

PRELIMINARY TREE SURVEY SCHEDULE
(TO BE FINALISED UPON COMPLETION OF LAYOUT PROPOSAL)

PROJECT: GREENHILL NURSERY, GREENHILL ROAD, LIVERPOOL
CLIENT: MORRIS HOMES LIMITED
REF: CW/7337-SS
DATE: 21 MAY 2014

SURVEYED BY: G THOMAS
 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	Sycamore (<i>Acer pseudoplatanus</i>)	M	12	9	500 (EST)	M	<ul style="list-style-type: none"> Growing off-site Restricted access and not assessed in detail Crown on south west side overhangs subject site by up to 1.5m with ground clearance of around 7m 	<ul style="list-style-type: none"> No work required 	2	B		6.0 (EST)
T2	Hawthorn (<i>Crataegus monogyna</i>)	M	7	6	350 (GL)	G	<ul style="list-style-type: none"> Growing off-site Restricted access and not assessed in detail Very minor canopy overhang on south west side over subject site and could be cut back to the boundary 	<ul style="list-style-type: none"> No work required 	2	B		4.2
T3	Sycamore	SM	11	8	250 & 280 (MS) (EST)	M	<ul style="list-style-type: none"> Growing off-site Abutting the rear corner of a brick outbuilding with crown on the south and west sides overlying and touching roof Most probably natural colonisation 	<ul style="list-style-type: none"> Option A: Consider removal to limit future damage to the building Option B: Prune to clear building 	2	C		4.5
T4	Deodar cedar (<i>Cedrus deodara</i>)	Y	8	7 (EST)	250 (EST)	M	<ul style="list-style-type: none"> Located off-site approximately 1.5m from the boundary fence Restricted access and not assessed in detail Crown on the north west side overhangs the subject site by up to 2m with ground clearance currently down to 3m and could be clipped back to the boundary 		2	B		3.0 (EST)
T5	Lombardy poplar (<i>Populus nigra 'Italica'</i>)	SM	12	5	400 (EST)	M	<ul style="list-style-type: none"> Dense vegetation partially restricts access and not assessed in detail 	<ul style="list-style-type: none"> Clear low vegetation to facilitate a more detailed assessment of the stem and root collar 	2	B		4.8 (EST)

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 GL = measured at ground level)
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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T6	Bay laurel (<i>Laurel nobilis</i>)	SM	6	5 (EST)	200 (EST)	G	<ul style="list-style-type: none"> Off-site boundary tree growing within the rear garden of a neighbouring property Could be clipped back to the boundary 		1	C		2.4 (EST)
T7	Cherry (<i>Prunus sp.</i>)	EM	6	8	300	M	<ul style="list-style-type: none"> Stem and crown biased to north east over access roadway Crown extends almost to ground level Pruned in the past to remove low first and second order branches from over the roadway 	<ul style="list-style-type: none"> No work required 	2	C		3.6
T8	Common oak (<i>Quercus robur</i>)	EM	15	14.5	550	G	<ul style="list-style-type: none"> Stem and crown slightly biased to north east Ivy colonising stem and primary branches to a height of 4m Clear stem to 3m Crown on north east side extends down to ground level, with scope to increase ground clearance to around 4m Would benefit from the removal of adjacent competing vegetation 	<ul style="list-style-type: none"> No work required 	2	A		6.6
T9	Sycamore	M	13	13	600	M	<ul style="list-style-type: none"> Recent minor disturbance of ground beneath the canopy on the east side Minor basal shoots Ivy colonising stem to a height of 3m Main stem trifurcates at a height of 3m Pruned in the past to remove low lateral and sub-lateral branches Would benefit from the removal of adjacent competing vegetation General ground clearance of between 3m and 6m, which could be raised to a height of around 6m by removal of low lateral branches 	<ul style="list-style-type: none"> No work required 	2	A		7.2
G1	5 Leyland cypress (<i>X Cuprocyparis leylandii</i>)	EM	≤15	≤8	280 - 440	G	<ul style="list-style-type: none"> Closely spaced linear group of off-site boundary trees, most probably a former boundary hedge Ground clearance on north side down to 4m Roots and stems on north side displacing bitmac roadway Acute included bark unions of co-dominant and primary branches, currently showing no signs of failure 	<ul style="list-style-type: none"> Monitor included bark unions for signs of failure 	2	C		3.3 – 5.4

