

**Site – Land at Corbar Hill House, Corbar Road,
Buxton**

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HND in Arboriculture

TREE SURVEY & TREE PROTECTION REPORT

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1. Executive Summary

- 1.1 A general view was taken of the trees within the survey area and their relationship with adjacent land-uses and the proposed work. The trees were assessed, and a note made of specific management treatments.
- 1.2 The trees are generally in a reasonable condition, with none posing a significant threat, other than Horse Chestnut T35, which has previously shed a significant proportion of its crown. It is suggested that this is removed as a medium priority. Several of the trees on site have significant dead wood within their crowns and it is recommended that this is removed, the priority depending on the location of the trees in respect to the use of the area below. It was noted that there are several Ash trees present on site, which are showing various degrees of decline due to Ash die-back. It is suggested that these are monitored on a regular basis. Proposed construction is not planned within the root protection area of any of the trees to be retained, however, figures are shown in the tree retention table (Appendix 3).

2. Terms of Reference

2.1 Instruction

2.1.1 Acacia Tree Services is instructed by Nick Bennison of Corbar Hill House, Buxton to:

Carry out assessment of the trees at Corbar Hill House in the vicinity of the proposed construction area.

Assess at an appropriate level of detail and record if the tree presents a significantly elevated risk.

Assess if the tree will be affected by the proposed work

Produce a plan and schedule of tree

Produce a report outlining our findings and propose action to allow the works to be carried out

3. Limitations

3.2.1 The trees were assessed visually from ground level. No digging or drilling methods were employed during this survey.

3.2.2 This report and associated documents remain the copyright of Acacia Tree Services and there shall be no transfer of rights to any third party without our express consent

4. Introduction

4.1 The trees were assessed in accordance to British Standard 5837 (2012), Trees in relation to design, demolition and construction.

4.2 The assessment takes account of the structural and physiological condition of the tree, its age, dimensions and any conservation or landscape value

4.3 The retention category of each Tree or groups of trees is based on the information detailed above using the following categories.

U	= Remove (irremediable or with less than 10 years contribution) (red)
A	= High quality and value, preferably with min. 40 years contribution (light green)
B	= Moderate quality and value (mid blue)
C	= Low quality and value. Also young trees with stem diameter below 150mm (these may be considered for relocation) (grey)

5. Statutory Controls

- 5.1 The trees **do have** statutory protection by virtue of being within Woodland Tree Preservation Order (HPTPO 193) W2 (Confirmed 04/04/2004).

6. Method

- 6.1 A visual assessment was carried out from the ground, to determine the health and structural condition. Dimensions were measured where appropriate or estimated otherwise.
- 6.1.1 Height - overall estimated height of the tree in metres (rounded up to the nearest metre for trees over 10m high.)
- 6.1.2 Stem diameter - measured in millimetres at 1.5m above ground (on sloping ground measured on the upslope of the stem) in accordance with annex C of BS5837:2012
- 6.1.3 Branch spread - measured in metres (rounded up to the nearest half metre) along the four cardinal points of the compass to derive an accurate representation of the crown.
- 6.1.4 Height of crown - the existing height, measured in metres, above ground level of the first significant branch.
- 6.1.5 Age class - Young (Y) Middle aged (MA) Mature (M) Over Mature (OM)
- 6.1.6 Physiological condition - Good (G) moderate (M) poor (P) dead (D)
- 6.1.7 Health and significant defects - overall form of the Tree, presence of decay, any physical defects and observations.
Category U or A to C grading as defined in table 1 BS.5837:2012
- 6.1.8 Management recommendations - including any further investigations required, wildlife habitat potential, management or pruning works.
- 6.1.9 The Estimated Remaining Contribution measured in years (<10, 10+, 20+, 40+)

7. Significant Findings

- 7.1 The trees are generally in a reasonable condition, with none posing a significant threat, other than Horse Chestnut T35, which has previously shed a large proportion of its crown, compromising the structural integrity significantly.
- 7.2 Several of the trees on site, mostly Ash, have significant dead wood within their crowns and it is recommended that this is removed, the priority depending on the size of the dead wood and location of the trees in respect to the use of the area below.
Several of the Ash trees present on site, are showing various degrees of decline due to Ash die-back.
- 7.3 Proposed construction is not planned within the root protection area of any of the trees to be retained, however, figures are shown in the tree retention table (Appendix 3).

