cheshire woodlands
arboricultural consultancy

ARBORICULTURAL STATEMENT

ON

PROPOSED RESIDENTIAL DEVELOPMENT

LAND AT LONGCLOUGH DRIVE, GLOSSOP

ON BEHALF OF

HIGH PEAK ARCHITECTS

WHARF HOUSE, WHALEY LANE

WHALEY BRIDGE, HIGH PEAK SK23 7AD

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Our Ref: CW/7411-AS3

Date: 27 June 2016

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APPENDICES

1. EXECUTIVE SUMMARY

1.1 Planning permission is sought for the erection of six dwellings on an overgrown plot of land adjacent to Longclough Drive in Glossop.

1.2 Trees and hedges on and adjacent to the site have been assessed and the effects of the development proposal on trees evaluated in accordance with current best practice guidance.

1.3 Implementing the development will require the removal of mainly low quality trees and hedges, the loss of which will have only minor impacts on the wider amenity. The removal of a handful of moderate quality trees, two of which are protected by a tree preservation order, will have a modest localised impact on the street scene.

1.4 All of the remaining trees, including most of the protected and moderate and high quality trees, can be protected during construction in accordance with current best practice, with residual details to be resolved by planning condition.

1.5 Landscaping of the residential plots and implementation of a comprehensive scheme of ecological enhancement works across the wider site will provide a net gain for local biodiversity.

2. TERMS OF REFERENCE

2.1 Instruction

2.1.1 Cheshire Woodlands Limited is instructed by High Peak Architects to:

- Survey and prepare a schedule of trees to comply with the general requirements of British Standard 5837:2012 Trees in relation to design, demolition and construction – Recommendations [BS5837]
- Annotate a topographical land survey drawing and produce a Tree Constraints Plan
- Appraise a development proposal in relation to trees and produce an arboricultural statement

2.1.2 The following documents have been considered in our evaluation:

- Existing site survey drawing dated 12 June 2001
- Sketch site layout drawing ref. 1218.03 Revision A
- Biodiversity Management Plan ref. Emery-206-786
- Indicative Landscaping drawing ref. 1218.06
- Tree constraints plan drawing ref. CW/7411-P-TC
- Preliminary tree survey schedule ref. CW/7411-SS1

2.2 Limitations

2.2.1 Assessing the potential effects of trees on load-bearing soils beneath existing and proposed structures is not considered in this report.

2.2.2 Trees are surveyed in sufficient detail to gather data for and inform the current project. Appraisal of the structural condition of trees is of a preliminary nature and sufficient to inform the project. Trees are assessed

from ground level without invasive investigation and the disclosure of hidden defects cannot be expected.

2.2.3 Trees are viewed from within the site or from areas with public access. Assessment may be restricted where trees are ivy clad, located wholly or partially on neighbouring land or where vegetation obscured lower stems and root collars.

2.2.4 This report and associated documents remain the copyright of Cheshire Woodlands Limited and there should be no transfer of rights to any third party without express written consent.

3. INTRODUCTION

3.1 The shaded sections in this report highlight the key issues that are specific to the project.

3.2 This assessment evaluates the effects of a development proposal on trees. The comparative values of trees are considered broadly in line with the guidance of BS5837 and their retention, protection and management are informed by this evaluation.

3.3 Glyn Thomas and Wayne Barnett, senior consultant and arboricultural surveyor with Cheshire Woodlands Limited assessed the trees and the development proposal. The trees were surveyed on 3 September 2014.

3.4 The development proposal comprises the erection of six, split-level, 2/3 storey, detached and semi-detached dwellings as shown on the tree constraints plan at appendix 2.

3.5 This report provides sufficient supporting information to demonstrate impacts on trees and enable the local planning authority [LPA] to determine a planning application insofar as it relates to trees. It does not include a

working specification for the protection of retained trees during construction, details of which can be resolved by planning condition.

4. THE SITE

4.1 The site, which slopes by up to 9 metres from south to north and occupies an area of disused ground to the north and west sides of Longclough Drive, around a kilometre to the west of Glossop town centre, is bounded by residential properties to all four sides, with a small stream to the north and Longclough Drive to the south and east.

4.2 The British Geological Survey - Geology of Britain Viewer identifies the underlying soils as 'Till, Devensian - Diamicton'. Till is a general term referring to any kind of sediment deposited directly from glacier ice, typically unstratified and unsorted and sometimes called boulder-clay.

5. STATUTORY TREE PROTECTION

5.1 An email enquiry to High Peak Council confirmed that several trees on the site are subjects of The High Peak Borough Council (Land at Longclough Drive, Simmondley) Tree Preservation Order (TPO) No 180 (2001), which is referenced in the 'comments' column of the tree survey schedule at appendix 1. The site is not in a conservation area. See appendix 4 for further guidance.

6. SURVEY METHODOLOGY

6.1 The existing site plan overlaid with the sketch site layout is the base for the tree constraints plan at appendix 2.

6.2 The trees were identified, measured and recorded in the survey schedule at appendix 1. Stem diameters and canopy spreads were mostly measured using a tape, tree heights using a tape and clinometer.

6.3 The structural condition of the trees was assessed on the basis of the 'visual tree assessment method' (Mattheck and Breloer 1994).

6.4 Below-ground constraints are represented on the drawing as 'root protection areas' (RPA), calculated in accordance with section 4.6 and table D.1 of BS5837.

6.5 All surveyed trees were assessed for 'Visual Prominence' and were categorised as set out in Table 1 below (see appendix 3 for further guidance).

6.6 A brief assessment for obvious signs of wildlife habitat in trees and hedges on the site was carried out during our survey. Any wildlife habitats of potential significance identified during our survey will be described in the 'comments' column of the tree survey schedule. Detailed ecological matters are dealt with by the project ecologists under separate cover.

