

Arboricultural Impact Assessment Report

February 2025

Land at Carisbrook Road, Mitcheldean

Prepared by:
CSA Environmental

On behalf of:
Gladman Developments Limited

Report No: CSA/4057/14

Summary table		
Site Name:	Land at Carisbrook Road, Mitcheldean	
Project reference:	CSA/4057	
Nearest Postcode:	GL17 0SA	
Central Grid reference:	SO 6641 1931	
Local Planning Authority:	Forest of Dean District Council	
Relevant planning policies:	Local Plan Core Strategy: CSP.1 - Design, environmental protection & enhancement.	
Statutory Controls:	Tree Preservation Order	Conservation Area
	TPO DFTPO 243 Land North of Carisbrook Road and West of Bradley Court Road, Mitcheldean (made 11/02/2019) protects oak T1 and ash T2 of this survey as T1 and T3 of the TPO respectively.	No
Soil Type: (Source: BGS online soils map © NERC 2023)	Superficial/Drift	Bedrock
	Neutral, intermediate to shallow Loam to silty Loam.	Brownstones Formation Sandstone and interbedded (subordinate) Argillaceous rocks.
Topographical Survey:	2018-089_Topo_01-02_2d	
Site Layout:	4057_116_G_Development Framework Plan	
Report author:	Ian Monger MSc, BSc (Hons), TechCert (ArborA) MArborA	

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Report reference	Date	Revision	Prepared by	Approved by	Comments
CSA/4057/14	25/02/2025	-	IM, Barton Hyett Associates Ltd	SM	First issue

1. Instruction

- 1.1. CSA Environmental was instructed by Gladman Developments Limited to survey trees located at Land at Carisbrook Road, Mitcheldean ('the Site') in accordance with BS5837:2012 '*Trees in relation to design, demolition and construction - recommendations*'. This report has been prepared for CSA Environmental by Barton Hyett Associates Limited.
- 1.2. The Site occupies an area of approximately 9.72ha and is located around central grid reference SO 6641 1931, to the northeast of Carisbrook Road, in the village of Mitcheldean, Gloucestershire.
- 1.3. Residential development of up to 180 dwellings is proposed at the Site, for which outline planning permission will be sought.
- 1.4. The objective of this report is to assess the condition of the significant trees and woody vegetation and to provide sufficient information to inform the planning decision.

2. Site description

- 2.1. The Site is located in the north of the village of Mitcheldean in the Forest of Dean District in Gloucestershire.
- 2.2. The Site is an arable agricultural field. The field slopes from about 160 metres AOD in the north to about 137 metres in the south. It is roughly triangular in shape.
- 2.3. The Site is accessed via two metal gates from an unnamed road which connects Bradley Court Road to the A40, one near the southernmost Site corner and one at the northernmost field boundary. In the centre of the northern Site boundary, there is also a gate linking the Site to the neighbouring field.
- 2.4. The field boundaries are a mix of hedges and wire fencing. In the south of the Site, the wire fencing has been partly overgrown with brambles and scrub.
- 2.5. To the north of the Site are two fields currently set to pasture. To the east of the Site is a former factory, which is now Vantage Point Business Village. To the south and west of the Site are 20th-century residential developments.

3. Statutory protection

- 3.1. A check has been made with the Forest of Dean District Council to ascertain if trees are protected by legislation. A check of the council's online TPO map 1 was made on 26/06/2024 and found that Tree Preservation Order (TPO) DFTPO 243 'Land North of Carisbrook Road and West of Bradley Court Road, Mitcheldean' (made 11/02/2019) protects oak T1 and ash T2 of this survey as T1 and T3 of the TPO respectively. The Site is not in a Conservation Area.

4. Tree survey findings

- 4.1. This survey is not a tree safety inspection. It has been undertaken to inform the planning process. However, where clear and obvious hazards have been observed, these have been identified in the tree survey schedule in **section 4** and appropriate recommendations made.
- 4.2. A total of 13 trees, five groups of trees and three hedgerows were surveyed. These are summarised in terms of their quality in accordance with the recommendations of BS5837 below. The survey data are shown in more detail on the tree survey and constraints plan BHA_456_01 (**section 2**) provided at 1:1250 scale when printed at A2 size, and within the tree survey schedule (**section 4**). Explanatory notes about the survey and categorisation process within BS 5837 are set out in **section 5**.

Table 1. Summary of arboricultural categories present.

