

Ref	Species	On/off site	Top Height (m)	No. of Stems	Est diam?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. low crown height (m)	1st branch ht (m)	1st branch dir.	Life Stage	Special importance	General Observations	Health & vitality	Structural condition	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²	ASNW or ARW buffer (m)
T70	Hornbeam	On	7.0	10	Yes	630	7.0-5.0-4.0-7.0	2.0	0.5	-	M	-	Mature hornbeam coppice at the woodland edge	Good	Good	40+	A3	7.6	180	-
T71	Ash (Common)	On	22.0	1	Yes	650	10.0-8.0-5.0-9.0	7.0	7.0	N	M	-	Mature woodland edge ash	Fair	Good	40+	B2	7.8	191	-
T72	Ash (Common)	On	16.0	1	Yes	600	7.0-7.0-7.0-8.0	5.0	4.0	S	EM	-	Prominent tree within the linear tree feature	Good	Fair	40+	B2	7.2	163	-
T73	Oak (English)	On	7.0	1	-	820	4.0-5.0-6.0-6.0	3.0	1.0	-	M	-	Northern most tree in the linear tree feature;heavily storm damaged or possibly veterinised in the past. Crown now re-establishing; hollowed stem. Good niche habitat potential	Good	Fair	40+	B3	9.8	304	-
T74	Oak (English)	On	17.0	1	-	740	7.0-7.0-7.0-7.0	5.0	4.0	S	M	-	Prominent and mature oak tree within the linear tree feature; heavily storm damaged or possibly veterinised in the past. Crown now re-established	Good	Fair	40+	B3	8.9	248	-
T75	Oak (English)	On	16.0	1	-	850	6.0-7.0-7.0-8.0	4.0	3.0	S	M	-	Prominent and mature oak tree within the linear tree feature	Good	Good	40+	A2	10.2	327	-
T76	Oak (English)	On	16.0	1	-	700	6.0-8.0-7.0-8.0	4.0	3.0	-	M	-	Prominent and mature oak tree within the linear tree feature	Good	Good	40+	A2	8.4	222	-
T77	Oak (English)	On	18.0	1	Yes	780	8.5-6.0-6.0-9.0	4.0	4.0	-	EM	-	Prominent woodland edge tree of good form and condition	Good	Good	40+	B2	9.4	275	-
T78	Oak (English)	On	16.0	1	Yes	800	4.0-3.0-6.0-6.0	4.0	4.0	W	M	-	Prominent woodland edge tree; storm damaged with large diameter branch tear outs/stubs	Good	Fair	40+	B3	9.6	290	-
T79	Beech (Common)	On	19.0	1	Yes	850	7.0-6.0-8.0-8.0	3.0	3.0	SW	M	-	Prominent woodland edge tree; good form and condition	Good	Good	40+	A2	10.2	327	-
T80	Beech (Common)	On	20.0	1	Yes	800	7.0-8.0-6.0-5.0	3.0	4.0	S	M	-	Prominent woodland edge tree; good form and condition	Good	Good	40+	A2	9.6	290	-
T81	Oak (English)	On	22.0	1	Yes	950	9.0-10.0-9.0-9.0	3.0	3.0	-	M	-	Prominent woodland edge tree; good form and condition	Good	Good	40+	A2	11.4	408	-
T82	Ash (Common)	On	13.0	2	-	640	7.0-8.0-8.0-8.0	6.0	6.0	E	M	-	Twin stem with ditch to the north. Some dieback in lower crown and decay within cavity on larger stem at 7m.	Fair	Good	40+	B1	7.7	185	-
T83	Lime (Small-leafed)	On	25.0	1	Yes	700	6.0-5.0-5.0-6.0	3.0	3.0	-	EM	-	Prominent woodland edge tree tree	Good	Good	40+	A2	8.4	222	-
T84	Lime (Small-leafed)	On	25.0	1	Yes	700	5.0-5.0-5.0-6.0	3.0	3.0	-	EM	-	Prominent woodland edge tree tree	Good	Good	40+	A2	8.4	222	-
T85	Lime (Small-leafed)	On	25.0	1	Yes	700	5.0-5.0-5.0-6.0	3.0	3.0	-	EM	-	Prominent woodland edge tree tree	Good	Good	40+	A2	8.4	222	-

