BS5837 Report

Tree Survey at:

Kimberly-Clark

Aber Road

Flint

CH6 5EX

Job Ref: 22066

Client:

RES

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Introduction

1 Introduction to BS5837:2012

1.1 Local Planning Authorities (LPAs) have a duty under the Town and Country Planning Act 1990 (Section 197) to make provision for the preservation and planting of trees. This is to reflect the wide range of accepted benefits that trees provide. These include (but are not limited to) amenity, historical and or cultural significance, ecological value, screening/strategic planting and landscape significance, among many others.

1.2 In order to comply with this duty, authorities require a standardized and objective method of assessing the quality of trees in relation to development. This enables a measured approach to be adopted with regards to how individual trees are valued against the potential benefits of a proposed development and other constraints that may be present.

1.3 This standardized method is embodied in the British Standard BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'. This is the standard that all LPAs expect tree surveys in relation to development to conform to. It specifies the requirements of taking tree dimensions and includes a categorization method used to assess the quality of trees. Their allocated category is then expected to inform the design (e.g lower quality trees should be removed in preference to higher quality trees).

2 Purpose and content of this report

2.1 The purpose of this report is to detail the findings of a BS5837 survey undertaken at Kimberly-Clark. It is often a prerequisite to obtain this survey prior to a planning application being accepted and therefore it can be submitted as part of a planning application. Local Planning Authorities will accept this report as evidence of conducting the survey. In accordance with BS5837, it cannot take into account the specific development proposals. Nor can we categorise trees or detail tree works that are required to accommodate the proposals within this report.

2.2 In this case, an Arboricultural Impact Assessment (AIA) has been instructed by the client. The impacts of the proposed development and any proposed mitigation will be included in that report which will provided separately.

2.3 This report will detail the findings of the objective survey. The Tree Schedule at Appendix 1 will include all the data gathered during the survey. An explanation of the various measurements and evaluations in the Tree Schedule is included at Appendix 3. A visual representation of the findings is included in the Tree Constraints Plan at Appendix 2. This shows the canopy extent, retention category and Root Protection Area (RPA) of each item surveyed.

3 Baseline data

3.1 We have been instructed by the client to conduct a BS5837 tree survey and supply our findings in a report, along with a suitable plan that can be used for design purposes.

3.2 In order to do this we have been supplied with a topographical survey (drawing ref:GEO-6491-FLINT-001-001) which, along with GIS technology, forms the basis of the Tree Constraints Plan at Appendix 2. This, in turn will inform the design as it develops. The topographical plan (AKA 'topo') is assumed to be accurate, unless we have reason to suspect otherwise. If there are any missing trees on the topo, we will do our best using triangulation with distometers and/or GPS technology to plot the trees as accurately as practically possible. However, it should be noted that we do not check third party documents.

3.3 We have also been provided with a plan (drawing ref:05040-RES-LAY-DR-LE-001) and description of the boundary extents of the survey area. Only trees within the boundary and those within influencing distance of it are included within the survey. Trees that reside outside the site boundary but are within influencing distance are assessed as best as possible from within the site or from areas that are clearly publicly accessible. Any land that is outside the prescribed boundary is assumed to be third party land unless known to be otherwise. We do not knowingly trespass in the interests of conducting tree surveys.

4 Survey method

4.1 The tree survey is a visual inspection that is undertaken from ground level. During a survey we use basic methods of investigation to assess a tree's condition. These may include resonance tests with a hammer, probing decay cavities or lifting bark with a knife. However, we do not undertake decay detection analyses, aerial inspections or remove dense ivy cover from trees as standard. If an inspection is hindered or if we suspect but cannot fully assess a defect we may recommend further forms of investigation, as required.

4.2 Trees with stems at or greater than 75mm in diameter at 1.5m above ground level are detailed as individuals, groups, woodlands or hedges, as appropriate. Smaller vegetation is not within the scope of BS5837; however groups of ornamental shrubs or scrub vegetation may be identified on the Tree Constraints Plan for reference, noting average height and predominant species within.

4.3 All dimensions are measured using diameter tapes, distometers or clinometers wherever practically possible. Where access or other factors inhibit a measurement being taken (for example off-site trees), measurements will be estimated to the best ability of the surveyor.