8. Recommendations

- 8.1 It is suggested that Horse Chestnut T35 is removed as a medium priority.
- 8.2 It is suggested that the Ash trees are re-inspected once back in leaf and then on an annual basis. Where there is dead wood within the canopy, the priority for action is given in the tree data table in Appendix 1.
- 8.3 A root protection zone is established and the guidelines relating to this (see Appendix 3) are adhered to.

9. References

British Standard 5837 (2012) - Trees in relation to design, demolition and construction.

Appendix 1

Tree Survey Schedule

Tree schedule – Land to the rear of Corbar Hill House, Corbar Road, Buxton

Arboricultural Data Sheet: Corbar Hill House, Corbar Road, Buxton Date of Survey: 28/11/2022 Surveyor: P Pollard													
Tree No.	Species	DBH (mm)	Height (m)	Age	Crown Spread (m)				Crown clearance (m)	Condition rating	Comments	Estimated remaining contribution	Tree quality category rating
					N	E	S	W					
T15	Sycamore	600	18	M	2	7	4	4	7	Good	Bifurcates @ 3m	40+	B
T16	Ash	370	14	MA	3	6	4	2	8	Fair	Supressed	20-40	C
T17	Crack Willow	900	14	OM	3	6	9	6	3	Fair	Asymmetrical crown, minor dead wood	20-40	C
T18	Ash	300	17	MA	3	5	5	3	10	Fair	Supressed	20-40	C
T19	Crack Willow	340	11	EM	1	5	5	1	6	Dead	Snapped @ 3m	0	U
T20	Ash	420	17	M	5	3	5	3	7	Fair	Asymmetrical crown, minor dead wood	20-40	C
T21	Ash	380	17	MA	4	5	3	3	8	Fair	Asymmetrical crown	20-40	C
T22	Crack Willow	380								Poor	Removed		
T23	Crack Willow	200								Dead	Removed		
T24	Ash	360	2							Dead	Stump		U
T25	Monkey Puzzle	510	15	M	4	5	5	4	7	Fair	Asymmetrical crown, occasional pruning wounds	40+	B

Arboricultural Data Sheet: Corbar Hill House, Corbar Road, Buxton Date of Survey: 28/11/2022 Surveyor: P Pollard													
Tree No.	Species	DBH (mm)	Height (m)	Age	Crown Spread (m)				Crown clearance (m)	Condition rating	Comments	Estimated remaining contribution	Tree quality category rating
					N	E	S	W					
T26	Crack Willow	220								Poor	Removed		
T27	Sycamore	240	10	MA	3	2	2	3	3	Fair	Asymmetrical crown	20-40	C
T28	Beech	540	11	EM	5	4	4	5	2	Good	Significant lean-to west	40+	C
T29	Beech	1480	20	M	10	11	11	7	10	Dead	Wind-blown	0	U
G30	Sycamore	70								Poor	Removed	0	C
T31	Ash	220	8	MA	3	2	2	2	3	Fair	Asymmetrical crown	20-40	C
T32	Rowan	200								Dead	Removed	0	U
T33	Rowan	380	12	EM	5	2	5	3	4	Fair	Bifurcates @ 2m	20-40	C
T34	Sycamore	600	12	EM	6	6	5	4	4	Good	Bifurcates @ 6m	40+	C
T35	Horse Chestnut	600	15	M	7	7	9	7	3	Poor	Has shed half of the crown – fell medium priority	<10	U
T36	Sycamore	500	15	M	7	7	7	7	4	Good	Multi-stemmed	40+	B
T37	Ash	140	5	Y	2	2	2	1	2	Good	Supressed	40+	C