7. EVALUATION OF THE TREES

7.1 BS5837 recommends that trees be evaluated and categorised as set out in Table 1, which also provides a summary of the impact of the application proposal on trees.

7.2 Table 1

	To be retained and protected during construction	To be removed for development	To be managed in accordance with the Biodiversity Management Plan
Category A High quality with life expectancy of at least 40 years	Tree T7	None	None
Category B Moderate quality with life expectancy of at least 20 years	Trees T1, T5, T6, T10, T11, T14 and T15 and groups G6 and G7	Trees T16, T21 and T22 and group G1	Groups G8, G12 and G13
Category C Low quality with life expectancy of at least 10 years, or small young trees	Trees T9, T12 and T13 and groups G2 and G4	Trees T2, T3, T4, T17 and T18, groups G3 and G14, the south western half of G11, the southern and western sections of area A1 and the southern section of A3	Trees T8 and T20, groups G5, G9, G10 and G15 and the north eastern half of G11, area A2, the northern and eastern sections of A1 and the northern section of A3
Category U Cannot be retained in context of current land-use for longer than 10 years	Tree T19	None	None
Hedges and Shrubs	Hedge H3	The eastern sections of hedges H1 and H2	The western sections of hedges H1 and H2

7.3 A total of 22 individual trees, 15 groups of trees, 3 areas of trees and 3 hedges have been assessed, and comprise 1 'high quality' A category tree (T7), 16 'moderate quality' B category trees and groups (T1, T5, T6, T10, T11, T14 to T16, T21, T22, G1, G6 to G8, G12 and G13), 22 'low quality' C category trees, groups and areas (T2 to T4, T8, T9, T12, T13, T17, T18, T20, G2 to G5, G9 to G11, G14, G15 and A1 to A3) and 1 'unsuitable' U category tree T19.

7.4 T19, G2, G4, G6 and G7 are off-site and are within the ownership and control of neighbouring land owners.

7.5 Trees T1, T10 to T12, T14 to T16 and T22 - along the southern highway boundary, and T6 and T7 - in the north western corner of the site – are protected by the TPO.

7.6 Trees T2 to T4, T16 to T18, T21 and T22, groups G1, G3 and G14, the south western half of G11, the southern and western sections of area A1, the southern section of A3 and the eastern sections of hedges H1 and H2, will be removed to accommodate the development. The majority of these are 'low quality' C category trees that contribute little to the character and appearance of the area. T16, T21, T22 and G1 are 'moderate quality' B category trees (with T16 and T22 included in the TPO) the removal of which will have localised adverse impacts on the local street scene.

7.7 Mitigation is proposed in the form of new tree, shrub and hedge planting and a comprehensive scheme of ecological enhancement works as detailed in the Biodiversity Management Plan submitted with the planning application.

7.8 Minor pruning of some of the retained trees is proposed, as detailed in the 'management' column of the tree survey schedule at appendix 1 to improve

the spatial relationship with the development and accommodate the biodiversity management plan. The proposed works comply with current best practice as set out in British Standard 3998:2010 Tree work – Recommendations [BS3998] and will not detract from the health or visual qualities of the retained trees.

7.9 All of the retained trees and hedges can be protected during construction in accordance with current best practice as set out in BS5837, with details to be resolved by planning condition.

8. CONCLUSIONS

8.1 Implementing the development proposal will require the removal of several 'moderate' and 'low quality' trees, two of which are protected by the TPO.

8.2 The proposed tree removals will have localised impacts on the character and appearance of the area, which will be mitigated by new landscaping and a comprehensive package of ecological enhancement works, details of which are submitted with the planning application.

8.3 All of the trees and hedges proposed for retention can be protected during construction in accordance with current best practice, with residual details to be resolved by planning condition.

9. RECOMMENDATIONS

9.1 No tree pruning or removal works should commence on site until the requisite consents have been obtained from the local planning authority [LPA], either in respect of the TPO or as part of a detailed planning permission.

9.2 All tree and hedge removal and pruning works should be implemented in accordance with the tree survey schedule at appendix 1 and in compliance with the requirements of BS3998.

9.3 Statutory protection of wildlife should be taken into account in the planning and execution of the tree and hedge removal and pruning works. See appendix 5 for further guidance.

9.4 All trees and hedges proposed for retention should be protected during site construction works in accordance with a tree protection plan and arboricultural method statement to be agreed with the LPA.

9.5 Foundation design should take into consideration the juxtaposition of existing and proposed trees and the nature of the load-bearing soils.

9.6 Underground services should be installed in accordance with a scheme of works to be agreed with the LPA and in compliance with the requirements of BS5837 and NJUG Volume 4.

9.7 Landscaping of the residential plots should be implemented in accordance with a scheme of works to be agreed with the LPA.

9.8 Management of the wider site beyond the residential curtilages should be implemented in accordance with the Biodiversity Management Plan (Emery-206-786) and the Indicative Landscaping drawing (1218.06).

10. REFERENCES.

Anon. Geology of Britain Viewer. British Geological Survey, Nottingham. http://www.bgs.ac.uk/ (accessed 25 June 2015)

BS5837:2012. Trees in relation to design, demolition and construction - Recommendations. British Standards Institute, London.

BS3998:2010. Tree work - Recommendations. British Standards Institute, London.

Mattheck. M, and Breloer. H,. 1994. The Body Language of Trees A handbook for failure analysis. Research for Amenity Trees No. 4.

NJUG Volume 4. 2007. NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees. National Joint Utilities Group, Milbank, London. 34pp.

