

Combined Arboricultural Impact Assessment/ Method Statement Construction Hub Academy Oakdale NPI I 3XG



Conducted by Ben Clark

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Introduction

This assessment was conducted by Ben Clark, Arboricultural Consultant, and Director at Tree Check Arboriculture Ltd. with over 11 years' experience in the arboriculture industry and holding the following qualifications:

- Level 4 Diploma in Arboriculture
- BSc. Geology (University of Southampton)
- LANTRA Professional Tree Inspection Certificate (PTI)
- Various NPTC qualifications in tree surgery.

Ben is a technician member of the Arboricultural Association and attends regular training and seminars to remain up to date with current arboricultural practices.

The methodology of this report is based on the recommendations provided by the British Standards Institute document BS5837: Trees in Relation to Design, Demolition and Construction – Recommendations, as well as other recommendations provided by institutions such as the Arboral Association.

Brief

Tree Check has been instructed by Dan Kinch of RMR Sand and Aggregates to carry out an Arboricultural Impact Assessment and Method Statement at Construction Hub Academy, Oakdale. The purpose of this report is as follows:

- To quantify any tree losses required to make way for the proposed development.
- To quantify and prescribe any pruning works required to make way for the proposed development.
- To assess the impact that the proposed development may have on retained trees on site and to provide control measures to prevent or minimize damage to retained trees.
- To consider whether design changes could prevent or reduce tree losses on site, and whether such changes are reasonable and proportional to the retention value of affected trees.
- To provide recommendations for mitigating tree losses where appropriate.

Baseline

This is revision number 1 and it's been revised to reflect an updated proposed layout

This report was based on the findings outlined in our baseline report: BS5837 Tree Survey and Categorisation Report at Construction Hub Academy, Tree Check 2025.

The following information was available:

- TCHAW-TOPO-DRG-001 - Construction Hub Academy Topographical Survey 2025
- AL(90)03 Rev E- Proposed Training Centre, Proposed Site Plan

It should be noted that this assessment is based on tree locations as recorded in the base line survey relative to the proposed design layout. These tree locations were plotted using tree locations on the topo if available, and GPS, satellite and known features on site. In any case there exists potential for inaccuracies in the locations of trees relative to the development.

The site was visited on the 11-Dec-2025 during overcast but dry weather conditions considered favourable for this type of survey.

Interpretation

See [appendix v](#) for a glossary of the terms commonly used in tree reports.

BS Categories

Trees have been assigned retention categories in accordance with BS5837. These are as follows:

Category A- Trees with a high retention value which are either arboriculturally important, important within the landscape, or culturally/ecologically important.

Category B- Trees with a moderate retention value i.e. they are good examples of their species, provide some notable amenity value to the area, or provide significant ecological or cultural value.

Category C- Trees with a low retention value. Including trees with defects which reduce their amenity value or expected lifespan but not to the extent that they cannot be realistically retained within the development.

Category U- Trees of which retention is considered unrealistic within the context of the development due to poor condition and low life expectancy.

See [Table I](#) in the appendices of this report for more information on the allocation of categories and subcategories.

Tree Age Ratings

Y- Young trees in their early stage of growth, have undergone minimal secondary thickening and are still primarily composed of active tissue.

EM- Early mature trees that have started to show characteristics of maturity such more developed crowns and increased stem thickness.

M- Mature fully developed trees.

OM- Over mature trees that are starting to show signs of decline.

A- Ancient trees that have reached a notably old age for their species and are therefore considered to be important.

V- Veteran trees with notable features such as wounds, cavities, cracks, etc. that provide significant habitat value. These are usually older trees.

Root Protection Areas (RPA's)

Root Protection areas have been calculated according to BS5837 and represent the estimated minimum rooting area required by the tree to carry out its functions.

Root protections areas are shown as orange circles or polygons for all trees except those with a retention category of U in the Tree Constraints Plan. In the Tree Loss/Retention and Protection Plan, RPA's are not shown for trees proposed for removal to make way for development.

Tree and Group Prefixes

Trees and groups are numbered with the following prefixes:

- **T-** individual trees.
- **G-** groups of trees with similar characteristics and rooting areas.
- **H-** Hedgerows.
- **W-** woodland groups, designated as such due to the presence of woodland features such as natural regeneration,

Arboricultural Impact Assessment/Method Statement

1. Tree Preservation Orders and Conservation Areas

Data obtained from Caerphilly Council's online mapping service suggests that the site is not within a Conservation Area and does not contain trees subject to Tree Preservation Orders (TPOs)

2. Site Monitoring and Auditing

A Project Arboriculturalist (PA) is to be appointed by the client to monitor the development. The below monitoring table outlines at which stages of the project PA input is required, what action is to be taken, whether works are to be held until the condition is satisfied and what documentation must be provided at each step.