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G2	1 Beech (<i>Fagus sylvatica</i>) 1 Copper beech (<i>Fagus sylvatica</i> 'Purpurea')	EM	≤15	≤13	450 & 530	G	<ul style="list-style-type: none"> Group of boundary trees Ground clearance on west side currently down to 4.5m and could be raised to a height of at least 7m by removal of low secondary branches Occluded and partially occluded branch pruning wounds to stems and around the lower crowns where low lateral branches were removed several years ago 	• No work required	3	A		5.4 & 6.3
G3	2 Copper beech	EM	≤12	≤8	300 & 500	M-G	<ul style="list-style-type: none"> Group of boundary trees Ground clearance on north west side down to 1.8m and could be raised to a height of around 5m by removal of low lateral and sub-lateral branches Both trees have been pruned in the past to remove low lateral branches 	• No work required	3	B		3.6 & 6.0
G4	Sycamore Cherry Privet (<i>Ligustrum ovalifolium</i>) Hawthorn Goat willow (<i>Salix caprea</i>)	Y SM	≤11	≤10 (EST)	≤550 (GL) (EST)	P-G	<ul style="list-style-type: none"> Closely spaced linear group of boundary trees and shrubs Comprises an overgrown privet hedge, a declining ornamental cherry tree at the western end and dense natural colonisation of sycamore and goat willow Restricted access and individual trees not assessed in detail Removal and replacement with new boundary landscaping could provide amenity benefits 	• No work required	2	C		≤6.6 (EST)
G5	Sawara cypress (<i>Chamaecyparis pisifera</i>) Mixed ornamental shrubs	Y	≤4	≤3	≤150	M-G	<ul style="list-style-type: none"> Internal ornamental plantings abutting a brick outbuilding Of no particular merit in terms of their contribution to the wider landscape 	• No work required	0	C		≤1.8
G6	Goat willow Privet Ash (<i>Fraxinus excelsior</i>)	Y-SM	≤11	≤7 (EST)	≤150 (EST)	M-G	<ul style="list-style-type: none"> Overgrown privet hedge and natural colonisation of ash and goat willow forming a closely spaced linear group Restricted access and individual trees not assessed in detail 	• No work required	2	C		≤1.8 (EST)

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G7	Hybrid black poplar (<i>Populus nigra</i>)	SM-EM	≤15 (EST)	≤10	≤400	M-G	<ul style="list-style-type: none"> Closely spaced linear group of boundary trees growing on a raised bank to the rear edge of the public highway The majority of the trees, save for a handful at the northern end were heavily topped many ago at a height of around 3m with multiple upright co-dominant branches arising from the old topping points Contains several dead poplar stems One tree to the centre is colonised by dense ivy 	<ul style="list-style-type: none"> Fell dead stems Clear ivy and low vegetation to facilitate a more detailed assessment of the lower stems and root collars Monitor development of multiple branch attachments Manage as pollards by regular removal of pollard regrowth every five to ten years 	4	B		≤4.8
G8	Sycamore Elder (<i>Sambucus nigra</i>) Goat willow	Y-SM	≤12 (EST)	≤10 (EST)	≤300	M-G	<ul style="list-style-type: none"> Closely spaced group of young to semi-mature recent natural colonisation on unmanaged ground Would benefit from re-spacing Several trees to the southern end are extensively fire-damaged 	<ul style="list-style-type: none"> Consider re-spacing 	3	B		≤3.6
G9	3 Leyland cypress	SM-EM	9 - 17	≤7	350 - 700 (GL)	G	<ul style="list-style-type: none"> Closely spaced linear group of off-site boundary trees growing within the rear garden of a neighbouring residential property Crowns on the north west side overhang the subject site by up to 3m, with ground clearance almost down to ground level Most probably remnants of a former boundary hedge G9/1 <ul style="list-style-type: none"> Growing abutting and displacing a steel palisade boundary fence 	G9/1 <ul style="list-style-type: none"> Monitor displacement of boundary fence 	2	C		4.2 – 8.4
G10	Sycamore Hawthorn Oak (<i>Quercus sp.</i>)	Y-EM	≤13	≤8 (EST)	≤400	M-G	<ul style="list-style-type: none"> Closely spaced linear group of boundary trees and shrubs Comprises the remnants of a former hawthorn hedge and dense natural colonisation of sycamore Recent disturbance of ground at the south eastern end, which extends beneath the crowns of several trees Would benefit from re-spacing and removal of trees to favour T9 	<ul style="list-style-type: none"> Consider re-spacing Consider removal of competing vegetation to release oak tree T9 	2	B		≤4.8

