6.2) that, "where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area should be produced." The BS goes on to state that, "modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution," and that any deviation from the original circular plot should take into account:

- morphology and disposition of roots
- topography and drainage
- soil type and structure
- the likely tolerance of the tree to root damage/disturbance

The following text is taken from the Standing Advice produced by the Forestry Commission and Natural England as included in the National Planning Policy Guidance:

'A buffer zone's purpose is to protect ancient woodland and individual ancient or veteran trees. The size and type of buffer zone should vary depending on the scale, type and impact of the development'.

Ancient woodland buffer:

'For ancient woodlands, you should have a buffer zone of at least 15 metres to avoid root damage. Where assessment shows other impacts are likely to extend beyond this distance, you're likely to need a larger buffer zone. For example, the effect of air pollution from development that results in a significant increase in traffic'.

Ancient and veteran tree buffer:

'A buffer zone around an ancient or veteran tree should be at least 15 times larger than the diameter of the tree. The buffer zone should be 5m from the edge of the tree's canopy if that area is larger than 15 times the tree's diameter'.

Above ground:

Above ground constraints posed by trees describe the capacity for trees to have an overbearing or dominating effect on new developments; usually post occupancy. Typical above ground constraints include a number or combination of inconveniences including shading, branch spread, movement of trees during strong winds and so on. If not adequately considered, above ground constraints can lead to repeated requests to fell or heavily prune retained and protected trees.

Shade:

Adverse shading and blocked views from windows raise concerns for incoming residents, which may lead to pressure to fell or remove trees in the future. Wherever possible it is advisable to arrange fenestration away from tree canopies to lessen the conflict, or increase window size to accommodate ambient light.

Conversely, appropriate designed development can use existing or new trees to create necessary and welcome shade and screening.

As part of the adopted approach the above considerations and constraints are assessed cumulatively in order to provide clear and site-specific advice on the areas of a site most suitable for the location of development.

Dependent on the site and nature of the proposed development, the Tree Survey and Constraints Plans may show the following:

Recommended Developable area - An advisory area defined in order to minimise arboricultural impacts using standard approaches to construction. Restricting proposed development to this area will limit the risk of harm to retained trees and of the Local Planning Authority objecting to the proposed development. It may be possible to propose development outside of this area but specific 'low impact' construction techniques may be needed recommended.

Recommended Buffer to development - Similar to the Recommended Developable Area but defined as a line marking a suitable buffer to retained trees. More commonly used on large sites or sites where the presence of trees is localised.

Tree Opportunities

Depending on the scale of developments existing trees can often provide opportunities to enhance the existing arboricultural resource of a site by bringing it into good management or by putting in place remedial measures e.g. soil amelioration.

Appropriately designed new tree planting is extremely important in maintaining healthy and sustainable tree populations. For the reasons highlighted, new trees can bring many benefits to new developments. It is critical to the establishment of new tree planting that the locations, species and specification of new trees is appropriate. Subsequently the sourcing of high-quality stock, suitable planting and the provision of post planting maintenance are essential to allow new trees to establish and to allow them to mature.