Tree Survey

Of Land at Calverhay Farm, Blythe Bridge

Undertaken in accordance to: BS5837 2012 "Trees in relation to construction"

COMMISSIONED BY:

Mr L Elkin,
Mount Pleasant Farm,
Cheadle Road,
Forsbrook,
Staffordshire.
ST11 9AX

SURVEYED BY:

Anthony Bethell B.Sc. (hons) For., M.I.C.For., M.Arbor.A.

DATED: 10th March 2015

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1.0 QUALIFICATIONS AND EXPERIENCE

1.1 My name is Anthony Bethell. I am presently the senior consultant for ArB Tree Care (Specialists) Ltd, (Arbour Tree Farm, The Green, Cheadle, Staffordshire ST10 1XS). I have worked for ArB since July 2002. I have been responsible for undertaking arboricultural inspections for commercial and domestic clients throughout this period.

1.2 I am a full member of the Institute of Chartered Foresters; having gained Chartered status since 1996. I have a B.Sc. honours degree in Forestry (Bangor University 1988). I am a full professional member of the Arboricultural Association. In 2009 I attained a Post Graduate Certificate in Aboriculture from the University of Central Lancaster. I have 30 years experience of undertaking consultancy and contracting work within the UK forestry and arboriculture industry.

2.0 BRIEF / HISTORY

2.1 I have been instructed by Mr L Elkins to comment upon the existing trees within and adjacent to the curtlidge of Calverhay Farm, Blythe Bridge, Staffordshire and to form an assessment as to the suitability of the tree/trees in accordance to the guidance laid out in BS:5837 Trees in relation to construction 2012.

2.2 The trees on the site are believed not to be covered by statuary protection from either a Tree Preservation Order or Conservation Area status. These are shown on the plan as being included in the site. Works to the trees may be specified in this report however; this report does not confirm that the Local Authority has approved consent. No works should be undertaken to any trees on the site until the contractor has confirmed that planning permission and a felling licence (if required) has been granted or a letter of conformation has been received that states felling may proceed.

2.3 The area contains a number of young, middle-aged and mature trees in a rural location and although each tree is debated on an individual or group basis, the purpose of this report is to catagorise the trees (and hedgerows) in accordance to BS5837 (2012) for their suitability of retention regarding any proposed development of the site.

3.0 INTRODUCTION

3.1 BS5837: 2012 gives recommendations and guidance on the principles to be applied to achieve a satisfactory juxtaposition of trees, including shrubs, hedges and hedgerows, with structures. It follows, in sequence, the stages of planning and implementing the provisions, which are essential to allow development to be integrated with trees.

3.2 The standard recognises that there can be problems of development close to existing trees which are to be retained, and of planting trees close to existing and new structures. The standard sets out to assist the LPA to form balanced judgements. Where proposed development, including demolition, is to occur, the standard provides guidance on how to decide which trees are appropriate for retention, on the means of protecting these trees during development, including demolition and construction work, and on the means of incorporating trees into the developed landscape.

4.0 TERMS OF REFERENCE/INSTRUCTIONS

4.1 I have been instructed by the client to carry out an inspection of trees within the existing ownership boundary of land at Calverhay Farm and to provide information on their condition and make good arboricultural practice for the suitability of the trees to be retained within any proposed development scheme.

4.2 The production of arboricultural survey and report will comply with the following specification as set out in BS5837 2012 as follows: -

- Reference number (to be recorded on the tree survey plan);
- Species (common and scientific names, where possible);
- Height in metres;
- Stem diameter in millimetres at 1.5m above adjacent ground level (on sloping ground to be taken on the upslope side of the tree base) or immediately above the root flare for multi-stemmed trees;
- Branch spread in metres taken at the four cardinal points to derive an accurate representation of the crown (to be recorded on the tree survey plan);
- Height in metres of crown clearance above adjacent ground level (to inform on ground clearance, crown stem ratio and shading);
- Age class (young, middle aged, mature, over-mature, veteran);
- Physiological condition (e.g. good, fair, poor, dead);
- Structural condition, e.g. collapsing, the presence of any decay and physical defect;
- Preliminary management recommendations, including further investigation of suspected defects that require more detailed assessment and potential for wildlife habitat;
- Estimated remaining contribution in years (e.g. less than 10, 10-20, 20-40, more than 40);
- U, A, B or C category grading to be recorded in plan on the tree survey plan

4.3 In addition, the production of an Arboricultural Implications Assessment in report and plan form can be carried out to the following specification as set out in BS5837 once a design layout has been developed.

- Assessment of existing development proximity and anticipated arboricultural implications.
- Design change advice.
- Assessment of special surfacing requirements.
- Assessment of supervisory requirements.
- Draft construction method statement including methods of protection, timing of works and communication.

4.4 The trees referred to in this report are living entities and are therefore subject to natural processes. They will also be subject to changes in their natural

environment caused by human activities and weather conditions. Therefore we cannot wholly guarantee the conditions of safety of the trees commented upon beyond what can reasonably be assessed from the procedure used. Trees have not been aerially inspected. We recommend regular inspections and advise on the frequency and type of inspection. We would recommend that re inspections be carried out within one year or within specific stipulated timescales. No assessment has been made of soil conditions and the impact of soil conditions on tree cover/built environment. No assessment has been made for underground services, proposed or existing, unless otherwise stated. The contents of this report are valid for one year. This period of validity maybe reduced in case of any change in conditions to, or in proximity to, the trees.

4.5

The report is for the sole use of the client and refers only to those trees referred to within; use by any other person(s) in attempting to use the contents for any other purpose renders the report invalid for that purpose.

5.0 DEFINITIONS

5.1 TREES TO BE CONSIDERED FOR REMOVAL

Category U

Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management.

- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other U category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning);
- Trees that are dead or are showing signs of significant, immediate and irreversible overall decline;
- Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g. Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality;

NOTE: Habitat reinstatement may be appropriate (e.g. U category tree used as a bat roost: installation of bat box in nearby tree).

Trees in this category will be shown Dark Red on the Tree Constraints Plan.

5.2 TREES TO BE CONSIDERED FOR RETENTION

Category A

Those of high quality and value: in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested).

Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue).

Trees, groups or woodlands which provide a definite screening or softening effect of the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups.

Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture).

Trees in this category will be shown Light Green on the Tree Constraints Plan.

Category B

Those of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested).

Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage).

Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (e.g. trees of moderate quality within an avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wilder locality.

Trees with clearly identifiable conservation or other cultural benefits.

Trees in this category will be shown Mid Blue on the Tree Constraints Plan.

Category C

Those of low quality and value: currently in inadequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150mm.

Trees not qualifying in higher categories.

Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit.

Trees with very limited conservation or other cultural benefits.

Trees in this category will be shown Grey on the Tree Constraints Plan.

5.3 **AGE CLASS**

Y – Young; tree in first third of life expectancy

MA – Middle Aged; tree in second third of life expectancy

M – Mature; tree in final third of life expectancy

OM – Over Mature; tree in decline

V – Veteran; tree with major physiological decline, surviving beyond the typical age range for the species.

5.4 **PHYSIOLOGICAL CONDITION**

- Those trees marked 'Good' can generally be classed as having good overall structural and physiological condition. Most usually specimens are in good/excellent condition. They generally have few and less significant arboricultural defects than those trees classed as 'B' or 'C'. Usually contribute significantly to the local or site amenity.

- Those trees marked 'Fair' can generally be classed as having reasonable structural and physiological condition. They may contain smaller areas of included bark within either major or minor fork junctions. They may be subject to single or multiple fungal invasions, bacterial or virus. In the case of fungal invasion or bacteria the Latin name of the species has been stated. They may be subject to minor crown dieback, unusually pale or smaller foliage or have been subjected to outside influences such as restriction of rooting spread, vandalism or mechanical damage, but should be viewed as in generally good overall condition.

- Those trees marked 'Poor' can generally be classed as having poor overall structural or physiological condition. They may contain large areas of included bark either within major for junctions. They may be subject to single or multiple fungal invasions, bacteria or virus. In the case of fungal invasion or bacteria the Latin name has been stated. They may contain splits or cracks throughout the branching structure. They may be subject to significant crown dieback or exhibit unusually pale or small foliage. They may be subject to outside influences such as restriction of rooting spread, vandalism or mechanical damage and costly to retain.

- Those trees marked 'Dead' have no visible foliage, brown cell structure under young bark.

5.5 The purpose of the tree categorisation method which has been applied by the surveyor, is to identify the quality and value of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained should development occur.

For a tree to qualify under any given category it should fall within the scope of the category's definition (U, A, B, C) and, for a tree in categories A – C, it should qualify under one or more of the three subcategories.

In the categories A, B, C, which together deal with trees that should be a material consideration in the development process, the subcategories are intended to reflect arboricultural, landscape and cultural values respectively. Category R trees are those which would be lost in the short term for reasons connected with their physiological or structural condition. For this reason, they should not be a consideration in the planning process.

