

**ARBORICULTURAL
IMPACT
ASSESSMENT**

Land at Tollgate Road,
Colney Heath

June 2022



Barton Hyett Associates
Arboricultural Consultants

In association with

CSA
environmental

Summary table		
Site Name:	Land at Tollgate Road, Colney Heath	
Project reference:	4896	
Site Address:	Tollgate Road, North Mymms, Welwyn Hatfield, Hertfordshire	
Nearest Postcode:	AL4 0PX	
Central Grid reference:	TL 20846 05488	
Local Planning Authority:	St Albans District Council	
Relevant planning policies:	District Local Plan Review 1994: 74 - Landscaping and tree preservation.	
Statutory Controls:	Tree Preservation Order	Conservation Area
	None	No
Soil Type: (Source: BGS online soils map © NERC 2022)	Superficial/Drift	Bedrock
	Lowestoft Formation - Diamicton	Lewes Nodular Chalk Formation and Seaford Chalk Formation - Chalk
Topographical Survey:	Ref 'TS22-058-1-2D' in DWG format	
Report author:	Paul Barton MSc, BSc Hons, RCarborA	
Date of issue:	30th June 2022	

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1. INTRODUCTION

- 1.1. I am Laurence Ford an arboriculturist with 8 years of experience. I hold a BSc (hons) in Environmental science, LANTRA professional tree inspection certification and I am a VALID tree risk-benefit validator.
- 1.2. Barton Hyett Associates Ltd have been instructed by CSA Environmental to survey trees located at land near Tollgate Road, Colney Heath ('the site') in accordance with the recommendations of British Standard 5837:2012 'Trees in relation to design, demolition and construction - recommendations'.
- 1.3. The scope of the instruction was to inspect trees relevant to a planning application at the site and provide written advice on how they inform feasibility and design options for the site. The instruction also required an assessment of the potential impact (the Arboricultural Impact Assessment) of the proposed development on the site's arboricultural resource to be undertaken.

2. SITE DESCRIPTION

- 2.1. The site is predominantly a field to the east of St Albans, a city in the commuter belt north of London. The site is southwest of Tollgate Road at Roestock. It also includes one residential property and gardens.