	Stage / Trigger	PA Requirement	Action	Hold Point	Responsible Party	Outcome/ Documentation (Provided to Client & LPA)
Stage	Pre Commencement	PA to attend site or consult with site manager via phone/teams.	Confirm TPF layout, access routes, CEZs, sequencing	No works commence until completed	Principal Contractor	Pre-Commencement Site Note.
	Correct Installation of Tree Protective Fencing	PA to sign off.	Confirm correct installation based on a site visit or photos provided by the site manager. Confirm whether proposed planting sites can be fenced off prior to the beginning of works or whether ground is to be made up.	Construction not to proceed until sign off has been completed	Principal Contractor	TPF Sign Off Note.
	Mid-construction compliance audit	PA to attend	Confirm fencing intact, CEZ not compromised, ground protection maintained	No hold.	PA	Interim Compliance Note.
	Consultation for additional tree protective fencing and ground amelioration around planting areas (if required following ground works)	PA to attend	If ground works are to take place in the areas proposed for planting, the PA is to inspect these sites to determine if soil amelioration is required prior to planting. Ground protection is to be advised upon if construction is still ongoing.	Planting not to proceed until this is signed off.	Principle Contractor and PA.	Technical note and pre planting sign off (to be provided to the LPA).
	Site Completion and Removal of TPF	PA to attend post-construction and meet with site manager.	Verify competition within CEZ has not occurred, confirm no further risk of tree damage through construction exists, authorise removal of Tree Protective Fence.	No hold.	PA/Contractor	Site Completion Sign off.
Trigger	Any design change affecting RPAs, TPP, CEZs, or planting areas	PA to be notified and provided with relevant drawings/ dimensions.	PA to assess for increased tree impact.	Relevant works to be held pending PA guidance and agreement from LPA if required.	Principle contractor.	Technical note or updated AIA/Method Statement with potential need for further supervision.

	Unexpected encroachment or need for access within an RPA.	PA to be notified and provided with relevant drawings/dimension	PA to assess for increased tree impact.	work halted until PA authorises continuation.	Principle contractor.	Technical note or updated AIA/Method Statement with potential need for further supervision.
Trigger	Encountering roots >50 mm diameter anywhere on site	PA to be provided photos and measurements of encountered roots as well as details of location. Site attendance may be required.	PA to determine source and significance of roots.	Work halted until PA authorises continuation.	Contractor	Site Supervision Note.
	Damage to fencing, CEZ breach, or unauthorised ground disturbance.	PA to be notified.	Fence to be reinstated, ground remediation to be instructed by the PA if required.	Work halted until PA sign off.	Contractor.	Site Supervision Note.

3. Proposed Tree Surgery Works

The below schedule includes trees on site that require works throughout the course of the proposed development. For a full schedule of all trees on site, please refer to BS5837 Tree Survey and Categorisation Report at Construction Hub Academy, Tree Check 2025.

The location of trees proposed for removal, and the extent of proposed pruning is illustrated on the attached [Tree Retention/Removal and Protection Plan](#).

	Ref	Tag	Species	Comments	Life Stage	Retention Category	RPA Radius (m)	Photo
Removals	NO TREE LOSSES ARE PROPOSED							/
Pruning	G2	N/A	Common alder (<i>Alnus glutinosa</i>) Common ash (<i>Fraxinus excelsior</i>) Blackthorn (<i>Prunus spinosa</i>)	2-3m crown reduced on the east side to prevent crown damage during development and provide clearance from the road and proposed visibility splay.	E M	C2	1.1	

3.1. Pruning Works

Pruning works, as outlined in the [Schedule of Tree Works](#) are proposed on site.

Poor pruning techniques can cause a large reduction in the amenity value of a tree, reduce its lifespan or lead to significant structural and physiological issues, requiring extensive remedial work. The following methodology must be followed during all pruning works:

3.1.1. Control Measures for Pruning Works

Trees

- All pruning must be undertaken by competent and trained personnel, in accordance with BS 3998:2010 – Tree Work – Recommendations.
- Cuts must be made to the nearest appropriate lateral growth point, using natural target pruning. Ideally, retained laterals should be at least one-third the diameter of the removed branch. Cuts that result in a retained lateral with a diameter less than one-third of the removed section are generally undesirable and should be avoided where practicable.
- Contractors must be made aware of any legal constraints affecting the trees to be pruned, such as Tree Preservation Orders (TPOs) or Conservation Area designations. No work shall proceed on such trees without prior written approval from the Local Planning Authority.
- No cuts greater than 100mm in diameter shall be made on the main stem unless specifically identified in the [Schedule of Tree Works](#).
- All cuts to the main stem must retain the branch collar, using natural target pruning techniques. The branch collar must not be damaged or removed, as it is vital in defending the tree from pathogen entry.

4. Construction Exclusion Zones

Following the recommended pruning, all trees on site and groups can be segregated from the proposed works within construction exclusion zones for the entirety of the development, with no requirement for access into their root protection or crown areas, and no conflict between the proposed layout of site and their above or below ground structures:

All trees, including those for which full segregation throughout development is not possible, will be segregated, as far as is possible from the development area by natural or pre-existing features on site, or by the installation of physical barriers as outlined in section 4.1.