	Total	Category A - High quality trees whose retention is most desirable.	Category B - Moderate quality trees whose retention is desirable.	Category C - Low quality trees which could be retained but should not significantly constrain the proposal.	Category U - Very poor quality trees that should be removed unless they have high conservation value.
Trees	13	T1	T2, T3, T4, T5, T6, T8, T9, T10, T11, T12, T13	T7	-
Groups	5	-	G1, G2, G3, G4, G5	-	-
Hedgerows	3	-	H1, H2, H3	-	-
Total	21	1	19	1	0

5. Arboricultural Considerations

- 5.1. The survey did not identify ancient or veteran trees, and no ancient woodland affects the Site.
- 5.2. The tree resource at the Site grows only close to the Site boundaries, on the boundaries or just outside of them. English oak T1 has been assigned Category A due to its high arboricultural and landscape value and excellent state of health, vigour and good form. It is located in a prominent position along the northern Site boundary at the ridge of the hill. The tree is protected as T1 of the TPO.
- 5.3. The remainder of the tree cover is Category B and includes common ash T2 (protected as T3 of the TPO) and crack willows T4 and T5. These are also prominent landscape trees. Common ash T2 has significant basal decay and hollowing but with strong buttressing and reaction growth. It has been given category B2 to recognise that its value is largely from its landscape quality, being similarly located in a prominent position near the hill ridge. Willows T4 and T5 grow as a pair and have high visual amenity, being located at the road junction in the south.

- 5.4. Common ash trees T6 and G2 are also Category B trees. It is not clear whether these trees grow within the Site or on adjacent local authority highway land.
- 5.5. A strip of planted trees, T8 to T13 and G3 to G5 grows on land between the Site boundary and the highway to the west of the Site, presumably within the maintained highway, and are Category B trees. The land slopes from the Site away to the west. The trees include English oak, common ash, goat willow, hawthorn, apple, silver birch, sycamore, horse chestnut, Norway maple, sweet chestnut, Scots pine and blackthorn. Occasional larger trees within the groups have been surveyed as individual trees to provide a measure of the maximum extent of tree RPAs into the Site. The groups and trees provide good screening between the Site and the dwellings along Ross Road.
- 5.6. The three planted hedgerows, H1 to H3, are all Category B. They have a good mix of species within them, and many individual member plants are of a good stem size.
- 5.7. No category U trees, groups of trees or hedges were identified in the survey.
- 5.8. All Category A and B trees (high and moderate quality) should be retained under normal circumstances when on or adjacent to development Sites. In addition, they should influence the conceptual design, Site layout and possibly construction methods.

6. Constraints and opportunities

- 6.1. Confirmed constraints to development at the Site have been identified as the presence of [on/ adjacent to Site]:
 - Category A1 English oak tree T1 and Category B2 common ash tree T2, protected by the TPO as trees T1 and T3 respectively
 - Category B2 willows T4 and T5
 - Category B screening trees and groups T8 to T13 and G3 to G5.
- 6.2. The significant decay in the base of common ash T2 (B2) means that, if it is to be retained, the land around it should be designed as open space.
- 6.3. Hedgerows H1 to H3 are established planted hedgerows that have been well-maintained and include a good species mix. Their retention should be considered as highly appropriate.
- 6.4. The proposed Site layout should align with landscape and ecology objectives. For example, the prominence in the landscape of protected oak T1 and ash T2 could be preserved by retaining vistas to them from the approach from the town from the south.
- 6.5. In summary, due to the limited number of trees and their peripheral location there should be minimal arboricultural constraint to development. The retention and protection of these important trees will serve to provide a level of maturity and maintain landscape and amenity values in these areas.