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T86	Lime (Small-leaved)	On	25.0	1	Yes	700	5.0-5.0-5.0-6.0	3.0	3.0	-	EM	-	Prominent woodland edge tree tree	Good	Good	40+	A2	8.4	222	-
T87	Ash (Common)	On	6.0	1	Yes	180	2.0-2.0-2.0-2.0	0.5	0.25	-	Y	-	Young ash on the banks of the ditch/culvert	Good	Fair	40+	C1	2.2	15	-
T88	Oak (English)	On	13.0	1	-	710	7.0-8.0-8.0-8.0	1.0	1.0	SE	EM	-	Prominent open grown oak of excellent form and condition	Good	Good	40+	A1	8.5	228	-
T89	Ash (Common)	On	5.0	2	Yes	180	2.0-2.0-2.0-2.0	0.5	0.25	-	Y	-	Young ash on the banks of the ditch/culvert	Good	Fair	40+	C1	2.2	15	-
T90	Oak (English)	On	13.0	1	Yes	580	6.0-6.0-3.0-6.0	2.0	2.0	-	EM	-	Establishing oak within the linear tree feature. Existing ditch/culvert to the west; footpaths to the east and west; Ivy establishing in lower crown	Good	Good	40+	B2	7.0	152	-
T91	Oak (English)	On	3.0	1	Yes	580	5.0-6.0-6.0-6.0	4.0	3.0	-	EM	-	Establishing oak within the linear tree feature. Existing ditch/culvert to the west; footpaths to the east and west; Ivy establishing in lower crown	Good	Good	40+	B2	7.0	152	-
T92	Oak (English)	On	16.0	1	Yes	980	7.0-8.0-8.0-8.0	4.0	3.0	W	M	-	Mature and prominent tree within the linear tree feature. Existing ditch/culvert to the west; footpaths to the east and west; Ivy establishing in lower crown	Good	Good	40+	A2	11.8	434	-
T93	Oak (English)	On	16.0	1	-	920	7.0-8.0-9.0-9.0	4.0	3.0	N	M	-	Mature and prominent tree within the linear tree feature. Existing ditch/culvert to the west; footpath to the east	Good	Good	40+	A2	11.0	383	-
T94	Ash (Common)	On	20.0	1	-	610	6.0-7.5-7.5-6.0	4.5	6.5	E	M	-	Prominent woodland edge tree of good form and condition; footpath to the north	Good	Good	40+	B2	7.3	168	-
T95	Oak (English)	On	15.0	1	-	680	6.0-6.0-7.0-6.0	4.5	6.5	N	M	-	Mature woodland edge oak; reduced vitality; deadwood throughout crown	Fair	Fair	20+	B3	8.2	209	-
T96	Oak (English)	On	14.0	1	-	1000	7.0-11.0-10.0-10.0	1.0	2.0	N	M	-	Well presented oak with historic storm damage on northwest side.	Good	Good	40+	A1	12.0	452	-
T97	Sycamore	On	7.0	3	-	180	3.0-3.0-4.0-3.0	2.0	1.5	S	SM	-	Small sycamore on bank of ditch; trimmed back from footpath. Ditch to the west.	Good	Good	40+	C2	2.2	15	-
T98	Maple (Field)	On	10.0	8	-	710	5.0-5.0-5.0-5.0	2.0	1.5	S	M	-	Shown on Topo as single tree; however tightknit group of 4 trees with 8 stems between them; cohesive crown. Located slightly off the nearby footpath with elder & hawthorn within understory.	Good	Good	40+	C2	8.5	228	-

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T99	Oak (English)	On	7	1	-	410	6.0-5.0-6.0-3.0	2	3.5	E	EM	-	Trunk bias to east. Dominant tree of cohesive group. Cubicle brown rot of second stem at base.	Good	Fair	40+	B1	4.9	76	-
T100	Oak (English)	On	11	1	-	430	6.0-6.0-6.0-5.0	3	4	S	SM	-	Dominant canopy tree within dense group.	Good	Good	40+	B1	5.2	84	-