Ground proposed for tree, shrub or wildflower planting is also to be included within construction exclusion zones and segregated from site during development. If any of this ground is to be made up during the ground works stage, the Project Arboriculturalist is to advise on soil amelioration following this stage and the areas fenced off for the remainder of the construction phase.

4.1. Method for Establishing Construction Exclusion Zones

- By maintaining a construction exclusion zone, with tree protective barrier fencing segregating retained trees from the rest of site, physical damage, both mechanical and related to soil compaction can be avoided.
- Tree protective barrier fencing must be installed in the configuration outlined in the [Tree Protection Plan](#).
- The crowns and root protection areas (having been measured and marked out on site) of all trees must be enclosed within the tree protective fencing. If more space is needed than the current crown extents allow, the project arboriculturalist must be consulted in order to arrange appropriate pruning measures.
- The standard level of tree protective fencing, as prescribed in BS5837 and shown in [Appendix iv](#) is recommended for this site due to the expected use of heavy machinery and the scale of the proposed works on site.
- Machine operators are to be briefed on positioning their equipment to avoid contact with branches from retained trees and the root protection zones.
- Where access is required beneath the crown or canopy area of retained trees, all pruning work to facilitate access must be carried out prior to the development stage, height restriction barriers are to be

installed at the edge of areas of caution where entry beneath barriers occurs, and banksmen are to be assigned to make sure no contact with branches is made during the movement or use of plant.

- No materials are to be stored within the RPA's of trees for any period of time, including in areas of caution.
- All RPA's are to be checked on site and marked out, measured based on the RPA radius shown in the tree schedule.

5. Tree Locations

Consideration of the potential impact of development on proposed trees is based on the location of trees (as plotted in the baseline survey) relative to the proposed layout provided by the clients. Due to the potential for inaccuracies and discrepancies between drawings and realities on site, the site manager or project arboriculturalist must mark out root protection areas and the extents of proposed structures on site to verify the following:

- Unless otherwise accounted for in this report, there is sufficient space on site for the crowns and RPA's of all trees on site (based on their RPA radius shown in the tree schedule) to be fenced off for the duration of works.
- Where this report specifies that RPAs or tree crowns will be encroached upon, the actual on-site distances between trees and the conflicting features must be measured and verified to ensure they match the figures stated in this report.

If discrepancies exist, the project arboriculturalist is to be informed, so that updated assessments can be made.

6. Schedule of RPA and Crown Incursions

The schedule below outlines trees that cannot be fully segregated from the development area and describes the type and significance of the incursions that occur.

Reference	Tag	Life Stage	Retention Category	RPA Radius (m)	RPA Area (M2)*	Type of Incursion	Incursion Area (M2)	Proportion of RPA Affected	Impact or Risk	Methodology Applied	Photo
NO RPA INCURSIONS ANTICIPATED ON SITE											

RPA's for groups represent the area per individual tree of the group, not the group as a whole.

**Incursion area represents an approximation of the area per effected tree within the group based on the formula provided in [appendix vi](#).

7. Impact Through Chemical Damage

There is a risk of chemical damage to trees from the mixing and storage of cement and other damaging chemicals.

All trees are at significant risk of chemical damage during development phase and in the course of the proposed use as a construction facility. The environmental management plan associated with the facility contains extensive measures for preventing harmful runoff towards the surrounding landscape, with the spill procedures, a bund around the excavator training area, suds features and a bioretention pond providing safeguarding measures against pollutant runoff from site. The following principles must also be applied throughout the development:

7.1. Method for the Control of Chemicals Potentially Harmful to Trees

- Materials that may have an adverse effect on the health of trees will not be stored or transported within the RPAs of retained trees. E.g., oil, bitumen, cement, and concrete.
- Concrete and cement will not be mixed within 10m of the base of trees.
- Cement and concrete will be mixed downhill from the base of trees or watercourses to avoid the risk of contamination to runoff.
- Where it is not possible to mix and store concrete downhill from trees and watercourses, sediment barriers will be used to prevent runoff from storage and mixing areas.

8. Drainage and SUDS

A review of the proposed drainage layout, overlaid onto the Tree Protection Plan, confirms that the alignment of drainage features and associated infrastructure does not require excavation within the Root Protection Areas (RPAs) of retained trees. The proposed Sustainable Drainage Systems (SuDS) are primarily located within areas of new hardstanding and development, and therefore will not result in direct impacts to existing tree rooting environments. In addition, the incorporation of permeable surfacing, bioretention areas and sub-base attenuation features will intercept, store and treat surface water runoff at source, thereby preventing uncontrolled accumulation of water within adjacent soil profiles and reducing the potential for contaminants associated with hardstanding areas to reach tree rooting zones. While exceedance flows are directed towards Manmoel Road, where a boundary tree line is present (T11–T15 and H1–H2), the predicted exceedance volume is negligible in scale, at circa 13.1m³ across the site. This volume would disperse across the wider site context and is unlikely to result in prolonged waterlogging. Furthermore, the trees along this boundary are situated within a roadside verge, an environment that is unlikely to retain standing water for any meaningful duration. It is therefore considered highly unlikely that these trees would be adversely affected by exceedance flows.