APPENDIX 1

TREE SURVEY SCHEDULE

PROJECT: LAND AT LONGCLOUGH DRIVE, GLOSSOP
CLIENT: HIGH PEAK ARCHITECTS LIMITED
REF: CW/7411-SS5
DATE: 03 SEPTEMBER 2014

SURVEYED BY: W BARNETT
CHESHIRE WOODLANDS LIMITED
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No.	Species	Age Range	Height (m)	Crown Spread (m)	Stem Dia. (mm)	Vitality	Comments	Management	Visual prominence	Retention Value Existing	Retention Value Proposed	BS5837 RPA Radius (m)
T1	Ash *(Fraxinus excelsior)*	EM	15	17	785	M	• Exhibits slightly reduced vitality with dieback to upper canopy • Damage to surface roots beneath the canopy on eastern side • Stem bifurcates at 0.5m, at which point there is an included bark union of co-dominant stems with no signs of failure • Several partially occluded open decay cavities to stem and first order branches • Appears to have been reduced in the past to reduce canopy spread overhanging neighbouring dwellings • Rope swing attached to low branch on east side • **Tree T3 of the 2001 TPO**	• Retain and protect during development • Monitor crown for signs of deterioration	3	B	B	9.3
T2	Goat willow *(Salix caprea)*	SM	9	11	550 (EST)	M	• Exhibits reduced vitality • Multi-stemmed at base • Of no particular merit	• Fell for development • Grind stump to a depth of 0.3m	2	C	U	N/A
T3	Hawthorn *(Crataegus monogyna)*	Y	8	5	200 (EST)	G	• Growing within area of overgrown land which limits assessment • Removal of lower vegetation would benefit long-term retention	• Fell for development • Grind stump to a depth of 0.3m	2	C	U	N/A
T4	Pine *(Pinus* sp.*)*	Y	4	3	100 (EST)	G	• Growing within an area of ground that appears to have been adopted by neighbouring land owners • Suppressed by neighbouring trees to the east with moderate canopy bias to the west	• Fell for development • Grind stump to a depth of 0.3m	1	C	U	N/A
T5	Hawthorn	EM	10 (EST)	9 (EST)	MS 1X400 1X125	G	• Growing within an area of ground that appears to have been adopted by neighbouring landowners	• Retain and protect during development • No work required	2	B	B	5.0

Assessment was restricted where trees were ivy clad or located wholly or partially on neighbouring land or where basal growth or vegetation obscured lower stems and root collars
All trees should be re-assessed at appropriate intervals

HEADINGS & ABBREVIATIONS

Age Range Y = young SM = semi-mature EM = early-mature M = mature PM = post-mature
Stem Dia Stem diameter (measured in accordance with Figure C.1 of BS5837: 2012) (MS = multi-stemmed EST = estimated)
Crown Spread Maximum crown spread (EST = estimated)
Vitality D = dead MD = moribund P = poor M = moderate G = good
Visual prominence Broad indication of prominence in the landscape (0 = none 1 = very low up to 5 = very high) (G = contributes to a wider group)
Retention Category Existing Broadly in accordance with Table 1 of BS5837: 2012 (considers the merits of the tree or group in the context of the existing land-use)
Retention Category Proposed Broadly in accordance with Table 1 of BS5837: 2012 (considers the merits of the tree or group in the context of a development proposal)
BS5837 RPA Radius Calculated in accordance with Table D.1 of BS5837: 2012

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No.	Species	Age Range	Height (m)	Crown Spread (m)	Stem Dia. (mm)	Vitality	Comments	Management	Visual prominence	Retention Value Existing	Retention Value Proposed	BS5837 RPA Radius (m)
T6	Sycamore *(Acer pseudoplatanus)*	EM	22 (EST)	16 (EST)	MS 1X700 1X200	G	• Growing within an area of unmanaged woodland to the southern bank of a small stream • Multi-stemmed at base • Extensive tipping of garden waste to the east side of stem • Bleeding stem lesions at 0.5m on north side and further bark necrosis up to a height of 2m on east side of stem • **Tree T2 of the 2001 TPO**	• Retain and protect during development • Prune to remove low branches to improve ground clearance (works to be agreed on site with LPA arboricultural officer and supervised by the project arboriculturist) • Monitor for signs of further bark necrosis and bleeding stem lesions • Monitor for signs of reduced vitality	3	B	B	8.7
T7	Sycamore	EM	22 (EST)	15 (EST)	730	G	• Growing atop the bank of a small stream • Stem bifurcates at 3m, at which point there is an included bark union of co-dominant stems with no signs of failure • Several dead branches in the lower canopy on north and east side • Would benefit from the removal of several naturally colonised ash saplings and young trees that are growing up to and through canopy on north and east side • **Tree T1 of the 2001 TPO**	• Retain and protect during development • Prune to remove low branches to improve ground clearance (works to be agreed on site with LPA arboricultural officer and supervised by the project arboriculturist)	3	A	A	8.7
T8	Willow *(Salix* sp.*)*	SM-EM	12 (EST)	12 (EST)	MS 2X250 3X200 (EST)	M	• Exhibits reduced vitality • Dense vegetation limits detailed assessment	• Manage in accordance with Biodiversity Management Plan (Emery-206-786) and Indicative Landscaping drawing (1218.06)	2	C	-	-
T9	Willow	M	17 (EST)	20 (EST)	MS 3X350 1X200 (EST)	M	• Exhibits reduced vitality with dieback to upper canopy • Dense vegetation limits detailed assessment of lower stem and root collar and assessed from site boundary • Growing to the northern bank of a small stream close to what appears to be a drainage outlet	• Retain and protect during development • Prune to remove low branches to improve ground clearance (works to be agreed on site with LPA arboricultural officer and supervised by the project arboriculturist) • Monitor crown for signs of deterioration	3	C	C	7.4
T10	Silver birch *(Betula pendula)*	EM	18	7.5	320	G	• Growing within an area of overgrown land close to the northern edge of a highway footpath • Canopy down to ground level • Branches in the mid canopy to the north are touching overhead BT wires • **Tree T4 of the 2001 TPO**	• Retain and protect during development • No work required	3	B	B	3.9

