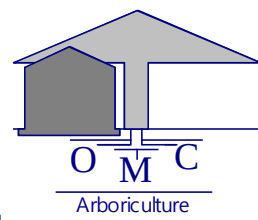


Arboricultural Tree Condition Report

'The View' Forest School
Rhododendron Avenue
Meopham, Kent
DA13 0TU



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Arboricultural Report on the Condition of Trees at 'The View' Forest School, Rhododendron Avenue, Meopham, Kent

1. Introduction

Instruction

- 1.1 OMC Associates (OMC) was instructed by Estate and Field Management Ltd. to carry out a visual inspection of trees and other significant woody vegetation within a defined area of woodland to the north of Rhododendron Avenue Meopham, in order to assess and report on its general health and condition. The inspection was carried out on 14th and 15th July 2022.

Scope of report

- 1.2 This report summarises the overall condition of all significant trees and woody vegetation included within the survey and, where necessary, makes recommendations for appropriate management. Trees on neighbouring land identified as having the potential to impact adversely on people or property, or other less prominent vegetation may also have been included where the need for management was obvious.
- 1.3 While principally addressing matters relating to tree safety, management recommendations within this report may also encompass minor nuisance issues associated with the natural growth of trees, such as: branches growing close to, or brushing against buildings / fences / phone lines and / or other structures, branches obscuring signage and external lighting, and prevention of the establishment of self-seeded vegetation growing in inappropriate locations. Occasionally recommendations may also be made purely in the general interests of good arboricultural management and where requested, works on the express instruction of the tree owner, irrespective of there being any overbearing arboricultural or practical reason.

Documents / plans

- 1.4 1:1250 scale mapping of the survey area was supplied by the site owner.

Limitations

- 1.5 The survey is concerned with the arboricultural aspects of the site only.
- 1.6 Trees are dynamic self-optimising organisms that grow in reaction and stimulus to their immediate surroundings and influence of wider environmental conditions. Consequently, tree health and condition will inevitably change over time, therefore any comments made in this report can only be considered valid for three years. In addition, OMC Associates does

not accept any liability for harm or injury resulting from a sudden deterioration in the health and/or structural condition of inspected trees within the report's period of validity due to unforeseeable factors such as: extreme weather conditions, accidents (whether caused by chemical, fire or vandalism), mechanical damage, or instances where recommended works have not been carried out to current industry standards, or within prescribed timeframes.

- 1.7 Due to the nature and lifecycle of living organisms associated with trees and variation in seasonal growing conditions, the recommendations made within this report are limited to one occasion, based on observations made at the given time of year. Factors having the potential to significantly influence tree health or structural integrity such as the degradation of internal tissues or roots due to the presence of annual fruiting species of certain wood decay fungi, or foliar disease may therefore not have been considered, due to the absence of identifiable external structures (e.g. fruiting bodies), lack of morphological indications or any other visible symptoms.
- 1.8 The presence of any statutory protection (e.g. Tree Preservation Orders, Conservation Area controls or historic 'in perpetuity' planning conditions prohibiting the pruning or removal of trees) has not been established. It is, therefore, essential that this is checked with the local authority and, where applicable, formal consent obtained prior to the commencement of any of the works recommended within this report. Carrying out work to protected trees without formal permission is a criminal offence and may incur large fines. Please see Appendix III for more information on the statutory protection of trees.
- 1.9 This report is solely for the client's use and remains the intellectual property of OMC Associates. Use of this report by any third party will render it null and void.

Survey method / parameters

- 1.10 The trees were inspected from ground level with the aid of binoculars where necessary; no climbing of the trees was undertaken, nor was any digging or other detailed internal investigation. Any identification of fungal fruiting bodies was made on a visual basis only. Further information on the surveying / positioning of trees and recording of tree data is attached at Appendix III.
- 1.11 The site comprises two distinct areas: the lower (eastern) area (Area 1) which comprises > 90% dead / dying ash and the upper (western) side, populated with a greater diversity of species. With a small number of exceptions all trees within Area 1 were grouped together with general management recommendations made, mainly for the removal of the ash trees which are infected with chalara ash dieback. Recommendations were also made for the removal of a small number of individual trees of other species in this area; these trees were marked with blue paint to aid their identification. Trees within Area 2 were also broadly grouped with those to be removed also marked with blue paint. Other individual trees were also surveyed; these trees have been plotted individually on the location plan and identified with a metal numbered tag affixed to their stem with a galvanised nail at approximately 2 metres height.
- 1.12 Where trees were not tagged (e.g. when recommended for removal or too small to take a nail, or where large groups were recorded), the entry was marked 'NT' (Not Tagged) in the schedule and on the tree location plan.
- 1.13 The trees were inspected using the Visual Tree Assessment (VTA) method¹. This method is recognised as current industry best practice for assessing tree condition. A description of the VTA method and list of reference sources is attached at Appendix III.

¹ 1994 Mattheck and Breloer (DETR), TSO

- 1.14 Where ivy, epicormic growth or dense undergrowth/canopy inhibited close inspection this has been noted within the tree schedule, with recommendations for the removal of ivy / epicormic shoots as necessary to enable future inspection.
- 1.15 A nylon sounding mallet and/or metal probe were used to determine the presence, extent and depth of internal decay/cavitation, where found.

2. Report on site visit and survey

Summary

- 2.1 The weather on both days of the inspection was sunny and dry; visibility was therefore satisfactory. A total of **24** trees and **2** Areas were recorded.
- 2.2 In total, management recommendations were made for 16 trees and over 100 stems within Areas 1 and 2. All works should be completed within 12 months (July 2023), or before the first occupancy of the site. In the main, management recommendations address issues relating to safety. Schedules of tree management recommendations are attached at Appendix I of this report.

Site description

- 2.3 The entire site slopes from west to east towards Rhododendron Avenue. The site comprises two distinct areas: the lower (eastern) area (Area 1) and the upper (western) side (Area 2), accessed from the highway via a narrow track close to the south-eastern corner. The two Areas are separated by a short, steep slope, as approximated in the image below. The south-eastern corner of the site bounds onto residential property (Amor House). The eastern and north-eastern boundaries abut also abut residential properties in Rhododendron Avenue. The northern and western boundaries abut open paddocks.
- 2.4 Paths have been cut between the trees from the head of the access track, running uphill roughly south-east/north-west and westwards towards the slope that bisects the site. Another path roughly oriented north / south follows the foot of the slope.



Approximate extents of the survey area – Google Images

The trees

- 2.5 The trees within Area 1 predominantly comprise early mature dead / dying ash, intermixed with a small number of field maple, sycamore and yew, elm, cherry, sycamore, hawthorn and hornbeam of varied maturity.
- 2.6 The trees within Area 2 comprise mature ash, sycamore, oak, cherry and hornbeam, with occasional semi-mature elm. Many of the ash appear to have been historically managed as coppice although this has lapsed, and the trees have since developed mature canopies.
- 2.7 The trees on the slope between the two Areas predominantly comprise mature yew with occasional ash, sycamore, field maple and hornbeam.

Comments on tree condition

- 2.8 The overall condition of trees within Area 1 is poor, due to the large ash component that is either dead or dying as a consequence of chalara ash dieback. The condition of the other trees within this area is generally fair.
- 2.9 The overall condition of the trees within Area 2 is fair. Many of the lapsed ash coppice stools are subject to decay / cavitation, which, in some cases, has caused the mature regrown stems to collapse. In other cases, the matured stems have grown at an acute angle and the disproportionate weight distribution has caused them to fail. Other selected ash in this area are at various stages of decline due to being infected with chalara ash dieback. The elms in this area are succumbing to Dutch elm disease.
- 2.10 The structural condition of beech (T9 – tag no. 1361) is poor. This tree is located adjacent to the southern boundary of Area 2 and is subject to fungal colonisation by three principal decay fungi: *Ganoderma australe*, *Fomes fomentarius* and *Kretzschmaria deusta*. This tree has also shed large limbs on its eastern side, which has created large open cavities. A partially collapsed tree within neighbouring land to the south is hung-up in its upper canopy.
- 2.11 Historic movement of the structural root plates and / or partial pulling-up of surface roots was commonly noted for the yew trees located on the slope between Areas 1 and 2. This is thought to have occurred as a consequence of the loose chalky soil and exposure to high winds, given the aspect of the slope.
- 2.12 The structural condition of yew (T19 – tag no. 1371) is poor. This tree is located close to the foot of the bank separating Areas 1 and 2 and partially overhangs the path adjacent to it. The tree has been subject to recent limb failures on the western side of the canopy overhanging the path. A deep tear wound within the main stem at 1.5 metres from ground level has been created as a result of this. a small fruiting body of the fungus *Laetiporus sulphureus* was noted at the base of the stub of one of the shed limbs. Cross-sectional flattening of a large ascending limb over the footpath due to historic contact with an adjacent limb that has since broken out represents a point of weakness.
- 2.13 The structural condition of lapsed coppiced ash stool (T24 – tag no. 1376) is poor. A desire line passes within the tree's canopy northern canopy spread. A deep cavity exists within the tree's base, created by the historic tearing out of a principal stem. Early signs of decline due to *Chalara* dieback were also noted.