GROUPS OF TREES

Ref	Species	On/off site	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. low crown height (m)	Life Stage	General Observations	Health & vitality	Structural condition	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)
G1	Blackthorn; hawthorn; common ash; goat willow; English oak	On	2-6	15	Yes	100	3.0	0.5	SM	Establishing area of scrub beneath LV overhead wires. Agricultural pond at the centre	Good	Fair	20+	C2	1.3
G2	Sycamore; common ash	Off	12-14	3	Yes	300	5.0	3.0	SM	Located within neighbouring property; establishing trees at the site boundary	Good	Fair	40+	C2	3.6
G3	Silver birch; cherry plum; hawthorn; blackthorn	On	3-8	7	Yes	200	3.0	1.0	SM	Informal hedgerow/establishing screening trees	Good	Fair	20+	C2	2.4
G4	English oak; common beech; hawthorn; common ash	On	5-22	50	Yes	1000	8.0	2.0	M	Predominantly mature beech and oak located on the banks of a steep sided depression; pond at centre. Some storm damaged trees provide niche habitat potential. Recommend 15m buffer is applied	Good	Good	40+	A2	12.0
G5	Ash	On	13-16	4	Yes	400	5.0	0.0	M	Early- mature ash group along field boundary.	Fair	Good	40+	C2	4.8
G6	Hawthorn; blackthorn; hazel; bramble.	On	4-11	100	-	250	3.0	0.0	M	Understorey and group of field boundary. Predominantly hawthorn.	Good	Good	40+	C2	3.0
G7	Ash	On	13-16	3	Yes	500	3.0	0.0	M	Broadleaf linear boundary group; mature ash with understorey of mixed species.	Good	Good	40+	B2	6.0
G8	Hawthorn; blackthorn; hazel	On	4-11	50	Yes	250	3.0	0.0	M	Understorey and group of field boundary. Predominantly hawthorn.	Good	Good	40+	C2	3.0
G9	Common ash; English oak; hawthorn; hazel; blackthorn; wild cherry	On	4-20	30	Yes	600	5.0	1.0	EM	Linear tree feature; predominantly establishing ash and oak with an understorey of hazel and blackthorn	Good	Good	40+	B2	7.2
G10	Hazel; common ash	On	3-10	20	Yes	300	3.0	0.5	EM	Hazel coppice and occasional ash forming an understorey to the more prominent and mature oak/ash that have been plotted as individual trees	Good	Good	40+	B2	3.6
G11	Field maple; hawthorn; blackthorn; hornbeam; oak;	On	4-8	150	-	250	3.0	0.0	M	Broadleaf linear group; predominantly hawthorn/blackthorn.	Good	Good	40+	C2	3.0
G12	Hazel; field maple; hornbeam; English oak	Off	4-10	40	-	350	3.0	0.0	M	Broadleaf linear group.	Good	Good	40+	B2	4.2
G13	Blackthorn; field maple; hawthorn	On	3-8	25	Yes	250	4.0	0.5	SM	Understorey trees/scrub. Occasional more mature field maple with reduced vitality. Ivy and bramble throughout	Fair	Fair	10+	C2	3.0