Findings

5 Overview of the site and existing vegetation

5.1 The proposed site currently comprises an open field to the west of the existing Kimberly-Clark complex. It incorporates substantial boundary vegetation, including several wooded areas, shelterbelt planting and a large established woodland to the south/southwest.

5.2 In terms of topography, the site slopes from the west down to the east corner of the field. It is set several metres higher than the main Kimberly-Clark complex, with significant banking between the two. This banking is covered in young woodland cover. Substantial changes in ground level are present throughout the large woodland (W8) to the margins of the site.

6 Summary of findings

6.1 The survey was conducted on 16th February 2023 by Scott Reid. During the survey the weather was cloudy with light rain and good visibility.

6.2 The survey revealed a total of 9 items (individual trees, groups of trees, hedges or woodlands) which are detailed in full in the Tree Schedule at Appendix 1. Their location and dimensions are visually represented on the Tree Constraints Plan at Appendix 2. The distribution of trees by their retention category is as follows:

Category U (trees not usually suitable for retention): 0

Category A (trees of high quality): 1

Category B (trees of moderate quality): 7

Category C (trees of low quality): 1

Total: 9

7 Legal designations

7.1 LPAs have the right to afford legal protection to trees which prevent any tree works such as pruning or tree removals from taking place without their prior and express consent. Doing so without consent may lead to prosecution, potentially including unlimited fines. The two most common forms of protection for trees are Tree Preservation Orders (TPOs) and Conservation Areas, enacted under the Town and Country Planning Act (1990) and the Town and Country Planning (Tree Preservation) (England) Regulations 2012. As part of this service we have investigated whether either of these two forms of legal designation apply, as detailed below. It should be highlighted that there are other forms of legal protection and also that the protective status of trees can change at any time. Therefore we strongly urge the client to conduct their own investigation to ensure compliance with the law.

7.2 Using Flintshire County Council's interactive mapping service[1], we are informed that no TPOs or conservation areas are in place on the surveyed trees at this time (Fig 1). However, we recommend that this situation is checked again as soon as possible prior to any planned tree works. This is to prevent any accidental breach of legislation caused by the LPA issuing protective status after this report is issued.