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No.	Species	Age Range	Height (m)	Crown Spread (m)	Stem Dia. (mm)	Vitality	Comments	Management	Visual prominence	Retention Value Existing	Retention Value Proposed	BS5837 RPA Radius (m)
T11	Silver birch	EM	18	9	350	G	• Growing within an area of overgrown land close to the northern edge of a highway footpath • **Tree T5 of the 2001 TPO**	• Retain and protect during development • Prune to remove low branches to improve ground clearance (works to be agreed on site with LPA arboricultural officer and supervised by the project arboriculturist)	3	B	B	4.2
T12	Silver birch	SM-EM	18	8	280	M	• Exhibits slightly reduced vitality • Growing within an area of overgrown land close to the northern edge of a highway footpath • Dense vegetation limits detailed assessment of the lower stem and root collar • Tipping of garden waste beneath the canopy on the east side • **T6 of the 2001 TPO**	• Retain and protect during development • Prune to remove low branches to improve ground clearance (works to be agreed on site with LPA arboricultural officer and supervised by the project arboriculturist) • Remove garden waste • Clear low vegetation to enable detailed assessment of lower stem	3	C	C	3.3
T13	Rowan *(Sorbus aucuparia)*	SM-EM	6	7	MS 1X180 1X100	M	• Exhibits reduced vitality • Growing within an area of overgrown land close to the northern edge of a highway footpath • Dense vegetation limits detailed assessment of lower stem and root collar	• Retain and protect during development • Prune to remove low branches to improve ground clearance (works to be agreed on site with LPA arboricultural officer and supervised by the project arboriculturist) • Carefully clear low vegetation to enable detailed assessment of lower stem	2	C	C	2.5
T14	Ash	SM	16 (EST)	16 (EST)	400 (EST)	G	• Growing within an area of overgrown land close to the northern edge of a highway footpath • Dense vegetation limits detailed assessment of lower stem and root collar • **Tree T7 of the 2001 TPO**	• Retain and protect during development • Prune to remove low branches to improve ground clearance (works to be agreed on site with LPA arboricultural officer and supervised by the project arboriculturist) • Carefully clear low vegetation to enable detailed assessment of lower stem and root collar	3	B	B	4.8 (EST)
T15	Balsam poplar *(Populus balsamifera)*	SM-EM	24 (EST)	18 (EST)	900 (EST)	G	• Dense vegetation limits detailed assessment of the lower and root collar • Growth habit of lower stem and buttress roots indicate possible shallow rooting zone • Surface roots are displacing adjacent pathway to the south • Recently failed branches with a diameter of approximately 100mm to north • **Tree T8 of the 2001 TPO**	• Retain and protect during development • Prune to remove low branches to improve ground clearance (works to be agreed on site with LPA arboricultural officer and supervised by the project arboriculturist) • Carefully clear low vegetation to enable detailed assessment of lower stem and root collar	3	B	B	10.8 (EST)

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No.	Species	Age Range	Height (m)	Crown Spread (m)	Stem Dia. (mm)	Vitality	Comments	Management	Visual prominence	Retention Value Existing	Retention Value Proposed	BS5837 RPA Radius (m)
T16	Balsam poplar	SM- EM	24 (EST)	20 (EST)	950 (EST)	G	• Dense vegetation limits detailed assessment of the lower and root collar and not assessed in detail • Growth habit of lower stem and buttress roots indicate possible shallow rooting zone • Surface roots are displacing adjacent pathway to the south • **Tree T9 of the 2001 TPO**	• Fell for development • Grind stump to a depth of 0.3m	3	B	U	N/A
T17	Silver birch	Y-SM	10 (EST)	4	150 (EST)	M	• Heavily suppressed under neighbouring poplar trees	• Fell for development • Grind stump to a depth of 0.3m	2	C	U	N/A
T18	Silver birch	SM	10	4	180	G	• Growing within an area of overgrown land close to the north edge of a highway footpath • Dense vegetation limits detailed assessment of lower stem and root collar • Suppressed to the south and east by neighbouring poplar trees with moderate crown bias and stem lean at 4m	• Fell for development • Grind stump to a depth of 0.3m	2	C	U	N/A
T19	Willow	EM	14	6	480 (EST)	D	• Located off-site within the gardens of an adjacent residential property and assessed from boundary • Stem leans to the south with dead branch with a diameter of 200mm overhanging subject site	• Notify adjacent landowner of their duty of care in relation to neighbouring land and the need for appropriate management of their trees	1	U	U	-
T20	Sycamore	SM-EM	14	1.8 (EST)	400 (EST)	M	• Growing on the south bank of a small stream • Exhibits slightly reduced vitality	• Manage in accordance with Biodiversity Management Plan (Emery-206-786) and Indicative Landscaping drawing (1218.06)	1	C	-	-
T21	Ash	SM	15 (EST)	12 (EST)	MS 1X280 1X120 (EST)	G	• Dense vegetation limits detailed assessment • Stem bifurcates at 2m, at which point there is an included bark union of co-dominant stems with no signs of failure	• Fell for development • Grind stump to a depth of 0.3m	1	B	U	N/A
T22	Common oak *(Quercus robur)*	SM	14 (EST)	7 (EST)	250 (EST)	G	• Dense vegetation limits detailed assessment • **Tree T10 of the 2001 TPO**	• Fell for development • Grind stump to a depth of 0.3m	2	B	U	N/A