Ref	Species	On/off site	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. low crown height (m)	Life Stage	General Observations	Health & vitality	Structural condition	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)
G14	Common ash; English oak; hazel; field maple	On	4-16	25	Yes	650	7.0	0.5	EM	Linear tree feature; early mature oak and ash with a understorey of maple and hazel coppice; footpath to the east and west; ditch/culvert to the east	Good	Fair	40+	B2	7.8
G15	Sycamore; field maple; elder;	On	4-15	10	-	300	5.0	0.5	EM	Two multi stemmed sycamore with other species within understory.	Good	Good	40+	B2	3.6
G16	Sycamore; field maple; elder	On	4-15	15	-	300	5.0	0.5	EM	Group of tight knit sycamore with other species and saplings within understory.	Good	Good	40+	B2	3.6
G17	Hawthorn; hazel; ash; sycamore; blackthorn; hawthorn; crack willow; elder	Off	3-12	250	-	350	3.0	0.0	EM	Establishing broadleaf woodland; mostly offsite. Predominantly ash/sycamore/ willow with a dense understorey of blackthorn and hawthorn.	Good	Good	40+	B2	4.2
G18	Silver birch	On	8-10	5	-	250	4	1	SM	Multi stemmed trees forming cohesive canopy	Good	Good	40+	B2	3
G19	Silver birch	On	8-10	12	-	250	4	1	SM	Multi stemmed trees forming cohesive canopy	Good	Good	40+	B2	3
G20	Silver birch	On	8-10	6	-	250	4	1	SM	Multi stemmed trees forming cohesive canopy	Good	Good	40+	B2	3
G21	Hawthorn; hazel; goat willow; dogwood	On	3-5	100	Yes	150	2	0	SM	Dense planting of small trees forming a cohesive canopy under power lines.	Fair	Fair	10+	C2	1.8
G22	Hawthorn; hazel; goat willow; dogwood	On	3-5	100	Yes	150	2	0	SM	Dense planting of small trees forming a cohesive canopy under power lines.	Fair	Fair	10+	C2	1.8

WOODLAND

Ref	Species	On/off site	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. low crown height (m)	Life Stage	Special importance	General Observations	Health & vitality	Structural condition	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	ASNW or ARW buffer (m)
W1	Ash; lime; beech; English oak; hazel; holly; hornbeam.	Off	9-18	400	Yes	900	9.0	7.0	M	ASNW	Diverse broadleaf mature woodland; with a spacious understorey. Consider buffer of 15m due to ancient woodland indicators.	Good	Good	40+	A3	10.8	15
W2	Common ash; English oak; hornbeam; Scots pine; hazel; silver birch; hawthorn; blackthorn	Off	4-22	2000	Yes	800	7.0	2.0	M	ASNW	Mature broadleaf woodland with good species diversity	Good	Good	40+	A2	9.6	15
W3	Hazel; field maple; cherry; common ash; English oak	Off	3-8	250	Yes	200	3.0	0.5	Y	-	Establishing mixed native species copse of woodland	Good	Fair	40+	B2	2.4	-
W4	Hornbeam; English oak; ash; hazel; hawthorn; beech	On	4-16	400	Yes	850	6.0	4.0	M	ASNW	Mature broadleaf woodland; predominantly oak/ash with hawthorn/hazel/hornbeam majority of understory. Ancient woodland indicators present; consider 15m buffer.	Good	Good	40+	A3	10.2	15