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G11	Sycamore Hawthorn Ash	Y-EM	≤14 (EST)	≤12 (EST)	≤800	G-D	<ul style="list-style-type: none"> Closely spaced linear group of boundary trees Comprises remnants of a former hawthorn hedge, locally dense natural colonisation of sycamore and a small pollard ash tree to the centre Several sycamore trees to the north western half are dead or show signs of decline, most probably associated with impaired drainage Removal of sycamore at the south eastern end would release sycamore tree T10 G11/1 - Ash <ul style="list-style-type: none"> Extensive decay/hollowing to stem Heavily topped many years ago at a height of 3m with multiple branch attachments arising from the old topping points 	<ul style="list-style-type: none"> Remove dead and dying trees to the north western end G11/1 – Re-pollard and maintain by regular removal of regrowth on a five to ten year cycle 	2	B		≤9.6

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G12	Hybrid black poplar Sycamore Ash Oak	M Y-M Y M	≤20 (EST)	≤25 (EST)	≤1100	M-G	<ul style="list-style-type: none"> Closely spaced linear group of boundary trees growing along a steep embankment to the rear edge of the public highway Comprises a line of mature poplar, sycamore, ash and oak to the north western edge, with locally dense natural colonisation of mainly sycamore along and to the bottom edge of the bank Several sycamore trees to the south eastern edge are colonised by dense ivy Several sycamore trees are multi-stemmed from ground level and are probably stool shoot regrowth from previously cut stumps Contains several low quality trees, the removal of which would have no significant impact on the collective visual qualities/landscape value of the group Would benefit from re-spacing <p>G12/1 Hybrid poplar</p> <ul style="list-style-type: none"> Heavily topped in the past at a height of 4m, with multiple co-dominant stems arising from the stem and the old topping point A primary branch of around 300mm diameter in the lower crown on the south east side has recently failed and is hanging in an adjacent sycamore tree Signs of internal decay to the stem and a substantial co-dominant branch on the north west side shows signs of incipient failure <p>G12/2 Sycamore</p> <ul style="list-style-type: none"> Partially occluded decay/hollowing to lower stem on north west side <p>G12/3 Oak</p> <ul style="list-style-type: none"> Stem and crown heavily biased to south east Decay to the upper side of a low primary branch on the south east side <p>G12/4 Ash</p> <ul style="list-style-type: none"> Appears to have been heavily topped many years ago at a height of around 2m 	<ul style="list-style-type: none"> Clear low vegetation and sever and strip ivy to a height of 3m as necessary to facilitate a more detailed assessment of lower stems and root collars of the principal trees G12/1 – Option a) Re-pollard and manage by regular removal of pollard regrowth on a five to ten year cycle. Option b) Fell to ground level and poison stump to prevent regrowth G12/3 – Prune to remove decayed low primary branch Consider re-spacing 	4	A		≤13.2