6.0 Site Location

Google earth

feet 1000
meters 300

7.0 **INDIVIDUAL ARBORICULTURAL SURVEY SHEETS**

Table 1 — Cascade chart for tree quality assessment

TREES FOR REMOVAL

Category and definition	Criteria	Identification on plan
Category R Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other R category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning). • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline. • Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g. Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality. NOTE Habitat reinstatement may be appropriate (e.g. R category tree used as a bat roost: installation of bat box in nearby tree).	DARK RED RGB code: 127-000-000 AutoCAD 246

TREES TO BE CONSIDERED FOR RETENTION

Category and definition	Criteria – Subcategories			Identification on plan
	1 Mainly arboricultural values	2 Mainly landscape values	3 Mainly cultural values, including conservation	
Category A **Those of high quality and value:** in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested)	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups)	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN RGB code: 000-255-000 AutoCAD 90
Category B **Those trees of moderate quality and value:** those in such a condition as to make a significant contribution (a minimum of 20 years is suggested)	Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage)	Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (e.g. trees of moderate quality within an avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality	Trees with clearly identifiable conservation or other cultural benefits	MID BLUE RGB code: 000-000-255 AutoCAD 170
Category C **Those trees of low quality and value:** currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150 mm	Trees not qualifying in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit	Trees with very limited conservation or other cultural benefits	GREY RGB code: 91-91-91 AutoCAD 252
	NOTE Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150 mm should be considered for relocation.			

BS5837:2012 Tree Survey

Client: Mr L Elkin
Project: Calverhay Farm, Blythe Bridge.
Survey Date: 05/03/2015
Surveyor: Anthony Bethell

ArB Tree Care Ltd

Arbour Tree Farm
The Green
Cheadle
Staffordshire
ST10 1XS
Phone: 01538756644

Tree and Tag No / Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations / Survey Comment	Cat ERC
1										Estimated Measurements	
Common Ash *Fraxinus excelsior*	6	1	70	N 1 E 1 S 1 W 1	1 1 1 1	Y	A: 2.2 R: 0.83	Fair	C: Fair S: Fair B:	Fell :: Fell and treat stump(s) Self set regenerated stem. Growing adjacent to a building. Fell to stop future subsidence.	U.2 20 to 40 yrs
2										Estimated Measurements	
Sycamore *Acer pseudoplatanus*	9	1	170	N 1 E 2 S 2 W 2	1 1 1 1	Y	A: 13.1 R: 2.04	Fair	C: Fair S: Fair B:	Fell :: Fell and treat stump(s) Self set regenerated stem. Growing next to a building. Basal area could not be inspected due to acces restriction.	U.2 10 to 20 yrs
3										Estimated Measurements	
Sycamore *Acer pseudoplatanus*	11	1	200	N 2 E 2 S 2 W 2	3 3 3 3	Y	A: 18.1 R: 2.4	Fair	C: Fair S: Fair B: Fair	Fell :: Fell and treat stump(s) Self set regenerated stem growing next to a building. Fell to stop future subsidence .	C.2 10 to 20 yrs
4										Estimated Measurements	
Sycamore *Acer pseudoplatanus*	11	1	200	N 2 E 2 S 2 W 2	3 3 3 3	Y	A: 18.1 R: 2.4	Fair	C: Fair S: Fair B: Fair	Fell :: Fell and treat stump(s) Self set regenerated stem growing next to a building. Remove to stop future subsidence.	C.2 10 to 20 yrs
5										Estimated Measurements	
Sycamore *Acer pseudoplatanus*	11	1	200	N 2 E 2 S 2 W 2	3 3 3 3	Y	A: 18.1 R: 2.4	Fair	C: Fair S: Fair B: Fair	Fell :: Fell and treat stump(s) Self set regenerated stem growing next to a building. Remove to stop future subsidence.	C.2 10 to 20 yrs

Age Classifications: N Newly planted; Y Young; SM Semi-mature; EM Early Mature; M Mature; OM Over Mature

Condition: C Crown; S Stem; B Basal area

Stems: Ø Diameter; (Eq) Equivalent stem diameter using BS5837:2012 definition

Tree and Tag No Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
6										Estimated Measurements	
Common Hawthorn *Crataegus monogyna*	1.5	1	50	N 1 E 1 S 1 W 1	0.1 0.1 0.1 0.1	Y	A: 1.1 R: 0.59	Fair	C: Fair S: Fair B: Fair	No action :: Unspecified Start of hawthorn hedge. Uniform all alongside fence. 1.5 to 2m width been recently topped. No sign of old nests and no species diversity. Looks like relatively new hedge planting.	C.2 >40 yrs
7										Estimated Measurements	
Common Holly *Ilex aquifolium*	5	2	227 (Eq)	N 2 E 2 S 2 W 1	0.1 0.1 0.1 0.1	Y	A: 23.3 R: 2.72	Fair	C: Fair S: Fair B: Fair	No action :: Unspecified Self set regenerated stem growing next to wall. May lead to subsidence issues in the future.	C.2 >40 yrs
8										Estimated Measurements	
Apple *Malus Unknown*	6	1	220	N 2 E 3 S 5 W 2	1 1 1 1	M	A: 21.9 R: 2.64	Decline	C: Poor S: Poor B: Poor	Fell :: Fell to ground level Collapsed apple tree. Regrowing from stem but will eventually fail completely in the long term.	U.2 <10 yrs
9										Estimated Measurements	
Common Ash *Fraxinus excelsior*	8	1	80	N 1 E 1 S 1 W 1	2 2 2 2	Y	A: 2.9 R: 0.96	Fair	C: Fair S: Fair B: Fair	Fell :: Fell and treat stump(s) Self set regenerated stem growing next to building. Remove to stop future subsidence .	C.2 10 to 20 yrs
10										Estimated Measurements	
Common Hawthorn *Crataegus monogyna*	9	3	420 (Eq)	N 3 E 5 S 5 W 4	1 1 1 1	M	A: 79.6 R: 5.03	Fair	C: Fair S: Fair B: Poor	Reduce crown(s) :: By 30% Cavity in main stem with inclusion forming and rot present. Either reduce crown to alieviate stress and likely hood of limb failure or otherwise fell tree. Long term future restricted	C.2 20 to 40 yrs
11										Estimated Measurements	
Common Holly *Ilex aquifolium*	6	3	212 (Eq)	N 3 E 3 S 3 W 3	0.1 0.1 0.1 0.1	Y	A: 20.4 R: 2.54	Fair	C: Fair S: Fair B: Fair	No action :: Unspecified Self set regenerated stem	C.2 >40 yrs

Age Classifications: N Newly planted; Y Young; SM Semi-mature; EM Early Mature; M Mature; OM Over Mature

Condition: C Crown; S Stem; B Basal area

Stems: Ø Diameter; (Eq) Equivalent stem diameter using BS5837:2012 definition

Tree and Tag No Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
12											Estimated Measurements
Common Hawthorn *Crataegus monogyna*	9	4	363 (Eq)	N 3 E 4 S 3 W 3	2 2 2 2	M	A: 59.7 R: 4.35	Fair	C: Fair S: Fair B: Fair	No action :: Unspecified Self set regenerated stem	C.2 >40 yrs
13											Estimated Measurements
Common Ash *Fraxinus excelsior*	17	1	390	N 4 E 5 S 3 W 3	2 2 2 2	SM	A: 68.8 R: 4.67	Fair	C: Fair S: Fair B: Fair	Fell :: Fell and treat stump(s) Self set regenerated stem growing next to building with inclusion forming in main stem. Building has asbestos roof. Canopy already growing towards and over roof. Should failure occur from inclusion in the long term this will damage the asbestos roof.	C.2 20 to 40 yrs
14											Estimated Measurements
Common Ash *Fraxinus excelsior*	12	6	539 (Eq)	N 4 E 3 S 5 W 5	1 4 1 1	SM	A: 131.4 R: 6.46	Fair	C: Fair S: Fair B: Fair	Fell :: Fell and treat stump(s) Group of self set regenerated stems adjacent to a building with asbestos roof. Fell due to proximity of asbestos roof and danger of failure.	C.2 20 to 40 yrs
15											Estimated Measurements
Common or Black Elder *Sambucas nigra*	4	1	200	N 1 E 3 S 2 W 1	1 0.5 0.5 1	OM	A: 18.1 R: 2.4	Decline	C: Poor S: Poor B: Poor	Fell :: Fell to ground level Collapsed stem with cavity in main stem and decay.	U.2 <10 yrs

Age Classifications: N Newly planted; Y Young; SM Semi-mature; EM Early Mature; M Mature; OM Over Mature

Condition: C Crown; S Stem; B Basal area

Stems: Ø Diameter; (Eq) Equivalent stem diameter using BS5837:2012 definition

Report selection criteria.

Projects.

Calverhay Farm, Blythe Bridge.

Date Range.

Any Date

Work types.

----> Fell :: Fell and treat stump(s)
----> Fell :: Fell to ground level
----> No action :: Unspecified
----> Reduce crown(s) :: By 30%

Latest Survey.

All surveys for the selected trees.
---> Last survey for each selected tree.

Work Completed.