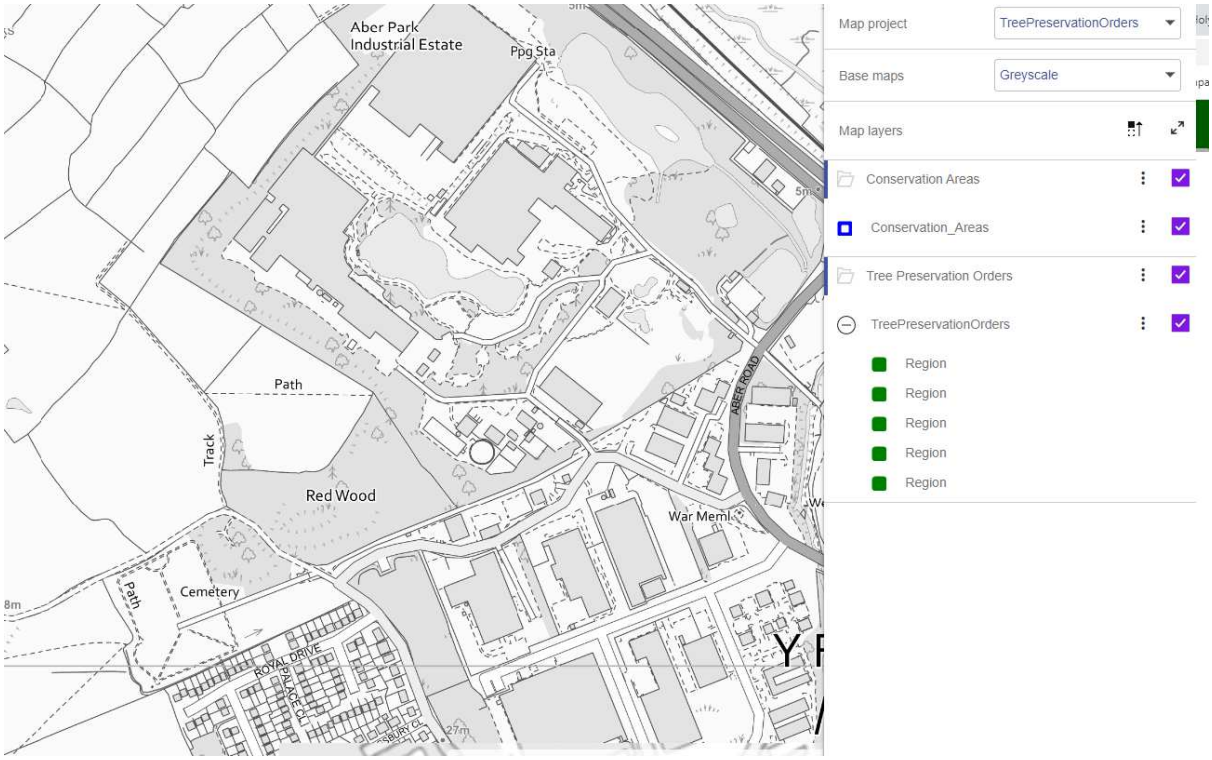

Figure 1: TPO/conservation area check showing no protected trees on the site at the time of writing.

[1] ttps://fccmapping.flintshire.gov.uk/connect/analyst/mobile/#/main?mapcfg=TreePreservationOrders

8 Preliminary management recommendations

8.1 In accordance with BS5837:2012 'preliminary management recommendations' should be highlighted during the survey. Such recommendations may be for health and safety purposes, to provide adequate clearances (e.g. from utility cables, over roads etc.), to promote the longevity of trees or for general maintenance purposes. In addition, further investigation or monitoring may be recommended. Further investigation is where the condition of a tree is to some degree uncertain and therefore works are recommended to better establish this (e.g. recommending the removal of dense Ivy to enable a more detailed inspection of a tree). Monitoring is where a defect has been highlighted but it is not considered serious enough to warrant intervention at the time of inspection. These defects should then be monitored during a routine tree risk assessment which should be undertaken as part of a tree owner's duty of care.

8.2 It should be noted that this survey does not constitute a full risk assessment of the trees; however, works considered to be of a high priority/urgent nature will be highlighted where appropriate within this report. Below is a summary of the recommended works, for full details please refer to the tree schedule at Appendix 1.

8.3 **Tree removals:** A single tree within G2 is recommended for removal.

8.4 **Pruning and maintenance works:** No items have been recommended for pruning works on this occasion.

8.5 **Investigation and monitoring:** No items have been recommended for monitoring or further investigation on this occasion.

9 Veteran and ancient trees

9.1 Veteran and ancient trees/woodlands have particular ecological value, representing rare niche habitats which may take hundreds of years to establish. Because of this, they are considered to be irreplaceable habitats in the NPPF[2] and the standing advice imparts additional protection measures for such trees[3], above the remit of BS5837.

9.2 During the tree survey, no veteran or ancient trees were identified. However; In addition to the survey, T.S.S have conducted a search using the available inventories of ancient woodland and veteran trees listed below:

- Woodland Trust's Ancient Tree Inventory[4]
- DEFRA's Magic Map Application[5]
- Natural England's Ancient Woodland Inventory[6]

9.3 This search revealed no individual ancient or veteran trees, and no ancient woodlands within appreciable distance of the site.

[2] https://www.gov.uk/government/publications/national-planning-policy-framework--2

[3] https://www.gov.uk/guidance/ancient-woodland-and-veteran-trees-protection-surveys-licences

[4] https://ati.woodlandtrust.org.uk/

[5] https://magic.defra.gov.uk/magicmap.aspx

[6] https://naturalengland-defra.opendata.arcgis.com/datasets/ancient-woodlands-england?geometry=-29.201%2C48.076%2C26.302%2C57.349

Conclusions

10 Conclusion

10.1 We have conducted a tree survey at Kimberly-Clark, Flint in accordance with BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'. Included in 'findings' Section is a synopsis of the results of the survey, including the retention categories and preliminary management recommendations. The tree schedule at Appendix 1 contains a full list of the data gathered during the survey and a visual representation of the trees is presented in the Tree Constraints Plan at Appendix 2. We have also investigated the protective status of the trees which is discussed in Section 7. All tree works should be undertaken by fully qualified and experienced arborists who have suitable risk assessments and insurances in place prior to conducting the work. For any protected trees, formal permission from the Local Planning Authority will be needed prior to undertaking the work.