Ref	Species	On/off site	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. low crown height (m)	Life Stage	Special importance	General Observations	Health & vitality	Structural condition	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	ASNW or ARW buffer (m)
W5	Common ash; English oak; hornbeam; hazel; silver birch; hawthorn; blackthorn	Off	4-22	1000	Yes	800	7.0	2.0	M	ASNW	Mature broadleaf woodland with good species diversity. Ditch along northern edge and existing footpaths run around the perimeter. Consider 15m buffer due to ASNW indicators	Good	Good	40+	A2	9.6	15
W6	Common ash; English oak; hornbeam; hazel; silver birch; hawthorn; blackthorn	Off	4-18	500	Yes	650	5.0	2.0	M	-	Tract of broadleaf woodland inbetween the overhead HV wires. High percentage of trees are of lapsed coppice form.	Good	Fair	40+	B2	7.8	-
W7	Common ash; English oak; hornbeam; hazel; silver birch; hawthorn; blackthorn	Off	4-22	1500	Yes	800	7.0	2.0	M	ASNW	Mature broadleaf woodland with good species diversity	Good	Good	40+	A2	9.6	15
W8	Corsican pine; hazel; silver birch; hornbeam; common ash; English oak	Off	5-15	2500	Yes	300	4.0	1.0	SM	-	Predominantly pine within the woodland interior; establishing broadleaf trees line the woodland edges	Good	Fair	40+	B2	3.6	-
W9	Ash; beech; English oak; hazel; elm; hornbeam; hawthorn; blackthorn; wild cherry; holly; silver birch	On	10-15	400	Yes	850	6.0	3.0	EM	ASNW	Mature broadleaf woodland; good species diversity; some ASNW indicators. Woodland recently subject to thinning.	Good	Good	40+	A3	10.2	15
W10	Ash; lime; beech; English oak; hazel; holly; hornbeam	On	9-18	400	Yes	900	7.0	2.0	M	ASNW	Diverse broadleaf mature woodland; with a spacious understorey. Consider buffer of 15m.	Good	Good	40+	A3	10.8	15
W11	Corsican pine; silver birch; hazel	Off	5-16	1000	Yes	350	4.0	1.0	SM	-	Predominantly pine with blackthorn and hazel at the woodland edge	Good	Good	40+	B2	4.2	-
W12	English oak; common ash; hornbeam; hazel; hawthorn; blackthorn	Off	5-22	1000	Yes	700	6.0	2.0	M	ASNW	Mature broadleaf woodland with good species diversity. Mature coppice ash; hornbeam and hazel with the occasional mature English oak. Well established footpaths throughout	Good	Good	40+	A2	8.4	15
W13	English oak; common ash; hornbeam; wild cherry; hazel; hawthorn	On	5-18	100	Yes	800	6	1	M	ASNW	Mature woodland parcel abutting existing residential properties. Dominated by oak plus coppiced ash and hornbeam. PROW through to field to north.	Good	Fair	40+	A2	9.6	15
W14	Hazel; blackthorn; hawthorn	On	3-6	200	Yes	200	3	0.5	SM	-	Dense; impenetrable group of trees below HV power lines. Distinct from adjacent woodland due to low height; presumably planted with species that will not interfere with lines.	Good	Good	40+	B2	2.4	
W15	Hazel; blackthorn; hawthorn	On	3-6	200	Yes	200	3	0.5	SM	-	Dense; impenetrable group of trees below HV power lines. Distinct from adjacent woodland due to low height; presumably planted with species that will not interfere with lines.	Good	Good	40+	B2	2.4	

HEDGEROWS

Ref	Species	On/off site	Av. Height (m)	Av. width (m)	Av. Stem diam (mm)	Avg. low crown height (m)	Life Stage	General Observations	Health & vitality	Structural condition	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)
H1	Hawthorn; blackthorn; English oak; hazel	On	2.0	1.5	50	0.0	SM	Outgrown hedgerow; predominantly hawthorn; blackthorn and bramble. Hedgerow becomes more sparse with several gaps from the oak to the gate entrance to field.	Good	Good	40+	C2	0.6
H2	Hazel; hawthorn; blackthorn	On	4.0	3.0	150	0.0	M	Predominantly blackthorn/hawthorn; previously maintained sides and height at 2m. At time of visit; hedgerow has outgrown in height by 2-3m.	Good	Good	40+	B2	1.8
H3	Field maple; hawthorn; blackthorn; English oak	On	3.0	2.5	50	0.0	SM	Predominantly hawthorn; previously maintained at 2m; left to outgrow.	Good	Good	40+	C2	0.6
H4	Hazel; hawthorn; English oak; blackthorn; ash saplings	On	4.0	3.0	150	0.0	M	Diverse hedgerow; previously maintained sides and height at 2m. At time of visit; hedgerow has outgrown in height by 2-3m. Some areas infested with bramble.	Good	Good	40+	B2	1.8
H5	Field maple; hawthorn; blackthorn; English oa	On	3.0	2.5	50	0.0	SM	Privately owned. Predominantly hawthorn; previously maintained at 2m; left to outgrow in areas and covered with bramble.	Fair	Good	40+	C2	0.6
H6	Blackthorn; hawthorn	On	3.0	3.0	80	0.2	M	Dense and mature hedgerow; becoming outgrown	Good	Fair	40+	B2	1.0
H7	Blackthorn; hawthorn; hazel	On	3.0	3.0	80	0.2	EM	Dense and mature hedgerow; becoming outgrown	Good	Fair	40+	B2	1.0
H8	Blackthorn; hawthorn	On	3.0	3.0	80	0.2	EM	Dense hedgerow; becoming outgrown	Good	Fair	40+	C2	1.0
H9	Blackthorn; hawthorn	On	3.0	3.0	100	0.2	EM	Dense hedgerow; becoming outgrown with bramble establishing throughout	Good	Fair	40+	C2	1.3
H10	Blackthorn; hawthorn; common ash; elder	On	3.0	3.0	80	0.2	M	Dense and mature hedgerow; becoming outgrown	Good	Fair	40+	B2	1.0
H11	Blackthorn; hawthorn	On	3.0	3.0	100	0.2	M	Dense and mature hedgerow; becoming outgrown	Good	Fair	40+	B2	1.3
H12	Blackthorn; hawthorn	On	3.0	3.0	80	0.2	M	Dense and mature hedgerow; becoming outgrown	Good	Fair	40+	B2	1.0
H13	Blackthorn; hawthorn	On	3.0	4.0	80	0.1	Y	Informal hedgerow/establishing scrub	Good	Fair	20+	C2	1.0
H14	Blackthorn; hawthorn	On	2.0	3.0	80	0.1	Y	Informal hedgerow/establishing scrub	Good	Fair	20+	C2	1.0