---> Work Completed
---> Work Not Completed

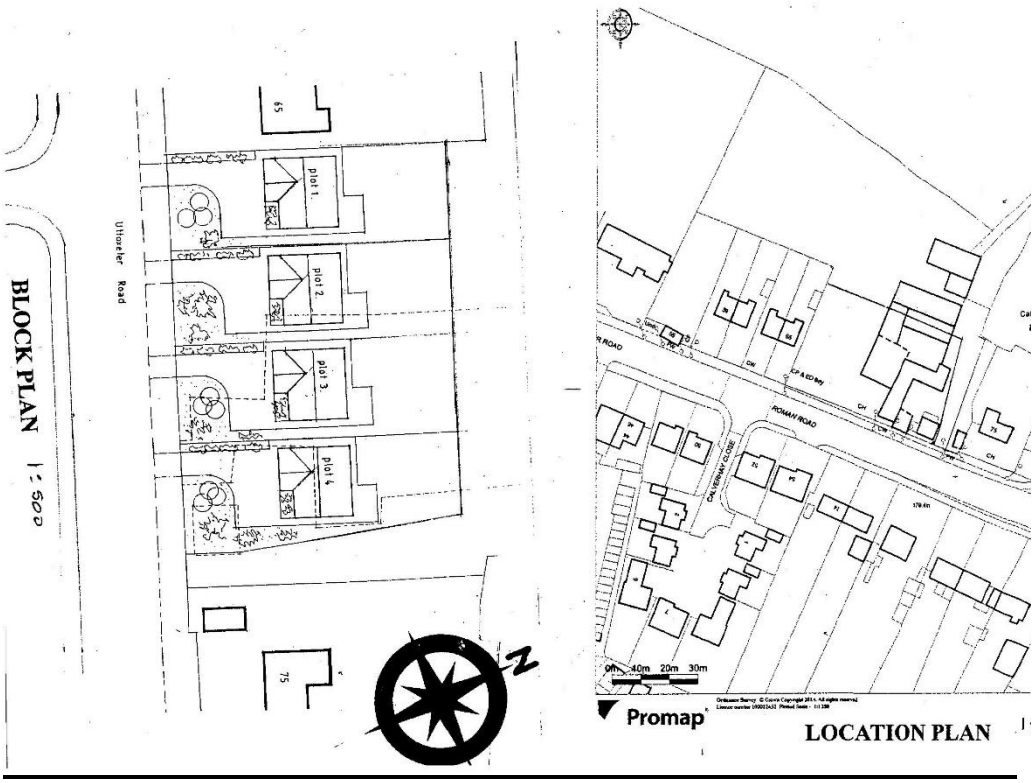
Number of trees in selected Project(s)	**15**
Number of trees in Report selection	**15**

Age Classifications:	N	Newly planted	EM	Early Mature	**Condition:**	C	Crown	**Stems:**	Ø	Diameter
	Y	Young	M	Mature		S	Stem		(Eq)	Equivalent stem diameter using BS5837:2012 definition
	SM	Semi-mature	OM	Over Mature		B	Basal area			


Calverhay
Farm
ROMAN ROAD
59
65
55
75
81
CW
CH
FW
14
13
15
12
11
10
8
7
9
6
5
4
3
2
1

7.1 **Arboricultural Implications general discussion**

The proposed design layout is for 4 dwellings as illustrated in the attached picture below. The design layout show the dwellings running in line from the adjacent property of number 65 to the Eastern boundary property of number 75. This would require the demolition of the existing buildings as illustrated in the tree constraints diagram and the removal of the trees 1-13 (including the new hedgerow along the adjacent footpath). The survey for the health and work recommendations of the trees takes into account that the existing trees are rooted in a rural agricultural field setting and as such present a very minimal risk should failure occur to the general public there is though a risk of structural damage occurring. This is principally because most trees are growing in proximity to agricultural buildings. Therefore the recommendations regarding the vast majority of the trees are already highlighted as removals. The trees are of low importance from an arboricultural value and the loss of the trees could easily be offset by planting in the agricultural fields to the North of the proposed project. The large fruit tree and hawthorn that are within the centre of the layout also have major defects. The fruit tree (8) has already collapsed due rotten stem and the hawthorn tree (10) has a cavity in the base of it. The holly stems on site are free from defect but their loss could be mitigated as stated earlier with a small copse planting in the agricultural fields. The removal of the hedgerow would also be required to facilitate the developments. The hedgerow is however young and is reduced to a small height. It is hawthorn and has no species diversity within it. At the time of surveying there was no signs of any old bird nests. Once again the loss of the hedgerow is not deemed an important loss from an arboricultural perspective and once again could be mitigated by planting another hedgerow at the rear of the proposed developments or as a boundary hedge around a copse of trees if added as a condition.


BLOCK PLAN 1:500
Uttoxeter Road
65
plot 1
plot 2
plot 3
plot 4
75
N
ROMAN ROAD
CALVERDAY CLOSE
0m 10m 20m 30m
Promap
LOCATION PLAN

8.0 Hedgerows

8.1 Legislation

a. Local Planning Authorities (LPA's) in England & Wales are duty bound to protect important hedgerows in the countryside by controlling their removal via the Hedgerow Regulations 1997 which were in turn made using section 97 of The Environment Act 1995.
b. Any hedge over 20 metres in length in a rural setting (all hedges must be on or adjoining agricultural or forestry based land, this includes land which is used for keeping horses/ponies, common land or village greens) is covered by the legislation. Garden hedges are not covered.
c. To remove a hedge or any part of it notification must be given to the LPA. The LPA has then 42 days from receipt of notification to either give or refuse consent. The presumption is in favour of protecting "important" hedgerows.
d. To be classed as an important hedgerow the hedge must be at least 30 years old and must be valuable from either an archaeological, wildlife, historical or landscape perspective.

8.2 On site Hedges

The only hedgerow that has been taken into the survey at Calverhay Farm is the "new" hawthorn hedge planted along the main road and footpath area.It is estimated that this hedgerow is less than 30 years old. Older hedges are present within the agricultural area where they act as field boundaries/enclosures.

8.3 Hedgerow Classification using BS5837 Trees in Relation to Construction 2012

In the opening paragraph of the Bristish Standard its states it is to act as guidance and supply of recommendations into the satisfactory juxtaposition of hedges and hedgerows as well as trees and shrubs with structures.
Taking this into account the hedgerows in and around the site have therefore been classified using the BS5837 2012 quality assessment process to obtain a retention grade.

8.4 Hedgerow locations and assessment numbers

Hedgerow retention	Principle species	Structural condition and comments	Age class	Comments	Retention key
1	**Hawthorn,**	**Good condition.**	**Y**	**Newly planted hedge alongside road side boundary.**	**C**

Hedgerow Classification table.

9.0 TREE CONSTRAINTS PLAN

9.1 Following categorisation of the trees on the development site, the influence that trees on and adjacent to the site have been plotted on a plan called the Tree Constraints Plan (TCP). This is usually an attached CAD drawing with the report.

9.2 To correctly protect below ground constraints the Root Protection Area (RPA) is calculated and plotted on the Tree Constraints Plan. In order to avoid damage to the rooting environment of retained trees the RPA should be plotted around each of the category A, B, C trees. The radius of the RPA is calculated as 12 times the stem diameter for single stem trees and 10 times the basal diameter for trees with more than one stem.

9.3 The RPA, for each tree has been plotted on the TCP taking full account of the following factors, which may change its shape but not reduce its area whilst still providing adequate protection for the root system.

(a) The likely tolerance of the tree to the root disturbance or damage based on factors such as species, age and condition and presence of other trees. (For open grown trees only, it may be acceptable to offset the distance by up to 20% in one direction).

(b) The morphology and disposition of the roots, when known to be influenced by past or existing site conditions (e.g. the presence of roads, structures and underground services).

(c) The soil type and structure.

(d) Topography and drainage.

(e) Where any significant part of a tree's crown overhangs the provisional position of tree protection area, these parts may sustain damage during the construction period. In such cases, it may be necessary to increase the extent of tree protection barriers to contain and thereby protect the spread of the crown. Protection may also be achieved by access facilitation pruning. The need for such measurers, including the precise extent of pruning is described in the individual arboricultural survey sheets under preliminary management recommendations, where necessary.

10.0 ARBORICULTURAL IMPLICATIONS ASSESSMENT (AIA) AND DESIGN ISSUES

10.1 Whilst the tree constraints plan (TCP) should inform site layout design, it is recognised that the competing needs of development mean that trees are only one factor requiring consideration. Certain trees are of such importance and sensitivity as to prevent development occurring or to substantially modify its design and layout. However, care should be taken to avoid misplaced tree retention; attempts to retain too many or unsuitable trees on a site which may result in excessive pressure on the trees during development work and subsequent demands for their removal. The end result is fewer or less suitable trees than would be the case if arboricultural input, planning, selection, conservation and new planting are incorporated into the approved final design. At the point the author states that the loss of the trees from the development would be acceptable as the author has already stated that the vast majority of the trees would need to be removed if his recommendations were followed. The loss of the trees however could be mitigated by the planting of a woodland copse area in the adjacent agricultural fields to the North of the dwellings. Guidelines for this process are stated below.

10.2 During the design and planning stages the following factors should have be taken into account.

(a) The presence of tree preservation orders or conservation area protection.

(b) The effect those development proposals may have had on the amenity value of trees, both on and near the site.

(c) The above and below ground constraints on the tree constraints plan.

(d) The construction of the proposed development.

(e) Infrastructure requirements, e.g. easement for underground or above ground services, highway safety and visibility splays; and other infrastructure provisions, such as substations, refuse stores, lighting, signage and CCTV requirements.

(f) The end use of the space.

(g) Whether tree loss resulting from the development proposals can be acceptably mitigated by new tree planting.

Particular care is needed regarding the retention of large old trees, which become enclosed within the new development. Such trees may be less resilient and more likely to die or become potentially unsafe as a result of the pressures associated with development. Even if they survive in the short term, they may die before the new buildings are obsolete. Their subsequent removal can pose technical difficulties and be costly. Where the retention of large, mature or

veteran trees is considered desirable, it may have been more effective to conserve them by incorporating them into open spaces, thereby allowing adequate space for their long term physical protection and maintenance.

10.3 A realistic assessment of the probable impact of the development on the trees has to take into account the characteristics and condition of the trees, with due allowance and space for their future growth and maintenance requirements. All areas within this application that are behind Root Protection Area fence's are to be designated CONSTRUCTION EXCLUSION AREAS. The protective fencing will be erected as shown on the finalised CAD drawings.