11 Further advice

11.1 This report is an assessment of the existing vegetation and it is expected that this assessment will inform the proposed design. Following on from this, there should be a period of discussion between the arboricultural consultant and the design team, whereby the various constraints of the site (including the trees) are accounted for and accommodated within the proposals. In accordance with the British Standard an arboricultural impact assessment (AIA) should then be prepared to assess the impact of the proposals on the trees and to highlight any mitigative measures that have been proposed during this process. The Local Planning Authority may also request an arboricultural method statement (AMS) be submitted. An AMS contains full details of the proposed protective measures to trees, as well as timings and other information to be utilised throughout the construction period. We can provide these additional reports upon request.

12 Final considerations/limitations

12.1 Our on-site assessment represents a 'snapshot' of the existing vegetation as it is now. Trees are dynamic organisms; their health & structural integrity can change due to a large number of factors including age, pests and diseases, the effects of wind, human activities and many others. For this reason this report is only valid for a period of one year from the date of issue. Furthermore, we cannot be held responsible for events that occur due to factors that were not apparent at the time of surveying. If any events occur which cause concern relating to the trees, please don't hesitate to contact us and we will be happy to provide advice.

12.2 We should also draw your attention to the fact that tree owners are required to have their trees inspected for safety/risk assessment purposes. This is a requirement under the Occupier's Liability Acts 1957 and 1984 and is also a well-established duty of care under common law. This report does not attend to this purpose; however, we can provide risk assessment surveys so please contact us for further information.

12.3 If further clarification or advice is needed, please don't hesitate to contact us.

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Date of issue: 01.03.23

Appendices

13 Appendix 1: BS5837 Tree Schedule

Job No. 22066

Appendix 1: Tree Survey Schedule

Date of survey: 16.02.23

Initials of surveyor: SR

Tree Reference no.		Common name / Botanical name / Age class	Height(m) / Crown Height(m) / First significant branch height(m) and aspect (NESW)	Crown Spread(m) NW N NE W E SW S SE	Stem diameter/s 1-5(mm)			Root protection radius(m)	Physiological Condition (Good, Fair, Poor, Dead)	Structural Condition (Good, Fair, Poor, Dead)	Observations	Preliminary management recommendations / Priority of works	NHBC water demand	Remaining life expectancy	Retention category	Sub-category
W	1	Species: Alder, common ash, silver birch, Norway maple, Scott's pine, buddleja, English oak, hazel.	14	See plan for canopy extent	160			1.9	G	G	Mixed young woodland with self set specimens. Predominantly alder. Ivy and bramble ground cover. Acceptable condition at this time.	No works required.	High	40+	B	1;2
		Mixed	2													
		Y-EM	Na									N/A				
G	2	Species: Norway maple, common ash, alder	14	See plan for canopy extent	300			3.6	G	G	A double line of early mature trees on a raised bank. Ivy on stems. One alder is in poor condition and slightly leaning east towards the compound. Dead flaking bark and dieback. Marked on plan.	Remove alder from group (marked on plan).	Mod	40+	B	1;2
		Mixed	1													
		SM-EM	S									Priority 4: Low				
G	3	Species: Alder, silver birch	13	See plan for canopy extent	180			2.2	G	G	Small group of young trees with some leaning stems marked on plan. Ivy on stems and bramble ground cover.	No works required.	Mod	40+	B	1;2
		Alnus glutinosa , *Betula pendula*	1.5													
		Y-EM	Na									N/A				
G	4	Silver birch	14	See plan for canopy extent	230			2.8	G	G	Frontage of birch. Phototropic growth with slight lean to the east, towards open space. Occasional basal bark wounds.	No works required.	Low	40+	B	1;2
		Betula pendula	2													
		EM	Na									N/A				
W	5	Species: Silver birch, hazel, alder, gorse, European larch, goat willow, Scots pine	15	See plan for canopy extent	230			2.8	G	G	Mixed woodland with gorse and hazel understory. Growing on slope. Occasional stems with ivy cover. In acceptable condition at this time.	No works required.	Mod	40+	B	2;1
		Mixed	0													
		SM-EM	Na									N/A				

NB: Cells highlighted in orange represent estimated dimensions.

Dimensions highlighted in grey are usually not required.