3. Duty of care and legal responsibility for tree safety

- 3.1 Tree owners or those responsible for the management of land containing trees (the duty holder) have a legal² duty of care to take reasonable steps to avoid foreseeable harm or injury arising from tree-related defects. Duty holders are expected to consider the risks posed by their trees and manage those risks in a reasonable way, proportionate to the size of the area of land owned and resources available. Failure to do this may result in prosecution for negligence or claims for compensation if it is proven that any act or omission that could have been reasonably been foreseen, leads to damage to property or personal injury. While some tree-related hazards may be obvious to all, many are subtle and will not be apparent to the untrained eye. It is commonly recognised that the average person does not have the necessary expertise to determine whether a tree has the potential to cause foreseeable harm by virtue of its size and condition; it is therefore accepted that an occupier's duty of care can only be satisfactorily discharged by employing a suitably qualified and experienced expert to do this work. In the event that defect(s) identified during a hazard assessment are brought to the tree owner's attention, it then becomes the tree owner's duty to act promptly and rectify the problem as soon as is reasonably practicable, regardless of the financial implications.
- 3.2 These circumstances include specific consideration for children; under s2(3)(a) of the Occupier's Liability Act (1957), '*an occupier must be prepared for children to be less careful than adults*'. The case of *Tomlinson v Congleton Borough Council* ([2003] 1 A.C. 46; [2004] UKHL 47), the 'the shallow pond case', expanded on this requirement by stressing the need to consider the inequivalence of danger relative also to people of reduced mobility.
- 3.3 In 2007 the Health and Safety Executive published a Sector Information Minute (SIM 01/2007/05) on the Management of the Risk from Falling Trees and Branches. This document was re-published in 2013 and subsequently revised in 2014. The document provides guidance on the standards for assessing and managing the risk from trees and where appropriate, routine checks by a competent person. Recommendations are made within the document for a strategy of prioritisation for large sites containing high numbers of trees, with the degree of focus determined by the intensity of site use or risk posed by the tree(s). It is also emphasised that landowners should have an auditable system in place for tree safety management, keeping records of checks made either periodically or after specific events (e.g. severe gales) and the reporting of incidents that have implications for tree safety (e.g. vehicle collisions). Where potential faults are identified, a system should also be in place for obtaining specialist assistance / remedial action when a check reveals hazardous defects with safety implications beyond the experience and knowledge of the person carrying out the check. The SIM can be found on the HSE website:
- http://www.hse.gov.uk/foi/internalops/sims/ag_food/010705.htm.
- 3.4 As the owner of a site containing a mature tree population that would be used for the education and recreation of young children, this survey and report demonstrates that the site owner (the duty holder) is managing its tree stock in a responsible and proportionate manner, so discharging their duty of care.

4. Management priorities and principles

- 4.1 Management priorities are determined by the surveyor at the time of inspection. While works to manage / mitigate the risk of personal injury take precedence over all other management considerations, lower priority works may be scheduled over a protracted timeframe to allow

² Occupiers Liability Act 1957 & 1984

maintenance budgets to be managed in a balanced way. Further information on management priorities is attached at Appendix III.

- 4.2 The skilful and sensitive management of trees is key to their successful long-term safe retention. Any work that exposes a tree's internal woody tissues is a form of damage that can be detrimental to the tree's long-term health. The best form of tree management is one of 'non-intervention unless absolutely necessary' and the use of a suitably qualified and experienced contractor (preferably one approved by the Arboricultural Association (AA)) will ensure any unnecessary works are avoided and management recommendations are carried out to the highest possible standards, in accordance with the principles of good arboricultural husbandry and current industry best practice recommendations. A list of approved AA contractors can be found at:

<https://www.trees.org.uk/ARB-Approved-Contractor-Directory>

5. Conclusions

- 5.1 A total of **24** trees and **2** Areas were recorded. Work is deemed necessary for **16** trees and over **100** stems within the Areas 1 and 2. All works should be completed within 12 months, or before the first occupancy of the site. Schedules of work are attached at Appendix I.
- 5.2 The average condition of the trees within Area 1 is poor and those within Area 2 is fair. The general condition of trees recorded individually is also generally fair.
- 5.3 The majority of the ash population throughout the site is infected with the fungus *Hymenoscyphus fraxineus*, commonly referred to as chalara ash dieback. This is reportable disease that should be reported to Forest Research's 'TreeAlert' service [TreeAlert - Forest Research](#) to help aid their monitoring of the disease's spread.
- 5.4 Current government guidance advises that the spread of chalara ash dieback in wood is considered to be a low risk, so ash wood from infected as well as uninfected sites may be moved without restriction. This is, however, subject to the brushing of leaf and shoot material from logs, firewood and vehicles before they leave the site as a precaution against the possibility that the disease might be present, but not obviously apparent, and be unintentionally spread with logs and firewood.
- 5.5 To mitigate the high number of removals necessary to mitigate hazard within Area 1 which is estimated to exceed 90% of the tree population in this location, some replanting would be advisable to replenish the tree cover. Given the presence of ash and sycamore which are quick to regenerate, it is highly likely that these species will regenerate to eventually form the dominant species in this area if left unmanaged. To introduce greater diversity, I would recommend planting a mix of native species that grow well in chalky soil. Species would include: sweet chestnut (*Castanea sativa*); common beech (*Fagus sylvatica*); small-leaved lime (*Tilia cordata*); English oak (*Quercus robur*) and Scots pine (*Pinus sylvestris*). Annual thinning of sycamore seedlings should also be undertaken to prevent this species from becoming dominant. It is likely that the ash regeneration will be more resistant to Chalara, so it would be preferable to leave these trees to naturally regenerate. The advice of a woodland management consultant would also be advisable.
- 5.6 Beech (T9 – tag no. 1361) is subject to internal degradation by three different species of principal decay fungi: *Ganoderma australe*, *Fomes fomentarius* and *Kretzschmaria deusta*. The type of decay caused by *G. australe* is less likely to render host trees liable to unpredictable failure of limbs and stems, however, *F. fomentarius* and *K. deusta* are far more dangerous in this regard. Management options for this tree have been discussed and, given the low occupancy of its location, it has been agreed that its location should be fenced off (at least 11

linear metres from its stem in all directions) to allow the tree to form a learning resource, while limiting access within the area where it is likely to begin to drop limbs in the coming years. Removal of the partially collapsed tree suspended within the tree's upper crown is also advisable.

- 5.7 A number of yew trees located on the slope between Areas 1 and 2 have partially collapsed or have partially lost root anchorage due to a combination of the loose chalky soil conditions and wind exposure, due to the slope's aspect. Three of these trees have been recommended for removal – they have been marked with blue paint.
- 5.8 Shed limbs, a deep cavity at 1.5m and a structurally compromised limb were noted in yew (T19 – tag no. 1371). This tree overhangs the path at the foot of the slope between Areas 1 and 2. A small fungal fruiting body (*Laetiporus sulphureus*) was also noted close to the base of the compromised limb. This type of fungus is commonly found on yew but can take many years before it renders host trees hazardous. This will need to be monitored but, in the meantime, reduction of the limb over the path has been recommended.
- 5.9 Given the poor structural condition of lapsed coppiced ash stool (T24 – tag no. 1376) and apparent use of the informal path (desire line) within its canopy, it is recommended that this tree be re-coppiced rather than remove it to preserve its longevity.

6. Recommendations

- 6.1 Arrange for the works recommended in this report to be undertaken within prescribed timescales.
- 6.2 Arrange for a follow-up inspection in or around three years from the date of this inspection (July 2025).

7. Key to accompany tree health and condition inspection

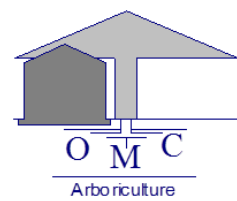
Age Classes

Young (Y):	Under 10 years old, either self-seeded or newly planted.
Semi-Mature (SM):	Tree has not reached ultimate maturity. Below a quarter of usual life expectancy.
Mature (M):	The tree's crown dimensions have generally been reached. Very little increase in trunk girth is expected.
Over-Mature (OM):	Tree has reached maximum expected species dimensions and symptoms of decline are present. Tree exhibits signs that energy stores are depleting such as: - Poor reaction wood growth; - Dieback or branch shutdown in upper crown or on branch tips.
Veteran (V):	Usually a very old tree, having survived longer in relation to others of same species. Home to a host of interdependent plants, animals and micro-organisms that interact and contribute to the longevity of the tree. Exhibits signs of extensive decline such as: - Loose bark or heartwood cavities; - Excessive young growth on main stem or branches.