Arboricultural Data Sheet: Corbar Hill House, Corbar Road, Buxton Date of Survey: 28/11/2022 Surveyor: P Pollard													
Tree No.	Species	DBH (mm)	Height (m)	Age	Crown Spread (m)				Crown clearance (m)	Condition rating	Comments	Estimated remaining contribution	Tree quality category rating
					N	E	S	W					
T38	Ash	410	16	EM	5	5	6	4	6	Poor	Significant deadwood - monitor	40+	C
T39	Crack Willow	300								Poor	Removed	0	
T40	Sycamore	500	11	EM	6	5	6	3	3	Fair	Multiple pruning wounds & stubs	20-40	C
T41	Crack Willow	550	10	M	5	4	4	3	5	Poor	Bifurcates @ 1.5m	10-20	C
T42	Sycamore	600	10	M	7	7	6	7	2	Fair	Multiple pruning wounds, minor deadwood	40+	B
T43	Ash	860	15	M	7	9	5	8	9	Fair	Significant deadwood, bifurcates @ 3m - monitor	20-40	B
T44	Ash	840	15	M	2	5	9	9	6	Fair	Unbalanced crown, minor deadwood - monitor	20-40	B
T45	Sycamore	470	14	EM	6	5	6	4	6	Fair	Die back in crown	10-20	C
G46	Mixed deciduous	200								Poor	Removed	0	
T47	Sycamore	200	9	MA	4	2	4	4	2	Fair	Supressed	20-40	C
T48	Sweet chestnut	700	16	M	4	2	4	4	8	Fair	Minor deadwood	20-40	B
T49	Ash	750	20	M	6	6	6	6	8	Fair	Some stem damage, significant deadwood - monitor	10-20	C

Arboricultural Data Sheet: Corbar Hill House, Corbar Road, Buxton Date of Survey: 28/11/2022 Surveyor: P Pollard													
Tree No.	Species	DBH (mm)	Height (m)	Age	Crown Spread (m)				Crown clearance (m)	Condition rating	Comments	Estimated remaining contribution	Tree quality category rating
					N	E	S	W					
T50	Sycamore	200								Poor	Removed	0	
T51	Beech	600	18	EM	3	3	6	3	3	Good	Four trees in linear group	40+	B
T52	Sycamore	550	16	EM	6	4	4	6	4	Good	Asymmetric crown	40+	B
T53	Beech	640	18	EM	6	8	6	6	4	Good	Asymmetric crown, with low hanging limb to the south. Remove limb, medium priority	40+	B
T54	Beech	510	17	EM	8	5	6	9	2	Good	Minor deadwood	40+	B
T55	Horse Chestnut	980	18	M	7	6	6	7	2	Fair	Bifurcates @ 4m with included union	40+	B
T56	Beech	830	20	M	8	5	6	9	1	Good	Stem divides @ 5m	40+	B

Appendix 2

Tree Survey Plan

[illegible]

Appendix 3

Tree Protection

Root Protection Zone

Tree number	DBH (mm)	Root protection area (m ²)	Root protection radius (m)
T15	600	163	7.2
T16	370	62	4.4
T17	900	366	10.8
T18	300	41	3.6
T19	340	52	4.1
T20	420	80	5
T21	380	65	4.6
T24	360	59	4.3
T25	510	118	6.1
T27	240	26	2.9
T28	540	132	6.5
T29	1480	991	17.8
T31	220	22	2.6
T33	380	65	4.6
T34	600	163	7.2
T35	600	163	7.2
T36	500	113	6
T37	140	8.9	1.7
T38	410	76	4.9
T40	500	113	6
T41	550	137	6.6
T42	600	163	7.2
T43	860	335	10.3
T44	840	319	10.1
T45	470	100	5.6
T47	200	18	2.4
T48	700	700	8.4
T49	750	750	9
T51	600	600	7.2
T19	340	52	4.1
T20	420	80	5
T21	380	65	4.6

T24	360	59	4.3
T25	510	118	6.1
T27	240	26	2.9
T28	540	132	6.5
T29	1480	991	17.8
T31	220	22	2.6
T33	380	65	4.6
T34	600	163	7.2
T35	0	0	0
T36	500	113	6
T37	140	8.9	1.7
T38	410	76	4.9
T40	500	113	6
T41	550	137	6.6
T42	600	163	7.2
T43	860	335	10.3
T44	840	319	10.1
T45	470	100	5.6
T47	200	18	2.4
T48	700	700	8.4
T49	750	750	9
T51	600	600	7.2
T52	550	550	6.6
T53	640	640	7.7
T54	510	510	6.1
T55	980	980	11.8
T56	830	830	10

Tree Retention Plan (red line shows extent of protective fencing)



Root Protection Area (RPA)

The extent to which a tree may represent a constraint to the development will depend both upon the location of the trunk and the size and nature of the canopy and also the extent of the roots below ground. The tree survey drawing plots the location of the tree above ground and through application of the calculation provided in section 5.5.2 of BS 5837:2012.