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No.	Species	Age Range	Height (m)	Crown Spread (m)	Stem Dia. (mm)	Vitality	Comments	Management	Visual prominence	Retention Value Existing	Retention Value Proposed	BS5837 RPA Radius (m)
G1	Common oak	SM	≤12	10	<350	G	• Closely space group of two trees, growing within overgrown ground • Several dead branches in lower canopies • Canopies down to ground level • **G1/1** • Stem bifurcates at 3.5m, at which point there is an included bark union of co-dominant stems with signs of past partial failure • **G1/2** • Open growth habit with canopy down to ground level	• Fell for development • Grind stumps to a depth of 0.3m	3	B	U	N/A
G2	Leyland cypress *(×Cupressocyparis leylandii)* Ash Cherry laurel *(Prunus laurocerasus)* Portuguese laurel *(Prunus lusitanica)* Cherry	SM-EM Y Y SM	≤15	≤8 (EST)	≤230 (EST)	G	• Located off-site • Growing to the side elevation of a neighbouring dwelling fronting the public highway	• No work required	2	C	C	≤2.7 (EST)
G3	Goat willow *(Salix caprea)* Cedar *(Cedrus* sp.*)* Horse chestnut *(Aesculus hippocastanum)* Ash Mixed ornamental shrubs	Y-EM Y-SM Y Y	≤15	≤15	≤550 (EST)	M-G	• Closely spaced group comprising mainly semi-mature to early mature goat willow • The majority of trees are multi-stemmed at base and appear to be natural colonisation • Extensive tipping of garden waste beneath the canopies of several trees • Understorey comprising mainly naturally colonised young ash, willow and horse chestnut **G3/1 Goat willow** • Past root plate failure with extensive phoenix regeneration	• Fell for development • Grind stumps to a depth of 0.3m	2	C	U	N/A
G4	Rowan Silver birch Ash Hawthorn Hazel *(Corylus avellana)* Goat willow	Y SM-EM Y Y Y-M Y-SM	≤18 (EST)	≤10 (EST)	≤ MS 2X300 (EST)	D-G	• Located mainly off-site within the gardens of an adjacent residential property save for single goat willow to the southern end • Comprising mainly rowan, hazel and hawthorn with occasional silver birch, ash and goat willow	• Protect during development • Prune to remove low branches to improve ground clearance (works to be agreed on site with LPA arboricultural officer and supervised by the project arboriculturist)	1	C	C	≤5.1 (EST)

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No.	Species	Age Range	Height (m)	Crown Spread (m)	Stem Dia. (mm)	Vitality	Comments	Management	Visual prominence	Retention Value Existing	Retention Value Proposed	BS5837 RPA Radius (m)
G5	Ash Hawthorn Elm *(Ulmus* sp.*)*	Y-SM Y-SM Y	≤18 (EST)	≤8 (EST)	≤220	D-G	• Naturally colonised closely spaced group • Comprising mainly ash with occasional hawthorn and elm • Trees have woodland form with clear stems up to a height of between 8m and 10m • Selective removal of ash would benefit adjacent long term retention of better quality trees	• Manage in accordance with Biodiversity Management Plan (Emery-206-786) and Indicative Landscaping drawing (1218.06)	1	C	-	-
G6	Sycamore	SM-EM	≤20 (EST)	≤15 (EST)	≤MS 3X450 (EST)	M-G	• Located off-site, growing on the north bank of a small stream and assessed from site boundary • Trees appear to be naturally colonised and rooting into boundary retaining wall • Ivy to stems and canopy up to a height of 16m • Minor overhang to subject site	• Protect during development • No work required	3	B	B	≤9.4 (EST)
G7	Sycamore Goat willow	EM-M EM	≤22 (EST)	≤20 (EST)	≤600 (EST)	G	• Located off-site, growing on the north bank of a small stream and assessed from site boundary **G7/1 Goat willow** • Appears to be extensively decayed to the lower stem	• Protect during development • **G7/1 -** Notify neighbouring land owner of our findings	3	B	B	≤7.2 (EST)
G8	Sycamore Ash	SM-EM Y-SM	≤22 (EST)	≤12 (EST)	≤450 (EST)	M-G	• Closely spaced group comprising mainly sycamore with occasional young to semi-mature ash • Growing atop the southern bank of a small stream • Trees form a single canopy **G8/1 Ash** • Growing up to and through canopy of neighbouring trees. Removal together with the removal of naturally colonised ash along stream bank would benefit long-term retention of better quality trees	• Manage in accordance with Biodiversity Management Plan (Emery-206-786) and Indicative Landscaping drawing (1218.06)	3	B	-	-
G9	Hazel Holly *(Ilex aquifolium)* Ash Hawthorn Sycamore	Y-SM Y Y-SM SM-EM Y	≤15 (EST)	≤8 (EST)	≤400 (EST)	M-G	• Dense vegetation limits detailed assessment of lower stem and root collars • Closely spaced group comprising mainly hawthorn and ash with occasional hazel, holly and sycamore	• Manage in accordance with Biodiversity Management Plan (Emery-206-786) and Indicative Landscaping drawing (1218.06)	1	C	-	-
G10	Alder *(Alnus glutinosa)* Sycamore Ash Hazel	Y Y Y Y	≤8 (EST)	≤4 (EST)	≤100 (EST)	G	• Dense vegetation limits detailed assessment • Closely spaced group comprising mainly sycamore and ash with occasional alder and hazel • Growing on the southern bank of a small stream • Of no particular merit	• Manage in accordance with Biodiversity Management Plan (Emery-206-786) and Indicative Landscaping drawing (1218.06)	2	C	-	-