Arboricultural Tree Condition Report

Appendix I

Tree Schedule & Schedule of Works



TREE SCHEDULE



No.	Tag	Species	Size	Stem ø (mm)	Crown Spread (m)	Maturity	Physiological & Structural Condition	Comments	Priority
T1	NT	Common ash (<i>Fraxinus excelsior</i>)	Large	450	N -4 S -2.5 E -3.5 W -3.5	M	Phys. -Low Struct. -Fair	Within neighbouring land, adjacent to northern boundary of entrance drive. Overhangs drive. Declining - established <i>Chalara</i> infection. Works:	
T2	NT	Corkscrew willow (<i>Salix contorta</i>)	Small	150 170	N -0.5 S -6 E -4 W -4	EM	Phys. -Moderate Struct. -Fair	Adjacent to northern boundary of entrance drive, overhanging drive. Twin stemmed at ground level. Severe asymmetry; suppressed by adjacent trees to north. Species prone to unpredictable branch failure. Works: Remove.	12 months
T3	NT	Corkscrew willow (<i>Salix contorta</i>)	Small	170 150 130 130 100	N -0.5 S -7.5 E -4 W -4	EM	Phys. -Moderate Struct. -Fair	Adjacent to northern boundary of entrance drive, overhanging drive. Multi stemmed at ground level. Severe asymmetry; suppressed by adjacent trees to north. Species prone to unpredictable branch failure. Works: Remove.	12 months
T4	NT	Common ash (<i>Fraxinus excelsior</i>)	Large	600	N -8 S -8 E -8 W -8	M	Phys. -Moderate Struct. -Fair	Within neighbouring land, adjacent to northern boundary of entrance drive. Overhangs drive. Minor deadwood throughout but no apparent <i>Chalara</i> infection at present. Works:	
T5	NT	Weeping willow (<i>Salix x chrysocoma</i>)	Small	180	N -1.5 S -7 E -3.5 W -3.5	EM	Phys. -Moderate Struct. -Fair	Adjacent to northern boundary of entrance drive, overhanging drive. Severe asymmetry; suppressed by adjacent trees to north. Species prone to unpredictable branch failure. Works: Remove.	12 months
A1	NT	Mixed broadleaf & coniferous species	Medium	250	N -5 S -5 E -5 W -5	V	Phys. -Low Struct. -Poor	Stand predominantly comprising early mature/mature ash, interspersed with occasional field maple, cherry, yew, sycamore, hawthorn and hornbeam, with hazel/spindle understorey. The ash are dead/declining due to established <i>Chalara</i> infection. Works: Remove all dead/dying ash with <i>Chalara</i> infection and partially collapsed/windblown trees. Also remove selected individual trees of poor structural quality or low vitality adjacent to paths, marked with blue paint.	12 months
T6	1357	Yew (<i>Taxus baccata</i>)	Large	850	N -4.1 S -7 E -12.4 W -8.5	M	Phys. -Moderate Struct. -Fair	At foot of bank separating east/west halves of the woodland, close to southern boundary. Northern canopy partially overhangs path. Substrate is loose/chalky, with high percentage of large aggregate >40mm. Development of pronounced, robustly developed structural rootplate, in reaction to sloping topography and loose rooting conditions. Suspected historic lifting of shallow surface roots to south. Very extended low limb to east. Moderate deadwood throughout canopy. Works: Reduce extended low limb to east by approximately 4m. Remove low deadwood.	12 months

TREE SCHEDULE



No.	Tag	Species	Size	Stem ø (mm)	Crown Spread (m)	Maturity	Physiological & Structural Condition	Comments	Priority
T7	1359	Yew (<i>Taxus baccata</i>)	Large	800	N -2.2 S -6.5 E -9.3 W -2.5	M	Phys. -Moderate Struct. -Fair	At foot of bank separating east/west halves of the woodland, close to southern boundary. Eastern canopy overhangs path. Substrate is loose/chalky, with high percentage of large aggregate >40mm. Development of pronounced, robustly developed structural rootplate, in reaction to sloping topography and loose rooting conditions. Suspected historic lifting of shallow surface roots to west. Moderate deadwood throughout canopy. Works: Remove deadwood.	12 months
T8	1360	Yew (<i>Taxus baccata</i>)	Medium	600	N -2.5 S -5 E -5 W -5	M	Phys. -Moderate Struct. -Fair	Close to top of bank separating east/west halves of the woodland, close to southern boundary. Substrate is loose/chalky, with high percentage of large aggregate >40mm. Development of pronounced, robustly developed structural rootplate, in reaction to sloping topography and loose rooting conditions. Adjacent tree is partially windblown, which has caused raising of soil and creation of subterranean voids. Suspected historic lifting of shallow surface roots to south. Moderate deadwood throughout canopy. Works:	
T9	1361	Common beech (<i>Fagus sylvatica</i>)	Extra Large	1100	N -11 S -11 E -9 W -10.5	M	Phys. -Moderate Struct. -Poor	Within upper section woodland, adjacent to southern boundary. Very large, over-mature example, subject to incipient decay by <i>Ganoderma australe</i> , <i>Fomes fomentarius</i> and <i>Kretschmaria deusta</i> . Pronounced, deeply fluted buttressing all round. Mature epicormic growth on northern/eastern/western sides of trunk, to 1.8m. Mature fruiting bodies of <i>K. deusta</i> within clefts between buttresses to south and west. Multiple fruiting bodies of <i>G. australe</i> on northern side of trunk and single fruiting body of <i>F. fomentarius</i> to east, between 1.7 and 5.3m. Stubs of historically shed limbs all round to approximately 8.5m. Large scars of old tear out wounds within eastern trunk at 4.3 and 8.4m, the lower of which has formed a deep cavity. Height of cavity from ground precludes detailed assessment of its depth/extent. Partially collapsed stem of tree within neighbouring land to south is hung-up within south-western canopy at 18m. Suspended broken branch (detached) at 18m to north. Works: Remove hung-up tree and suspended broken branch. Create exclusion zone around periphery of canopy (minimum 12m linear distance from trunk) to prevent access beneath the tree's branches.	12 months
T10	1362	Sycamore (<i>Acer pseudoplatanus</i>)	Large	350 450 600	N -1.5 S -7.5 E -9.5 W -4	M	Phys. -Moderate Struct. -Fair	Close to top of slope, within upper section woodland. Etiolated, drawn-up, asymmetric form due to presence of surrounding trees. Tight/included union between stems at ground level to north. Upper surfaces of lower limbs to east are subject to bark wounding (squirrel damage). Suspended broken branch (detached) at 8.5m to east and small cavity in upper section of supporting stem. Works: Remove suspended broken branch and reduce squirrel damaged limbs by 3-4m.	12 months

No.	Tag	Species	Size	Stem ø (mm)	Crown Spread (m)	Maturity	Physiological & Structural Condition	Comments	Priority
T11	1362	Sycamore (<i>Acer pseudoplatanus</i>)	Large	450 500	N -5.5 S -6.5 E -5 W -1.5	M	Phys. -Moderate Struct. -Fair	Close to top of slope, within upper section woodland. Etiolated, drawn-up, asymmetric form due to presence of surrounding trees. Suspended broken branch (detached) at 11.5m to east. Works: Remove suspended broken branch.	12 months
T12	1364	Hornbeam (<i>Carpinus betulus</i>)	Large	300 550	N -4.7 S -5 E -12.5 W -2.5	M	Phys. -Moderate Struct. -Fair	Close to top of bank separating east/west halves of the woodland, close to southern boundary. Asymmetric form (biased to east) due to presence of neighbouring trees to west. Substrate is loose/chalky, with high percentage of large aggregate >40mm. Development of pronounced, robustly developed buttressing, in reaction to sloping topography and loose rooting conditions. Works:	
T13	1365	Yew (<i>Taxus baccata</i>)	Large	650	N -5 S -7.6 E -7.6 W -6.2	M	Phys. -Moderate Struct. -Fair	Close to top of bank separating east/west halves of the woodland. Substrate is loose/chalky, with high percentage of large aggregate >40mm. Development of pronounced, robustly developed buttressing, in reaction to sloping topography and loose rooting conditions. Historic rootplate movement and lean to south due to partial windthrow - tree has since re-established. Deep excavations in bank to south, either foxearth or inactive badger set. Works:	
T14	1366	English oak (<i>Quercus robur</i>)	Large	600	N -7.7 S -8.6 E -7.5 W -2.5	M	Phys. -Moderate Struct. -Fair	Close to foot of bank separating east/west halves of the woodland. Eastern canopy overhangs path. Asymmetric form (biased to south and east) due to presence of neighbouring trees. Substrate is loose/chalky, with high percentage of large aggregate >40mm. Basal swelling to east at site of old stubs of historically removed/broken-out stems. Scar of old tear-out wound just above union of primary crown stems at 5.5m to east; healthy callus development at margins. Low deadwood over path. Works: Remove low deadwood over path.	12 months
T15	1367	Field maple (<i>Acer campestre</i>)	Medium	180 230	N -3.5 S -2.5 E -5.5 W -3.5	M	Phys. -Moderate Struct. -Fair	Close to foot of bank separating east/west halves of the woodland. Eastern canopy overhangs path. Asymmetric form (biased to east) due to presence of neighbouring trees. Twin-stemmed from ground level; one stem is dead. Substrate is loose/chalky, with high percentage of large aggregate >40mm. Excavation to south (foxearth or inactive badger set.). Works: Remove dead stem.	12 months
T16	1368	Yew (<i>Taxus baccata</i>)	Large	750	N -3.5 S -6 E -7.5 W -1.5	M	Phys. -Moderate Struct. -Fair	At foot of bank separating east/west halves of the woodland, close to southern boundary. Asymmetric form (biased to east) due to presence of neighbouring trees. Eastern canopy overhangs path. Substrate is loose/chalky, with high percentage of large aggregate >40mm. Development of pronounced, robustly developed structural rootplate to west, in reaction to sloping topography and loose rooting conditions. Works: Remove deadwood.	12 months