Activity within the RPA must be agreed by the Local Planning Authority (LPA) before commencing. Where there is an overriding justification for construction within the RPA, technical solutions might be available that prevent damage to the trees. (See section 7 in BS5837 (2012)). If operations within the RPA are proposed, it must be possible for the project arboriculturist to demonstrate that trees can remain viable, and that the area lost to encroachment can be compensated for elsewhere within the RPA. If encroachment is to take place, a series of mitigation measures to improve the soil environment must be implemented to promote further rooting structures.

Where new permanent hard surface including paving or a slab for a minor structure (e.g., shed base) is to be formed within the RPA, it should bear on existing ground level, and should not exceed an area greater than 20% of the existing un-surfaced ground.

Site operations such as deliveries, site machines, crane jibs etc. should be organised to avoid damaging the trunk or crown of trees. Where this conflict is unavoidable then facilitation pruning should be carried out in advance, rather than after damage has occurred.

Material which could contaminate the soil e.g., concrete mixing, fuel, vehicle washings etc. should not be discharged within 10m of the stem of the tree, and **not on ground beyond sloping down to the tree.**

Fires should either not be permitted, or else not lit where flames could extend to within 5m of the foliage, branches or trunk.

No notice boards, cables, nails or other items should be attached to any part of the tree.

Appendix 4

Guidance Note – Statutory Controls

WILDLIFE ISSUES AND TIMING OF OPERATIONS

Bats. Under current legislation it is an offence to ‘intentionally or recklessly disturb a bat’ or ‘damage, destroy or block access to the resting place of any bat’. For further details consultation must be made with the Statutory Nature Conservancy Organisation (Natural England, 0300 060 1842 www.naturalengland.org.uk). **Where relevant any current ecological surveys for the site will take precedence in this matter.**

Birds. It is also likely to be an offence to kill, injure or take any wild bird; or take, damage or destroy the nest of any wild bird while it is in use or being built. Therefore, work likely to disturb nesting birds should be avoided from late March to August.

All trees requiring work here should be evaluated prior to work starting, and **ideally work should be carried out during August – early October.**

The pruning of some species should avoid specific times. *Prunus* species (e.g. flowering and fruiting Cherry, Plum, Almond etc) should only be pruned during June – August in order to minimise the risk of infection by Silver Leaf disease. *Acer* (Maples including Sycamore), *Betula* (Birches) and, *Morus* (Mulberry) should not be pruned February – June due to sap bleeding; also, *Juglans* (Walnut) from December – June

Appendix 5

GLOSSARY OF ARBORICULTURAL TERMS

Abscission. The shedding of a leaf or other short-lived part of a woody plant, involving the information of a corky layer across its base; in some tree species twigs can be shed in this way.

Abiotic. Pertaining to non-living agents: e.g. environmental factors

Absorptive roots. Non-woody, short-lived roots, generally having a diameter of less than one millimetre, the primary function of which is uptake of water and nutrients.

Access facilitation pruning. One off tree pruning operation, the nature and effects of which are without significant adverse impact on tree physiology or amenity value, which is directly necessary to provide access for operation on site.

Adaptive growth. In tree biomechanics, the process whereby the rate of wood formation in the cambial zone, as well as wood quality, responds to gravity and other forces acting on the cambium. This helps to maintain a uniform distribution of mechanical stress.

Adaptive roots. The adaptive growth of existing roots, or the production of new roots in response to damage, decay or altered mechanical loading.

Adventitious shoots. Shoots that develop other than from apical, axillary or dormant buds; see also 'epicormic'.

Anchorage. The system whereby a tree is fixed within the soil. Involving cohesion between roots and soil and the development of a branched system of roots which withstands wind and gravitational forces transmitted from the aerial parts of the tree.

Arboricultural Method Statement. Methodology for the Implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained.

Arboriculturist. Person who has, through relevant education, training and experience. Gained expertise in the field of trees in relation to construction.

Architecture. In a tree, a term describing the pattern of branching of the crown or root system.

Axil. The place where a bud is borne between a leaf and its parent shoot,

Bacteria. Microscopic single-celled organisms, many species of which break down dead organic matter, and some of which cause diseases in other organisms.

Bark. A term usually applied to all the tissues of a woody plant lying outside the vascular cambium, thus including the phloem, cortex and periderm; occasionally applied only to the periderm or the phellem.

Basidiomycotina. (Basidiomycetes). One of the major taxonomic groups of fungi; their spores are borne on microscopic peg-like structure (basidia), which in many types are in turn borne on or within conspicuous fruit bodies, such as brackets or toadstools. Most of the principal decay fungi in standing trees are basidiomycetes.