TREE SURVEY SCHEDULE

PROJECT: LAND AT LONGCLOUGH DRIVE, GLOSSOP
CLIENT: HIGH PEAK ARCHITECTS LIMITED
REF: CW/7411-SS5
DATE: 03 SEPTEMBER 2014

SURVEYED BY: W BARNETT
CHESHIRE WOODLANDS LIMITED
PAGE: 7

No.	Species	Age Range	Height (m)	Crown Spread (m)	Stem Dia. (mm)	Vitality	Comments	Management	Visual prominence	Retention Value Existing	Retention Value Proposed	BS5837 RPA Radius (m)
G11	Ash Goat willow Swedish Whitebeam *(Sorbus x intermedia)* Hawthorn	Y-SM Y-M Y-EM Y	≤16 (EST)	≤12 (EST)	≤MS 2X400 1X350 1X200 1X180 1X150 (EST)	D-G	• Growing within an area of overgrown land close to the south and western edge of a highway footpath • Dense vegetation limits detailed assessment of lower stems and root collars • Closely spaced group comprising mainly goat willow with an area of Whitebeam to the northern end • Several goat willow are multi-stemmed at base **G11/1 Goat willow** • Several stems exhibit longitudinal cracking and bark necrosis. Within falling distance of the highway. Removal recommended **G11/2 Goat willow** • Westernmost stem has an included stem union with signs of partial failure. Within falling distance of highway. Removal recommended **G11/3 Goat willow** • Significantly displacing footpath surfacing. Not suited to long-term retention. Removal recommended	• Remove south western half for development and grind stumps to a depth of 0.3m • Manage north eastern half in accordance with Biodiversity Management Plan (Emery-206-786) and Indicative Landscaping drawing (1218.06)	3	C	C&U	≤8.2 (EST)

TREE SURVEY SCHEDULE

PROJECT: LAND AT LONGCLOUGH DRIVE, GLOSSOP
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DATE: 03 SEPTEMBER 2014

SURVEYED BY: W BARNETT
CHESHIRE WOODLANDS LIMITED
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No.	Species	Age Range	Height (m)	Crown Spread (m)	Stem Dia. (mm)	Vitality	Comments	Management	Visual prominence	Retention Value Existing	Retention Value Proposed	BS5837 RPA Radius (m)
G12	Alder Ash Sycamore Hawthorn Holly Beech *(Fagus sylvatica)* Goat willow	SM-EM Y-EM Y-EM SM Y SM Y-EM	≤22 (EST)	≤20 (EST)	≤MS 2X500 (EST)	D-G	• Closely spaced group comprising mainly ash and sycamore • Growing on steep bank to the north of a small stream • Several trees to the north eastern corner are dead or exhibit reduced vitality • Several naturally colonised trees are growing to the northern boundary and have potential to damage adjacent structures and surfacing **G12/1 Beech** • Dead. Overhanging public highway. Removal recommend **G12/2 Ash** • Multi-stemmed at base. Northernmost stem heavily leaning to the north with weak attachment point at base. Easternmost stem is heavily decayed up to a height of 3m **G12/3 Alder** • Extensively decayed on south side up to a height of 1.5m	• Manage in accordance with Biodiversity Management Plan (Emery-206-786) and Indicative Landscaping drawing (1218.06)	3	B	-	-
G13	Alder Sycamore Hawthorn Goat willow Ash	M Y-SM Y-SM SM-EM Y	≤16 (EST)	≤17 (EST)	≤MS 1X600 1X300 (EST)	D-G	• Closely spaced group to the southern bank of a small stream • Contains several trees that could be removed without significantly affecting the visual qualities of the wider group **G13/1 Oak** • Heavily suppressed under adjacent alder with stem leaning to the north	• **G13/1 –** Fell for development and grind stump to a depth of 0.2m • Manage remainder in accordance with Biodiversity Management Plan (Emery-206-786) and Indicative Landscaping drawing (1218.06)	2	B	B&U	≤8.0 (EST)
G14	Holly Hazel Hawthorn	Y Y Y-EM	≤10 (EST)	≤6 (EST)	≤300 (EST)	D-G	• Dense vegetation limits assessment and assessed from site boundary • Appears to be remnants of former hedgerow	• Fell for development • Grind stumps to a depth of 0.3m	2	C	U	N/A
G15	Ash Sycamore Hawthorn Willow	Y-SM Y Y-SM Y	≤14	≤8	≤200 (EST)	G	• Dense vegetation limits detailed assessment and assessed from boundary • Closely spaced group comprising mainly hawthorn and ash with occasional natural colonisation of willow and sycamore	• Manage in accordance with Biodiversity Management Plan (Emery-206-786) and Indicative Landscaping drawing (1218.06)	2	C	-	-

TREE SURVEY SCHEDULE

PROJECT: LAND AT LONGCLOUGH DRIVE, GLOSSOP
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REF: CW/7411-SS5
DATE: 03 SEPTEMBER 2014