7. Impact Assessment

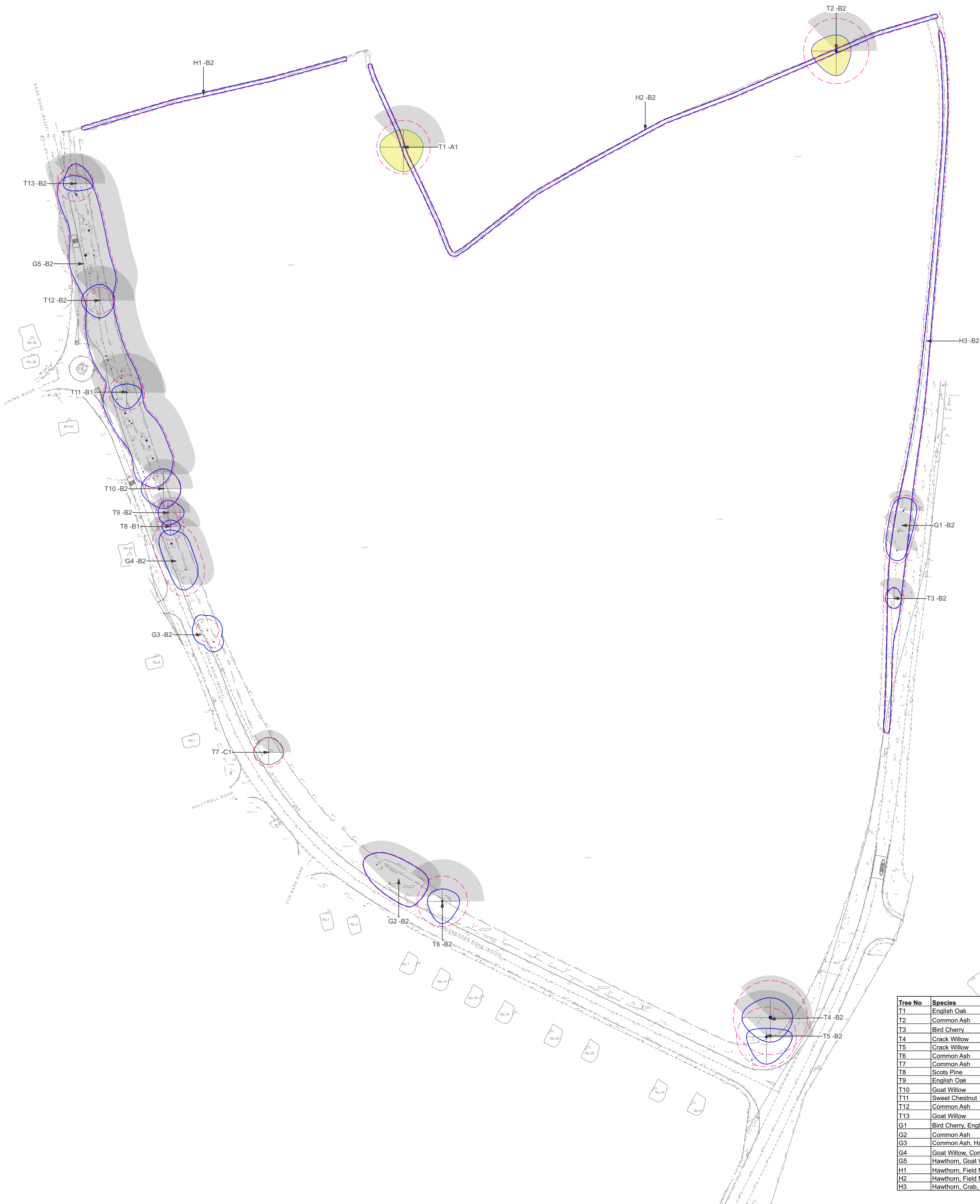
- 7.1. This assessment considers the effect of the proposed access to the Site (i.e., the non-reserved matters) and the potential impacts of the Development Framework Plan. Any anticipated removals are shown on the Indicative Tree Retention and Removal Plan in **Section 3**. However, a further assessment of the details of the reserved matters will be required at the detailed planning stages.
- 7.2. No trees or hedgerows will need to be removed to implement the proposed vehicle access point into the Site. A proposed shared footway/cycleway connection near the southernmost corner of the site also avoids trees and hedgerows. No tree or hedgerow removals are anticipated as part of the reserved matters.
- 7.3. There is a minor incursion by the new footway into the Root Protection Area (RPA) of ash tree T7 (C1). The tree has symptoms of ash dieback disease and a short life expectancy.
- 7.4. Crown lifting of ash and hawthorn group G3 and goat willow, ash, hawthorn and apple group G4 (B2) would be required to achieve the visibility splay to the north of the new access. This would require no tree or shrub removals and would have a negligible arboricultural and visual impact.
- 7.5. The Development Framework Plan has been designed to provide appropriate buffers to the trees along the Site's boundaries. There would be no impact on the two protected trees, oak T1 and ash T2. They would be protected within new boundary planting, which would allow ash T2 to be retained in its compromised structural condition.
- 7.6. The Development Framework Plan demonstrates that a sustainable relationship between the proposed development parcels and retained trees can be achieved and that there is ample opportunity to enhance and improve the green infrastructure for the Site.
- 7.7. New tree planting would include tree-lined streets in accordance with Paragraph 136 of the National Planning Policy Framework. Further woodland, tree and thicket planting will strengthen the boundaries and significantly increase canopy cover and species diversity at the Site.
- 7.8. Given the potential for new tree planting to be delivered, the proposals are considered acceptable in Arboricultural terms.