The drainage strategy incorporates a maintenance regime to ensure continued functionality of SuDS components, including measures to address potential blockages. As some of these features are located in proximity to areas of proposed planting, it is recommended that the annual inspection schedule outlined in Section 10 includes monitoring for signs of localised waterlogging. This is a precautionary measure in the event of accidental bypass or failure of drainage components, which could otherwise alter soil moisture conditions around newly established trees. Should any such issues be identified, they should be investigated and rectified promptly to maintain suitable growing conditions and ensure successful establishment.

9. Scope for Preventing Tree Losses through Design Change

Not applicable as while tree removal has already occurred, **no further tree losses are proposed.**

10. Mitigation of Tree Losses

10.1. Mitigation Through Replacement Planting

Mitigation planting is proposed to mitigate the previous loss of approximately 15 early mature and 18 self-seeded scrub like trees as discussed in detail in the Green Infrastructure Statement For Proposed Training Centre, Parkway, Blackwood Prepared By TDA.

The proposed planting includes the instruction of 36 standard trees and 48 feathered trees, providing appropriate mitigation for the ~15 early mature trees removed from site at a ratio of 5.6:1.

10.1.1. Method for Tree Planting

- A total of 84 trees plus additional understory species to be planted in the areas indicated on the Detailed Soft Landscaping Proposals submitted with the application.
- Species and root type are specified in the Detailed Soft Landscaping Proposals submitted with the application.
- Planting areas formed on made ground should be reviewed following completion of earthworks to assess soil structure and suitability for tree establishment. The Project Arboriculturalist should specify any necessary soil amelioration or importation of suitable growing media to ensure adequate rooting conditions.
- Planting pits are to be excavated on the same day as planting, pre-preparing pits days before planting is not appropriate as this will lead to drying out of planting pits.
- Planting pits are to be excavated as a square, large enough to accommodate the entire root ball without distorting or compressing roots, but small enough so that the tree fits snugly, to encourage the roots to become established outside of the planting pit without encircling the outside of the pit.
- The edge of the planting pit is to be scarified, removing the smooth surface created by the spade during excavation, in order to encourage root establishment outside of the planting pit.
- Trees are to be placed in the pre-prepared planting pits, ensuring it is at the correct depth ensuring all roots are below ground level, but the root flares at the base of the tree are above ground.
- Planting pits are to be backfilled with soil, ensuring there are no air pockets. Water the tree to field capacity after planting.
- Stakes or guy wires are to be employed to stabilize the tree until it re-establishes, ensuring supports are not too tight and allow for some movement to allow development of stem taper.
- Mulch is to be applied to a depth of 50mm over an area 12 times the stem diameter of the transplanted tree, avoiding the accumulation of mulch on the base.
- Ground around the trees to be irrigated to field capacity weekly in the first year after translocation and throughout the summer months during periods of dry weather for 3 years after planting.
- Annual inspection schedule to be implemented to monitor the trees for signs of stress, disease, or pest infestation, enabling adjustments to the support and watering regimes as necessary as well as prescribing any necessary pruning or pest control measures.
- Continue regular inspections and maintenance. Remove supports once the tree is stable and well-established.

Appendix

-Appendix i: Photographs taken on site.

-Appendix ii: Tree protection/loss/retention plan showing the location of trees, their root protection areas and their retention category in relation to the proposed development.

-Appendix iii: A cascade chart from BS5837: 2012- Trees in relation to design, demolition, and construction– Recommendations explaining the categorisation of trees.

-Appendix iv: A diagram showing the recommended configuration for tree protective fencing, from BS5837: 2012- Trees in relation to design, demolition, and construction– Recommendations.

-Appendix v: A Glossary of terms and phrases commonly used in tree reports.