11.0 STANDARD PLANNING CONDITIONS

11.1 Circular 11/95: Use of Conditions in Planning Permissions contains example planning conditions designed to identify and protect appropriate trees during development (see 11/95 Appendix A: Suggested Models of Acceptable Conditions for Use in Appropriate Circumstances N^{os} 71 & 72 to do with Outline consent and N^{os} 73, 74 & 75 to do with Detailed (Full) consent).

Many LPAs (Local Planning Authorities) have devised their own planning conditions to replace or augment Model Conditions 71 – 75 and as a result there is considerable variation in the quality of such conditions including those that are now out of date.

With the release of BS5837 (2005) there are distinct areas of arboricultural protection measures that are not covered succinctly either by the Model Conditions or by many locally developed conditions. There are many new and improved methods and considerations to take into account.

11.2 OUTLINE PERMISSION

A. The plans and particulars submitted in accordance with condition [ ] above shall include:

a. A plan to a scale and level of accuracy appropriate to the proposal that shows the position of every tree on site with a stem diameter over the bark measured at 1.5 metres above ground level of at least 75 millimetres. In addition any tree on neighbouring or nearby ground to the site that is likely to have an effect upon or be affected by the proposal (e.g. by shade, overhang from the boundary, intrusion of the Root Protection Area (para. 5.2.2 of BS5837, 2005, Trees in relation to construction – Recommendations) or general landscape factors) must be shown.

b. The details of each tree as required at para. 4.2.6 of BS5837 in a separate schedule.

c. a schedule of tree works for all the trees in paragraphs (a) and (b) above, specifying those to be removed, pruning and other remedial or preventative work.

d. the details of any proposed alterations to the existing ground levels or the position of any proposed excavations within 5 metres of the Root Protection Area (para. 5.2.2 of BS5837) of any retained* tree, including those on neighbouring ground.

e. The details of all the appropriate tree protection measures for every retained tree before and for the entire duration of the course of the development.

f. A statement setting out the principles of arboricultural sustainability in terms of landscape, spatial integration and post development pressure.

* In this condition a "retained tree" means an existing tree which is to be retained in accordance with the plan referred to at paragraph (a) above.

B. **PROVISION FOR TREE PLANTING**

The plans and particulars submitted in accordance with condition [ ] above shall include details of the quantity, size, species, position of all trees to be planted, together with an indication of how they integrate with the proposal in the long term with regard to their mature size and anticipated routine maintenance. In addition all shrubs and hedges to be planted that are intended to achieve a significant size and presence in the landscape should be similarly specified.

C. **LANDSCAPE MANAGEMENT/MAINTENANCE**

The plans and particulars submitted in accordance with condition [ ] above shall include details of the means of protection and maintenance of the trees, shrubs and hedges referred to at condition B above, until they are established.

11.3 **RESERVED MATTERS (FULL DETAILS)**

A. **RETAINED TREE**

In this condition a "retained tree" is an existing tree which is to be retained in accordance with the approved plans and particulars; and paragraphs (a) and (b) below shall have effect until the expiration of [1 year*] from the date of the (occupation of the building/commencement of use of the approved development) for its permitted use.

a. No retained tree shall be cut down, uprooted or destroyed, nor shall any retained tree be pruned in any manner, be it branches, stems or roots, other than in accordance with the approved plans and particulars, without the prior written approval of the LPA. All tree works shall be carried out in accordance with BS3998.

b. If any retained tree is cut down, uprooted, destroyed or dies, another tree shall be planted at the same place and that tree shall be of such size and species, and shall be planted at such time, as may be specified in writing by the LPA.

* The time period should be specific, but should not seek to provide protection that should more properly be the subject of a Tree Preservation Order. The period may extend for 5 years, but would not exceed 10 years. The reason for the time period should be stated.

B. **TREE PROTECTION MEASURES**

No works or development shall take place until a scheme for the protection of the retained trees (section 7, BS59837, the Tree Protection Plan) has been agreed in writing with the LPA. This scheme shall include [include those that are pertinent]:

a. a plan to a scale and level of accuracy appropriate to the proposal that shows the position, crown spread and Root Protection Area (para. 5.2.2 of BS5837) of every retained tree on site and on neighbouring or nearby ground to the site in relation to the approved plans and particulars. The positions of all trees to be removed shall be indicated on this plan.

b. The details of each retained tree as required at para. 4.2.6 of BS5837 in a separate schedule.

c. A schedule of tree works for all the retained trees in paragraphs (a) and (b) above, specifying pruning and other remedial or preventative work, whether for physiological, hazard abatement, aesthetic or operational reasons. All tree works shall be carried out in accordance with BS3998, 1989, Recommendations for tree work.

d. Written proof of the credentials of the arboricultural contractor authorised to carry out the scheduled tree works.

e. The details and positions (shown on the plan at paragraph (a) above) of the Ground Protection Zones (section 9.3 of BS5837).

f. The details and positions (shown on the plan at paragraph (a) above) of the Tree Protection Barriers (section 9.2 0f BS5837), identified separately where required for different phases of construction work (e.g. demolition, construction, hard landscaping). The Tree Protection Barriers must be erected prior to each construction phase commencing and remain in place, and undamaged for the duration of that phase. No works shall take place on the next phase until the Tree Protection Barriers are repositioned for that phase.

g. The details and positions (shown on the plan at paragraph (a) above) of the Construction Exclusions Zones (section 9 of BS5837).

h. The details and positions (shown on the plan at paragraph (a) above) of the underground service runs (section 11.7 of BS5837).

i. The details of any changes in levels or the position of any proposed excavations within 5 metres of the Root Protection Area (para. 5.2.2 of BS5837) of any retained tree, including those on neighbouring or nearby ground.

j. The details of any special engineering required to accommodate the protection of retained trees (section 10 of BS5837), (e.g. in connection with foundations, bridging, water features, and surfacing).

k. The details of the working methods to be employed with the demolition of buildings, structures and surfacing within or adjacent to the RPAs of retained trees.

l. The details of the working methods to be employed for the installation of drives and paths within the RPAs of retained trees in accordance with the principles of "No-Dig" construction.

m. the details of the working methods to be employed with regard to the access for and use of heavy, large, difficult to manoeuvre plant (including cranes and their loads, dredging machinery, concrete pumps, piling rigs, etc) on site.

n. the details of the working methods to be employed with regard to site logistics and storage, including an allowance for slopes, water courses and enclosures, with particular regard to ground compaction and phytotoxicity.

o. The details of the method to be employed for the stationing, use and removal of site cabins within any RPA (para. 9.2.3 of BS5837).

p. The details of tree protection measures for the hard landscaping phase (sections 13 and 14 of BS5837).

q. The timing of the various phases of the works or development in the context of the tree protection measures.

C. **NOTICE OF TREE WORKS AND MAJOR OPERATIONS**

The applicant shall give written notice to the LPA of [days*] prior to carrying out the approved tree works and any operations that present a particular risk to trees (e.g. demolition within or close to a RPA, excavations within or close to a RPA, piling, cranage).

* The time period should be specific, but should be appropriate to the scale and complexity of works. The reason for the time period should be stated.

D. **PROHIBITED ACTIVITIES**

The following activities must not be carried out under any circumstances:

a. No fires shall be lit within 10 metres of the nearest point of the canopy of any retained tree.

b. No works shall proceed until the appropriate Tree Protection Barriers are in place, with the exception of initial tree works.

c. No equipment, signage, fencing, tree protection barriers, materials, components, vehicles or structures shall be attached to or supported by a retained tree.

d. No mixing of cement or use of other materials or substances shall take place within a RPA, or close enough to a RPA that seepage or displacement of those materials or substances could cause then to enter a RPA

e. No alterations or variations to the approved works or tree protection schemes shall be carried out without the prior written approval of the LPA.

E. **SITE SUPERVISION**

No works or development shall take place until a scheme of supervision for the arboricultural protection measures has been approved in writing by the LPA. This scheme will be appropriate to the scale and duration of the works and may include details of:

a. induction and personnel awareness of arboricultural matters.

b. identification of individual responsibilities and key personnel.

c. statement of delegated powers.

d. timing and methods of site visiting and record keeping updates.

e. procedures for dealing with variations and incidents.

The LPA may require the scheme of supervision to be administered by a qualified arboriculturist approved by the LPA but instructed by the applicant.

F. VETERAN TREES

Veteran Trees (*as defined by the criteria within 'Veteran Trees, A Guide to good management', English Nature 2000 [ISBN 1 85716 474 1]*).

If any retained tree is identified as being or having the potential to be a 'veteran tree' it shall be the subject of a specific management plan devised by an individual with the appropriate experience. No work to the tree or within its vicinity which might compromise the environs of the tree shall be carried out without the written approval of the LPA.

G. PROVISION FOR TREE PLANTING

No works or development shall take place until a specification of all proposed tree planting has been approved in writing by the LPA. This specification will include details of the quantity, size, species, position and the proposed time of planting of all trees to be planted, together with an indication of how they integrate with the proposal in the long term with regard to their mature size and anticipated routine maintenance. In addition all shrubs and hedges to be planted that are intended to achieve a significant size and presence in the landscape should be similarly specified. All tree, shrub and hedge planting included within that specification shall be carried out in accordance with that specification and in accordance with BS 3936 (parts 1, 1992, Nursery Stock, Specification for trees and shrubs, and 4, 1984, Specification for forest trees); BS4043, 1989, Transplanting root-balled trees; and BS4428, 1989, Code of practice for general landscape operations (excluding hard surfaces).