No.	Tag	Species	Size	Stem ø (mm)	Crown Spread (m)	Maturity	Physiological & Structural Condition	Comments	Priority
T17	1369	Yew (<i>Taxus baccata</i>)	Medium	350	N -4.5 S -4.5 E -3 W -4.5	M	Phys. -Moderate Struct. -Fair	At foot of bank separating east/west halves of the woodland, close to southern boundary. Substrate is loose/chalky, with high percentage of large aggregate >40mm. Development of pronounced, robustly developed structural rootplate, in reaction to sloping topography and loose rooting conditions. Works:	
T18	1370	Yew (<i>Taxus baccata</i>)	Large	600 700	N -6.5 S -6.5 E -6.5 W -6.5	M	Phys. -Moderate Struct. -Fair	At crest of bank separating east/west halves of the woodland. Twin-stemmed from ground level; union is sound. Substrate is loose/chalky, with high percentage of large aggregate >40mm. Development of pronounced, robustly developed structural rootplate, in reaction to sloping topography and loose rooting conditions. Decayed shed stem suspended within southern canopy. Works: Remove suspended, hung up stem.	12 months
T19	1371	Yew (<i>Taxus baccata</i>)	Large	750	N -4.8 S -7.5 E -11.5 W -1.5	M	Phys. -Moderate Struct. -Fair	Close to foot of bank separating east/west halves of the woodland, close to southern boundary. Asymmetric form (biased to east) due to presence of neighbouring trees. Eastern canopy overhangs path. Substrate is loose/chalky, with high percentage of large aggregate >40mm. Development of pronounced, robustly developed structural rootplate to west, in reaction to sloping topography and loose rooting conditions. Historic lifting of surface roots to west due to partial windthrow. Deep, splintered cavity at 1.5m due to tearing-out of crown stem. Stub of decayed, shed limb at 4.5m to east with small proximal fruiting body of <i>Laetiporus sulphureus</i> . Flattening of large ascending crown stem at 5m to east over path due to historic long-term contact/abrasion with adjacent limb (now absent). Works: Reduce ascending crown stem and sub-laterals thereof over path by 4m. Remove low deadwood.	12 months
T20	1372	Yew (<i>Taxus baccata</i>)	Medium	550	N -3 S -4.7 E -8.7 W -4	M	Phys. -Moderate Struct. -Fair	Close to foot of bank separating east/west halves of the woodland, close to southern boundary. slightly asymmetric form due to presence of neighbouring trees. Eastern canopy overhangs path. Substrate is loose/chalky, with high percentage of large aggregate >40mm. Development of pronounced, robustly developed structural rootplate to west, in reaction to sloping topography and loose rooting conditions. Historic lifting of surface roots to south and west due to partial windthrow. Works: Remove low broken limb at 4m to east.	12 months
T21	1373	Yew (<i>Taxus baccata</i>)	Medium	450	N -3.6 S -4 E -7 W -4	M	Phys. -Moderate Struct. -Fair	Close to foot of bank separating east/west halves of the woodland, close to southern boundary. slightly asymmetric form due to presence of neighbouring trees. Eastern canopy partially overhangs path. Development of pronounced, robustly developed structural rootplate all round, in reaction to sloping topography and loose rooting conditions. Works:	

TREE SCHEDULE



No.	Tag	Species	Size	Stem ø (mm)	Crown Spread (m)	Maturity	Physiological & Structural Condition	Comments	Priority
T22	1373	Yew (<i>Taxus baccata</i>)	Medium	450	N -4.5 S -4 E -6.5 W -4	M	Phys. -Moderate Struct. -Fair	Close to foot of bank separating east/west halves of the woodland, close to southern boundary. slightly asymmetric form due to presence of neighbouring trees. Works:	
T23	1375	Hornbeam (<i>Carpinus betulus</i>)	Large	700	N -8.5 S -4.8 E -8.5 W -1	M	Phys. -Moderate Struct. -Fair	At crest of bank separating east/west halves of the woodland. Asymmetric form (biased to north/east) due to presence of neighbouring trees to west. Entire tree is engulfed in dense, mature ivy, hindering close inspection. Robust, pronounced buttress development on sloping ground to east. Shallow lean to north suggests possible partial historic windthrow. Works: Completely strip ivy to determine structural condition.	12 months
T24	1376	Common ash (<i>Fraxinus excelsior</i>)	Large	350 500 700	N -4 S -6.5 E -6.5 W -3.5	M	Phys. -Moderate Struct. -Fair	Old, lapsed coppice stool, supporting mature regenerated stems at crest of bank separating east/west halves of the woodland, close to northern boundary. Desire line runs SW to NE within canopy. Deep cavity in base to east (scar of old tear-out wound). Early signs of decline due to <i>Chalara</i> infection. Works: Coppice to original points.	12 months
A2	NT	Mixed broadleaf & coniferous species	Large	500	N -5 S -5 E -5 W -5	V	Phys. -Moderate Struct. -Fair	Higher wooded area and slope, species comprising mature ash, sycamore, oak, cherry and hornbeam of generally drawn-up, etiolated form, interspersed with semi-mature elm. Many of the ash appear to have been historically managed as coppice although now lapsed; basal decay/cavitation is common among these trees. Some ash are also in various states of decline due to <i>Chalara</i> infection. Many of the sycamores are multi-stemmed at ground level with deformed branches/canopies, due to prolonged, repeated bark damage caused by squirrels. Many of the elms are dying off due to Dutch elm disease. Dense canopy cover precludes clear view of the upper canopy structure of some trees. Works: Remove marked trees (100 stems). Clear partially collapsed/fallen trees/stems. Remove large diameter deadwood (>40mm dia.).	12 months

TREE WORK SCHEDULE



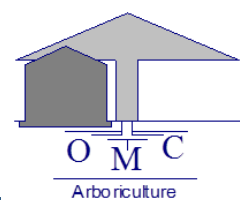
Date: July 2022

Tree No.	Tag	Species	Recommendations	Priority
T2	NT	Corkscrew willow	Remove.	12 months
T3	NT	Corkscrew willow	Remove.	12 months
T5	NT	Weeping willow	Remove.	12 months
A1	NT	Mixed broadleaf & coniferous species	Remove all dead/dying ash with Chalara infection and partially collapsed/windblown trees. Also remove selected individual trees of poor structural quality or low vitality adjacent to paths, marked with blue paint.	12 months
T6	1357	Yew	Reduce extended low limb to east by approximately 4m. Remove low deadwood.	12 months
T7	1359	Yew	Remove deadwood.	12 months
T9	1361	Common beech	Remove hung-up tree and suspended broken branch. Create exclusion zone around periphery of canopy (minimum 12m linear distance from trunk) to prevent access beneath the tree's branches.	12 months
T10	1362	Sycamore	Remove suspended broken branch and reduce squirrel damaged limbs by 3-4m.	12 months
T11	1362	Sycamore	Remove suspended broken branch.	12 months
T14	1366	English oak	Remove low deadwood over path.	12 months
T15	1367	Field maple	Remove dead stem.	12 months
T16	1368	Yew	Remove deadwood.	12 months
T18	1370	Yew	Remove suspended, hung up stem.	12 months
T19	1371	Yew	Reduce ascending crown stem and sub-laterals thereof over path by 4m. Remove low deadwood.	12 months
T20	1372	Yew	Remove low broken limb at 4m to east.	12 months
T23	1375	Hornbeam	Completely strip ivy to determine structural condition.	12 months
T24	1376	Common ash	Coppice to original points.	12 months
A2	NT	Mixed broadleaf & coniferous species	Remove marked trees (100 stems). Clear partially collapsed/fallen trees/stems. Remove large diameter deadwood (>40mm dia.).	12 months