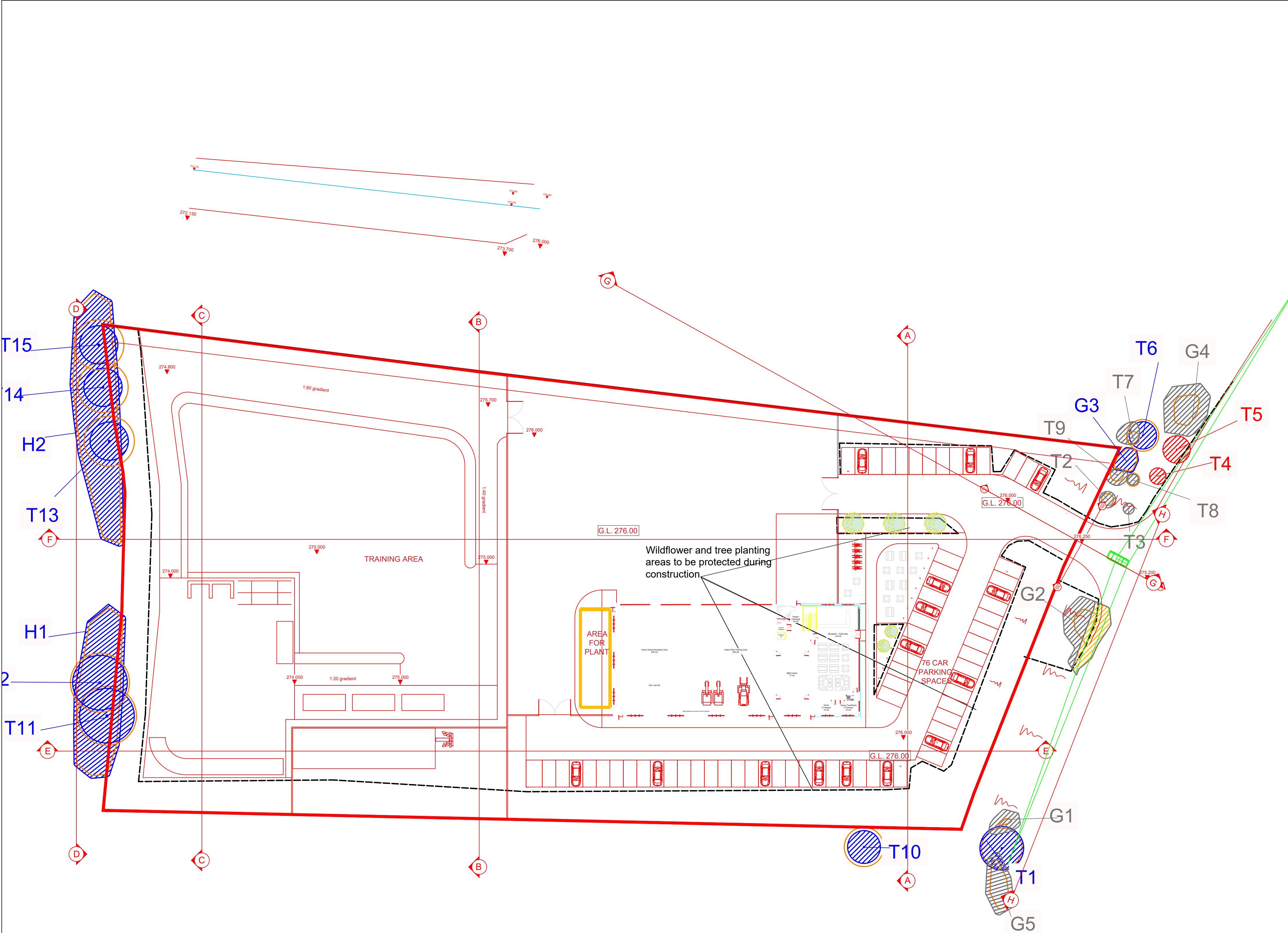
-Appendix vi: Formulas and Calculations.

-Appendix vii: Information to Inform Selection of Trenchless Solutions for the Installation of Services

Appendix i: Photos

Photo 1: [G2](#) - Reduction work proposed to provide clearance for the road.