- The tree survey was carried out with reference to the methodology set out in BS 5837:2012 '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 (e.g. 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 and/or woodlands were also surveyed as individuals.
- 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.
- OOS: The recorded Out Of Scope trees and features refer to either a dead-standing or failed tree; a stump or minor shrubs; where trees are inaccessible or located off-site and unlikely to be affected by the development or, it is found that the trees are undersized according to BS 5837:2012, which stipulates a minimum recordable diameter of 75mm.

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 root protection area (RPA)) "m-s" = Multi-stemmed.
- STEM DIAMETER (measured 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. Note: a notional diameter may be estimated where measurement is not possible.
- HEIGHT (measured in metres), recorded to the nearest half metre for dimensions up to 10m and to the nearest whole metre for dimensions over 10m.
- The CROWN SPREAD, taken at the four cardinal points to derive an accurate representation of the tree crown, 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, expressed both as the existing height above ground level of the first significant branch along with its direction of growth (e.g., 2.5m-N) and also in terms of the overall crown e.g., the average height of the crown above ground level. 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, e.g., due to inaccessibility, 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 a 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 on the local landscape and environment. Semi-mature are still capable of being transplanted without preparation, up to 300mm 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 on the local landscape and 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 and 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 epicormic shoot growth).

Poor: Significant stress or disease noted; larger areas of dieback than above.

Dead: (or Moribund).

STRUCTURAL CONDITION:

Features affecting the structural stability of the tree include decay, significant deadwood, 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 feature(s) likely to lead to actual failure in the medium- to long-term.

Dead: (or Moribund).

ESTIMATED REMAINING CONTRIBUTION:

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.

The term '*notable*' carries no weight within the National Planning Policy Framework (NPPF), but is a term that recognises a mature tree which may stand out in the local environment because it is large in comparison with other trees around it.

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

QUALITY CATEGORY:

Trees are classed as category U, A, B or C, based on criteria given in BS 5837:2012; summary definitions as follows (see BS 5837 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, These are:

- (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 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 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 the number 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: LOW QUALITY:

Trees or groups of rather low quality, although potentially capable of retention for at least approx. 10 years. Also small trees with stems below 150mm diameter.

Potentially retainable, but not of sufficient value to be regarded as a significant planning constraint.

- C1: Unremarkable trees of very limited merit or 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 benefits.

CATEGORY U: VERY LOW QUALITY

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

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 the stem diameter, measured at 1.5m above ground level. The shape of the RPA may be altered where site conditions dictate that there are sound reasons to do so.

VETERAN OR ANCIENT TREE BUFFER (VTB/ATB)

In line with the Standing Advice produced by the Forestry Commission and Natural England, this is a buffer zone (in metres) around an ancient or veteran tree that 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 stem diameter.

ANCIENT WOODLAND BUFFER (FOR ASNW, PAWS OR ARW)

In line with the Standing Advice produced by the Forestry Commission and Natural England, this is a buffer zone of at least 15 metres to avoid root damage. Where assessment shows other impacts are likely to extend beyond this distance, a larger buffer zone may be required.