Arboricultural Report on Tree Condition

Appendix II

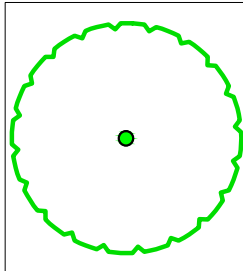
Tree Location Plan



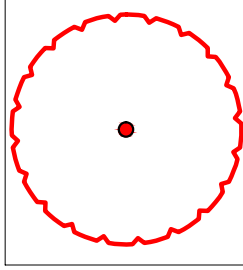


DO NOT SCALE - Use only figured dimensions
To be read in colour

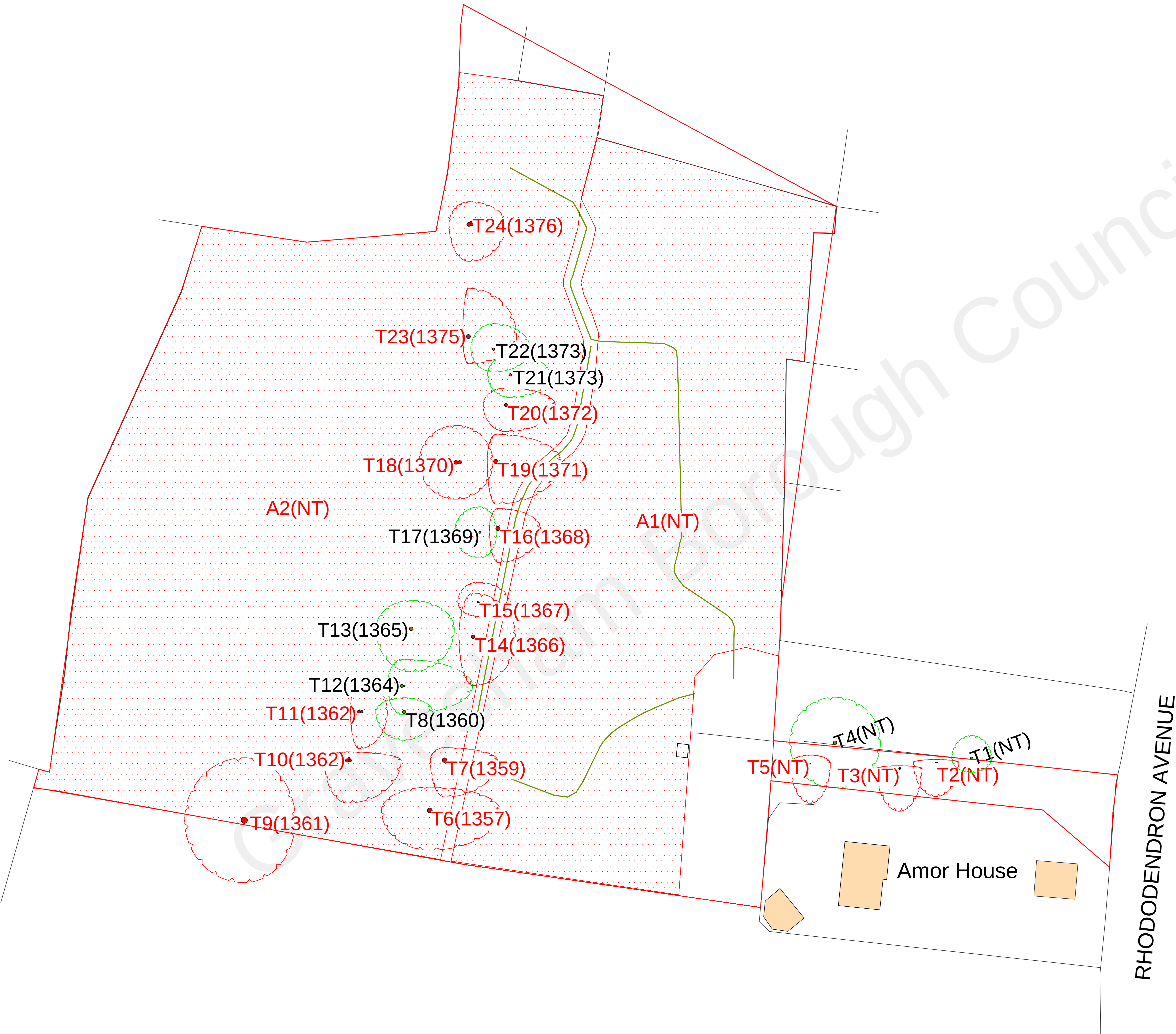
KEY



Trees Without Works



Trees requiring works within 12 months (July 2023)



Title
Tree Location Plan

Client
Estate and Field Management Ltd.

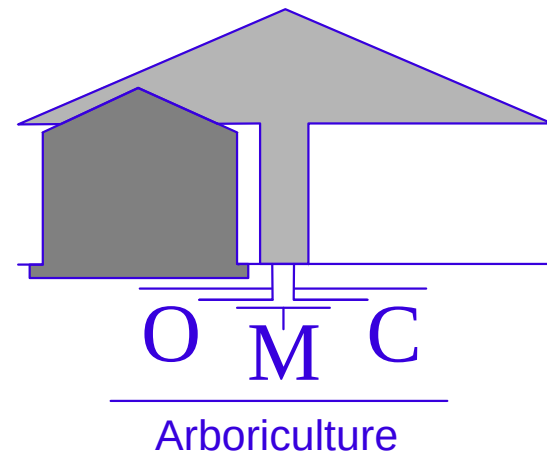
Project
The View School, Rhododendron Avenue,
Meopham, Kent, DA13 0TU

Date
July 2022

Drawn by
CS

Dwg Ref.
0722

Scale
1:300 @ A1



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Arboricultural Report on Tree Condition

Appendix III

Notes on:

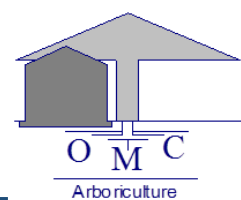
Statutory Restrictions to Tree Work

Collection of Tree Data & Management Priorities

Visual Tree Assessment (VTA) and Method of Tree Inspection

Glossary of Arboricultural Terms

List of References



1 Statutory Restrictions to Tree Work

Tree Preservation Orders (TPO)

- 1.1 In accordance with sections 197 or 198 of the Town and Country Planning Act 1990 (as modified) Local Planning Authorities have powers to make Tree Preservation Orders (TPO), to protect trees when consenting to development or where deemed expedient in the interests of amenity and their value to the quality of the local environment. The Act and associated government guidance recognises the positive impact that trees can have on the local environment and its enjoyment by the public and those who live there.
- 1.2 Typically, trees worthy of protection include those visible from a public place (such as a road or footpath), although this does not always need to be the case. Trees may be worthy of preservation for their intrinsic beauty or for their contribution to the landscape or because they serve to screen an eyesore or future development. The value of trees may be enhanced by their scarcity; the value of a group of trees or woodland may be collective only. The tree/s individual and/or collective visual impact is assessed as well as their wider visual impact, taking into account their suitability to the local setting. Other factors such as importance as a wildlife habitat may be taken into account. The benefit of protecting trees may be for their present or future contribution to amenity or the environment.
- 1.3 Tree Preservation Orders (TPO) are one means of protecting trees. Once a TPO is placed on a tree or trees, the owner must obtain written consent from the Local Planning Authority before undertaking any works – this can take up to 8 weeks or longer in exceptional circumstances. A TPO does not necessarily prevent works being undertaken to a protected tree, rather, it allows the Local Planning Authority to assess (through a free application process) the acceptability of the proposed works, having regard to their extent, arboricultural justification (as defined by the relevant British Standards), the condition and amenity value of the tree/s, and their setting. It prevents the unnecessary loss of trees whilst allowing for appropriate maintenance to be undertaken.
- 1.4 Undertaking work to protected trees without Local Authority consent is a criminal offence carrying fines of up to £20,000 for wilful destruction and up to £2,500 for wilful damage.