Bolling. A term sometimes used to describe pollard heads.

Bottle-butt. A broadening of the stem base and buttresses of a tree, in excess of normal and sometimes denoting a growth response to weakening in that region, especially due to decay involving selective delignification.

Bracing. The use of rods or cables to restrain the movement between parts of a tree.

Branch:

- **Primary** A first order branch arising from a stem.

- **Lateral.** A second order branch, subordinate to a primary branch or stem and bearing sub-lateral branches
- **Sub-lateral.** A third order branch, subordinate to a lateral or primary branch, or stem and usually bearing only twigs.

Branch bark ridge. The raised arc of bark tissues that forms within the acute angle between a branch and its parent stem.

Branch-collar. A visible swelling found at the base of a branch whose diameter growth has been disproportionately slow compared to that of the parent stem; a term sometimes applies also to the pattern of growth of the cells of the parent stem around the branch base.

Brown-rot. A type of wood decay in which cellulose is degraded while lignin is only modified.

Buckling. An irreversible deformation of a structure subjected to a bending load.

Buttress zone. The region at the base of a tree where the major lateral roots joins the stem. With buttress-like formation on the upper side of the junction.

Cambium. Layer of dividing cells producing xylem (woody) tissue internally and phloem (bark) tissue externally.

Canker. A persistent lesion formed by the death of bark and cambium due to colonisation by fungi or bacteria.

Canopy species. Tree species that mature to form a closed woodland canopy

Cleaning out. The removal of dead, crossing, weak and damaged branches, where this will not damage or spoil the overall appearance of the tree.

Compartmentalisation. The confinement of disease, decay or other dysfunction within an anatomically discrete region of plant tissue, due to passive and/or active defences operating at the boundaries of the affected region.

Competent person. A person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached.

Compression fork. An acute angled fork that is mechanically optimised for the growth pressure that two or more adjacent stems exert on each other.

Compression strength. The ability of a material or structure to resist failure when subjected to compressive loading, measurable in trees with special drilling devices.

Compressive loading. Mechanical loading which exerts a positive pressure, the opposite to tensile loading.

Condition. An indication of the physiological conditions of the tree. Where the term 'condition' is used in a report, it should not be taken as an indication of the stability of the tree.

Construction. Site based operations with the potential to affect existing trees.

Construction exclusion zone. Area based on the Root Protection Area from which access is prohibited for the duration of the project.

Crown/Canopy. The main foliage bearing section of the tree.

Crown lifting. The removal of limbs and small branches to a specified height above ground level.

Crown thinning. The removal of a proportion of secondary branch growth throughout the crown to produce an even density of foliage around a well-balanced branch structure.

Crown reduction/shaping. A specified reduction in crown also whilst preserving, as far as possible, the natural tree shape.

Crown reduction/thinning. Reduction of the canopy volume by thinning to remove dominant branched whilst preserving, as far as possible the natural tree shape.

Deadwood. Dead branch wood.

Decurrent. In trees, a system of branching in which the crown is borne on a number of major widely-spreading limbs of similar size (cf. excurrent). In fungi with toad stool as fruit bodies, the description of gills which run some distance down the stem, rather than terminating abruptly.

Defect. In relation to tree hazards, any feature of a tree which detracted from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment.

Delamination. The separation of wood layers along their length visible as longitudinal splitting.

Dieback. The death of parts of a woody plant, starting at shoot-tips or root-tips.

Disease. A malfunction in or destruction of tissues within a living organism, usually excluding mechanical damage: in trees usually caused by pathogenic micro-organisms.

Distal. In the direction away from the main body of a tree or subject organism (cf. proximal).

Dominance. In trees, the tendency for a leading shoot to grow faster or more vigorously than the lateral shoots: also the tendency of a tree to maintain a taller crown than its neighbours.

Dormant bud. An axial bud which does not develop into a shoot until after the formation of two or more annual wood increments: many such buds persist through the life of a tree and develop only if stimulated to do so.

Dysfunction. In woody tissues, the loss of physiological function especially water conduction, in sapwood.

DBH (Diameter at Breast Height) stem diameter measured at a height of 1.5 metres (UK) or the nearest measurable point. Where measurement at a height of 1.5 metres is not possible another height may be specified.