SURVEYED BY: W BARNETT
CHESHIRE WOODLANDS LIMITED
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No.	Species	Age Range	Height (m)	Crown Spread (m)	Stem Dia. (mm)	Vitality	Comments	Management	Visual prominence	Retention Value Existing	Retention Value Proposed	BS5837 RPA Radius (m)
A1	Himalayan balsam *(Impatiens glandulifera)* Bramble Goat willow Sycamore Ash Hazel	 Y Y Y Y	≤5	≤4 (EST)	≤100 (EST)	D-G	• Unmanaged area • Dense vegetation limits assessment and assessed from site boundary • Comprising mainly bramble with occasion natural colonisation of ash, goat willow and sycamore	• Remove southern/western section for development and grind stumps to a depth of 0.3m • Manage northern/eastern sections in accordance with Biodiversity Management Plan (Emery-206-786) and Indicative Landscaping drawing (1218.06)	2	C	U	N/A
A2	Himalayan balsam Bramble Elder *(Sambucus nigra)* Sycamore Hawthorn Ash	 Y Y Y	≤4 (EST)	≤2 (EST)	≤80 (EST)	D-G	• Unmanaged area • Dense vegetation limits assessment and assessed from site boundary • Comprising mainly bramble with occasional elder and naturally colonised ash and sycamore	• Manage in accordance with Biodiversity Management Plan (Emery-206-786) and Indicative Landscaping drawing (1218.06)	2	C	-	-
A3	Japanese knotweed *(Fallopia japonica)* Himalayan balsam Ash Hawthorn Elder Sycamore Hazel Bramble	 Y Y Y-EM Y Y	≤6 (EST)	≤5 (EST)	≤180 (EST)	D-G	• Unmanaged area • Dense vegetation limits assessment and assessed from site boundary • Appears to comprise bramble with naturally colonised ash, hawthorn and elder • An area of what appears to be Japanese knotweed to the north east corner	• Remove southern section for development and grind stumps to a depth of 0.3m • Manage northern section in accordance with Biodiversity Management Plan (Emery-206-786) and Indicative Landscaping drawing (1218.06)	1	C	U	N/A
H1	Leyland cypress	-	≤6	≤3 (EST)	-	G	• Short section of clipped hedge • Growing within an area of ground that appears to have been adopted by neighbouring land owners • Broadly maintained to the western end to a height of 2m, with eastern end allowed to grow on to 6m • Would benefit from clipping back to solid form and a reduction to the height of between 2m and 3m	• Remove eastern section for development and grind roots to a depth of 0.3m • Manage western section in accordance with Biodiversity Management Plan (Emery-206-786) and Indicative Landscaping drawing (1218.06)	2	-	-	-
H2	Leyland cypress Golden Leyland cypress *(×Cupressocyparis leylandii 'Castlewellan')* Ash	 Y	≤6	≤4 (EST)	-	G	• Short section of clipped hedge • Growing within an area of ground that appears to have been adopted by neighbouring land owners • Broadly maintained to a height of 2m, save for eastern end which has been allowed to grow on to 6m • Would benefit from clipping back to solid form and a reduction to the height of between 2m and 3m	• Remove eastern section for development and grind roots to a depth of 0.3m • Manage western section in accordance with Biodiversity Management Plan (Emery-206-786) and Indicative Landscaping drawing (1218.06)	1	-	-	-

TREE SURVEY SCHEDULE

PROJECT: LAND AT LONGCLOUGH DRIVE, GLOSSOP
CLIENT: HIGH PEAK ARCHITECTS LIMITED
REF: CW/7411-SS5
DATE: 03 SEPTEMBER 2014

SURVEYED BY: W BARNETT
CHESHIRE WOODLANDS LIMITED
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No.	Species	Age Range	Height (m)	Crown Spread (m)	Stem Dia. (mm)	Vitality	Comments	Management	Visual prominence	Retention Value Existing	Retention Value Proposed	BS5837 RPA Radius (m)
H3	Spotted laurel *(Aucuba japonica)* Holly Mixed ornamental shrubs	-	≤2.5	≤1.5	-	G	• Located off-site within the front garden of an adjacent residential property • Broadly managed to a height of 2m	• Protect during development • No work required	1	-	-	-

APPENDIX 2

TREE CONSTRAINTS PLAN

TREE CONSTRAINTS PLAN

CHESHIRE WOODLANDS
ARBORICULTURAL CONSULTANCY

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CLIENT	HIGH PEAK ARCHITECTS
PROJECT	LAND AT LONGCLOUGH DRIVE GLOSSOP
JOB REF	CW/7411-P-TC1
DATE	27 June 2016
SCALE	1:250 at A1

- OWNERSHIP BOUNDARY
- APPLICATION SITE BOUNDARY
- DEVELOPMENT PROPOSAL (DRAWING REF 1218.03 Rev A)
- INDIVIDUAL TREE TO BE RETAINED
- TREE INCLUDED IN TREE PRESERVATION ORDER
- GROUP OF TREES TO BE RETAINED AND MANAGED
- AREA OF TREES TO BE RETAINED AND MANAGED
- HEDGE TO BE RETAINED
- STEM POSITION APPROXIMATED
- TREE, GROUP, AREA OR HEDGE TO BE REMOVED FOR DEVELOPMENT
- TREE TO BE REMOVED FROM A GROUP
- BS 5837 RETENTION VALUE
- BS5837 ROOT PROTECTION AREA RADIUS
- BS5837 CATEGORY 'A' TREES
- BS5837 CATEGORY 'B' TREES
- BS5837 CATEGORY 'C' TREES

APPENDIX 3

Guidance Note - Assessment of Visual Prominence and Assessment of Retention Values

Visual Prominence Values

Determined by assessment of current and potential visual prominence and taking account of location, tree size, growth potential and useful life expectancy. Visual prominence values are classified as follows:

(0) none, (1) very low up to (5) very high

Retention Values

Trees or groups of trees are evaluated twice in order to facilitate consideration of their relative merits. Firstly, the trees are assessed and categorised in the context of the pre-development situation to provide a broad valuation of all of their attributes and the contribution to their environs. Secondly, the trees are similarly assessed and categorised in the context of a development proposal. The evaluations consider current or projected:

- life expectancy (broad categorisation)
- visual prominence (current and potential)
- landscape function
- numbers of other trees and their maturity (continuity for landscape, amenity, habitat)
- wildlife habitats (incl. continuity)
- safety
- conflicts with the built environment or other land-use
- cultural, historical or other special value

Groups of trees are assessed and categorised as a single unit.