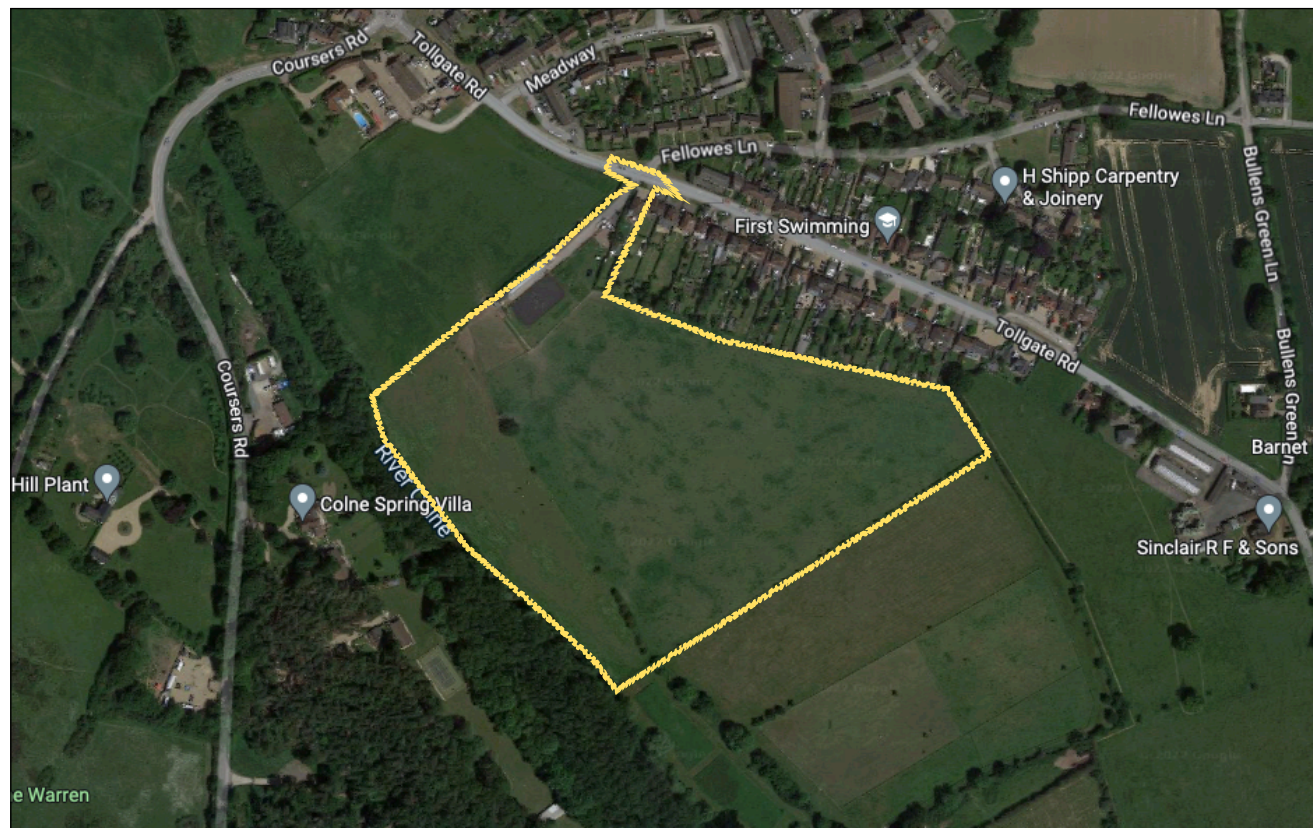


Figure 1: aerial photograph (Google Maps) showing the extent of the site in its local context.

- 2.2. There is agricultural land to the northwest and the southeast. To the west the land borders the River Colne beyond this is a woodland, a few sparse residential houses and then more agricultural land. Bordering to the northeast are terraced houses and beyond continues a small village of flats and other residential abodes.

- 2.3. There is an entrance to the site to the north from Tollgate Road. There is a hardstanding drive that leads down to horse stables. The rest of the site appears to be used as a horse paddock.

3. TREE SURVEY FINDINGS

- 3.1. A total of 55 trees, groups of trees and hedgerows were surveyed. These are summarised in terms of their quality in accordance with the recommendations of BS5837 below, and shown in more detail on the Tree Survey and Constraints Plan (**Section 2**) and within the Tree Survey Schedule (**Section 3**).

	Total	A - High quality trees whose retention is most desirable.	B - Moderate quality trees whose retention is desirable.	C - Low quality trees which could be retained but should not significantly constrain the proposal.	U - Very poor quality trees that should be removed unless they have high conservation value.
Trees	30	3	15	11	1
Groups	13	1	8	4	-
Hedgerows	12	-	11	1	-
Total	55	4	34	16	1

Table 1: Summary of arboricultural features of each BS5837 quality category

4. KEY ARBORICULTURAL FEATURES

- 4.1. No ancient or veteran trees were identified on or close to site.
- 4.2. The most visually prominent and highest value trees are oak T13, poplar T27 and oak T29 which are all found to the periphery, just outside of the site boundary.
- 4.3. T13 is a mature oak tree located in a rear residential garden to the northeast. The RPA will likely just reach into the site.
- 4.4. T27 is the largest tree at the site; a large hybrid black poplar which is growing within G13 on the west bank of the River Colne. It is unlikely that its roots would pass underneath the river into the site to the east.
- 4.5. T29 is another large A category oak found within G13 to the south. Due to its location, roots are unlikely to pass underneath the river although its canopy does come into the site which is why it is included in the survey as a separate tree from G13.
- 4.6. G13 is an A category group with several large prominent trees and the group as a whole adding a height and depth aspect to views towards the west of the site. It is also likely to be an important wildlife corridor for local species.
- 4.7. Trees in the interior of the site are category B or C. Many have grazing damage or have dense foliage due to being grazed giving them unique characteristics that would not be present if they hadn't have been exposed to grazing animals. Some of these characteristics are detrimental and others are not and will be highlighted by categorisation in the Tree Survey Schedule.

4.8. One category U tree was Identified (T28) and remedial works recommended.

5. PROPOSED DEVELOPMENT

- 5.1. The development proposal is for residential development of the land.
- 5.2. This report is to support an outline application for the demolition of the existing house (no. 42 Tollgate Rd) and stables and the erection of up to 150 dwellings, including affordable and custom-build properties, together with all ancillary works.
- 5.3. All matters are reserved except for the new access.

6. IMPACT ASSESSMENT

Trees to be removed

- 6.1. One tree (T1 - hawthorn) and one hedge (H1 - privet) would be removed to facilitate the new access point in to the site. Both are moderate quality (category B) arboricultural features.
- 6.2. In addition, a small section of the north end of hedgerow H12 may need to be removed to accommodate the new footway at the site entrance.
- 6.3. These removals are shown on the indicative Tree Retention and Removal Plan in Section 3.
- 6.4. The impact of these removals on the overall visual character and biodiversity of the site will be low. Both are small, low-lying features. The top of the crown of the hawthorn can currently be glimpsed from Tollgate Rd but it is not a large or prominent tree.

Impacts on retained trees

- 6.5. As the application is in outline form only, the internal layout of the proposed site is not fixed and therefore subject to some changes. The development framework plan and illustrative masterplan show the draft layout of the internal roads and dwellings.
- 6.6. The draft layout indicates that there are no direct conflicts with trees, other than the location of a SUDs attenuation basin and drainage outfall in the southern corner which may require removal of a section of the linear tree group G5.
- 6.7. The rear gardens of plots in the north part of the site may back on to the rear boundaries of the residential gardens on Tollgate Road. Groundworks and landscaping of these gardens could impact the roots of trees along the boundary (T2-T13).
- 6.8. Post-development pressure arising from conflict between future residents and retained trees appears to be a low risk due to the small size and/or distance between dwellings and retained trees.