Job No. 22066

Appendix 1: Tree Survey Schedule

Date of survey: 16.02.23

Initials of surveyor: SR

Tree Reference no.		Common name / Botanical name / Age class	Height(m) / Crown Height(m) / First significant branch height(m) and aspect (NESW)	Crown Spread(m) NW N NE W E SW S SE	Stem diameter/s 1-5(mm)			Root protection radius(m)	Physiological Condition (Good, Fair, Poor, Dead)	Structural Condition (Good, Fair, Poor, Dead)	Observations	Preliminary management recommendations / Priority of works	NHBC water demand	Remaining life expectancy	Retention category	Sub-category
G	6	Species: Alder, common ash, silver birch, English oak	12	See plan for canopy extent	130			1.6	G	G	Young area of woodland with self-set specimens and natural regeneration. Growing on slope. Acceptable condition at this time. Predominantly ash. Occasional stems covered in ivy.	No works required.	High	40+	B	1;2
		Mixed	0													
		Y-SM	Na									N/A				
G	7	Species: Cherry laurel, Scots pine, black pine, sycamore, hawthorn, silver birch, hazel, common ash, dog rose, gorse European larch, English oak	10	See plan for canopy extent	280			3.4	G	G	Typical shelterbelt with amenity trees. Acceptable condition at this time.	No works required.	High	40+	B	1;2
		Mixed	0													
		SM-M	Na									N/A				
W	8	Species: English oak, sweet chestnut, silver birch, common ash, holly, goat willow, hawthorn, hazel, elder	17	See plan for canopy extent	380			4.6	G	F	Area of mature woodland with evidence of snap-outs in canopies facing out towards the open field. Occasional stems covered in ivy. A feature of high Aboricultural and ecological value.	No works required.	High	40+	A	1;2;3
		Mixed	0													
		SM-M	Na									N/A				
H	9	Species: Blackthorn, hawthorn, English oak	6	See plan for canopy extent	75			0.9	G	G	Typical field boundary hedgerows in good condition. The shorter of the two sections is relatively unamanged.	No works required.	High	40+	C	2;1
		Mixed	0													
		M	Na									N/A				

NB: Cells highlighted in orange represent estimated dimensions.

Dimensions highlighted in grey are usually not required.

14 Appendix 2: Tree Constraints Plan

N
NW
NE
W
E
SW
SE
S

G4
W5
G4
W5
G3
Dying alder to be removed.
Area of gorse scrub
G2
W1
G7
W1
H9
W8
G6
W8

TREE SURVEY SOLUTIONS

Appendix 2: Tree Constraints Plan

Site: Kimberly-Clark, Aber Road,
Flint, CH6 5EX.

Project Ref:	22066	Drawing Ref:	01
Scale:	1:500	Printing size:	A1

T1	Tree reference number. Sequential number preceeded by item type: T=individual tree, G=group, H=hedge, W=woodland group.
	Category 'A': Trees of high quality
	Category 'B': Trees of moderate quality
	Category 'C': Trees of low quality
	Category 'U': Trees usually unsuitable for retention
	Root protection area (RPA)
	Root protection area (RPA) prior to offsetting

Scale bar
0
5
10
15
20
25
30
35
40
45
50

-This plan should be printed in colour, a monochrome version should not be relied upon.

-This plan should be read alongside the associated arboricultural report which will detail the protective status of the trees.

-Any development proposals should be designed with consultation with the appointed arboriculturalist to avoid delays/rejection at planning or breach of tree-related legislation.

15 Appendix 3: Explanation of Tree Schedule

Measurements/ references

Tree reference number: Each item (i.e. tree, group, hedge or woodland group) is assigned a sequential reference number, proceeded with a letter to identify what type of vegetation is being assessed. T = individual tree, G = group of trees, H = hedge and W = woodland group.

Species – common and botanical name: The species of each item is identified by its common name and botanical/scientific name, in accordance with the ICN (International Code of Nomenclature for algae, fungi and plants) or the ICNCP (International Code of Nomenclature for Cultivated Plants) as appropriate. Where multiple species are identified, the common names are listed in the 'Observations' section and the botanical names are omitted and replaced with *'Mixed'*.

Age class: Is listed as young, semi-mature, early-mature, mature, over-mature, ancient or dead. For groups, hedges and woodland groups the age may be listed as a range (e.g. young to early-mature).

Height: Measured from ground level in metres. For groups, hedges and woodland groups the height listed may be in the form of a range (e.g. 8-15m), an average or the highest tree encountered, to the discretion of the surveyor.