Pre-Development Retention Value

Each surveyed tree or group of trees is valued and placed into one of the following categories (A, B, C or U). The valuation considers the benefits and disbenefits of retaining the tree or group of trees in the pre-development context; any specific issues are noted in the tree survey schedule.

(A) Trees the retention of which in the pre-development context is most desirable and that have an estimated remaining life expectancy of at least 40 years (high value category)

Wholly appropriate to the pre-development situation and without significant conflict

(B) Trees the retention of which in the pre-development context is desirable and that have an estimated remaining life expectancy of at least 20 years (moderate value category)

Appropriate to the pre-development situation but not of highest value

(C) Trees that could be retained in the pre-development context and have an estimated remaining life expectancy of at least 10 years (low value category)

Ill-suited to the pre-development situation but could be retained with moderate conflicts

Trees of no particular merit in the pre-development context

(U) Trees unsuitable for retention in the pre-development context

Cannot reasonably be retained within the pre-development situation for longer than 10 years

Post-Development Retention Value

With reference to a development proposal, each of the trees or groups of trees is placed in one of the following categories (A, B, C or U). The valuation considers the benefits and disbenefits of retaining the tree or group of trees in the context of the development proposal; any specific issues are noted in the tree survey schedule.

(A) Trees the retention of which is most desirable (high value category)

Retention wholly appropriate to the proposed situation and without significant conflict

(B) Trees the retention of which is desirable (moderate category)

Retention appropriate to the proposed situation but not of highest value and/or having only minor conflicts

(C) Trees which could be retained (low value category)

Retention ill-suited to the proposed situation but could be retained with moderate conflicts

Trees of no particular merit in the proposed situation

(U) Trees for removal

Cannot reasonably be retained within the proposed situation

APPENDIX 4

GUIDANCE NOTE- STATUTORY CONTROLS

TREES AND HEDGES:

Subject to certain specified exemptions, the Town and Country Planning Act 1990, requires that an application must be made to the local planning authority (LPA), to carry out works upon or remove trees that are subject to a tree preservation order (TPO).

Six weeks' notice must be given to the LPA of intention to carry out works upon or remove trees within a conservation area and not protected by a TPO.

Local planning authority consent may be required to carry out works upon or remove trees, shrubs and hedges that are the subjects of planning conditions.

LPA consent may be required for the removal of hedgerows under the Hedgerow Regulations 1997.

Your Council's planning department will advise whether or not any of the above controls apply to your trees, shrubs and hedges.

Subject to certain exemptions, the Forestry Act (1967 specified) requires that a licence must be obtained for the felling of growing trees

Your nearest Forestry Commission office will advise whether you require a felling licence.

WILDLIFE

The Wildlife and Countryside Act 1981 (together with the amendments of 1985 & 1991, the subsequent variations to the schedule orders, and strengthening amendments made within the Countryside and Rights of Way Act 2000) forms the basis for legislation protecting Britain's flora and fauna.

Nesting birds and all species of bat are afforded statutory protection. It is an offence to:

- disturb a nesting bird
- disturb a roosting bat or damage, destroy or block access to a bat roost
- intentionally kill, injure or take a bat
- sell, hire, barter or exchange a bat, dead or alive
- be in possession or control of a bat or anything derived from a bat

Your local Wildlife Trust or your Council's Ecologist will provide guidance on statutory controls relating to wildlife.

APPENDIX 5

GLOSSARY OF ARBORICULTURAL TERMS

Abscission. The shedding of a leaf or other short-lived part of a woody plant, involving the formation 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 operations 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 structures (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 formed at the base of a branch whose diameter growth has been disproportionately slow compared to that of the parent stem; a term sometimes applied 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 join the stem, with buttress-like formations on the upper side of the junctions

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 condition 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 size whilst preserving, as far as possible, the natural tree shape

Crown reduction/thinning. Reduction of the canopy volume by thinning to remove dominant branches 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 toadstools 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 detracts 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

Incorporating extracts from Lonsdale, D. 1999. Principles of Tree Hazard Assessment. Her Majesty's Stationary Office, London

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 provides valuable habitat for a wide range of species and seldom represents a threat to the health of the tree. Removal of deadwood can result in the ingress of decay to otherwise sound tissues 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 which 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

Excrescence. 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 circles 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 cables for trees 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 supressed

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/ripewood. The dead central wood that has become dysfunctional as part of the aging processes

Heave. A term mainly applicable to a shrinkable clay soil which expands due to re-wetting 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 results 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 auger, 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 tissues 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-branches 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 plants 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

Incorporating extracts from Lonsdale, D. 1999. Principles of Tree Hazard Assessment. Her Majesty's Stationary Office, London

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

Removal of major dead wood. The removal of, dead, dying and diseased branchwood 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. See 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 assess 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 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

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

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

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

Sporophore. The spore bearing structure of fungi

Sprouts. Adventitious shoot growth erupting from beneath the bark

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

Stress. In plant physiology, a condition under 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

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 ten 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 tissues

Targets. In tree risk assessment (with slight misuse of normal meaning) persons or property or other things 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 tree population considered in the context of the adjacent land-use to identify trees that present significantly elevated risks
- Drive-by - A general view of the tree population from a moving vehicle and considered in the context of 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 risks

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 cells become dysfunctional

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

Incorporating extracts from Lonsdale, D. 1999. Principles of Tree Hazard Assessment. Her Majesty's Stationary Office, London

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 the stem

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

Vitality. A measure of physiological condition. N = within normal range for species and age, R = reduced from the normal range for the species and age, P = poor, MD = moribund, D = dead

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 proven value against fresh wound parasites

Woundwood. Wood with atypical anatomical features, formed in the vicinity of a wound