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 February 2025 (NPPF) paragraph 193 states that, when determining planning applications, local planning authorities should apply the following principle:

c) '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

'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.

Other paragraphs of the NPPF 2025 of relevance to this report are:

Paragraph 136: '*Trees make an important contribution to the character and quality of urban environments, and can also help mitigate and adapt to climate change. Planning policies and decisions should ensure that new streets are tree-lined, that opportunities are taken to incorporate trees elsewhere in developments (such as parks and*

community orchards), that appropriate measures are in place to secure the long-term maintenance of newly-planted trees, and that existing trees are retained wherever possible. Applicants and local planning authorities should work with highways officers and tree officers to ensure that the right trees are planted in the right places, and solutions are found that are compatible with highways standards and the needs of different users.'

Paragraph 187: *'Planning policies and decisions should contribute to and enhance the natural and local environment by:*

b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland.'

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. Therefore, we recommend that a further check is made with the LPA before any tree works are carried out.

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.

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 the table below:

Information Stage	RIBA Stage	BS5837:2012
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 Areas:

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.

Additional buffer zones beyond the RPA:

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 Recommend 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.

HOW TREE DAMAGE CAN OCCUR

Above the ground

Damage can occur as a result of knocks and scuffs, breakages of branches and/or tree trunks. This is often but not always associated with machine operations, groundworks excavations, tele handlers, high sided vehicles and crane use. Other forms of above ground damage include fixings to trunk and unauthorised cutting back of branches. Wounds will harm a tree's health and shorten its life by letting in disease-causing organisms.

Below the ground

It is often not appreciated that the majority of most tree roots are generally located within the top 600mm of the ground. On this basis it needs to be understood that damage to roots can occur in three ways:

- Root severance can occur as a result of, for example, soil stripping during site clearance or excavations.
- Root dieback and death can result from compaction of the soil. Compaction can occur as a result of vehicle weight, weight of stored materials or increased pedestrian access. Compaction crushes out soil pore space and prevents tree respiration from occurring (respiration requires gas exchange between the ground and the atmosphere). Compacted soil is denser and therefore inhibits/prevents any further new root growth.
- Pollution of the soil with chemicals such as oil or cement washings can destroy the soil environment, making it inhospitable for the tree cause causing it stress.

The effects of these impacts can be disfiguring to a tree's appearance and also weaken a tree making it more liable to attack by pest and diseases. In addition, root damage or death results in corresponding decline above the ground with dieback occurring within the tree crown.

The effects of damage to trees generally take some time to become fully apparent. In many cases, damaged trees decline slowly after the completion of a new development, until they eventually need to be removed due to ill health.

Tree protection barriers and load distributing 'no-dig' paths are specified in order to prevent soil compaction from taking place.