Crown height: The height at which the main canopy begins. For off-site trees which overhang the site, the height listed is the height at which they overhang. Where the canopy is at different heights, the measurement is either the lowest crown height or the average height, to the discretion of the surveyor. For groups, hedges and woodlands groups, the crown height is often '0' as the crown heights fluctuate throughout the group, starting from ground level.

First significant branch height and aspect: Height at which the first significant branch emerges from the main stem/s and the aspect using the cardinal points (NESW). Where multiple branches emerge at the same height from different aspects, 'N/A' is typically used. Most groups, hedges and woodland groups have no prevailing significant branch height and direction, so 'N/A' is used in this case also.

Crown spread: Crown spread is typically measured using the cardinal points (NESW) for individual trees. For groups, hedges and woodland groups several different methods may be employed. The appropriateness of each one is to the discretion of the surveyor. For small groups, the furthest extent of the crown to each aspect may be measured and then drawn around to create an overall spread. Alternatively, an average crown spread may be listed. For linear features such as hedges, an average width may be stipulated. Otherwise, 'See plan' is used where the canopy has been plotted using the topographical survey, GPS, estimation (to the best ability of the surveyor) or a combination of these.

Stem diameter: The diameter of the main stem/s at 1.5m above ground level is listed in millimetres. Where more than five main stems are encountered, an average stem diameter is used. For groups, hedges and woodland groups, the diameter listed is typically an average or the largest stem encountered, to the

discretion of the surveyor. In some circumstances multiple diameters may be recorded for groups and plotted separately on the Tree Constraints/Protection Plan.

No. of stems: The number of main stems which are being measured for their diameter.

Root protection radius (RPR): A calculation based on the No. of stems and the stem diameter/s. The radius is the extent of the Root Protection Area (RPA) expressed as the diameter of a circle. It applies to individual trees and individual trees within groups. NB: The RPA shown on the Tree Constraints/Protection Plan takes precedent over the RPR listed in the Tree Survey Schedule. This area should be avoided to prevent damage to retained trees.

Evaluations

Physiological condition: Describes the physiological health/vitality of the tree as good, fair, poor or dead.

Structural condition: Describes the biomechanical integrity of the tree as good, fair, poor or dead.

Observations: A description of the item being surveyed including the most notable defects or characteristics relevant to the assessment.

Preliminary management recommendations: Work recommendations made with reference to the existing condition of the tree in the current context and usage of the site.

Priority of works: Where preliminary management recommendations are made, a priority rating is assigned to guide the client to allocate their resources in a targeted manner. The four priority ratings are as follows: Priority 1: Urgent, Priority 2: High, Priority 3: Moderate, Priority 4: Low.

Remaining life expectancy: Is described as dead, <10, 10+, 20+ and 40+ years. It is an estimation only, based on the condition of the tree and the current context of the site.

Retention category: A categorisation method to identify the quality and (non-fiscal) value of the item being surveyed, in accordance with BS5837:2012, as follows:

Category U – "Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years".

Category A – "Trees of high quality with an estimated remaining life expectancy of at least 10 years".

Category B – "Trees of moderate quality with an estimated remaining life expectancy of at least 20 years".

Category C – "Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm".

Sub-category: Trees that are retention category 'A', 'B' or 'C' are then assigned a sub-category (or multiple sub-categories) which justify their categorisation. '1' = mainly arboricultural qualities, '2' = mainly landscape qualities and '3' = mainly cultural values, including conservation. The number of sub-categories assigned to a tree does not confer on them greater value than those with fewer sub-categories.

16 Appendix 4: Glossary of common tree defects/observations

Bark wounds: Damaged caused to a tree stem or branch where the bark has been damaged or removed, often exposing the underlying wood.

Canker/s: Damage caused by disease (principally fungi or bacteria), leading to deformed areas of bark and usually confined to the outer edges of the stem/branch.

Cavity/decay pocket: holes or entrances leading into the interior parts of the tree timber, either caused by, or accelerated by decay (principally decay fungi).

Chlorotic: Discolouration of leaves due to some form of ill-health in the tree. Can be caused by a number of factors including nutrient deficiencies, disease or damage to the root system.

Coppice/d: Coppicing is an ancient and still widely utilised tree management practice whereby trees are felled nearly to ground level and then allowed to regrow; often with multiple shoots arising from the edges of the original tree stump.

Crossing/rubbing branches or stems: This phrase refers to where branches or stems are rubbing against each other causing bark wounds by abrasion. Crossing/rubbing branches can also lead to the production of included unions (see below).