H. LANDSCAPE MANAGEMENT/MAINTENANCE

If within a period of [specified time*] from the date of planting of any tree that tree, or any tree planted in replacement for it, is removed, uprooted, destroyed or dies, (or becomes in the opinion of the LPA seriously damaged or defective), another tree of the same species and size originally planted shall be planted at the same place, unless the LPA gives its written consent to any variations.

* The time period should be specific, but should not seek to provide protection that should more properly be the subject of a Tree Preservation Order. The period may extend for 5 years, but would not exceed 10 years. The reason for the time period should be stated.

I **ESTABLISHMENT**

In the opinion of the LPA the planted tree(s) listed below is (are) of particular importance: LIST: ……
No works or development shall take place until written evidence of a contractual agreement for the supply, planting, maintenance for three years and a replacement guarantee over that same period by the same contractor for the tree(s) listed above, has been approved in writing by the LPA.

J. **MUTUAL COMPATIBILITY OF PLANNING CONDITIONS**

No works or development shall take place until a review of all the planning conditions attached to this approval has been approved in writing by the LPA. The review will identify potential points of conflict between other conditions and those applicable to arboricultural matters, including any lack of awareness by other parties involved in the arboricultural implications, in exercising the planning consent. Where such matters are identified the relevant parties will be made aware of their responsibilities and a written statement of their undertaking to abide by the scheme for the protection of retained trees will be submitted to the LPA as part of the review.

K. **ECOLOGY**

No works or development shall take place until the requirements of any specifications to do with wildlife and ecology that affect arboricultural matters are formally included with the arboricultural protection measures and approved in writing by the LPA.

12.0 **RECOMMENDED PLANNING CONDITIONS**

12.1 **FULL PERMISSION (FULL DETAILS RETROSPECTIVE)**

A. **RETAINED TREE**

In this condition a "retained tree" is an existing tree which is to be retained in accordance with the approved plans and particulars; and paragraphs (a) and (b) below shall have effect until the expiration of 10 years* from the date of the commencement of use of the approved development for its permitted use.

a. No retained tree shall be cut down, uprooted or destroyed, nor shall any retained tree be pruned in any manner, be it branches, stems or roots, other than in accordance with the approved plans and particulars, without the prior written approval of the LPA. All tree works shall be carried out in accordance with BS3998.

b. If any retained tree dies another tree shall be planted at the same place and that tree shall be of such size and species, and shall be planted at such time, as may be specified in writing by the LPA.

* The time period should be specific, but should not seek to provide protection that should more properly be the subject of a Tree Preservation Order. The period may extend for 5 years, but would not exceed 10 years. The reason for the time period should be stated.

B. **TREE PROTECTION MEASURES**

No additional works or development shall take place until a scheme for the protection of the retained trees (section 7, BS59837, the Tree Protection Plan) has been agreed in writing with the LPA.

a. a plan to a scale and level of accuracy appropriate to the proposal that shows the position, crown spread and Root Protection Area (para. 5.2.2 of BS5837) of every retained tree on site and on neighbouring or nearby ground to the site in relation to the approved plans and particulars. The positions of all trees to be removed shall be indicated on this plan.

b. the details of each retained tree as required at para. 4.2.6 of BS5837 in a separate schedule.

c. a schedule of tree works for all the retained trees in paragraphs (a) and (b) above, specifying pruning and other remedial or preventative work, whether for physiological, hazard abatement, aesthetic or operational

reasons. All tree works shall be carried out in accordance with BS3998, 1989, Recommendations for tree work.

d. written proof of the credentials of the arboricultural contractor authorised to carry out the scheduled tree works.

e. the details and positions (shown on the plan at paragraph (a) above) of the Ground Protection Zones (section 9.3 of BS5837).

f. the details and positions (shown on the plan at paragraph (a) above) of the Tree Protection Barriers (section 9.2 0f BS5837), identified separately where required for different phases of construction work (e.g. demolition, construction, hard landscaping). The Tree Protection Barriers must be erected prior to each construction phase commencing and remain in place, and undamaged for the duration of that phase. No works shall take place on the next phase until the Tree Protection Barriers are repositioned for that phase.

g. the details and positions (shown on the plan at paragraph (a) above) of the Construction Exclusions Zones (section 9 of BS5837).

h. the details and positions (shown on the plan at paragraph (a) above) of the underground service runs (section 11.7 of BS5837).

i. the details of any changes in levels or the position of any proposed excavations within 5 metres of the Root Protection Area (para. 5.2.2 of BS5837) of any retained tree, including those on neighbouring or nearby ground.

j. the details of any special engineering required to accommodate the protection of retained trees (section10 of BS5837), (e.g. in connection with foundations, bridging, water features, surfacing).

k. the details of the working methods to be employed for the installation of drives and paths within the RPAs of retained trees in accordance with the principles of "No-Dig" construction.

l. the timing of the various phases of the works or development in the context of the tree protection measures.

C. NOTICE OF TREE WORKS AND MAJOR OPERATIONS

The applicant shall give written notice to the LPA 14 days* prior to carrying out the approved tree works and any operations that present a particular risk to trees (e.g. demolition within or close to a RPA, excavations within or close to a RPA, piling, cranage).

* The time period should be specific, but should be appropriate to the scale and complexity of works. The reason for the time period should be stated.

D. **PROHIBITED ACTIVITIES**

The following activities must not be carried out under any circumstances:

a. No fires shall be lit within 10 metres of the nearest point of the canopy of any retained tree.

b. No works shall proceed until the appropriate Tree Protection Barriers are in place.

c. No equipment, signage, fencing, tree protection barriers, materials, components, vehicles or structures shall be attached to or supported by a retained tree.

d. No mixing of cement or use of other materials or substances shall take place within a RPA, or close enough to a RPA that seepage or displacement of those materials or substances could cause then to enter a RPA

e. No alterations or variations to the approved works or tree protection schemes shall be carried out without the prior written approval of the LPA.

SITE SUPERVISION

No works or development shall take place until a scheme of supervision for the arboricultural protection measures has been approved in writing by the LPA. This scheme will be appropriate to the scale and duration of the works and may include details of:

a. induction and personnel awareness of arboricultural matters.

b. identification of individual responsibilities and key personnel.

c. statement of delegated powers.

d. . timing and methods of site visiting and record keeping. .

e. procedures for dealing with variations and incidents.

The LPA may require the scheme of supervision to be administered by a qualified arboriculturist approved by the LPA but instructed by the applicant.

PROVISION FOR TREE PLANTING

No works or development shall take place until a specification of all proposed tree planting has been approved in writing by the LPA. This specification will include details of the quantity, size, species, position and the proposed time of planting of all trees to be planted, together with an indication of how they integrate with the proposal in the long term with regard to their mature size and anticipated routine maintenance. In addition

all shrubs and hedges to be planted that are intended to achieve a significant size and presence in the landscape should be similarly specified. All tree, shrub and hedge planting included within that specification shall be carried out in accordance with that specification and in accordance with BS 3936 (parts 1, 1992, Nursery Stock, Specification for trees and shrubs, and 4, 1984, Specification for forest trees); BS4043, 1989, Transplanting root-balled trees; and BS4428, 1989, Code of practice for general landscape operations (excluding hard surfaces).

LANDSCAPE MANAGEMENT/MAINTENANCE

If within a period of 10years* from the date of planting of any tree that tree, or any tree planted in replacement for it, is removed, uprooted, destroyed or dies, (or becomes in the opinion of the LPA seriously damaged or defective), another tree of the same species and size originally planted shall be planted at the same place, unless the LPA gives its written consent to any variations.

* The time period should be specific, but should not seek to provide protection that should more properly be the subject of a Tree Preservation Order. The period may extend for 5 years, but would not exceed 10 years. The reason for the time period should be stated.

ESTABLISHMENT

No works or development shall take place until written evidence of a contractual agreement for the supply, planting, maintenance for three years and a replacement guarantee over that same period by the same contractor for the tree(s) listed above, has been approved in writing by the LPA.

MUTUAL COMPATIBILITY OF PLANNING CONDITIONS

No works or development shall take place until a review of all the planning conditions attached to this approval has been approved in writing by the LPA. The review will identify potential points of conflict between other conditions and those applicable to arboricultural matters, including any lack of awareness by other parties involved in the arboricultural implications, in exercising the planning consent. Where such matters are identified the relevant parties will be made aware of their responsibilities and a written statement of their undertaking to abide by the scheme for the protection of retained trees will be submitted to the LPA as part of the review.

13.0 GLOSSARY OF TERMS

Abiotic factors	Relates to non-Living Agents that affect the health or development of trees.
Absorbing Roots	Microscopic roots, whose function is to absorb water and nutrients from the soil, can often be seen in combination with ***Mycorrhizae***. Generally, found close to the soils surface to benefit from increase availability of oxygen, nutrients, and water.
Acoustic	The use of sound to identify hollows and faults in trees since the used for decades, simply by banging the trunk with a mallet. With the use of modern highly sensitive equipment this basic system has been significantly improved.
Adaptive growth	In tree biomechanics, the process whereby wood formation is influenced both in quantity and quality by the action of gravitational forces and mechanical stresses on the cambial zone.
Aerobic	Conditions in which oxygen is freely available, or to biomechanical processes that depend on the presence of oxygen.
Anaerobic	A condition marked by the absence of oxygen; Generally such areas are unsuitable for normal life and growth of plant tissues. These sites tend to be populated by bacteria capable of surviving low oxygen conditions often associated with ***Slime Flux***.
Annual Rings	The annual increment of wood in a tree or shrub as seen in transverse sections of the stems, branches, or roots. As the increments are three-dimensional, they are cylinders or cones, rather than rings. In addition, they are not strictly annual, especially in minor roots and in some tropical species.
Arboricultural Implication Assessment	The early involvement of an arborist on a development site can avoid costly delays and mistakes whilst allowing a site to achieve its full potential and retain important trees.
Arboriculture	The culture and management of trees as groups and individuals primarily for amenity and other non-forestry purposes.
Arborist	A person possessing the technical competence through experience and related training to provide management of trees or other woody plants in a landscape setting. Generally involved with the development or management of trees for visual amenity or land management rather than the growth of trees for product or profit.
Architecture	In a tree, a term describing the pattern of branching of the crown or root system.
Ariel Inspection	The science of inspection is continually evolving, however, there can be little substitute for close inspection of a particular feature. We are happy to undertake a full Ariel inspection service, compliant with all heath and safety legislation.