7. TREE PROTECTION MEASURES

- 7.1. In order to protect retained trees at the site during construction of the development robust vertical barriers will need to be erected at distances that enclose the plotted RPAs of all trees and hedgerows.

8. HEADS OF TERMS FOR AN ARBORICULTURAL METHOD STATEMENT (AMS)

- 8.1. BS5837:2012 (Figure 1) recommends that detailed/technical design of tree protection and arboricultural methodologies should be resolved and finalised following on from the approval of the feasibility of a scheme by the Local Planning Authority.
- 8.2. Annex B and Table B.1 of BS5837:2012, an informative, advises that Arboricultural method Statement Heads of Terms are a sufficient level of information in order to deliver tree-related information into the planning system. The table also advises that a detailed Arboricultural Method Statement might reasonably be required as a 'reserved matter' or planning condition.
- 8.3. In relation to the site, it is anticipated that arboricultural working methods are likely to be quite straightforward. A brief summary of the principles of tree protection on development sites is included in **Section 7**.
- 8.4. A draft, 'Heads of Terms' for an Arboricultural Method Statement is set out below:
 - Project arboriculturist – schedule of monitoring and supervision to be agreed with the applicant and LPA
 - Pre-commencement site meeting - to be attended by the project arboriculturist, client, site manager and other relevant parties. Project arboriculturist to ensure that all parties have copies of the tree protection plan and this report.
 - Tree removals and facilitation pruning - as shown on the Tree Retention and Removal Plan (TRR)
 - Erection of tree protection barriers and temporary ground protection as may be required as per the Tree Protection Plan (TPP)
 - Site preparation and ground works - no access for any machinery within the fenced tree protection areas.
 - Main construction phase - all tree protection measures shall remain in situ and intact for the duration of the construction phase
 - Removal of tree protection barriers - only to occur following approval of site conditions by the project arboriculturist.
 - Final landscaping including tree planting.

9. CONCLUSIONS AND RECOMMENDATIONS

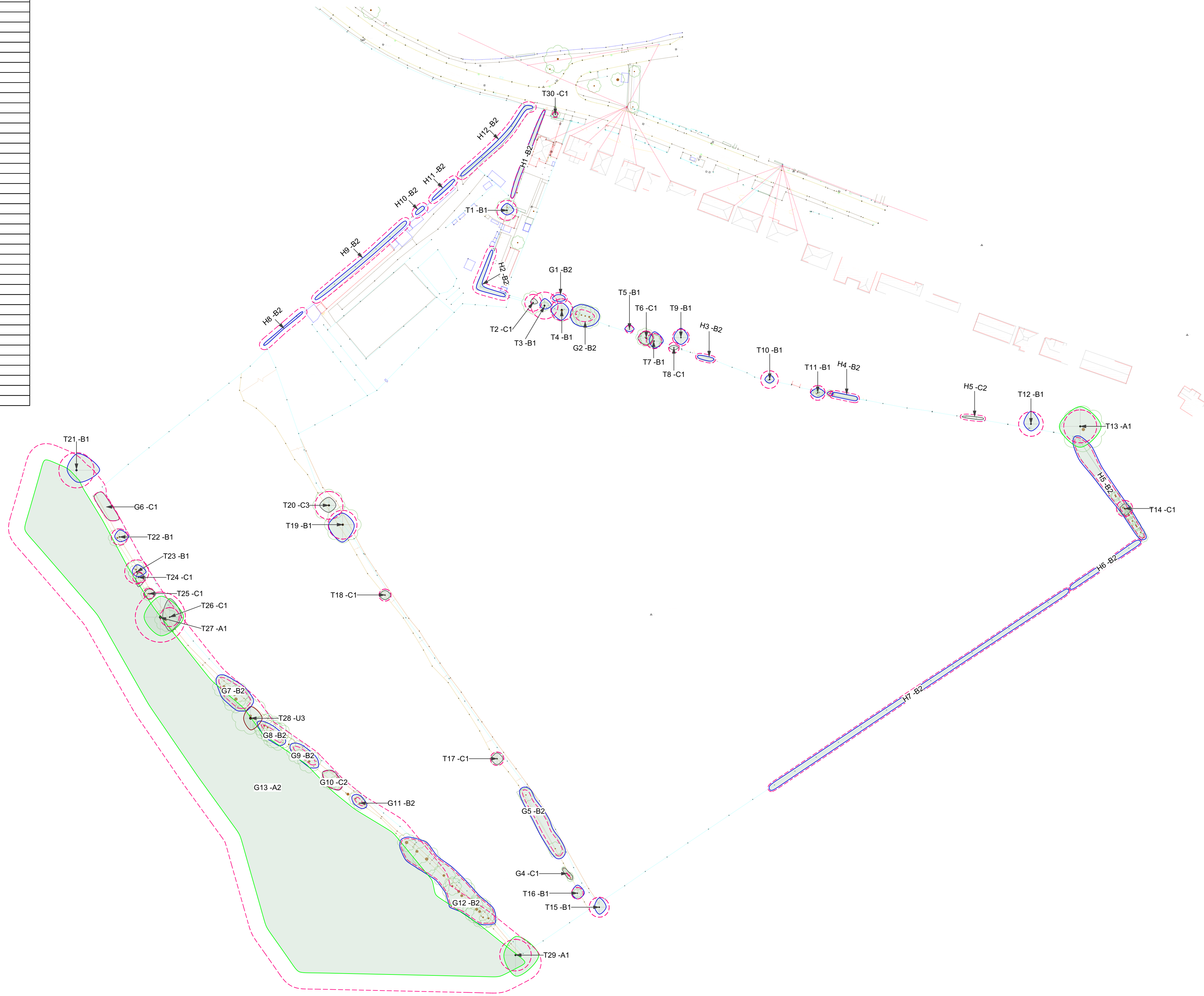
- 9.1. The proposed development has a low arboricultural impact. The loss of one tree and one hedge can be readily mitigated and the retained trees can be adequately protected during construction activities to sustain their health and longevity.
- 9.2. An Arboricultural Method Statement and finalised Tree Protection Plan will need to be produced. Where the feasibility of a scheme has been agreed upon by the Local Planning Authority, this detail can be agreed and submitted later as part of a reserved matters application or pre-commencement planning condition (by agreement with the applicant).