8. Further recommendations and conclusions

- 8.1. The following is recommended to inform the next stages of the design/planning process of the proposed development, such that suitable arboricultural impact avoidance, mitigation and compensation measures may be adopted:
- Consultation with LPA/Tree Officer with regard to potential effects on key trees/groups;
 - Detailed Arboricultural Impact Assessment at detailed planning stages.
- 8.2. Together with:
- A suitable Tree Protection Plan and Arboricultural Method Statement once the design is fixed at the reserved matters planning stage
- 8.3. In conclusion, no overriding arboricultural constraints that would otherwise prevent development have been identified. This is subject to the implementation of the recommendations and advice included in this report. No significant arboricultural impacts have been identified as part of the non-reserved or reserved matters. The proposals are considered acceptable in arboricultural terms.

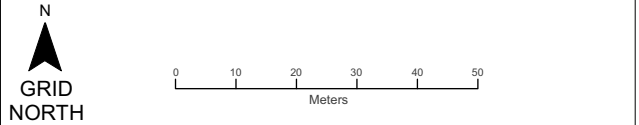


Ian Monger MSc, BSc (Hons), TechCert (ArborA)
Senior arboriculturist



- KEY** BS 5837 : 2012 Categories
- Tree Category A - High Quality
 - A Category - Hedgerow, Group, Woodland
 - Tree Category B - Moderate Quality
 - B Category - Hedgerow, Group, Woodland
 - Tree Category C - Low Quality
 - C Category - Hedgerow, Group, Woodland
 - Tree Category U - Unsuitable for Retention
 - U Category - Hedgerow, Group, Woodland
 - Root Protection Area to BS 5837:2012
 - Shrub Mass / Offsite Tree / OOS (Out of scope)
 - Indicative Tree Shading
 - Tree Preservation Order (TPO)

Note: The original of this drawing was produced in colour - a monochrome copy should not be relied upon.



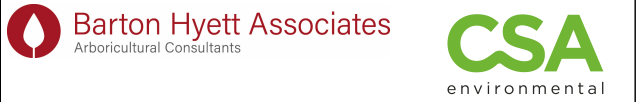
PROJECT TITLE
Land at Carisbrook Road, Mitcheldean (6307)

DRAWING TITLE
Tree Survey & Constraints Plan

SCALE 1:1250 @ A2		DRAWING NUMBER BHA_456_01	
DRAWN BY SD	APPROVED BY PB	REVISION A	SHEET 1
CLIENT Gladman Developments Ltd		DATE 04/07/2024	

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

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Suite 5E, Deer Park Business Centre, Eckington,
Pershore, Worcs WR10 3DN

Tree No	Species	RPA Radius M	RPA Area M2	Category
T1	English Oak	10.8	366	A1
T2	Common Ash	13.2	547	B2
T3	Bird Cherry	4.1	52	B2
T4	Crack Willow	15	707	B2
T5	Crack Willow	12.1	462	B2
T6	Common Ash	10.2	327	C1
T7	Common Ash	6	113	B1
T8	Scots Pine	5.4	92	B1
T9	English Oak	5	80	B2
T10	Goat Willow	7.2	163	B2
T11	Sweet Chestnut	7.2	163	B1
T12	Common Ash	5.4	92	B2
T13	Goat Willow	7.2	163	B2
G1	Bird Cherry, English Oak, Field Maple, Blackthorn.	5	n/a	B1
G2	Common Ash	4.2	n/a	B2
G3	Common Ash, Hawthorn.	4.9	n/a	B2
G4	Goat Willow, Common Ash, Hawthorn, Apple.	6.6	n/a	B2
G5	Hawthorn, Goat Willow, English Oak, Silver Birch, Common Ash, Sycamore, Horse Chestnut, Norway Maple, Blackthorn.	5.6	n/a	B2
H1	Hawthorn, Field Maple, Hazel, Elder.	1.5	n/a	B2
H2	Hawthorn, Field Maple, Hazel, Elder, Holly, Blackthorn.	1.5	n/a	B2
H3	Hawthorn, Crab, Oak, Ash, Elm, Hazel, Field Maple, Holly.	1.5	n/a	B2



KEY BS 5837 : 2012 Categories

- Tree Category A - High Quality
- A Category - Hedgerow, Group, Woodland
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Note: The original of this drawing was produced in colour - a monochrome copy should not be relied upon.