Assessment	The process of estimating risk that a tree or group of trees poses to persons or property.

Avenue	A double row of trees, planted parallel, creating an arched effect over a path or highway. The use of avenues within the landscape is often associated with large formal landscapes a development of early paths / track being cut out of native forest or woodlands.
Bacteria	Microscopic single celled organisms, many species of which break down dead organic matter and some of which cause diseases in other organisms.
Bark	The tissues of woody plants outside the vascular cambium, including the Phloem, cortex, and periderm occasionally applied only to the periderm or the phellem.
Barrier zone	A layer within an annual increment of wood which contains abnormal xylem cells, laid down by the cambium in response to wounding or other trauma.
Biomechanics	This area of tree care has come to the fore in recent years, enabling a more accurate assessment of tree stability to be undertaken. Often trees previously condemned, can be managed, and confidently retained to offer ongoing benefits.
Body language	In trees, the outward display of growth responses and or deformation in response to mechanical stress.
Bole	Or Trunk, the main stem of a tree below its first major branch.
Boundaries	The laws relating to boundaries are well defined but not always clear-cut when hedgerows or trees are involved. We can provide information regarding the law and advice upon appropriate courses of action.
Bracing & Propping	The use of artificial support for a section of the tree is often regarded as a last resort upon trees likely to suffer failure. Considering the use of non-injurious bracing systems can provide many additional years of retention or provide time to establish replacements.
Bracket	A type of fruiting body produced by various fungal species, plate like to hoof like in shape and often a one sided attachment to the wood or bark.
Branch	A limb extending from the main stem or parent branch of a tree.
Branch bark ridge	The raised arc of bark tissue that forms within the acute angle between the branch and its parent stem.
Branch Collar	Trunk tissue that forms around the base of a branch between the main stem and the branch, or between a main branch and a lateral branch. As a branch decreases in vigour or begins to die, the collar usually becomes more pronounced and completely encircles the branch.

Brown rot	A type of wood decay in which is degraded whilst lignin is only modified.

Buttress Root	Roots that emerge from the base of the tree stem, normally large and well developed that rapidly reduce in diameter to create the ***Root Plate*** this offers structural support for the tree. Buttress roots divide rapidly forming the connection between the stem and the transport roots.
Cabling Bracing	Installation of steel cables, attached to lag screws or bolts placed in tree limbs, to provide additional support or to limit movement and stress of limbs. Recent developments have established non-injurious flexible systems that enable the partial movement of parts within reasonable limits enabling the trees to produce ***Reaction growth*** and forms an excellent alternative to ***Propping*** The installation of such features does require legal interpretation.
Callus	Undifferentiated cells often formed at the edges of recent injuries. This tissue quickly becomes differentiated, forming cells of the type characteristic of that position on the tree (e.g. forming wood, bark, roots, etc.) see wound response tissue.
Cambium	A thin layer of actively growing and dividing cells, located between the xylem (sapwood) and bark of a plant; the part responsible for radial growth of a tree stem or branch.
Canker	An area of dead bark caused by certain fungal infections. The continued annual development of bark around the area, increasingly make the feature more noticeable, often forming a target appearance.
Canopy	The topmost layer of twigs and foliage in a woodland, tree, or group of trees.
Cavity	An open and exposed area of wood, where the bark is missing, and internal wood has been decayed and dissolved.
Cellulose	A carbohydrate consisting of molecules bonded in strings to create filaments; a key component of plant cell walls. May be selectively destroyed by ***fungi***.
Chlorophyll Photo-fluorescence	The way light is reflected from the surface of a leaf can provide a range of information upon the health or vigour of a tree.
Chlorotic	Also Chlorosis. A condition of the plant marked by yellowing of normally green foliage, often indicating nutrient deficiency or plant dysfunction.
Choosing a Contractor	When looking through local listings, choosing a contractor can be difficult when all are claiming to be the best. In simple terms, you need to be confident in their abilities, ensure they are qualified, insured, and carry the relevant employees' liability insurance. Legitimate contractors will be able to provide proof.
Cladoptosis	The shedding of twigs by abscission.
Clinometer	Devices that measures vertical angles, and provides direct height measurements of objects by triangulation.

Compartmentalisation	To seal off decay. The ability of the tree to restrict the spread of invasive organisms, such as decay fungi, by means of internal changes in cell structure and chemistry.

Compression Failure	Localized buckling of fibres and other longitudinal elements produced by compression of wood along the grain; compression failures sometimes develop in standing trees.
Compression Strength	The ability of a material or structure to resist failure when subjected to compressive loading; measurable in trees using special drilling devices
Compression Wood	Abnormal wood formed on the lower side of branches and curved stems, with physical properties different from normal wood.
Conservation Area	In Great Britain, designated areas of architectural or historical interest, in which there are special procedures for planning applications. Additionally tree works cannot generally be undertaken without prior notification (Currently 6 weeks) to the relevant local planning authority. See also ***Tree Preservation Orders***.
Contaminated ground	The management of contaminated land is particularly of value on brown field or waste sites. Combined management of the soil and vegetation can go a long way in providing sustainability.
Contract documentation	Through the use of documentation, works to trees can be specified managed & monitored, this ensures that the correct works are administered and undertaken to the correct standard, enabling a fare comparison of tenders.
Contract Management	To ensure that the correct works are administered and avoid the negative effects of under or over pruning, we offer a contract management service to free clients from the need to site manage.
Core Sample	A sample of wood extracted from a trunk or branch, using an increment borer tool. The resulting core can be analysed for characteristics of growth, wood strength, structure, decay, and for species identification.
Crotch	The union of two or more branches; the auxiliary zone between branches.
Crown	The upper portion of a tree or shrub, including the main limbs, branches, and twigs.
Decay	Progressive deterioration of organic tissues, usually caused by fungal or bacterial organisms, resulting in loss of cell structure, strength, and function. In wood, the loss of structural strength.
Decay Detection	The assessment of decay within a tree has been traditionally difficult, but recent advances have made it possible to achieve accurate representations of the internal section of a tree in both 2D and 3D, removing doubt over the condition of the tree and allowing accurate management decisions.
Decline	Progressive reduction of health or vigour of a plant.
Decurrent	In trees a, system of branching in which the crown is borne on a number of major widely spreading limbs of similar size. In fungi relates to toadstools whose gills run down the stem and leaves and other plant organs, which extend down the stem.
Defect	In relation to tree hazards, any feature of a tree which detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment.

Delaminating	An internal defect: separation of wood, usually seen in ***hazard beams*** usually following growth rings or sites of old injuries, or compartmentalization zones.
Desiccation	The drying out of plant tissues, including leaves, twigs, bud, bark, or roots, leading to death of those tissues.
Design & Planting	Through the use of design, there are many improvements that can be made to a landscape. A broad knowledge of trees along with general horticulture enables us to offer low maintenance solutions, whilst creating attractive manageable schemes.
Dieback	Progressive death of buds, twigs and branch tissues, on individual limbs resulting in ***Deadwood***, or throughout the canopy, extreme cases can result in ***Stag Heading***.
Discoloured Wood	Wood tissue that is not of normal colour due to invasion by pre-decay organisms following injury; a precursor to decay.
Disease	A malfunction in or destruction, of tissues within a living organism, usually not taken to include mechanical damage; in trees, usually caused by pathogenic micro-organisms
DNA Analysis	Such assessment can provide vital information regarding the identification of trees implicated with structural damage by DNA matching of roots and aerial parts.
Dominance	In trees, the tendency for a leading shoot to maintain a faster rate of expansion than the lateral shoots through the effects of hormonal control; also the tendency of a tree to maintain a taller crown than its neighbours.
Dripline	A projected line on the ground that corresponds to the spread of branches in the canopy; the farthest spread of branches.
Dysfunction	In woody tissue, the loss of physiological function especially water conduction.
Energy	The capacity to do work (Through photosynthesis, green plants absorb energy from sunlight and store it in the from of chemical compounds which are used in energy dependent processes such as growth).
Epicormic Shoot	Shoots or roots that are initiated on mature woody stems, often as a response to physiological stress. Shoots may form in this way or they may be adventitious.
Epinasty	Twisted or distorted growth of plant parts. A deformation of the plant caused by chemical damage or a pathogen.
Excurrent	In trees, a system of branching that a single leader remains dominant, through the control of lateral branches.
Failure	In connection with tree hazards, a partial or total fracture within the wood tissue or loss of cohesion between roots and soil. (In total failure affected parts will snap or tear away completely, Partial failure there is a crack or deformation, which results in an altered distribution of mechanical stress.
Felling Licence	In Great Britain, a permit to fell trees in excess of a certain size or total volume.