TS - 'Section 2'

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 massifs/site tree/out of scope (DOS)

Ref	Species	Height (m)	Life Stage	RPA Radius (m)	RPA (m2)
T1	Hawthorn	6.5	M	4.3	59
T2	Blackthorn	2.5	M	3.6	41
T3	Other (see notes)	5	EM	5.8	104
T4	Blackthorn	8	LM	4.7	69
T5	Other (see notes)	4	SM	1.7	9
T6	Blackthorn	6	EM	3.1	31
T7	Blackthorn	7.5	EM	3.3	35
T8	Elder	4	SM	2.3	16
T9	Walnut (Common)	8	SM	3.6	41
T10	Hawthorn	5	EM	3.8	46
T11	Hawthorn	4.5	EM	3.2	33
T12	Hawthorn	6.5	M	5.3	85
T13	Oak (English)	16	M	7.1	157
T14	Ash (Common)	9	SM	3.5	38
T15	Hazel (Common)	4.5	EM	4.3	59
T16	Hawthorn	6	EM	2.5	20
T17	Hawthorn	4.5	EM	2.9	26
T18	Hawthorn	4.5	EM	2.6	22
T19	Oak (English)	9	EM	6.2	122
T20	Oak (English)	8.5	None	6	113
T21	Ash (Common)	17	M	7.6	180
T22	Alder (Common)	12	EM	3.5	38
T23	Alder (Common)	15	EM	5.2	84
T24	Cherry (Wild)	5	EM	2.4	18
T25	Alder (Common)	7	EM	2.3	16
T26	Willow	8	M	4.1	52
T27	Poplar (Hybrid black)	28	M	10.8	366
T28	Poplar (Hybrid black)	6	None	10.8	366
T29	Oak (English)	13	M	6.8	147
T30	Hawthorn	4	SM	1.3	5
G1	Pear, apple, hawthorn	6.5	EM	3.3	-
G2	Blackthorn	9	LM	4.8	-
G3	Lawson cypress	5	SM	1.6	-
G4	Hawthorn, blackthorn	6	EM	1.1	-
G5	Blackthorn, hawthorn	7	EM	1.8	-
G6	Blackthorn	4	Y	1	-
G7	Alder	18	EM	2.8	-
G8	Alder	17	EM	2.6	-
G9	Alder	15	EM	2.6	-
G10	Alder, goat willow	10	EM	2.8	-
G11	Hawthorn	6	EM	1.3	-
G12	Alder, hawthorn	13	EM	2.4	-
G13	Alder, oak, poplar, hazel, willow, hawthorn, ash,	28	M	12	-
H1	Privet	2	SM	0.8	-
H2	Hawthorn elder	2.5	M	2.4	-
H3	Hawthorn, holly, elder	2.5	M	1.5	-
H4	Beech	2	EM	1.3	-
H5	Holly, beech	1.5	EM	1.3	-
H6	Hawthorn, blackthorn	7	M	1.3	-
H7	Hawthorn, blackthorn, dogwood, dog rose.	1.5	SM	1	-
H8	Hawthorn, elder	1.5	M	2.3	-
H9	Elder, hawthorn, blackthorn, dog rose	2.5	M	2	-
H10	Elder, hawthorn, blackthorn	2.5	M	2	-
H11	Elder, hawthorn	2.5	M	2	-
H12	Elder, hawthorn, blackthorn,	2.5	M	2	-