Deadwood. Branch or stem wood bearing no live tissues. Retention of deadwood provided valuable habitat for a wide range of species and seldom represents threat to the health of the tree. Removal of deadwood can result in the ingress of decay to otherwise sound tissue and climbing operations to access deadwood can cause significant damage to a tree. Removal of deadwood is generally recommended only where it represents an unacceptable level of hazard.

Endophytes. Micro-organisms that live inside plant tissues without causing overt disease, but in some cases capable of causing disease if the tissues become physiologically stressed, for example by lack of moisture.

Engineer-designed hard surfacing. Hard surfacing constructed within the 'Root protection area' of a tree, which will be designed by a structural or geotechnical; engineer in collaboration with an arboriculturist as set out in clause 7.4 of British Standard BS5837.2012. The purpose being to minimise the effects of the construction on the health of the tree.

Epicormic shoot. A shoot having developed from a dormant or adventitious bud and not having developed from a first year shoot.

Excrecence. Any abnormal outgrowth on the surface of tree or other organism.

Excurrent. In trees, a system of branching in which there is a well-defined central main stem, bearing branches which are limited in their length, diameter and secondary branching (cf. decurrent).

Fastigiate. Having upright, often clustered branches.

Felling licence. In the UK, a permit to fell trees in excess of a stipulated number of stems or volume of timber.

Field layer. Herbs, ferns, grasses and sedges.

Flush cut. A pruning cut which removes part of the branch bark ridge and or branch-collar.

Girdling root. A root which circled and constricts the stem or roots possibly causing death of phloem and/or cambial tissue.

Ground layer. Mosses, ivy, lichens and fungi.

Guying. A form of artificial support with cable for tree with a temporarily inadequate anchorage.

Habit. The overall growth characteristics, shape of the tree and branch structure.

Haloing. Removing or pruning trees from around the crown of another (usually mature or post-mature) tree to prevent it becoming suppressed.

Hazard beam. An upwardly curved part of a tree in which strong internal stresses may occur without being reduced by adaptive growth prone to longitudinal splitting.

Heartwood/false-heartwood. The dead central wood that has become dysfunctional as part of the aging processes and being distinct from the sapwood.

Heave. A term mainly applicable to a shrinkable clay soil which expands due to re-watering after the felling of a tree which was previously extracting moisture from the deeper layers; also the lifting of pavements and other structures by root diameter expansion; also the lifting of one side of a wind-rocked root-plate.

High canopy tree species. Tree species having potential to contribute to the closed canopy of a mature woodland or forest

Incipient failure. In wood tissues, a mechanical failure which resulted only in deformation or cracking, and not in the fall or detachment of the affected part.

Included bark (ingrown bark). Bark of adjacent parts of a tree (usually forks, acutely joined branches or basal flutes) which is in face-to-face contact.

Increment borer. A hollow augur, which can be used for the extraction of wood cores for counting or measuring wood increments or for inspecting the condition of the wood.

Infection. The establishment of a parasitic micro-organism in the tissue of a tree or other organism.

Internode. The part of a stem between two nodes; not to be confused with a length of stem which bear nodes but no branches.

Lever arm. A mechanical term denoting the length of the lever represented by a structure that is free to move at one end, such as a tree or an individual branch.

Lignin. The hard, cement-like constituent of wood cells; deposition of lignin within the matrix of cellulose microfibrils in the cell wall is termed Lignification.

Lions tailing. A term applied to a branch of a tree that has few if any side-branched except at its end, and is thus liable to snap' due to end-loading.

Loading. A mechanical term describing the force acting on a structure from a particular source e.g. the weight of the structure itself or wind pressure.

Longitudinal. Along the length (of a stem, root or branch)

Lopping. A term often used to describe the removal of large branches from a tree, but also used to describe other forms of cutting.

Mature Heights (approximate):

- Low maturing – less than 8 metres high
- Moderately high maturing – 8 – 12 metres high
- High maturing – greater than 12 metres high.

Microdrill. An electronic rotating steel probe which when inserted into woody tissue provides a measure of tissue density.

Minor deadwood. Deadwood of a diameter less than 25mm and or unlikely to cause significant harm or damage upon impact with a target beneath the tree.

Mulch. Material laid down over the rooting area of a tree or other plant to help conserve moisture; a mulch may consist of organic matter or a sheet of plastic or other artificial material.

Mycelium. The body of a fungus consisting of branched filaments (hyphae)

Occluding tissues. A general term for the roll of wood cambium and bark that forms around a wound on a woody plant (cf. woundwood).