Conservation Areas

- 1.5 In accordance with the Planning (Listed Buildings and Conservation Areas Act) (1990) and in consultation with English Heritage, Local Authorities have powers to designate areas of special architectural or historical interest as 'Conservation Areas' to preserve their character and appearance. Trees can form an intrinsic part of the character and appearance of such areas; hence, the Act prohibits any works to trees therein with a stem diameter exceeding 75mm at a height of 1.5 metres from ground level.
- 1.6 Prior to the commencement of works to trees in a Conservation Area, a written notice (a Section 211 Notice) must be sent to the Local Authority detailing the intended works; the notice should contain a sufficient level of detail to allow the Authority to

reliably identify the subject trees and a clear description of the proposed works to allow the Authority to make an informed decision. Following receipt of a written notice (and issue of written acknowledgement to this effect), the Authority have a statutory timeframe of 6 weeks to determine the notice, either raising no objection to the works (either by issuing a written decision with or without informatives or allowing the 6 weeks to elapse), or raising objection and making a TPO. The Authority's decision must be received or the 6 weeks period expired before works can proceed (assuming a TPO has not been made).

- 1.7 Prohibited works to trees subject to Conservation Area controls (as defined at section 1.5) is defined within the Act as '*cutting down, lopping, topping, or uprooting*'. Local Authority notification is not necessary for work that does not involve the cutting or live branches, stems or roots, such as removal of dead branches from live trees or ivy removal.
- 1.8 Penalties for carrying out works to trees in Conservation Areas without Local Planning Authority consent are the same as those for unauthorised work to trees protected by TPO.

Wildlife and Countryside Act 1981

(as amended by the Countryside Rights of Way Act 2000) and The Conservation of Habitats and Species Regulations 2010)

- 1.9 Under the above legislation, it is an offence to disturb or damage any existing or potential wildlife habitat within a tree. Pre-work surveys may be necessary to ascertain likelihood of bat roosts within dead wood, ivy or cavities and bird nests within the canopy of the tree. Work scheduling must be planned around bird nesting season and delayed if necessary. If any evidence of a bat roost is discovered during normal working procedure, all site work must cease immediately and The Bat Trust contacted on 0845 1300 228 for immediate emergency advice. Natural England can be contacted on 03000 604 970 and may also be consulted in relation to habitat issues pertaining to Bats and Schedule 1 Birds.

2 Collection of Data

- 2.1 All significant trees within the boundaries of the site shall be included in the survey, as deemed necessary to the surveyor in the course of the survey or instructed by the client. Significance may be attributed to observed hazards, apparent need for management on non-hazardous grounds (see below), or simply because certain trees merit inclusion for their prominence. In some cases, smaller trees or large shrub masses may also be recorded, irrespective of whether (or not) they require works. The details of significant trees and vegetation overhanging the site with clearly identifiable defects posing a potential hazard may also be recorded to the same level of detail where access allows.
- 2.2 The following data is recorded for each tree or tree group:
- Sequential alphanumeric identification (e.g. "T1" for individual trees, "TG1" for groups of trees or "H1" for hedges). This relates to the I.D.'s shown on the tree location plan;
 - Tag number (the unique number of each metal tag affixed to the tree or tree group – where tagging has been undertaken);
 - Species (common and scientific names);
 - Size (small, medium, large, extra-large);
 - Tree Preservation Order (TPO) reference or Conservation Area status (if known);
 - Life stage (newly planted, young, semi-mature, mature, over mature or dead);
 - Physiological and structural condition (good, fair, poor, dangerous or dead);
 - Prioritised management recommendations;
 - Specific notes.

Tagging trees

- 2.3 When instructed, the surveyor will affix a metal I.D. tag to the stem of the tree to enable clear future identification, using a galvanised nail. In some cases, trees/vegetation may not be tagged e.g. where their stems are too small for a nail to be driven in, or where trees are recommended for removal. In such cases this shall be recorded at the appropriate place within the survey data as 'Not tagged'.

Positioning of trees

- 2.4 OMC will use site reference points, measurements taken on site and in some cases aerial photography to plot tree locations when undertaking tree surveys. Where a site plan is provided this may be used, provided it's in a usable file format. Where no electronic mapping is available or not available in a usable format the purchase of additional electronic mapping will be necessary. In instances where a usable plan already showing the locations of trees is provided, tree positions shall be regarded as definitive. In cases where trees and vegetation are identified that has not been

included on the supplied location plan, their position shall be estimated using either measurement from known datum points (e.g. nearby buildings/infrastructure), or with the use of GPS equipment.

3 Management Recommendations and Priorities

Scope of management recommendations

- 3.1 Management recommendations will principally be made in the interests of hazard / risk management where tree-related defects are identified, according to the tree's location and potential severity of harm arising in the event of tree failure. Notwithstanding this, recommendations may also be made in some cases for the management of non-hazardous conditions arising from the natural growth of trees (e.g. cutting back branches to achieve clearance from buildings / external lighting or signage / suspended phone or power lines, or removal of self-seeded trees growing in inappropriate locations). On occasion works may also be prescribed on express instruction from the tree owner, irrespective of there being any overbearing arboricultural or practical reason.

Priorities for management

- 3.2 Management priorities are determined by the surveyor at the time of inspection. Principal factors influencing the urgency for works are:
- location of the tree(s) and intensity of use of the surrounding land;
 - the nature / severity of the issue or defect, and;
 - size of the defective part and potential for harm.
- 3.3 The need to address low branches overhanging a busy highway impeding the passage of traffic or remove a broken suspended branch will take precedence over branches / foliage obscuring internal signage, or removal of young self-set trees growing in an inappropriate location. Where works are deemed necessary in the interests of hazard management they will be prioritised according to the magnitude of the risk proportionate to the observed hazard, likelihood of failure and nature / intensity of use of the target* area. While works to manage / mitigate the risk of personal injury will take precedence over all other management recommendations, lower priority works will be scheduled over a protracted timeframe, to allow maintenance budgets to be managed in a balanced way.

*the tree's immediate environs and persons or property therein likely to be harmed

4 Visual Tree Assessment (VTA) method

- 4.1 This method of tree inspection was developed by C. Mattheck and H. Breloer and provides a standardised approach to tree risk assessment through the diagnosis of tree structural defects from visible external signs and evaluation of their significance, through the application of biomechanical criteria (study of the physical loading stresses associated with natural tree growth and compensatory growth strategies employed by trees in response to areas of reduced wood strength e.g. due to fungal degradation or physical damage).
- 4.2 VTA is based on the Axiom* of Uniform Stress, which states that trees grow with such a configuration that all stresses on their surfaces are distributed evenly. If this state is disturbed, the tree will repair itself by producing locally thicker rings around the weakened area. These thickened areas are external visual symptoms of the defects that lie beneath and arboriculturists have learned to read the 'body language' of these reparative structures to interpret their implications for tree safety.
- 4.3 The method proceeds in three stages:
1. Visual inspection for defect symptoms and vitality. If there is no sign of a problem the investigation is concluded.
 2. If a defect is suspected on the basis of symptoms, its presence or absence must be confirmed by thorough examination.
 3. If the defect is confirmed and appears to be a cause for concern, it must be measured and the strength of the remaining part of the tree evaluated.

Method of tree inspection

- 4.4 Inspection of tree condition follows a logical progression assessing each main part of the tree in turn:
- overall crown (foliage) condition and abundance;
 - mechanical balance (weight distribution) of the crown;
 - root stability / condition and condition of local soil / ground around the tree;
 - strength / presence of defects in the main stem, and;
 - strength / presence of defects in the major branches.
- 4.5 The assessment should start from afar where (site conditions permitting) the tree can be viewed as a whole structure and preferably, compared with neighbouring trees. Trees of lower vitality can be more easily identified this way as the colour and density of their foliage will contrast with that of other healthier trees nearby. The assessment proceeds to move closer to the tree, observing the condition of the soil or surfaces in the rooting area, then moving upward through the tree's structure, observing the condition of the tree's buttresses / lower stem, main stem(s), primary crown structure and finally the condition of smaller branches.

*A precept that by virtue of its inherent plausibility can be held as true, although cannot generally be proven

- 4.6 In accordance with stage 3 of VTA where defects are identified, particularly in trees of high value for their cultural, amenity, heritage or environmental benefits, further investigation to quantify the extents of the defects may be expedient to provide a realistic appraisal of their significance to safety. Such investigations may involve the use of internal decay mapping equipment such as PiCUS® Sonic Tomography, testing of the soundness of residual wood surrounding an area of weakness using Resistograph microdrill, or assessing overall tree stability using Static Integrated Assessment (SIA).
- 4.7 While the responsible management of such trees may necessitate remedial tree surgery to ensure their safe retention, reputable tree surgery contractors, particularly those that regularly update their professional knowledge and skills, are committed to conservation and the principles of good arboricultural practice; which recognises that any work that exposes a tree's woody internal tissues is a form of damage that can be detrimental to their health in the long-term. Tree surgery should therefore only be considered as a last-resort measure, particularly in cases where the works would leave large diameter wounds. The use of specialist equipment to determine tree safety can therefore ensure that such intervention is not undertaken unless absolutely necessary.

Glossary of Arboricultural Terms



A

Abscission

The shedding of a leaf or other part of the plant, involving the formation of a corky layer across its base. *Some trees also shed twigs in this way.*

Abiotic

Pertaining to non-living agents; e.g. environmental factors.