GRID NORTH

0 10 20 30 40 50 Meters

PROJECT TITLE
Land at Carisbrook Road, Mitcheldean (6307)

DRAWING TITLE
Tree Retention & Removal Plan

SCALE **1:1250 @ A2** DRAWING NUMBER **BHA_456_01**

DRAWN BY **IM** APPROVED BY **PB** REVISION **-** SHEET **1/1** DATE **19/11/2024**

CLIENT
Gladman Developments Ltd

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

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Barton Hyett Associates
Arboricultural Consultants

CSA
environmental

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Tree No	Species	RPA Radius M	RPA Area M2	Category
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T7	Common Ash	6	113	B1
T8	Spots Pine	5.4	92	B1
T9	English Oak	5	80	B2
T10	Goat Willow	7.2	163	B2
T11	Sweet Chestnut	7.2	163	B1
T12	Common Ash	5.4	92	B2
T13	Goat Willow	7.2	163	B2
G1	Bird Cherry, English Oak, Field Maple, Blackthorn.	5	n/a	B1
G2	Common Ash	4.2	n/a	B2
G3	Common Ash, Hawthorn.	4.9	n/a	B2
G4	Goat Willow, Common Ash, Hawthorn, Apple.	6.6	n/a	B2
G5	Hawthorn, Goat Willow, English Oak, Silver Birch, Common Ash, Sycamore, Horse Chestnut, Norway Maple, Blackthorn.	5.6	n/a	B2
H1	Hawthorn, Field Maple, Hazel, Elder.	1.5	n/a	B2
H2	Hawthorn, Field Maple, Hazel, Elder, Holly, Blackthorn.	1.5	n/a	B2
H3	Hawthorn, Crab, Oak, Ash, Elm, Hazel, Field Maple, Holly.	1.5	n/a	B2

TREE SURVEY SCHEDULE

LAND NORTH OF CARISBROOK ROAD, MITCHELDEAN

PROJECT NO: CSA/2826

SURVEYOR: A CUNNINGHAM

DATE: 27/06/2024

CLIENT: GLADMAN DEVELOPMENTS LTD



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	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m²	TPO
T1	English oak	17.0	1	#	900	7.00-8.00-10.00-9.50	4.5	5	S	M	Flail wound to stem at 3m. Minor deadwood. Prominent tree due to elevation, limited access to stem base.	Good	Good	40+	A1	10.8	366	YES
T2	Common ash	16.5	1	#	1100	6.50-6.00-10.00-10.00	6.0	5	SW	LM	Extensive basal stem decay and hollowing, with strong buttressing and reaction growth. Exposed xylem to 1.5' on east and west of stem. Epicormic shoots on branches. Deadwood. Branch loss wounds and branch dieback.	Good	Poor	10+	B2	13.2	547	YES
T3	Bird cherry	8.5	8	-	340	4.50-3.00-4.00-3.50	5.0	1	N	SM	Canopy flailed over hedge line. Multi-stemmed form.	Good	Fair	20+	B2	4.1	52	-
T4	White willow	17.0	3	-	1380	8.00-9.00-10.00-11.50	4.0	3.5	N	M	Three stems from near ground. Prominent tree. Decay cavity within west stem at 5m. Upper crown dieback. Deadwood. Would benefit from pollard.	Good	Fair	20+	B2	15.0	707	-
T5	White willow	19.0	2	-	1010	3.50-10.50-11.00-8.00	3.0	2.2	S	M	Two stems from ground.. Deadwood. Cohesive with adjacent tree. Evidence of past limb failures. Prominent tree. Would benefit from pollard.	Good	Fair	20+	B2	12.1	462	-
T6	Common ash	17.0	3	#	850	5.00-7.00-9.00-6.00	5.0	2.5	SW	M	Three stems from ground. Ivy on bole - limited visibility, some dieback in upper canopy, prominent tree.	Fair	Good	20+	B2	10.2	327	-
T7	Common ash	9.0	1	#	500	6.00-6.00-5.00-6.00	1.0	2	n/a	EM	Individual tree located on site boundary, some minor canopy dieback, thinning canopy - probably ash dieback.	Fair	Good	10+	C1	6.0	113	-
T8	Scots pine	12.0	1	-	450	2.60-4.00-3.50-3.50	3.0	5.5	S	EM	Tree located within boundary group, typical form.	Good	Good	40+	B1	5.4	92	-
T9	English oak	9.0	1	-	420	5.00-6.50-5.00-4.00	1.5	2.5	N	SM	Twin-stemmed tree at 2m, lower limbs removed in past, part of larger boundary group.	Good	Good	40+	B2	5.0	80	-
T10	Goat willow	12.0	9	#	600	8.00-7.00-8.00-9.00	3.0	1	n/a	M	Multi-stemmed tree located within larger group, Ivy on some stems, flailed edge in past.	Good	Fair	20+	B2	7.2	163	-
T11	Sweet chestnut	16.0	2	-	600	3.50-6.00-6.50-6.00	4.0	3	E	EM	Two stemmed tree, limited access to stem bases, lower limbs recently removed, collective with other adjacent trees.	Good	Good	40+	B1	7.2	163	-
T12	Common ash	14.0	1	#	450	6.50-6.00-7.00-7.50	3.5	2	SW	EM	Hedgerow tree, Minor dieback/deadwood - probably ash dieback - still reasonable foliage.	Fair	Good	10+	B2	5.4	92	-
T13	Goat willow	12.0	4	#	600	8.00-7.00-3.00-5.00	5.0	2	E	M	Ivy on stems.	Good	Fair	20+	B2	7.2	163	-