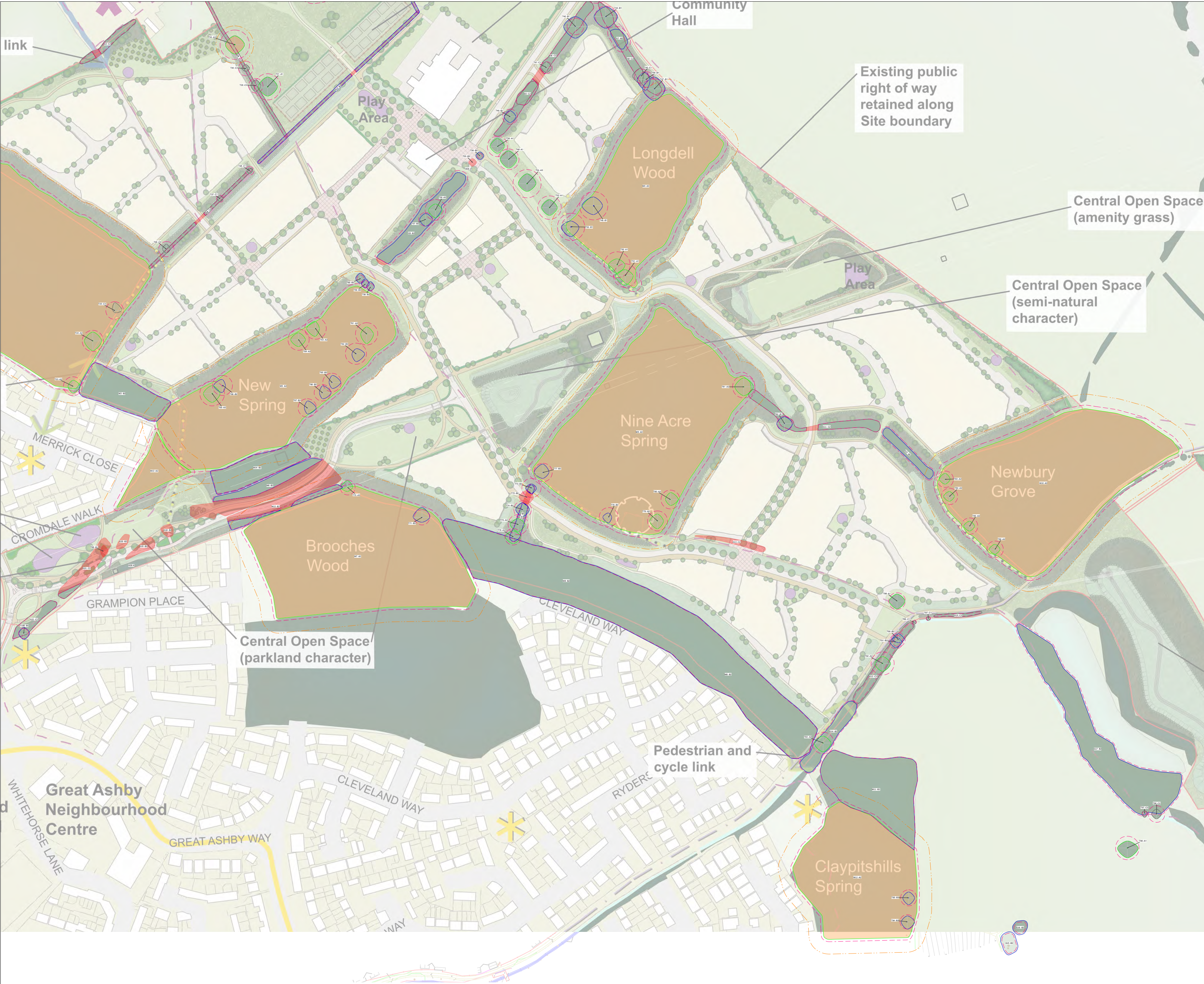
GENERAL SITE RULES FOR TREE PROTECTION

Do not independently carry out any activity that is at odds with the site scheme of tree protection. This is contained within an approved Arboricultural Method Statement (AMS) and accompanying Tree Protection Plan.

In simple terms: do not carry out any work within any Construction Exclusion Zone (CEZ) without prior liaison with the Project Arboriculturist and written authorisation from the Local Planning Authority.

Within the CEZ:

- No mixing of cement
- No soil/turf stripping, raising/lowering of ground levels (unless advised), deposit or excavation of soil or rubble
- No excavations for services or installation of services
- No storage of materials, machinery fuel, chemicals or other materials of any other description
- No parking/use of tracked or wheeled machinery
- No siting of temporary structures including hard standing areas, portaloos, site huts
- No lighting of fires or disposal of liquids
- Fires on site should be avoided if possible. Where they are unavoidable, they must not be lit in a position where heat could damage foliage or branches. Fires must be a minimum of 20m from the trunk of any retained tree or the centre line of any hedgerow to be retained
- No signs, cables, fixtures or fittings of any other description shall be attached to any part of a retained tree.



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/offsite tree/out of scope (OOS)

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 / Hedgerow / Group to be removed

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
Land North-East of Great Ashby, Stevenage

DRAWING TITLE
Tree Retention & Removal Plan

SCALE 1:2500 @ A2		DRAWING NUMBER BHA_5461_02	
DRAWN BY IM	APPROVED BY RH	REVISION A	SHEET 2/2
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LAYOUT USED Framework Masterplan 23_M004_DL03 Rev N

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