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G13	Sycamore	Y	≤10	≤6	≤180	M-G	<ul style="list-style-type: none"> Closely spaced linear group of boundary trees growing abutting and through a steel palisade boundary fence 	<ul style="list-style-type: none"> Consider removal to limit future damage/displacement of the fence 	1	C		≤2.1
G14	3 Oak	SM	≤11	≤10	300 - 450	G	<ul style="list-style-type: none"> Closely spaced group of boundary trees General ground clearance of around 2m G14/1 <ul style="list-style-type: none"> Acute included bark unions of co-dominant and primary branches between 1.8 and 3m, currently showing no signs of failure Ivy colonising stem and lower crown to a height of 3m G14/2 <ul style="list-style-type: none"> Ivy colonising stem and crown G14/3 <ul style="list-style-type: none"> Acute included bark unions of co-dominant stems at a height of 1.5m, currently showing no signs of failure 	<ul style="list-style-type: none"> Monitor development of included bark unions 	2	B		3.6 – 5.4
G15	Sycamore Goat willow Holly (<i>Ilex aquifolium</i>) Ash Hawthorn Elder Lawson's cypress (<i>Chamaecyparis lawsoniana</i>)	Y-M	≤16 (EST)	≤16 (EST)	≤750 (EST)	M-G	<ul style="list-style-type: none"> Closely spaced linear group of boundary trees, several of which are located off-site within the grounds of the neighbouring property Comprises a linear group of early mature/mature off-site sycamore trees and locally dense natural colonisation of sycamore and goat willow along the boundary fence Several Lawson's cypress are probably remnants of a former boundary hedge Off-site trees to the north side overhang the subject site by up to 6m, with ground clearance currently down to 3m and could be raised to a height of between 6m and 7m by removal of low lateral and sub-lateral branches Removal of low quality sycamore and goat willow colonisation to the southern and south western edges would have no significant impact on the collective landscape/visual qualities of the wider group and would provide space for new boundary landscaping 	<ul style="list-style-type: none"> No work required 	2	A		≤9.0 (EST)

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G16	1 Lombardy poplar 1 Sycamore	PM EM	≤12	≤10	430 & 1000	M	<ul style="list-style-type: none"> Closely spaced group, which appear to be located off-site G16/1 Poplar <ul style="list-style-type: none"> Heavily topped several years ago between 5m and 7m Extensive decay/hollowing to lower stem G16/2 Sycamore <ul style="list-style-type: none"> Stem and crown biased to south west Reduced vitality 	<ul style="list-style-type: none"> Clarify ownership and formally notify the respective landowner of their duty of care in relation to neighbouring land and the need for appropriate management of their trees 	2	C		5.1 & 12.0
A1	Goat willow Ash Buddleia Sycamore Norway maple Leyland cypress Oak	Y-SM	≤11 (EST)	≤15 (EST)	≤450 (EST)	P-G	<ul style="list-style-type: none"> Large area of unmanaged ground, colonised by locally dense goat willow, sycamore, oak and ash and with areas of open ground colonised by dense raspberry and bramble Restricted access and unable to assess in detail 	<ul style="list-style-type: none"> No work required 	2	C		≤5.4 (EST)
A2	Mixed ornamental shrubs Sycamore Ash Goat willow Lawson's cypress	Y-SM	≤10	≤6 (EST)	≤150 (EST)	M-G	<ul style="list-style-type: none"> Area of unmanaged ground with remnants of ornamental tree and shrub plantings associated with the former nursery Open ground colonised by coarse grasses, bramble, raspberry and locally dense young natural colonisation of sycamore, goat willow and ash 	<ul style="list-style-type: none"> No work required 	2	C		≤1.8 (EST)
A3	Ash Buddleia Goat willow Cherry Sycamore	Y	≤7	≤7 (EST)	≤150 (EST)	M-G	<ul style="list-style-type: none"> Area of unmanaged ground Comprises recent natural colonisation of mainly ash, goat willow and sycamore, remnant ornamental shrubs from the former nursery and open ground colonised by coarse grasses and locally dense patches of bramble 	<ul style="list-style-type: none"> No work required 	1	C		≤1.8 (EST)
A4	Silver birch (<i>Betula pendula</i>) Goat willow Broom Sycamore Cherry Hawthorn Ash	Y	≤5	≤3	≤50 (EST)	G	<ul style="list-style-type: none"> Area of open ground colonised by coarse grasses, locally dense bramble and raspberry and young natural colonisation of cherry, silver birch, ash, sycamore and hawthorn 	<ul style="list-style-type: none"> No work required 	1	C		≤0.9 (EST)