Occlusion. The process whereby a wound is progressively closed by the formation of new wood and bark around it.

Pathogen. A micro-organism which causes disease in another organism.

Photosynthesis. The process whereby plant use light energy to split hydrogen from water molecules and combine it with carbon dioxide to form the molecular building blocks for synthesizing carbohydrates and other biochemical products.

Phytotoxic. Toxic to plants.

Pollarding. The removal of the tree canopy, back to the stem or primary branches, usually to a point just outside that of the previous cutting. Pollarding may involve the removal of the entire canopy in one operation or may be phased over several years. The period of safe retention of trees having been pollarded varies with species and individuals. It is usually necessary to re-pollard on a regular basis, annually in the case of some species.

Primary branch. A major branch, generally having a basal diameter greater than 0.25 x stem diameter.

Primary root zone. The soil volume most likely to contain roots that are critical to the health and stability of the tree and normally defined by reference BS5837 (2012) Trees in Relation to design, demolition and construction.

Priority. Works may be prioritised, 1 = high, 5 = low.

Probability. A statistical measure of the likelihood that a particular event might occur.

Proximal. In the direction towards from the main body of a tree or other living organism (cf. distal).

Pruning. The removal or cutting back of twigs or branches, sometimes applied to twigs or small branches only, but often used to describe most activities involving the cutting of trees or shrubs.

Radial. In the plane or direction of the radius of a circular object such as a tree stem.

Rams-horn. In connection with wounds on trees, a roll of occluding tissues which has a spiral structure as seen in cross-section.

Rays. Strips of radially elongated parenchyma cells within wood

And bark. The functions of rays include food storage, radial translocation and contributing to the strength of wood.

Reactive Growth/Reaction Wood. Production of woody tissue in response to altered mechanical loading, often in response to internal defect or decay and associated strength loss (cf. adaptive growth)

Removal of deadwood. Unless otherwise specified, this refers to the removal of all accessible dead, dying and diseased branchwood and broken snags.

Removal of major deadwood. The removal of, dead, dying and diseased branch wood above a specified size.

Respacing. Selective removal of trees from a group or woodland to provide space and resources for the development of retained trees.

Residual wall. The wall of non-decayed wood remaining following decay of internal stem, branch or root tissues.

Rib. A ridge of wood that has usually developed because of locally increased mechanical loading. Often associated with internal cracking in the wood of the stem, branch or root.

Ring-barking (girdling). The removal of a ring of bark and phloem around the circumference of a stem or branch, normally resulting in an inability to transport photosynthetic assimilates below the area of damage. Almost inevitably results in the eventual death of the affected stem or branch above the damage.

Ripewood. The older central wood of those tree species in which sapwood gradually ages without being converted to heartwood.

Root-collar. The transitional area between the stem/s and roots

Root-collar examination. Excavation of surfacing and soils around the root-collar to access the structural integrity of roots and/or stem.

Root protection area (RPA). Layout design tool indicating a national minimum area around a tree deemed to contain sufficient roots and And rooting volume to maintain the tree's viability and where the protection of the roots and soil structure is treated as a priority.

Root zone. Area of soils containing absorptive roots of the tree/s described. The Primary root zone is that which we consider of primary importance to the physiological well-being of the tree.

Sapwood. Living xylem tissues.

Secondary branch. A branch, generally having a basal diameter of less than 0.25 x stem diameter.

Selective delignification. A kind of wood decay (white-rot) in which lignin is degraded faster than cellulose.

Service. Any above – or below –ground structure or apparatus required for utility provision e.g. drainage, gas supplies, ground source heat pumps, CCTV and satellite communications.

Shedding. In woody plants, the normal abscission, rotting off or sloughing of leaves, floral parts, twigs, fine roots and bark scales.

Shrub species. Woody perennial species forming the lowest level of woody plants in a woodland and not normally considered to be trees.

Silviculture. The practice of controlling the establishment. Growth, composition, health, and quality of forests to meet diverse needs and values.

Silvicultural thinning. Removal of selected trees to favour the development of retained specimens to achieve a management objective.

Single-up. Removal of stems from a multi-stemmed tree with the aim of developing a tree with a single stem.

Simultaneous white-rot. A kind of wood decay in which lignin and cellulose are degraded at about the same rate.

Snag. In woody plants, a portion of a cut or broken stem, branch or root which extends beyond any growing-point or dormant bud; a snag usually tends to die back to the nearest growing point.