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

PROJECT TITLE Tollgate Road, Colney Heath

DRAWING TITLE Tree Survey & Constraints Plan

SCALE 1:1000 @ A1 **DRAWING NUMBER** BHA_4896_01

DRAWN BY DV **APPROVED BY** LF **REVISION** - **SHEET** - **DATE** 01/03/2022

LAYOUT USED WITHIN DRAWING xxxxxxxxxxxx

CLIENT CSA Environmental

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

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- Category A Tree - High quality (Retention highly desirable)
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 - 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)
 - Tree/Group/Hedgerow not on topographical survey. Location given is an estimate
 - Tree / Hedgerow / Group to be removed

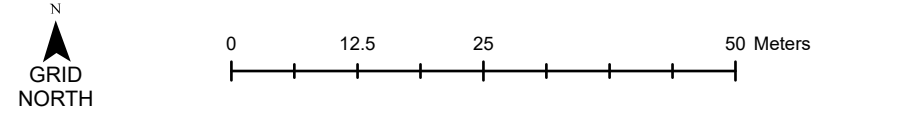
Tree Ref	Species	Height (m)	LifeStage	RPA Radius (m)	RPA (m ²)	Remove
T1	Hawthorn	6.5	M	4.3	59	
T2	Blackthorn	2.5	M	2.6	41	Yes
T3	Other (see notes)	5	EM	5.8	104	
T4	Blackthorn	8	LM	4.7	69	
T5	Other (see notes)	4	SM	1.7	9	
T6	Blackthorn	6	EM	3.1	31	
T7	Blackthorn	7.5	EM	3.3	35	
T8	Elder	4	SM	2.3	16	
T9	Walnut (Common)	8	SM	3.6	41	
T10	Hawthorn	5	EM	2.8	48	
T11	Hawthorn	4.5	EM	3.2	33	
T12	Hawthorn	6.5	M	5.3	88	
T13	Oak (English)	16	M	7.1	157	
T14	Ash (Common)	9	SM	2.5	38	
T15	Hazel (Common)	4.5	EM	4.3	59	
T16	Hawthorn	6	EM	2.5	20	
T17	Hawthorn	4.5	EM	2.9	26	
T18	Hawthorn	4.5	EM	2.9	22	
T19	Oak (English)	9	EM	6.2	122	
T20	Oak (English)	8.5	None	6	113	
T21	Ash (Common)	17	M	7.6	180	
T22	Alder (Common)	12	EM	2.5	38	
T23	Alder (Common)	15	EM	5.2	84	
T24	Cherry (Wild)	5	EM	2.4	18	
T25	Alder (Common)	7	EM	2.3	16	
T26	Hawthorn	6	M	4.1	52	
T27	Poplar (hybrid black)	28	M	10.8	366	
T28	Poplar (hybrid black)	6	None	10.8	366	
T29	Oak (English)	13	M	6.8	147	
T30	Hawthorn	4	SM	1.3	5	

Group Ref	Species	Height Range	LifeStage	RPA Radius (m)	RPA (m ²)	Remove
G1	Pear, apple, hawthorn	6.5	EM	3.3	35	
G2	Blackthorn	9	LM	4.8	72	
G3	Lamb's ear	5	SM	1.6	8	
G4	Hawthorn, blackthorn	6	EM	1.1	4	
G5	Blackthorn, hawthorn	7	EM	1.8	10	
G6	Blackthorn	4	Y	1	3	
G7	Alder	18	EM	2.6	24	
G8	Alder	17	EM	2.6	22	
G9	Alder	15	EM	2.6	22	
G10	Alder, goat willow	10	EM	2.8	24	
G11	Hawthorn	9	EM	1.3	5	
G12	Alder, hawthorn	13	EM	2.4	18	
G13	Alder, oak, poplar, hazel, willow, hawthorn, ash	28	M	12	452	

Hedge Ref	Species	Avg Height (m)	LifeStage	RPA Radius (m)	RPA (m ²)	Remove
H1	Privet	2	SM	0.8	2	Yes
H2	Hawthorn, elder	2.5	M	2.4	18	
H3	Hawthorn, holly, elder	2.5	M	1.5	7	
H4	Beech	2	EM	1.3	5	
H5	Holly, beech	1.5	EM	1.3	5	
H6	Hawthorn, blackthorn	7	M	1.3	5	
H7	Hawthorn, blackthorn, dogwood, dog rose	1.5	SM	1	3	
H8	Hawthorn, blackthorn, dogwood, dog rose	1.5	SM	1	3	
H9	Hawthorn, elder	1.5	M	2.3	16	
H10	Elder, hawthorn, blackthorn	2.5	M	2	13	
H11	Elder, hawthorn	2.5	M	2	13	



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: Tollgate Road (4896)