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H1	Leyland cypress Golden Leyland cypress Sycamore Ornamental shrubs	-	≤3.5	-	-	M	<ul style="list-style-type: none"> Poor quality off-site garden hedges Could be cut back to the boundary 		0	-		-
H2	Leyland cypress	EM	≤16	7	450 (GL)	G	<ul style="list-style-type: none"> Unmanaged boundary hedge Acute included bark unions of co-dominant and primary branches, currently showing no obvious signs of failure Signs of past branch failures 	<ul style="list-style-type: none"> Monitor for further branch failures 	2	C		5.4
H3	Privet Dog rose (<i>Rosa canina</i>) Sycamore	-	≤3	-	-	M	<ul style="list-style-type: none"> Short length of very poor quality boundary hedge Mainly privet with young natural colonisation of sycamore 	<ul style="list-style-type: none"> Consider removal of sycamore Clip back to solid form 	1	-		-
H4	Privet Sycamore Lime (<i>Tilia sp.</i>)	-	≤4	-	-	M	<ul style="list-style-type: none"> Length of unmanaged boundary hedge Mainly privet with young natural colonisation of sycamore and root sucker growth of lime 	<ul style="list-style-type: none"> Clip back to solid form 	2	-		-
H5	Privet	-	≤1.5	-	-	G	<ul style="list-style-type: none"> Length of managed party boundary hedge Maintained in the past by regular clipping 		0	-		-
H6	Privet Elder Sycamore Lawson's cypress	-	1.8 – 7.0 (EST)	-	-	M-G	<ul style="list-style-type: none"> Dense boundary vegetation Mainly unmanaged, overgrown privet hedges with occasional young natural colonisation of sycamore and a closely spaced linear group of off-site cypress trees to the south western end Restricted access and unable to assess in detail A short section to the north eastern end has been managed by regular clipping at a height of around 1.8m Would benefit from management Removal and replacement with new boundary landscaping could provide amenity benefits 		2	-		-