Soft-rot. A kind of wood decay in which a fungus degrades cellulose within the cell walls, without any general degradation of the wall as a whole.

Spores. Propagules of fungi and many other life-forms, most spores are microscopic and dispersed in air or water.

Sporophore. The spore bearing structure of fungi.

Sprouts. Adventitious shoot growth erupting from beneath the bark.

Squirrel damage. Stripping of the bark from stems or branches by squirrels. This can result in the death of branches or even entire trees.

Stem/s. Principle above-ground structural component(s) of a tree that supports its branches.

Stress. In plant physiology a condition und which one or more physiological functions are not operating within their optimum range, for example due to lack of water, inadequate nutrition or extremes of temperature.

Stress. In mechanics, the application of a force to an object.

Strain. In mechanics, the distortion of an object caused by a stress.

Stringy white-rot. The kind of wood decay produced by selective delignification.

Storm. A layer of tissue which supports the fruit bodies of some types of fungi, mainly ascomycetes.

Structural roots. Roots generally having a diameter greater than tn millimetres and contributing significantly to the structural support and stability of the tree.

Structure. Manufactured object, such as a building, carriageway, path, wall, service run, and built or excavated earthwork.

Subsidence. In relation to soil or structures resting in or on soil a sinking due to shrinkage when certain types of clay soil dry out, sometimes due to extraction of moisture by tree roots.

Subsidence. In relation to branches of trees, a term that can be used to describe a progressive downward bending due to increasing weight.

Taper. In stems and branches, the degree of change in girth along a given length.

Target canker. A kind of perennial canker, containing concentric rings of dead occluding tissue.

Targets. In tree risk assessment (with slight misuse of normal meaning) persons or property or other thigs of value which might be harmed by mechanical failure of the tree or by objects falling from it.

Topping. In arboriculture, the removal of the crown of a tree, or of a major proportion of it.

Torsional stress. Mechanical stress applied by a twisting force.

Translocation. In plant physiology, the movement of water and dissolved materials through the body of the plant.

Transpiration. The evaporation of moisture from the surface of a plant, especially via the stomata of leaves; it exerts a suction which draws water up from the roots and through the intervening xylem cells.

Tree Protection Plan. Scale drawing, informed by descriptive text where necessary, based upon the finalised proposals showing trees for retention and illustrating the tree and landscape protection measures.

Tree Risk Assessment. An assessment and description of the risks and where appropriate the values associated with a tree or trees. The primary risk being considered is that from falling trees. Other risks such as damage to infrastructure. Interruption of service and building subsidence may also be considered.

- **Walkover** – A general view of the type population considered in the context of the adjacent land-use to identify trees and present significantly elevated risks.
- **Drive-by** – A general view of the tree population from a moving vehicle and considered in the contract if the adjacent land-use to identify trees that present significantly elevated risks.
- **Individual** – The assessment of risks from a single tree considered in the context of the adjacent land-use to identify trees that present significantly elevated risk

Understorey. This layer consists of younger individuals of the dominant trees, together with smaller trees and shrubs which are adapted to grow under lower light conditions.

Understorey tree species. Tree species not having potential to attain a size at which they can contribute to the closed high canopy of a woodland.

Vascular wilt. A type of plant disease in which water-conducting cell become dysfunctional.

Vessels. Water-conducting cells in plants, usually wide and long for hydraulic efficiency; generally not present in coniferous trees.

Veteran tree. Tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned. These characteristics might typically include a large girth, signs of crown retrenchment and hollowing of th stem.

Vigour. The expression of carbohydrate expenditure to growth (in trees)

Vitality. A measure of physiological condition N = within normal range for specie and are R = reduced from the normal range for the species and age, P = poor.

Volunteer trees. Trees arising from natural colonisation rather than having been planted.

White-rot. A range of kinds of wood decay in which lignin, usually together with cellulose and other wood constituents, is degraded.

Wind exposure. The degree to which a tree or other object is exposed to wind, both in terms of duration and velocity.

Wind pressure. The force exerted by a wind on a particular object.

Windthrow. The blowing over of a tree at its roots.

Wound dressing. A general term for sealants and other materials used to cover wounds in the hope of protecting them against desiccation and infection only of prove value against fresh wound parasites.

Wound wood. Wood with atypical anatomical feature. Formed in the vicinity of a wound