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	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)
G1	Bird cherry, English oak, field maple, blackthorn, hawthorn	7.5 - 8.5	5	#	420	4	4.5	SM	Canopies flailed above hedge line. Good collectively.	Good	Fair	20+	B2	5.0
G2	Common ash	12-14	7	#	400	4	3.0	SM	Three trees are multi-stemmed. Ivy to stems, foliage good with minimal dieback.	Good	Good	20+	B2	4.8
G3	Common ash, hawthorn	4 - 9	3	-	410	6.5	0.5	EM	Two tree group, ash larger - some dieback in upper canopy - not significant at the time of survey.	Fair	Good	20+	B2	4.9
G4	Goat willow, common ash, hawthorn, apple	5 - 8	6	#	550	4	4.5	M	Northernmost and largest Goat Willow is only tree currently overhanging site - multi-stemmed/leaning. Ash trees are young - some dieback but not significant. Better collectively.	Good	Fair	20+	B2	6.6
G5	Hawthorn, goat willow, English oak, silver birch, common ash, sycamore, horse chestnut, Norway maple, blackthorn	4 - 16	45	-	470	5	4.0	EM	Planted highways verge group. Ivy on some stems. Canopies over site have been cleared by agricultural vehicles to 4m. Good collectively. Some limb removal in past.	Good	Good	20+	B2	5.6

HEDGEROWS

Ref	Species	Av. Height (m)	Av. width (m)	Av. Stem diam (mm)	Avg. Canopy Height (m)	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)
H1	Hawthorn, field maple, hazel, elder	1.5	2	120	0	M	Maintained hedge along northern boundary, continuous form.	Good	Good	20+	B2	1.5
H2	Hawthorn, field maple, hazel, elder, holly, blackthorn	1.5	2	120	0	M	Maintained hedge along northern boundary, continuous form.	Good	Good	20+	B2	1.5
H3	Hawthorn, crab apple, oak, ash, elm, hazel , field maple, holly	2.5	3	120	0	M	Maintained hedge adjacent to highway, continuous.	Good	Good	20+	B2	1.5



PHOTO 1: View across the southern part of the Site, looking west.



PHOTO 2: View along the western Site boundary, looking southeast.



PHOTO 3: Protected oak T1, looking north.



PHOTO 4: Protected ash T2, looking north.



PHOTO 5: Willows T4 and T5, looking south.



PHOTO 6: View along the eastern Site boundary, looking north.

- 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 2024 (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 2024 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.

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	BS 5837:2012
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 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 relating to future tree growth and orientation.

Tree constraints

Root Protection Areas:

With reference to BS 5837:2012, 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”.**

BS 5837:2012 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, appropriately 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 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 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 need to be 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 are 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 mature over time.

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, teleporters, 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



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