Deadwood: Completely dead sections of branch or stem, still present within the crown. Deadwood is often created by a natural process not linked with ill-health. However; if there is excessive deadwood within the crown of a tree it can be sign of stress. Deadwood is often described as 'minor' or 'major'. Within this report, 'minor' should be taken to mean up to a maximum of 7cm in diameter and less than 2m in length. 'Major' is greater than 7cm in diameter and/or greater than 2m in length. If there is a combination of both types within a tree's crown, then 'major' is used.

Decay: Decay describes a process by which woody tissues are broken down, principally by decay fungi and invertebrates. Where standing trees are subjected to decay, it can weaken their structure to the point where they collapse or break-apart so an assessment of the decay is needed by a specialist.

Decline: Trees in decline usually describe trees that are dying back from the tips of their branches, moving inwards to the interior of the crown. It may be the early signs of a tree's approaching death, however it can also be part of a re-balancing process where the tree is reducing the size of its crown to something which it can better manage, in terms of energy usage.

Epicormic growth: Small and often plentiful shoots that typically arise from the base of a tree, on the main stem or within the inner crown. For many species this is very common and not a cause of concern. However, in some cases it can be an indicator of stress.

Etiolated/drawn-up: These terms usually describe smaller trees that have been in heavy competition and shaded by larger specimens. This causes them to grow up towards the light, giving them a narrow crown and generally a poor shape/form. Additionally 'etiolated' may indicate poor health, often as a result of

becoming out-shaded, whereas 'drawn-up' usually describes a poor shape and form but with no significant health implications.

Fibre buckling: An acute bulge in a tree stem that is not due to the presence of underlying decay but to the localised compression of woody fibres. It is not generally a significant cause of concern.

Form: This principally describes the shape of the tree and how well it has developed.

Girdling roots: Roots which wrap around and restrict other roots or the main stem. Often caused by poor planting/nursery practices.

Hanger/s: Broken branches in the crown which are either still partially attached or have severed from the parent branch by are held up by other branches in the crown.

Hazard beam: A particular type of commonly occurring crack that occurs longitudinally along a bend in a branch.

Included bark/Included union: This occurs in tight branch/stem forks where due to radial growth of the two branches/stems, they rub against each other and meet. The bark of the two tree parts is then trapped and pressed together. In some cases, where the tree does not compensate for this properly, weak unions can occur which are predisposed to failure.

Lesions: Bleeding exudations, typically on the main stems of trees which indicates the presence of disease or ill-health.

Monolith: This can either describe a dead standing tree, or one which by tree surgery has had all branches removed back to a single standing stem.

Occluding/Occlusion: The process by which trees seal over wounds with new growth.

Pollard/ed: A tree surgery operation where the crown of the tree is reduced back to many small stubs, creating a crown reminiscent in shape to a candelabra. It is then allowed to regrow with new shoots forming from these pruning points. Over time this operation is repeated on a cyclical basis to create trees of formal shape and aesthetic.

Pruning wounds: The points in a tree's crown where pruning cuts have been made.

Reverting/reversion: A process where cultivated varieties of plants revert to their natural foliage colour and type.

Ring-barked: The removal of a 'ring' of bark around a tree stem, most commonly caused by vandalism or browsing damage by livestock.

Root plate: The root plate comprises of the main structural roots of the tree. Where uprooting occurs, these roots and the soil around them lifts up on one side like a plate.

Stub (branch): Either where branches have been cut horizontally and not back to a growth point, or the short section of a branch where it meets the main stem.

Tear wound/branch tear: The resulting wound where branches/stems have been torn off, often encompassing the branch stub.

Topped: The tree surgery practice of removing a tree's crown back to the main stem, or a fixed point. This is generally bad practice and is only advised in exceptional circumstances.

Vehicle strikes: Where vehicles have conflicted with trees, usually resulting in bark wounds.

Veteran Tree: A tree which displays may features characteristic of, but not necessary exclusive to, ancient trees. These features are often in other contexts considered to be defects but are of ecological value and provide niche deadwood habitats. Such features include many of those defects listed here which in the right context can be retained to provide valuable wildlife benefits.

Vitality: The physiological health of the tree, expressed by the colour and size of the foliage, extension of shoot/root growth, proliferation of buds, creation of fruits and flowers and the speed of growth, including occlusion.

TREE SURVEY SOLUTIONS