DRAWING TITLE: Tree Retention and Removal Plan

SCALE: Scale: 1:750 @ A1 DRAWING NUMBER: BHA_4896_02

DRAWN BY: TB APPROVED BY: PB REVISION: - SHEET: - DATE: 30/06/2022

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

CLIENT: CSA Environmental

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Arboricultural Consultants

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INDIVIDUAL TREES

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
T1	Hawthorn	On	6.5	2	None	360	3-3-2-2	3.0	3.0	NW	M	None	Balanced crown; crown lifted. Ivy clad stem; no significant issues.	Good	Good	20+	B1	4.3	59.0
T2	Blackthorn	On	2.5	1	Yes	300	2-2-0-1	2.0	1.0	N	M	None	Damage to stem by horses; half of crown has recently failed.	Fair	Poor	10+	C1	3.6	41.0
T3	Other (see notes)	On	5.0	7	None	480	3-3-1-2	0.5	0.0	N	EM	None	Lilac tree multi stemmed.	Fair	Fair	20+	B1	5.8	104.0
T4	Blackthorn	On	8.0	4	Yes	390	3-3-4-4	2.0	2.0	E	LM	None	Unusually large tree for species some damage from grazing horses to branches.	Fair	Fair	20+	B1	4.7	69.0
T5	Other (see notes)	Off	4.0	4	Yes	140	2-2-1-2	0.0	0.2	W	SM	None	Mimosa tree; small compact garden tree.	Good	Good	20+	B1	1.7	9.0
T6	Blackthorn	Off	6.0	3	Yes	260	3-3-3-3	3.0	1.0	S	EM	None	Right on site/ garden boundary. Topped at 3 m.	Fair	Poor	10+	C1	3.1	31.0
T7	Blackthorn	Off	7.5	2	Yes	280	4-4-3-2	3.0	2.5	N	EM	None	Right on site/ garden boundary. Previously topped at 3 m.	Good	Fair	10+	B1	3.3	35.0
T8	Elder	On	4.0	7	None	190	1-2-1-2	1.0	0.0	S	SM	None	Topped at 1.5m	Good	Fair	20+	C1	2.3	16.0
T9	Walnut (Common)	On	8.0	1	Yes	300	4-3-3-3	3.0	2.0	S	SM	None	Garden tree topped at 6 m	Good	Good	20+	B1	3.6	41.0
T10	Hawthorn	Off	5.0	7	Yes	320.0	2-2-1-2	2.0	1.0	W	EM	None	On site/ garden boundary. Previously pollarded.	Fair	Fair	20+	B1	3.8	46.0

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
T11	Hawthorn	On	4.5	6	Yes	270.0	2-3-2-3	0.3	0.0	S	EM	None	On site/ garden boundary. South side of trees lower canopy has obtained hedge like form where it has presumably been grazed.	Good	Good	20+	B1	3.2	33.0
T12	Hawthorn	Off	6.5	6	Yes	440.0	5-3-3-3	3.0	2.5	E	M	None	Multistemmed tree growing on boundary between 2 sheds	Good	Good	20+	B1	5.3	88.0
T13	Oak (English)	On	16.0	1	Yes	590.0	8-9-9-9	5.0	5.0	E	M	None	Squat tree in residential garden good form.	Good	Good	40+	A1	7.1	157.0
T14	Ash (Common)	On	9.0	6	None	290.0	2-3-3-2	6.0	2.0	W	SM	None	Damage to lower stems; deadwood; short extension growth.	Poor	Poor	<10	C1	3.5	38.0
T15	Hazel (Common)	On	4.5	13	None	360.0	4-3-3-2	2.0	0.0	NE	EM	None	Good form hazel tree in neighbouring field.	Good	Good	20+	B1	4.3	59.0
T16	Hawthorn	On	6.0	5	Yes	210.0	3-3-2-2	0.5	0.3	S	EM	None	Balanced crown good form	Good	Good	40+	B1	2.5	20.0
T17	Hawthorn	On	4.5	6	Yes	240.0	2-2-2-2	0.5	0.3	W	EM	None	Dense scrubby tree.	Good	Good	40+	C1	2.9	26.0
T18	Hawthorn	On	4.5	6	Yes	220.0	2-2-2-2	0.5	0.5	S	EM	None	scrubby tree.	Good	Good	40+	C1	2.6	22.0
T19	Oak (English)	On	9.0	1	None	520.0	5-5-7-6	3.0	2.5	W	EM	None	Squat tree; good form.	Good	Good	40+	B1	6.2	122.0
T20	Oak (English)	On	8.5	1	None	500.0	3-3-3-4	3.0	2.0	S	None	None	Dead tree but stable	Poor	Fair	10+	C3	6.0	113.0
T21	Ash (Common)	Off	17.0	4	Yes	630.0	7-10-5-4	4.0	3.0	E	M	None	Multi stemmed spreading tree	Good	Good	20+	B1	7.6	180.0