Fertilization	The process of adding nutrients to a tree or plant; usually done by incorporating the nutrients into the soil, but sometimes by foliar application or injection directly into living tissues.
Flush-Cut	In trees and shrubs, a pruning cut close to the parent stem, which removes the branch bark ridge.
Foliage	The live leaves or needles of the tree; the plant part primarily responsible for ***photosynthesis***.
Fruit tree pruning management	This can be an area of tree management that is shrouded in mystery and folk law. Fortunately, this is not the case and we often help clients steer a path through the establishment and restoration of fruit orchards.
Functional wood	A term usually applied to sapwood which is living and conductive; more properly 'physiologically functional wood' to avoid confusion with mechanical function, which continues after death.
Fungal identification	The identification of fungi is often a rare chance to correctly record the presence of structural defects or factors that may significantly influence the stability of a tree. Always be cautious, if in doubt, Ask!
Gall	An abnormal, disorganized growth of plant tissues, caused by parasitic or infectious organisms such as insects, fungi, bacteria, or viruses.
Girdling	In woody plants, any form of damage that destroys the ***bark*** and / or the ***Cambium*** all the way around the stem, branch, or root, normally resulting in death of the damaged section.
Girdling Root	In woody plants, a root that grows across the buttress, or across other roots, eventually causing constriction of the radial growth.
Ground improvement	Particularly within the urban area trees can become subject to many root related problems that can be helped through a series of improvements to the root zone, this can be specific cultivation techniques or management methods aimed at improving the condition of the overall tree.
Ground Penetrating Radar	The area of technology is not yet fully developed, but even basic systems can provide valuable information upon the architecture of trees without the need for excavation.
Growth Increment	The incremental growth added as new ***annual ring*** develops each season over existing wood. This is seen as (growth) rings in cross-sections of wood.
Growth Substance	Chemicals produced within the plant that affects the growth of other parts of the plant as they are translocated.
Hazard beam	In a tree, an upwardly curved part in which the strong internal stresses may occur without the compensatory formation of extra wood leading to the creation of a typical taper, such features may be accompanied with longitudinal ribs, the result of internal delaminating.
Health & Safety	A basic requirement of most site owners or managers is to ensure that a tree is safe. There is no such thing as a safe tree though with regular assessment of general health, risk can be controlled.

Health Assessment	The assessment of health and vigour, is generally the starting point of any appraisal, ensuring the tree is worthy of further assessment / investment.
Heartwood	Xylem wood tissue, often slightly discoloured, representing the inner growth rings of the wood. Mostly non-reactive wood cells. Usually providing structural strength to the tree. See ***Sapwood***
Heave	In relation to shrinkable clay soils, expansion due to rewetting of a volume of soil previously subjected to the removal or water by plant / trees following felling or root severance. Also in relation to root growth, the lifting of pavements and other structures by radial expansion. Also in relation to tree stability, the lifting of one side of a wind rocked root plate.
Herbicide	A chemical compound that causes the death of a plant.
High Hedge	The long awaited 'High Hedge Bill' has been included within the Anti-social Behaviour Act 2003, which is due for adoption in mid 2004. This defines the criteria and solution to disputes.
Included bark	Bark or cortex tissue that is included or trapped between close-growing branches. Usually found in narrow or tight crotches. This can prevent the correct joining of individual features, leading to the premature failure of sections.
Increment Borer	A tool that cuts and extracts a narrow cylinder of wood from a tree for analysis of the wood tissue and growth increments.
Infrared Photographic Analysis	The particular assessment can provide clear-cut information upon the health of a tree, this style of assessment is particularly useful for the assessment of large numbers of tree. Totally un-invasive.
Internodal	The part of a twig between two nodes, or points of beginning of annual twig growth. The node is formed at the end of each year's growth.
Inventory	It is difficult for any manager / owner to construct a sensible management system until it is clear which trees are within their ownership and what is their general condition. This level of report will provide information on both location based upon GIS, CAD or traditional plans, additionally the general condition or requirement for further investigation can be identified, allowing resources to be allocated.
Irrigation	The installation and monitoring of trees water requirements can help during drought or stressful episodes following transplanting or recent local soil changes.
Leader	The top most shoot that has apical dominance.
Lever Arm	A mechanical term referring to the length of a lever that is free to move at one end, such as a tree or one of its branches
Lightning Protection	Valuable trees, particularly those in open positions can be prone to damage from Lightening. The use of specific tree friendly systems can help to protect valuable trees.
Lignin	The hard cement like constitute of wood cells found within the ***Cellulose*** matrix. Lignification is the addition of lignin to the cellulose filaments. Lignin can be specifically removed by certain ***fungi***.

Limb	A large lateral branch growing from the main trunk or from another larger branch.
Lion Tailing	Often the result of poor pruning practices; the main leader or branches are largely devoid of side branches, growth is restricted to the end of branches and is likely to suffer damage through end loading.
Live Crown Ratio	The proportion of the total height of the tree that is represented by live branch growth within the canopy. Used as an indicator of potential vitality, when compared as a ratio to the woody mass of the tree.
Lopping	In trees, a general term that related to the removal of branches from a tree.
Macronutrient	One of six elements required in relatively large quantities by a plant for metabolic processes; essential to plant health. (See ***micronutrient)***
Microclimate	Small, localized areas where conditions of temperature, wind, humidity, etc., may vary from the general surrounding conditions.
Micronutrient	One of seven elements required in small quantities by a plant for metabolic processes; essential to plant health. (See ***macronutrient***)
Monitoring	Due to the relative life span of trees in relation to our own, long-term monitoring provides a valuable insight to the health of trees, identifying decline and or stabilisation and or improvement.
Mulch	A material laid over the root system of a tree to help conserve moisture within the soil. Additionally it may help control the development of weeds close o the tree.
Mycelium	A mass of growing filaments (hyphae) formed by fungi.
Mycorrhizae	A term given to the symbiotic relationship between roots and certain beneficial fungi. Mycorrhizae are the combined root / fungal growth.
Natural Pruning	The shedding of a branch or twig that has died back naturally and has become decayed at or near its base.
Necrosis	The failure and subsequent death of a branch, leader, or tree.
Negligence	A failure to take reasonable action to deal with a ***hazard*** to prevent damage to property or person.
Node	The point were a leaf is connected to a shoot, the point were an auxiliary bud may develop
Nutrient	Substances that are absorbed by living organisms for the maintenance of internal processes.
Occluding tissue	The general tern of ***wood***, ***cambium*** and ***bark*** that develop around the site of a wound on a woody plant
Pathogen	A disease-causing organism, usually a fungus in plants, but may also be viral or bacterial.
Pathogen	A micro organism that causes diseases within another organism.
Pest & Disease Management	Through early identification of pest and disease appropriate management can be undertaken to reduce the effect on individuals.
Petiole	The stem of the leaf, attaching the leaf blade to the twig.

pH	A logarithm of the reciprocal of hydrogen ion concentration in moles per litre of a solution, giving a measure of its acidity or alkalinity.
Phloem	The principle conductive tissue that the products of ***Photosynthesis*** are transported around the plant
Photosynthesis	The process were light energy is used to create energy (***Carbohydrate***) for use within the plant.
Planting	Planting and species selection is the best chance at reducing future management problems. Through the selection of the correct tree species or cultivars we can help select a tree that will become and asset and increase the value of a location.
Pollard	A term for a pollarded tree.
Pollard head	The swollen section of branch / stem that forms behind the pollarding cut.
Pollarding	The complete or partial removal of the ***crown*** of a young tree so as to encourage the development of numerous branches either for amenity or historically as fodder, repeated management is required cyclically to maintain the feature
Post Damage	Independent rapid assessment of damage can allow cost effective solutions to potentially major damage.
Post Development	Monitoring following construction will identify the response of trees to the altered root zone and ensure appropriate management. Construction damage can take up to a decade to become apparent, commonly, others reasons are found for tree decline.
Pre installation	Whether it is the installation of services or a development, identifying potential pinch points prior to being on site allows adjustments to installation techniques to be made saving tree loss or costly confrontation through failures.
Pre purchase	Often property purchase is an individuals largest investment, trees may pose a significant risk to the fabric of the building or other features, pre purchase inspections aim to provide a level of information that enables a balanced decision upon the management of the site, whilst reducing future risk were possible.
Pre-development survey	Provides a cultural assessment of the existing trees within a site to identify their condition and retention potential. The information is provided in accordance with BS5837:2005 and allows the identification of development windows within the proposed development site.
Preventative action	In tree Hazard management, action which helps to prevent damage to property or injury to person.
Propping	The use of artificial apparatus to support living sections of a tree that may be prone to failure. The installation of such features does require legal interpretation.
Prune or Pruning	Selective removal of woody plant parts of any size, using saws, Loppers, Secateurs, or other pruning tools.
Rams Horn	In connection with wounds on trees, a roll of ***wound wood*** or ***occluding tissues*** that has a spiral appearance in cross section.