Ref	Tag	Species	Height	Stem Diam (mm)	Life Stage	Life Expectancy	Retention Category	RPA Area (m ²)	RPA Radius (m)
G1	N/A	Hazel (<i>Corylus avellana</i>)	8	90	EM	20-40	C2	3.7	1.1
G2	N/A	Common alder (<i>Alnus glutinosa</i>), Common ash (<i>Fraxinus excelsior</i>), Blackthorn (<i>Prunus spinosa</i>)	9	90	EM	20-40	C2	3.7	1.1
G3	N/A	Scots pine (<i>Pinus sylvestris</i>)	12	190	EM	20-40	B2	16	2.3
G4	N/A	Common dogwood (<i>Cornus sanguinea</i>)	5	90	EM	20-40	C2	3.7	1.1
G5	N/A	Hazel (<i>Corylus avellana</i>), Whitebeam (<i>Aria edulis</i>)	10	180	EM	20-40	C2	15	2.2
H1	N/A	Goat willow (<i>Salix caprea</i>), Hazel (<i>Corylus avellana</i>), Common hawthorn (<i>Crataegus monogyna</i>)	8	120	EM	20-40	B2.3	6.5	1.4
H2	N/A	Goat willow (<i>Salix caprea</i>), Hazel (<i>Corylus avellana</i>), Common hawthorn (<i>Crataegus monogyna</i>), Common holly (<i>Ilex aquifolium</i>)	8	120	EM	20-40	B2.3	6.5	1.4
T1	N/A	Common ash (<i>Fraxinus excelsior</i>)	14	310	EM	20-40	B2	43	3.7
T2	N/A	Pedunculate oak (<i>Quercus robur</i>)	6	90	Y	40+	C2	3.7	1.1
T3	N/A	Common ash (<i>Fraxinus excelsior</i>)	7	80	Y	20-40	C2	2.9	1
T4	N/A	Common ash (<i>Fraxinus excelsior</i>)	10	90	SM	<10	U	0	0
T5	N/A	Common ash (<i>Fraxinus excelsior</i>)	8	180	EM	<10	U	0	0
T6	N/A	Silver birch (<i>Betula pendula</i>)	15	240	EM	20-40	B2	26	2.9
T7	N/A	Pedunculate oak (<i>Quercus robur</i>)	4	100	EM	40+	C2	4.5	1.2
T8	N/A	Silver birch (<i>Betula pendula</i>)	8	100	SM	20-40	C2	4.5	1.2
T9	N/A	Goat willow (<i>Salix caprea</i>)	8	100	SM	20-40	C2	4.5	1.2
T10	N/A	Common ash (<i>Fraxinus excelsior</i>)	12	300	EM	20-40	B2	41	3.6
T11	N/A	Pedunculate oak (<i>Quercus robur</i>)	20	450	M	20-40	B2	92	5.4
T12	N/A	Pedunculate oak (<i>Quercus robur</i>)	20	450	M	20-40	B2	92	5.4
T13	N/A	Common ash (<i>Fraxinus excelsior</i>)	20	380	M	20-40	B2	65	4.6
T14	N/A	Common ash (<i>Fraxinus excelsior</i>)	20	380	M	20-40	B2	65	4.6
T15	N/A	Silver birch (<i>Betula pendula</i>)	20	380	M	20-40	B2	65	4.6

Key

- Category A. Trees with high retention value.
- Category B. Trees with moderate retention value.
- Category C. Trees with low retention value.
- Category U. Trees unsuitable for retention due to condition
- Root Protection Area (RPA)

Tree Key

- Canopy extents, hatched area represents area within the canopy.
- Location of tree base, taken from position on TOPO or GPS.

Reference number (T for trees, G for groups, W for woodlands, H for hedges).

RPA- an indication of the estimated minumum rooting area required by the tree. Calculated in accordance with BS5837.

- Tree Protective Fence
- Trees to be pruned
Yellow hatch indicates area to be removed through pruning, retained crown shown as retention category colouring.

Tree Protection Plan Rev 1

Construction Hub

1:400 at A1

Client	RMR
Survey Code	25182
Drawn by	BC
Surveyed by	BC
Date	19/12/2025

Tree Check

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Drawing designed to be viewed in colour.
Indicative only, check all RPA's on site in accordance with table.

Appendix iii: Cascade Table for the Categorisation of Trees (BS5837)

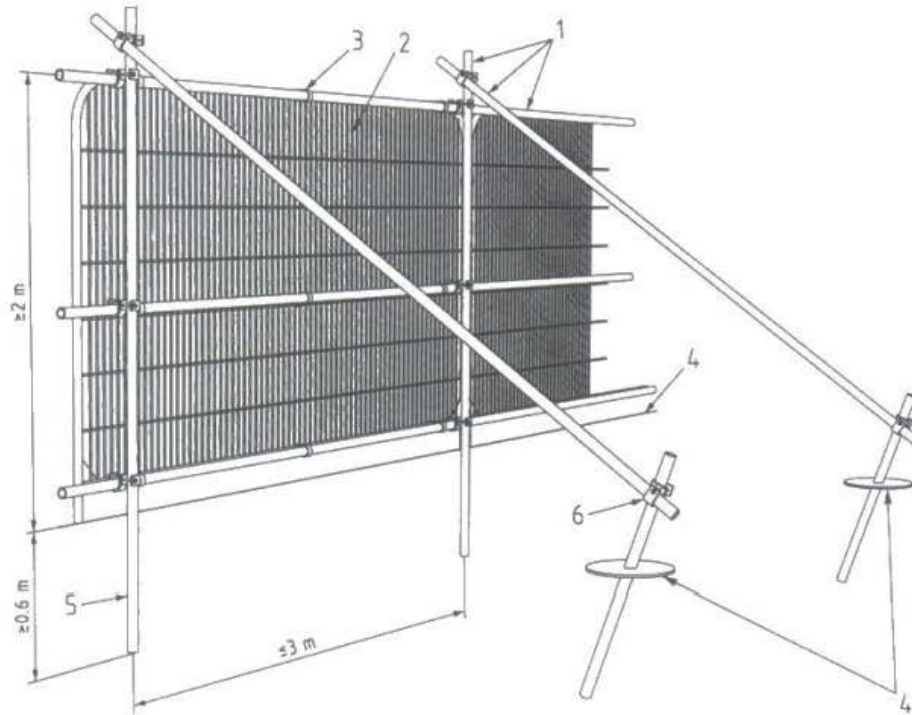
Table 1 – Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)		
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	- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other U category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) - Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline - Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7		
	1 Mainly Arboricultural values	2 Mainly landscape values	3 Mainly cultural values, including conservation
Category A Those of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as Arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation; historical, commemorative or other value (e.g. veteran trees or wood-pasture)
Category B Those of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural benefits
Category C Those of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value, and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value