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
T22	Alder (Common)	On	12.0	2	Yes	290.0	3-4-2-2	3.0	4.0	E	EM	None	Leaning east from the bank of the brook	Good	Good	20+	B1	3.5	38.0
T23	Alder (Common)	On	15.0	3	Yes	430.0	3-4-2-2	4.0	5.0	E	EM	None	Upright tree growing out of the east bank of the brook	Good	Good	20+	B1	5.2	84.0
T24	Cherry (Wild)	On	5.0	1	Yes	200.0	2-3-4-1	4.0	4.0	N	EM	None	Canker on trunk suppressed form	Poor	Poor	10+	C1	2.4	18.0
T25	Alder (Common)	On	7.0	1	Yes	190.0	2-3-2-2	2.0	1.0	W	EM	None	Leaning east from east bank of brook.	Poor	Fair	10+	C1	2.3	16.0
T26	Willow	On	8.0	2	Yes	340.0	8-5-6-3	1.5	0.5	N	M	None	One main stem removed; topped at 4 m.	Fair	Fair	20+	C1	4.1	52.0
T27	Poplar (Hybrid black)	Off	28.0	1	Yes	900.0	9-10-8-7	12.0	10.0	N	M	None	Large prominent tree off site; growing to the West Bank of the brook.	Good	Good	40+	A1	10.8	366.0
T28	Poplar (Hybrid black)	Off	6.0	1	Yes	900.0	5-5-5-3	2.0	2.0	E	None	None	Dead tree fallen from West Bank of brook. Overhanging dead limbs may cause hazard. Remedial work to cut back limbs recommended.	Poor	Poor	10+	U3	10.8	366.0
T29	Oak (English)	On	13.0	1	Yes	570.0	8-10-9-5	3.0	3.0	S	M	None	Growing out of West Bank of brook; leaning and growing into site.	Good	Good	40+	A1	6.8	147.0
T30	Hawthorn	On	4.0	1	None	100.0	1-1-1-1	2.0	1.0	N	SM	None	Small tree in front of residential house	Fair	Good	10+	C1	1.3	5.0

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	Special importance	General Observations	Health & vitality	Structural condition	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)
G1	Pear; apple; hawthorn	Off	6.5	3	Yes	280.0	2.5	3.0	EM	None	Three small garden trees.	Good	Good	40+	B2	3.3
G2	Blackthorn	On	9	3	None	400.0	7.0	3.0	LM	None	Large trees for species. Grazing damage by horses to stems and low branches	Fair	Fair	20+	B2	4.8
G3	Lawson cypress	On	5	2	Yes	130.0	1.5	2.5	SM	None	Garden trees on boundary growing close to building	Good	Good	10+	C2	1.6
G4	Hawthorn; blackthorn.	On	6	6	None	90.0	2.0	0.5	EM	None	Scrubby group of trees growing close to each other. Some dead.	Fair	Fair	20+	C1	1.1
G5	Blackthorn; hawthorn	On	7	10	None	150	3.0	1.0	EM	None	Scrubby group of trees growing out of rubble with animal burrows underneath.	Good	Good	40+	B2	1.8
G6	Blackthorn	Off	4	4	Yes	80	1.0	0.3	Y	None	Small trees on bank of brook.	Good	Good	40+	C1	1.0
G7	Alder	On	18	3	Yes	230	4.0	3.5	EM	None	Multi stemmed trees forming a cohesive canopy on the east bank of the brook.	Good	Good	40+	B2	2.8
G8	Alder	On	17	4	Yes	220	4.0	3.5	EM	None	Multi stemmed trees forming a cohesive canopy on the east bank of the brook.	Good	Good	40+	B2	2.6
G9	Alder	On	15	6	Yes	220	4.0	3.5	EM	None	Multi stemmed trees forming a cohesive canopy on the east bank of the brook.	Fair	Good	40+	B2	2.6
G10	Alder; goat willow	On	10	2	Yes	230	3.0	2.0	EM	None	Growing out of the east bank of the brook.	Poor	Fair	10+	C2	2.8
G11	Hawthorn	On	6	2	Yes	100	2.5	2.0	EM	None	Growing out of the east bank of the brook.	Good	Good	40+	B2	1.3
G12	Alder; hawthorn	On	13	14	Yes	200	3.0	3.0	EM	None	Group of trees ranging in condition from good to poor. Although those in bad condition should not cause threat with proposed plans. Some dead alder. Group growing from east bank of brook.	Fair	Fair	40+	B2	2.4
G13	Alder ; oak; poplar; hazel; willow; hawthorn; ash;	Off	28	200	Yes	1000	5.0	4.0	M	None	Group of offsite trees to west of brook. Predominately poplar and alder. Large prominent trees present.	Good	Good	40+	A2	12.0