Acoustic

Of sound (also 'sonic'); applicable to methods for tree defect detection which involve the use of hammer blows or ultrasound pulses.

Adaptive growth

An increase in wood production in localised areas in response to a decrease in wood strength or external loading, to help maintain an even distribution of mechanical stress across the structure.

Adventitious growth

Describing shoots, roots or other plant organs which develop other than at their normal positions of origin (e.g. shoots which do not arise from terminal or axillary buds at branch tips (see also epicormic bud)).

Aerobic

Pertaining to conditions in which oxygen is freely available, or to biomechanical processes which depend on the presence of oxygen.

Anaerobic

Literally without air; pertaining to conditions where oxygen-dependent biomechanical processes cannot occur or to processes which take place in the absence of oxygen.

Ancient woodland

In the UK, a site which has been woodland for at least 350 years.

Annual rings

The annual increments of wood in a tree or shrub as seen in transverse sections of stems, branches or roots. (As the increments are three-dimensional, they are really cylinders or cones, rather than rings; also they are not always strictly annual, especially in minor roots and in tropical species).

Arboriculture

Formerly, the culture of trees, especially for forestry (see also silviculture); latterly, the culture and management of trees as groups and individuals, primarily for amenity and other non-forestry purposes.

Architecture

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

Assessment

In relation to hazards, the process of estimating the risk which a tree or group of trees poses to people or property (this involves a visual inspection for defects and contributory site factors, and sometimes also a detailed investigation of suspected defects).

B

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 (layers immediately below the tough woody surface layers).

Bole (trunk)

The main stem of a tree below its first major branch.

Bolling

A term used to describe pollard heads or sometimes the entire framework of a pollarded tree.

Bracing

A term used to describe the installation of cables, ropes and/or belts to reduce the probability of failure of one or more parts of the tree structure due to weakened elements under excessive movement.

Bracket

In wood-decaying fungi, the type of fruit body produced by many species, plate-like to hoof-like in appearance with one side attached to the wood or bark of the host tree.

Branch

A limb extending from the main stem or parent crown stem of a tree. May be lateral (horizontal axis), ascending or descending in form.

Branch bark ridge

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

Brashing

The pruning of twigs and small branches from the bole of a tree, usually in silviculture (forestry).

Broadleaf, broadleaf tree

A tree belonging to the one of the families of angiosperms; i.e. not a conifer or other gymnosperm.

Brown-rot

A type of wood decay in which cellulose is degraded, while lignin is only modified.

Buckling

The irreversible deformation of a structure subjected to a bending load.

Burr

A term used for various types of woody protuberances, especially those derived from the mass proliferation of adventitious buds.

Butt

The basal end of a tree's trunk.

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 sides of the junctions.

C

Callus

Undifferentiated tissue initiated as a result of wounding and which become specialised tissues of the repair over time.

Cambium

The single layer of cells which expand incrementally to form the cambial zone (new annual rings) during the growing season.

Canker

A lesion formed on stems and/or branches by the death of bark and cambium as a result of bacterial or fungal infection.

Canopy

The topmost layer of twigs and foliage in a woodland, tree or group of trees.

Cellulose

A carbohydrate consisting of glucose molecules joined end-to-end so as to form long filaments; a principal constituent in the cell walls of plants.

Chlorosis

An atypical colouring, usually yellowish, of foliage; often a symptom of mineral nutrient imbalance or inadequate root function.

Co-dominant stems

Two or more, generally upright, stems of roughly equal size and vigour competing with each other for dominance. Where these arise from a common union the structural integrity of that union should be assessed.

Compartmentalisation

The confinement of a 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.

Compressive loading

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

Conifers

Trees, mostly with needle- or scale-like leaves. Whose male and/or female inflorescences consist of cones and whose seeds are not formed within ovaries.

Conk

A fungal bracket; a mainly North American term.

Coppicing

The cutting of a woody plant near ground level to encourage the development of multiple stems; in some regions of the UK, this term is partly interchanged with pollarding.

Conservation Area

In Great Britain, designated areas of architectural or historic interest, in which there are special procedures for planning applications and a requirement that tree work cannot be generally undertaken unless notice (currently six weeks) has been given the local authority concerned *see also* **Tree Preservation Order**.

Crown

The foliage bearing section of the tree formed by its branches and not including any clear stem/trunk.

Crown lifting

The removal of lower branches (or portions thereof) to achieve a stated vertical clearance above ground level or other surface.

Crown reduction

Operation that results in an overall reduction in the height and/or spread of a tree's crown by means of a general shortening of the smaller diameter twigs and/or branches comprising the outer peripheral crown structure, while retaining the main framework of heavier stems and branches.

Crown thinning

Removal of a portion of small, live branches from throughout the crown to achieve an even density of foliage round a well-spaced and balanced crown structure.

Decay Detecting Drill

A device which allows zones of decay to be detected and mapped by virtue of their reduced resistance to penetration, compared to sound wood.

D

Damage

In arboriculture, this is defined in two ways:

- a) Direct damage: caused by parts of a tree that have grown to come into contact with structures or other objects.
- b) Indirect damage: the shrinkage of clay soils through the abstraction of moisture by tree roots, so undermining the support afforded by such soils to structures bearing on them. *See Subsidence.*

Dead wood

Non-living branches or stems due to natural ageing or external influences. Dead wood provides essential habitats and its management should aim to leave as much as possible, shortening or removing only those that pose a risk. Durability and retention of deadwood will vary by tree species.

Decline

When a tree exhibits signs of a lack of vitality such as reduced leaf size, colour or density.

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 layers from one another, sometimes visible as longitudinal splitting in the wood of a tree.

Dieback

Tips of branches exhibit no signs of life due to age or external influences. Decline may progress, stabilise or reverse as the tree adapts to its new situation.

Disease

A malfunction in or destruction of tissues within a living organism, usually not taken to include mechanical damage; in trees usually caused by pathogenic micro-organisms.

Dominance

In trees, the tendency for a leading shoot to maintain a faster rate of expansion than the lateral shoots; *also* the tendency of a tree to maintain a taller crown than its neighbours.

Dormant

The inactive condition of a tree, usually during the coldest months of the year when there is little or no growth and leaves of deciduous trees have been shed.

Drop-Crotching

Shortening branches by pruning off the end back to a lateral branch, which is at least 1/3 of the diameter of the removed branch.

E

Epicormic shoots

Pertaining to shoots or roots which are initiated on mature woody stems; shoots may form in this way from dormant buds or they may be adventitious. Can be produced as a stress reaction in some species e.g. following heavy pruning or triggered by a deterioration in environmental conditions.

F

Failure

In connection with tree hazards, a partial failure or fracture within woody tissues or loss of cohesion between roots and soil. (In total failure, the affected parts snaps or tears away completely. In partial failure, there is a crack or deformation which results in an altered distribution of mechanical stress.

Feeder roots

The fine, relatively short-lived roots that exist at the periphery of a tree's root system, responsible for the uptake of moisture and nutrients.

Felling Licence

See 'Tree Protection brief guidance'.

Fertilising

The application of a substance usually to the tree's rooting area (and occasionally to the tree) to promote tree growth or reverse or reduce decline. This was only be effective if nutrient deficiency is confirmed. If decline is the result of other factors such as compaction, physical damage, toxins etc., the application of fertiliser will not make any difference.

Formative pruning

Minor pruning during the early years of a tree's growth to establish the desired form and/or to correct defects or weaknesses that may affect structure in later life.

Fungi/Fruiting bodies

A member of the plant kingdom that may colonise living or dead tissues of a tree or form beneficial relationships with the roots. The fruiting body is the spore bearing, reproductive structure of that fungus. Removal of the fruiting body will not prevent further colonisation and will make diagnosis and prognosis harder to determine. Each colonisation must be considered in detail by a competent person to determine the long-term implications of tree health and structure when considered alongside the tree species, site usage etc.

Flare

See **root flare**

Flush Cut

A pruning cut close to the parent stem which removes part of the branch collar, containing cells responsible for the production of callus wood.

Foreseeable

In tree hazard assessment, pertaining to failure and associated injury or damage which are predictable on the basis of evidence from a tree and its surroundings.

Formative pruning

The pruning of young trees with the aim of removing potential structural defects (e.g. co-dominant stems or weak unions) to produce a tree, that, in maturity, is largely free of major physical weakness and which will complement the management objectives of the given site. Can also be applied to more specialised practices e.g. utility pruning, pollarding, or pleaching.

Fungi

Organisms of several evolutionary origins, most of which are multicellular and grow within dead organic matter or living organisms (*Wood decay fungi are specialised forms which have co-evolved with woody plants.*)

G

Gaseous exchange

In woody tissues, the diffusion of gases into and out of a particular region e.g. from tree roots into soil.