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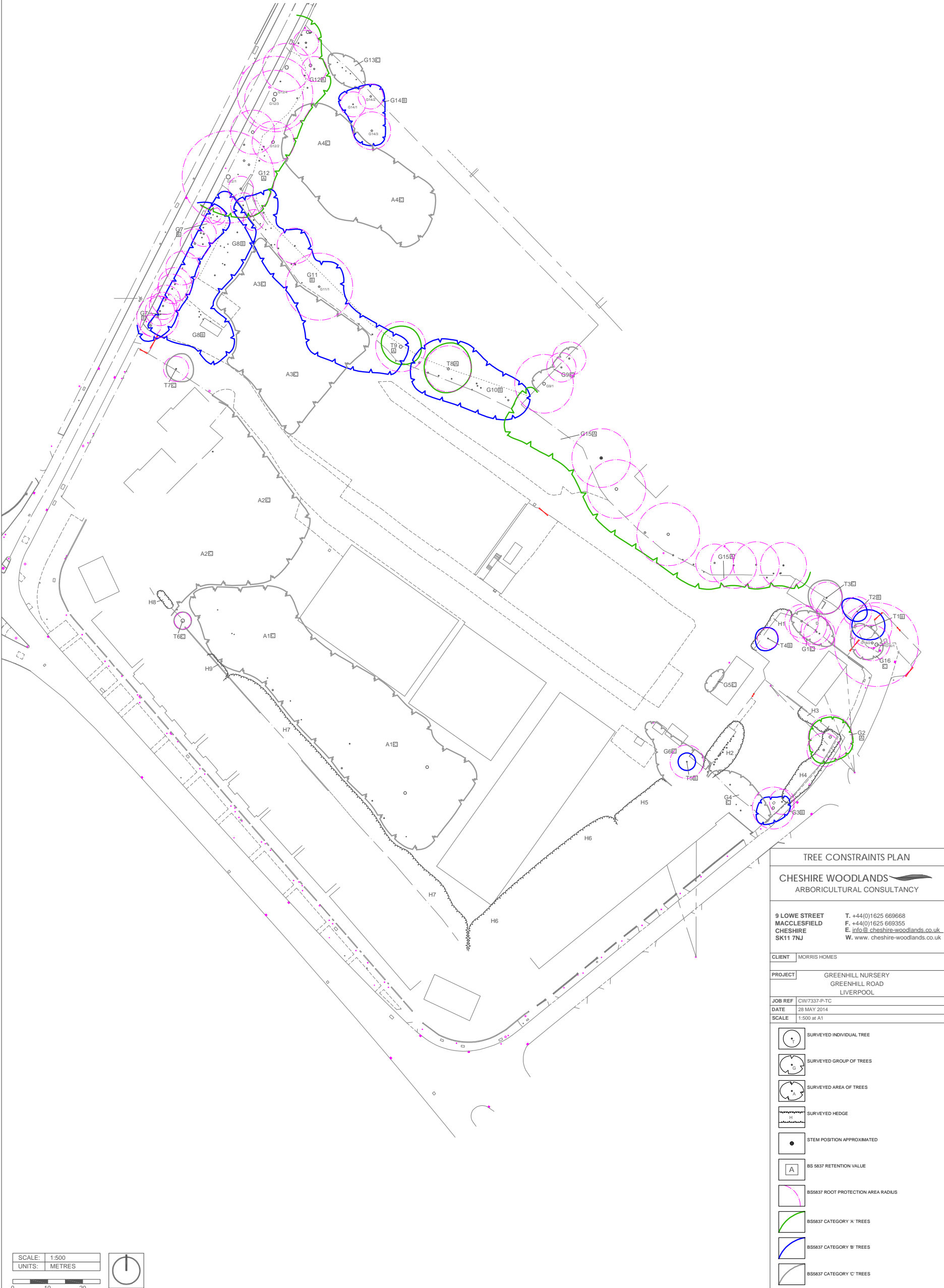
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H7	Leyland cypress	SM/EM	≤10	≤6 (EST)	≤300 (EST)	G	<ul style="list-style-type: none"> • Unmanaged boundary hedge • Continuous along most of its length, save for a 12m long section towards the south eastern end which has been removed in recent years presumably by the adjoining property owners • Signs of recent branch failures • Removal and replacement with new boundary landscaping could provide long-term amenity benefits 		2	-		-
H8	Privet	-	≤2	-	-	G	<ul style="list-style-type: none"> • Short length of clipped garden boundary hedge 	<ul style="list-style-type: none"> • Maintain by regular clipping 	0	-		-
H9	Cherry laurel	-	≤3.5	-	-	G	<ul style="list-style-type: none"> • Short length of clipped garden boundary hedge 	<ul style="list-style-type: none"> • Maintain by annual clipping 	0	-		-

TREE CONSTRAINTS PLAN



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

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

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

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

Compartmentalization. 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

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 exclusion zone. Area based on the Root Protection Area (in square metres) to be protected during development, by the use of barriers and/or ground protection

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

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

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)

Fastigate. 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 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/ripewood. Sapwood that has become dysfunctional as part of the natural 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)

Ocluding 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 (2005) Guide for Trees in Relation to 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 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

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. An area of ground surrounding a tree that contains sufficient rooting volume to ensure the tree's survival. Calculated with reference to Table 2 of BS5837 (2005) and shown in plan form in square metres

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

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. The main supporting structure/s, from ground level up to the first major division into 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

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 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

Veteran tree. A loosely defined term for an old specimen that is of interest biologically, culturally or aesthetically because of its age, size or condition and which has usually lived longer than the typical upper age range for the species concerned

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

Vitality. A measure of physiological condition expressed through the health and growth of foliage, shoots and adaptive woody tissues.

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