HEDGES

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	Privet	On	2	1.5	60	0.0	SM	Maintained garden hedge	Good	Good	20+	B2	0.8
H2	Hawthorn elder	On	2.5	1.5	200	0.0	M	Maintained hedgerow	Good	Good	40+	B2	2.4
H3	Hawthorn; holly; elder	On	2.5	1.5	120	0.3	M	Maintained hedgerow	Good	Good	40+	B2	1.5
H4	Beech	On	2	1	100	0.0	EM	Maintained hedge	Good	Good	20+	B2	1.3
H5	Holly; beech	On	1.5	1	110	0.0	EM	Maintained hedge with gaps	Fair	Fair	20+	C2	1.3
H5	Hawthorn; blackthorn	On	7	4	100	0	M	Wide; semi maintained hedgerow.	Good	Good	40+	B2	1.3
H6	Hawthorn; blackthorn; dogwood; dog rose.	On	1.5	1	80	0	SM	Maintained hedgerow	Good	Good	40+	B2	1
H7	Hawthorn; blackthorn; dogwood; dog rose.	On	1.5	1	80	0	SM	Gappy maintained hedgerow becoming increasingly gappy to the SW	Good	Good	40+	B2	1
H8	Hawthorn; elder	On	1.5	1	190	0	M	Maintained hedgerow with gaps.	Good	Good	20+	B2	2.3
H9	Elder; hawthorn; blackthorn; dog rose	On	2.5	1	170	0	M	Maintained hedgerow	Good	Good	40+	B2	2
H10	Elder; hawthorn; blackthorn	On	2.5	1	170	0	M	Maintained hedgerow	Good	Good	40+	B2	2
H11	Elder; hawthorn	On	2.5	1	170	0	M	Maintained hedgerow	Good	Good	40+	B2	2
H12	Elder; hawthorn; blackthorn;	On	2.5	1	170	0	M	Maintained hedgerow	Good	Good	40+	B2	2



IMAGE 1: looking east at oak T13



IMAGE 2: looking northwest at oak T29



IMAGE 3: poplars within G13 on the southwest boundary



IMAGE 4: alders in G12 in front of G13



IMAGE 5: large blackthorn trees T4 and G2



IMAGE 6: looking northwest across the site to the residential gardens adjoining the site.

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

The **DIMENSIONS** taken are:

- STEM-No. Indicates the number of main stems (i.e. whether the trunk divides at or below 1.5m; (Used in the calculation of RPA.) "m-s" = Multi-stemmed.
- STEM DIAMETER (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. (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 are expressed both as existing height above ground level of 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, due to inaccessibility for example, this is indicated by a "#" suffix to the measurement as shown in the tree survey schedule.

LIFE STAGE is defined as follows:

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

- EM Early-mature: Not yet having reached 75% of expected mature size. Established young trees, normally of good vigour and still increasing in height but beginning to spread laterally. Beginning to make an impact upon the local landscape 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, it's apparent vigour and the presence or absence of symptoms associated with poor health, physiological stress etc. (Fungal infections may be recorded here but decay giving rise to structural weakness would be recorded under 'Structural Condition' – see next parameter):

Good: No significant health issues.

Fair: Indications of slight stress or minor disease (e.g. the presence of minor dieback/deadwood or of epicormic shoot growth).

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

Dead: (or Moribund).

STRUCTURAL CONDITION:

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

Classified as:

Good: No obvious structural defects: basically sound.

Fair: Minor, potential or incipient defects.

Poor: Significant defect(s) likely to lead to actual failure in the medium to long-term.

Dead: (or Moribund).

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.

An 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 BS5837:2012; summary definitions as follows (see BS5837 for further details). Categories A, B and C are further characterised by the use of sub-categories, which attempt to identify what aspect of the tree is the main source of its perceived value, 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 numbers of trees, perhaps in groups or woodlands, whose value as landscape features is greater collectively than would warrant as individuals (such that the selective removal of an individual would not impact greatly upon the trees’ overall, collective value).
- B3: Trees, groups or woodlands with clearly identifiable conservation or other cultural benefits.

CATEGORY C: 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 15cm diameter.

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

- C1: Unremarkable trees of very limited merit or of significantly impaired condition.
- C2: Trees offering only low or short-term landscape benefits; also secondary specimens within groups or woodlands whose loss would not significantly diminish their landscape value.
- C3: Trees with extremely limited conservation or other cultural benefit.

CATEGORY U:

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 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 2021 (NPPF paragraph 180) 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 2021 of relevance to this report are:

Paragraph 131: *'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 174: *'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 the relevant Statutory Nature Conservation Organisation (SNCO): Natural England, Scottish Natural Heritage or Natural Resources Wales.

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

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

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

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

DESIGN GUIDANCE

Approach

The approach adopts the guidelines set out in the British Standard BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations. The process is broken down to coordinate with the key elements within both the RIBA Plan of Work (2013) and British Standard 5837:2012 as set out in 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 Recommended Developable Area but defined as a line marking a suitable buffer to retained trees. More commonly used on large sites or sites where the presence of trees is localised.

Tree Opportunities

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

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

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