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Appendix iv: Recommended Configuration for Tree Protective Fencing (BS5837)

Figure 2 Default specification for protective barrier



Key

- 1 Standard scaffold poles
- 2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
- 3 Panels secured to uprights and cross-members with wire ties
- 4 Ground level
- 5 Uprights driven into the ground until secure (minimum depth 0.6 m)
- 6 Standard scaffold clamps

Appendix v: Glossary

Aerial Inspection: A close inspection of the aerial part of a tree, either by mobile elevated work platform (MEWP) or by a tree surgeon (climbing inspection). **Adaptive Growth;** The growth of new wood in response to a stress concentration in the structure of a tree

Adventitious; A shoot which arises from tissue other than a growing shoot apex or bud, for instance in callus associated with a wound.

Anchorage; The holding of the structural root system of a tree with in the soil,.

Architecture; the formation and distribution of a trees branch system.

Arboricultural Impact Assessment: That part of the BS 5837 (2012) procedure that evaluates the tree-related constraints to a development (loss of trees, encroachment into root protection areas etc.).

Arboricultural Method Statement: That part of the BS 5837 (2012) procedure that sets out how site works should be carried out near trees to avoid accidental damage.

Arboriculturalist: A person skilled or knowledgeable in the field of arboriculture. The alternative term 'arboriculturalist' is sometimes used. A Person trained and experienced in the management of trees, and trees in relation to construction.,

Assessment; The process of examining the variables involving a trees condition and location in order to assess the risk posed by an individual tree.

Bole (trunk): The main , vertical stem or trunk of a tree.

Branch: a limb extending from the main stem or parent branch of a tree

Canopy: the combined foliage of a group of trees or a woodland, i.e. the combined area of numerous crowns.

Construction Exclusion Zone; The part of a development site from which all pedestrian and vehicular movements are excluded by protective fencing, typically to ensure the wellbeing of trees, during site works. Usually determined by the RPA of a tree.

Crown: in arboriculture the main foliage-bearing portion of a tree containing the leaves and branches

Defect: Any feature of a tree that is likely to make it less safe (in the case of a structural defect) or otherwise to reduce its health, longevity, landscape prominence or conservation value for any other reason.

Dysfunction: The cessation of physiological function in woody material, especially vascular functions such as water and sap transportation.

Failure: Fracture or deformation in any load bearing part of the tree, compromising stability or causing loss of support for part of, or all of the tree structure,

Group: More than one tree in close proximity that possess sufficient similarity or cohesiveness that they can be treated as a single entity for the purpose of this report.

Heave: deformation of shrinkable clay soil related to the expansion caused by rehydration.

Leader: the dominant, vertical shoot or stem of a tree.

Pruning: The cutting off or cutting back of tree branches or foliage to direct growth, remove an obstructing part, mitigate a nuisance, make safe, remove a diseased part, increase longevity, simulate natural damage, enhance habitat for wildlife etc.

Retained Tree: a tree that has been considered suitable for retention and therefore selected to remain as part of the final site layout.

Risk: the likelihood of a hazard to cause actual harm to people or property,

Root Protection Area (RPA); The area around the base of a tree that contains sufficient root volume to ensure the future well-being of the tree in the event of nearby soil disturbance (as on a development site). It is calculated according to guidelines in BS 5837 (2012).

Subsidence (branch): Branches, especially if spreading, tend gradually to subside under their own weight, and may eventually reach ground level in large open-grown trees. Rapid subsidence may result in crown separation or congested bark and can lead to branch failure where there is no support within the elastic limit of a given branch.

Subsidence (soil): Broadly, the downward movement of ground and an affected foundation influenced by soil properties, weather, foundation depth and nearby vegetation.

Targets: An element of tree risk: the subject of injury or damage within range of a hazard.

Tree: The definition of 'tree' is a composite of tree species, tree form and tree size. The blue book offers the following: A perennial plant with a self-supporting woody main stem, usually developing woody branches at some distance from the ground and growing to a considerable height and size. This definition has the three main elements in general form. **For the purposes of 5837 surveys, only plants with a stem diameter of 75mm or above are considered trees.**

Tree Constraint Plan (TCP): Site plan showing the tree-related constraints to development as envisaged in BS 5837 (2012). Common constraints are the loss of trees, encroachment into a tree's root protection area.