Girdling

In woody plants, any form of damage which destroys or kills the bark and cambium all the way around a stem, branch or root, usually leading to the death of the distal portion.

Girdling root

A root that grows across the buttress zone or across the bases of other roots, eventually causing constriction of radial growth.

Guying

A form of artificial support with cables for trees whose anchorage is temporarily inadequate.

H

Heartwood

The dead or predominantly dead central part of the various tree species whose outer living wood (sapwood) has a finite and pre-determined lifespan.

Heave

In relation to a shrinkable clay soil, expansion due to re-hydration, sometimes after the felling or root severance of a tree or trees which were previously extracting moisture from the deeper layers; *also*, in relation to root growth, the lifting of pavements and other structures by radial expansion; *also*, in relation to tree stability, the lifting of one side of a wind-rocked root plate.

I

Included bark (ingrown bark)

Bark of adjacent parts of a tree (usually in forks, acutely angled branches or basal flutes) which is in face-to-face contact, so that there is a weakness due to the lack of a woody union.

Infection

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

L

Lopping and Topping

Generally regarded as outdated terminology but still part of Planning legislation. Lopping refers to the removal of large side branches (the making of vertical cuts) and topping refers to the removal of

large portions of the crown of the tree (the making of horizontal cuts, generally through the main stems). Often used to describe crude, heavy-handed or inappropriate pruning.

Leader

In a tree, a topmost shoot which has dominance over all other peripheral growth.

Lignin

The hard, cement-like constituent of wood cells.

Lion-tailing

A term applied to a branch of a tree that wholly or largely lacks side-branches, except near its tip, and may thus may be liable to snap due to disproportionate end-loading.

Loading

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

M

Mitigation

A term used to describe the use of remedial action to lessen risk associated with foreseeable failure; also among other uses, a circumstance that may lessen the gravity of an offence in law.

N

Natural pruning

The shedding of a twig or branch that has died back naturally and has become decayed at near its base (often due to the activation of wood-decaying organisms.)

Negligence

The failure to take reasonable action to deal with tree related hazards so as to help to prevent injury to persons or damage to property.

Nutrients

Substances which are absorbed by living organisms for the maintenance of metabolic process (e.g. growth); usually not regarded as including water or oxygen. *Green plants absorb inorganic forms of elements such as Potassium, Nitrogen and Phosphorus as nutrients, while manufacturing organic food materials by photosynthesis. Plants are vital food sources for fungi, animals and many types of bacteria.*

O

Occluding tissues

A general term for the wood, cambium and bark that form around a wound on a woody plant.

Occlusion

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

P

Pathogen

A micro-organism which causes disease in another organism.

Painting or sealing

Covering pruning cuts or other wounds with a paint, often bitumen based. Research has demonstrated that this is not beneficial and may in fact be harmful. On no account should timber treatments be used as these are definitely harmful to living cells.

Photosynthesis

The process whereby plants and some other organisms use sunlight to synthesize nutrients from carbon dioxide and water. Photosynthesis in plants generally involves the green pigment chlorophyll and generates oxygen as a by-product.

Pollard

A term for a pollarded tree.

Pollard head

The swollen region of a stem or branch that forms behind a pollarding cut.

Pollarding

The complete or partial removal of the crown of a young tree at a prescribed height to encourage multi-stemmed branching from that point, traditionally for fodder, firewood or poles. Once started, it should be repeated on a cyclical basis always retaining the initial pollard point, or 'bolling' as it becomes known.

Probability

A statistical measure of the chance that a particular event (e.g. a specific failure of a tree or a specific kind of harm to persons or property) might occur.

Pruning

The removal or cutting back of twigs, branches or roots; in some contexts applying to only twigs or small branches only, but more often used to describe all kinds of work involving cutting.

R

Radial

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

Remedial action

In tree hazard management, action to remove or mitigate the risk of injury to persons or damage to property.

Retrenchment pruning

A form of reduction intended to encourage development of lower shoots and emulate the natural process of tree aging.

Ring barking

A form of girdling, involving physical damage to the bark and cambium.

Risk

The likelihood of the potential harm from a particular hazard becoming actual harm.

Root-plate

The portion of a tree's root system (excluding the small outermost roots) needed to keep a tree windfirm.

Root pruning

The pruning back of root (similar to the pruning back of branches). This has the ability to affect tree stability so it is advisable to seek professional advice prior to attempting root pruning.

S

Sail area

In arboriculture, a general term for the wind-intercepting area of a tree's crown, which varies both with leaf cover and the orientation of leaves and twigs under different wind conditions.

Sap

A general term used for fluids in plant tissues, whether in living cells or in the hollow water-conducting cells of the xylem.

Sapwood

The living xylem of a woody plant, which either loses viability gradually over a number of years or decades or becomes converted into a distinct, largely dead heartwood.

Scaffold limbs

The branches or stems which form the main framework of the crown of a tree.

Shedding

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

Shoot

In a tree, the elongating region of a stem or a branch.

Shrub

A woody plant which branches at or near ground level and so does not have a single trunk.

Significant

In relation to health and safety, pertaining to hazards or risks which are deemed to exceed accepted standards of safety and which therefore require remedial or preventative action.

Silviculture

The planting, tending and management of woods and forests.

Sites of Special Scientific Interest (SSSIs)

Areas designated under UK law, at which specified activities are required, prohibited or controlled for the purpose of conserving wildlife or other natural features.

Stag-headed

In a tree, a state of dieback in which dead branches protrude beyond the current living crown.

Stem

In a tree, the principal portion of the woody structure (i.e. the trunk), or one of a number of such portions with similar size and status.

Strain

In mechanics, the distortion in an object caused by a stress

Strength

The resistance of a structure or material to mechanical failure when subjected to a particular type of stress: tensile, compressive, shear, torsional etc.

Subsidence

- a) In relation to soil or structures resting in or on soil: a sinking due to shrinkage when clay soils dry out, sometimes due to extraction of moisture by tree roots. *Also termed as 'indirect damage'.*
- b) In relation to branches of trees: a term that can be used to describe a progressive downward bending due to increasing weight.

Surgery

As applied to trees, a term sometimes used to describe work such as pruning or bracing.

Sweep

In trees, the upward curvature of a stem with a leaning base.

T

Tap-root

A root formed in some types of plant which grows downwards and retains dominance over its side roots. *Tap roots are present in young trees of many species, but rarely persist as such in maturity.*

Taper

In stems and branches, the decrease in diameter along a given length, usually in the distal direction.

Targets

In tree hazard assessment (and with somewhat incorrect terminology), persons or property or other things of value which might be harmed by mechanical failure trees, or objects falling from them.

Tipping

In arboriculture, a term sometimes used to describe the shortening of branches, usually the outermost portion.

Topping

See Lopping and Topping.

Transpiration

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

Tree

A woody plant which typically has a single stem and, in maturity, attains a height of at least four metres and a stem diameter at breast height of at least 75mm.

Tree Preservation Order (TPO)

In Great Britain, an order made by a local authority, whereby the authority's consent is generally required for the cutting down, topping or lopping of trees specified within the Order. *Also see 'Tree Protection brief guidance'.*

Trunk

The single main (primary) stem of a tree.

V

Vessels

Water-conducting cells in plants, usually wide and long to provide hydraulic efficiency.

Veteran tree

A loosely-defined term for an old and valued specimen, which may have survived beyond the typical age-range for the species concerned.

Vigour

In tree assessment, an overall measure of the rate of shoot production, shoot extension, or diameter of growth.

Visual Tree Assessment (VTA)

In addition to the literal meaning, a system expounded by Mattheck and Breloer (1995) to aid the diagnosis of potential defects through visual signs and the application of mechanical criteria.

Vitality

In tree assessment, an overall appraisal of physiological and biomechanical processes, in which high vitality equates with healthy function.

W

Wetwood

A zone of abnormally moist wood in a standing tree, either within the heartwood or within a region of dysfunctional sapwood. *Anaerobic bacteria are responsible for the development of moist but not all forms of wetwood. They generate Methane and usually give rise to alkaline conditions.*

Whip

A young, single-stemmed tree supplied for planting before the appreciable development of side shoots.

Wind exposure

The degree to which a tree or other object is exposed to wind, with regard to both duration and velocity.

Wind pressure

The force exerted by wind on a tree or other object.

Wind snap

The breaking of a tree or stem by the wind.

Windthrow

The blowing over of a tree at its roots.

Woundwood

Wood with atypical anatomical features, formed in the vicinity of a wound; also, a term sometimes used to describe the occluding tissues around a wound in preference to the ambiguous term 'callus'.

Xylem

Plant tissue with the special function of translocating water and nutrients. *The wood of trees and shrubs consists of heavily lignified xylem, laid down in radial increments, which provides structural support as well as water conduction.*

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