	Opposing faces may result in the formation of cracks as they connect.
Reaction Wood	Wood with distinctive anatomical and physical characteristics, formed in parts of leaning or crooked stems and in branches to provide additional strength / support. In hardwoods, ***tension wood*** usually forms. In conifers, ***compression wood*** is usually found.
Reaction Zone	A zone normally darker than surrounding wood that denoted the boundary often a defensive one between functional sapwood and dysfunctional or decaying wood.
Rejuvenation pruning	Where historically or environmentally important trees are to be retained, their life spans can be significantly extended through the adoption of particular pruning regimes.
Rejuvenation root treatment	Management of the rootzone can have a significant positive effect upon the health of trees. Physical, mechanical, and biological approaches are available and can be prescribed in accordance within the constraints of individual sites.
Remedial Action	In tree hazard management, action to mitigate or remove the risk of injury to persons or property.
Report types	We endeavour to tailor reports to clients individual requirements, these can range from Verbal Assessments enabling clients the opportunity to 'What if? /Question & Answer', through simple covering letters, tabular reports and specifications. If the information is of a more formal nature, then a range of technical documents can be created to cover most situations.
Resistance	In tree health, an assessment of at trees ability to with stands site change or attack by a ***pathogen***.
Resistograph	The highly sensitive tool can be used to give an insight into the growth rate of a tree or used to confirm the location of decay within the tree, by drilling a small hole and recording the resistance the wood offers to the probe. Invasive though very small hole diameter.
Rib	In tree body language, a long narrow, axial protuberance which often over lays a crack.
Right to Light	Right to light is always a contentious are, we can assist in defining the law.
Ring Barking	Artificial Girdling of the stem, to result in the death of a tree. May be used in habitat creation were the retention of dead standing trees is required.
Risk	The likelihood of potential damage occurring to a feature or a ***hazard*** resulting in harm.
Risk Assessment	Under numerous acts and common law, there is a duty of care upon tree owners to ensure that trees are retained within reasonable levels of risk. Regular inspection of trees is essential to identify risk and apply adequate control. Trees are dynamic organisms affected by numerous environmental factors, therefore, health and condition can change rapidly thus risk assessment must be ongoing.
Rod Bracing / Bolting	Traditionally, this has relied upon the Installation of steel rods or bolts through the stems or limbs, to reduce twisting or splitting of

	the wood. The installation of such features does require legal interpretation.
Root Barriers	Both Buildings and services can benefit from the installation of root barriers to protect a soil volume from the ingress of roots.
Root Collar	The basal area of the tree; transition zone from trunk to root. Also sometimes called trunk flare.
Root Identification	In many situations, it becomes critical to know precisely which tree has been involved with damage. This is achieved through accurate identification of Genera through root cross section comparison, where groups of similar species exist then identification needs to be undertaken by DNA analysis.
Root Plate	The primary support area for the tree; an area of the root system close to the base that structurally anchors the tree to the soil.
Root Rot	Either a general term for decay within the wood of the lower stem / buttress roots, or a disease in which the fine roots are killed.
Root System	The portion of the tree containing the root organs, including buttress roots, transport roots, and fine absorbing roots; all underground parts of the tree.
Root Zone	The area and volume of soil around the tree in which roots are expected. May extend to three or more times the branch spread of the tree, or several times the height of the tree.
Sail Area	In arboriculture, a general description for the wind intercepting area of a trees live crown. This can vary with both orientation and season.
Sanitation	In plant disease control, the removal of material that could a source of infection by a pathogen. Removal of diseased plant parts, such as fallen leaves and twigs, and pruning of dead and diseased branches. Diseased parts should be burned or buried under soil or active compost.
Sapwood	Xylem wood tissue, usually light in colour, representing the outer growth rings of the wood. Usually living, reactive wood tissue, in a healthy tree**.** See ***heartwood***
Scaffold limb	The branches that from the main network framework of the crown of a tree with a ***decurrent*** habit.
Second opinion	We are frequently asked to assess TPO's, reports and other documentation and indeed visual assessments to confirm or clarify findings.
Shrub	A woody plat that branches at or close to the ground level and so does not have a single stem.
Slime Flux	Relating to a toxic condition from the spreading of bacteria or their products from a source of infection; characterized by malodorous gases, or salt deposits upon the bark. If these products enter the sap stream, localised vessel ***necrosis*** can result, usually associated with anaerobic conditions.
Snag	In a woody plant, a portion of cut or broken stems which extends beyond any growing point or dormant bud.
Soft Rot	A kind of wood decay, were a ***fungi*** degrades cellulose within the cell wall, without causing overall degradation.

Soil Assessment	Assessment of soils is critical when connecting the possible interaction of trees with buildings. Thorough assessment can be helpful in mitigating the effect of future growth and can be helpful at the design stage of developments.
Soil Compaction	The compression of soil, causing a reduction of pore space and an increase in the density of the soil. Air is squeezed out and nutrients become locked. Tree roots cannot grow in compacted soil.
Soil Improvements	Various methods to improve the soils close to trees can improve root performance significantly and have a positive effect upon the health of trees. Physical, mechanical, and biological approaches are available and can be prescribed in accordance within the constraints of individual sites.
Soil pH	Also pH. A measure of acidity, on a scale of 1.0 to 14.0. PH 7.0 is neutral (water), pH 1.0 is extremely acid, and pH 14.0 is extremely alkaline.
Soil Profile	The characteristics of a soil as regards to relative depth; the changes in soil texture and composition that occur with depth.
Soil Texture	The classification of the constituent particles of soil; includes sand, silt and clay particles. Directly related to soil porosity, permeability, and aeration.
Specification	Various technical specifications can be prepared, from development site management to simple pruning instructions, a specification is essential to ensure that all physical and biological issues have been considered.
Sprout	Also ***Epicormic shoot***. A shoot or stem that grows from the bark of a tree; adventitious or secondary growth generally the result of physiological stress.
Stability Assessment - pulling	Trees can be put under load to simulate gale force wind conditions; their response to load is measured digitally to determine their likelihood of withstanding prolonged load situations. In some situations, the physical attributes of the tree can indicate its ability to withstand load.
Stag Heading	In a tree, a state of dieback were dead branches protrude beyond the current living crown.
Strain	In mechanics, the distortion of an object, the result of ***stress***.
Strategy	Following an inventory, the information can be analysed and a long-term strategy formulated for the planned removal, pruning, and replacement of trees thus ensuring pro-active management and long term tree cover.
Stress	In plant physiology, conditions were one or more physiological functions Are not working within normal parameters. In mechanics, force acting upon an object, measured per unit area of the object.
Subsidence	In relation to soils, the removal of water by plant growth results in localised shrinkage in the soil volume.
Sucker	Same as sprout.
Survey types	As no client has the same requirement it is difficult to create 'a one size fits all' assessment. We try and personalise assessments as far

	as possible, these can range from brief walk by visual assessment to detailed internal assessment of particular features.

Systemic	Affecting the whole plant or organism. A systemic compound is carried throughout the entire plant to all parts through the vascular system.
Target	Any person or object within reach of a falling tree or part of a tree that may be injured or damaged.
Target Pruning	The pruning of a branch were the wound affects only branch material, often result in a target shaped wound.
Tension Wood	Reaction wood typically formed on the upper side of limbs or curved stems; characterized by lack of cell wall lignifications (higher ratios of cellulose to lignin).
Thermography	The use of very sensitive equipment can detect small temperature changes within the volume of a tree, these small changes are used to identify the location of decay, faults, and water pockets. Totally un-invasive.
Tight Crotch	Also, narrow crotch. A crotch with a narrow angle between branches, often having ***included bark***.
Tomography	The comparison of sound or stress waves through the tree allows the creation of a 2D or 3D representation of the internal structure of a stem or branch section and highlights areas of damage. Virtually non-injurious.
Topography	The configuration of surface features, including the vertical and horizontal relationships or positions of the ground and other features.
Topping	The practice of cutting large limbs back severely, without regard to form or habit of the tree. Cuts are usually made between lateral branch nodes. This practice is extremely injurious to trees, and promotes decay and structural weakness within the canopy.
Tree	A woody plant that typically has a single stem, at maturity has a height of a least 4 metres and a stem diameter at breast height of at least 75mm.
Tree Law	Tree law is complex and covers many issues; we can provide or clarify many legal aspects concerning trees.
Tree Preservation Order	In Great Britain, an order made by the local planning authority, were consent must be gained before undertaking all but exempt works to a tree.
Trunk Flare	The basal area of the trunk that flares or widens, and merges with the main roots. See ***root collar***
Veteran Tree Management	Veteran trees are often found in large parks or estates and commonly affected by extensive decay or have been subject to extensive works. These trees are retained for historical importance and often pose greater risk than normal, which is generally justified. Such trees need careful management and often propping or bracing to support them, some require fencing to limit access.

Vigour	Active, healthy growth of plants: ability to respond to stress factors.
Visual Tree Assessment (VTA)	An assessment of the mechanical condition of trees based upon their 'body language'. Trees are dynamic and respond to faults / decay / environmental factors in various ways, these responses can be indicative of structural integrity.
Wetwood	An infection caused by bacteria living inside the plant tissues. The bacteria ferment the plant fluids, resulting in death of nearby cells, and often causing exudations of fluid from the bark, often referred to as a ***Slime Flux.***
White Rot	A kind if wood decay were a ***fungi*** attacks the ***lignin*** within the wood matrix
Wind pressure	The force excreted by the wind on a tree or other structure.
Windthrow	The blowing over of a tree at its roots.
Witches Broom	A deformed or unusual growth of twigs from adventitious buds, caused by insects, disease, or dieback of twigs and buds.
Wood	Secondary ***Xylem***; the main structural support and water conducting tissue of trees and shrubs.
Wound Response Tissue	Also ***Occluding Tissue***, ***Wound Wood,*** or ***Callus***. Differentiated wood tissue that grows around the margins of a wound or injury.
Wound Wood	See ***wound response tissue***
Xylem	Plant tissues with special function of translocation of water and dissolved ***nutrients***.

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