Tree Condition Inspection/Survey: A procedure to inspect a tree or trees. Variables used to describe a tree include position (if not already plotted on a topographical survey), species identity, maturity, various dimensions (main stem diameter, height, crown radius etc.), aspects of form, vigour, condition, incidence of pests, diseases, damage and defects, evidence of past management etc. Site factors, position in the landscape and site usage may also be relevant. , usually including its position, species identity, dimensions, age class, condition, conservation value etc. as appropriate, and to identify and evaluate defects. It is also common to make management recommendations (see schedule of works). Tree inspection is a fundamental of tree management and advisory practice in arboriculture.

Tree Preservation Order: (UK) an order made by a local authority or other planning authority to protect a tree, group of trees, area of (scattered) trees or woodland under Part VIII of the Town and Country Planning Act 1990. There have been several amendments, the latest being the Town and Country Planning (Tree Preservation) (England) Regulations 2012. An order is generally made on the grounds of amenity and expediency. Anyone proposing works to a TPO tree must seek prior consent from the authority using the form IAPP. With the advent of the 2012 regulations, some of the detail in existing TPOs in England has been revoked.

Tree Protection Plan: scale drawing prepared by an arboriculturalist showing the final layout proposals, tree retention and tree and landscape protection measures detailed within the arboricultural method statement (AMS), which can be shown graphically.

Trunk: see bole.

Vigour: The health and resilience of a tree (from the Latin 'to be strong'), reflected in the capacity of the whole tree to grow (see growth rate). The term is often used as a description of overall condition on a qualitative scale from 'high' to 'low'.

Visual Tree Assessment (VTA): The standard approach to tree risk assessment consisting of the diagnosis of structural defects and the evaluation of their significance from visible signs and the application of biomechanical criteria. Simple equipment such as a sounding mallet, probe and binoculars are commonly used.

Wind exposure: the degree to which a tree or other object is exposed to wind, with regard both to duration and velocity, often taking into account prevailing wind directions.

Windthrow: the blowing over of a tree at its roots.

Appendix vi: Formulas and Calculations

Method used to estimate RPA incursion area (per tree)

We treat the group RPA as a **circle of radius R** (from the average DBH).

Using an AutoCAD overlay of the site plan and our tree data, we **measured**:

- the **average depth** that works extend **beyond the RPA line**, and
- the **average width W** of that incursion strip.

For an “average” tree, we model that strip by two parallel lines cutting the circle.

Let $D = R - (\text{average depth})$ be the distance from the RPA centre to the inner line of the incursion.

The **incursion area per tree** is then the overlap of that strip with the circle:

$$A = [(D + W)\sqrt{R^2 - (D + W)^2} - D\sqrt{R^2 - D^2}] + R^2 \left[\arcsin \frac{D + W}{R} - \arcsin \frac{D}{R} \right].$$

(The maximum width W of an incursion is $R - D$.)

Definitions:

R = RPA radius from average DBH; W = average incursion width;

$D = R - \text{average depth}$ = distance from centre to the inner line.

W = The distance between the inner line and the outer edge of the incursion object, or the outer edge of the circle, whichever is closest.

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Terms and conditions

The Client is the party commissioning and funding the survey. The Consultant is any person(s) employed by Tree Check Arboriculture LTD to carry out any related works, as well as Tree Check Arboriculture LTD as an entity.

Limitations

1. This survey reflects the condition of the trees as they were observed on 04/10/2023. The condition of trees can change quickly and if any significant change is observed then a qualified arboriculturist should be consulted regardless of the recommended reinspection period.
2. While every attempt has been made to provide accurate recommendations based on the condition of the observed trees, Tree Check Arboriculture Ltd. can accept no liability for damage, injury, or loss of property caused by faults that were not apparent at the time of inspection. These include but are not limited to faults that may only be visible seasonally such as fungal fruiting bodies, or faults that were obscured or inaccessible to the surveyor such as those high up in the crown or obscured by ivy.
3. During adverse weather conditions such as storms, otherwise healthy trees can fail. Trees should be visually inspected after any high winds.
4. This report cannot predict the reaction of inspected trees to external factors such as extreme climate events, accidents, or vandalism.
5. The author(s) can accept no liability for damages if the recommended works are not carried out as per this report in line with BS:3998.
6. Operational recommendations (e.g.) climb and dismantle, are for loose guidance only. It remains the responsibility of the assigned contractor to decide on the safest work method. Tree Check Arboriculture LTD. accepts no responsibility for damages occurring during the carrying out of recommended works.
7. This report does not cover any underground part of trees, nor does it consider any affect inspected trees may have on shrinkable clay soils since these issues are almost entirely restricted to areas of shrinkable clay soils and soil analysis was not specified in the brief.
8. **Recommendations made in this report do not override any legislation covering the affected trees. Trees in a conservation area, trees subject to preservation orders and groups of trees requiring felling licenses still require relevant permissions before work can be carried out. Unless otherwise agreed the Tree Check Arboriculture LTD will not be checking for the presence of this legislation or be applying for these permissions. The Client must contact the consultant if they are unsure on this matter.**
9. **The findings of this report cannot be relied upon after 12 months from the time of inspection or the recommended reinspection date (if sooner).**

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