Tree Condition Survey & Management Report

SITE:

Department for Transport
DVSA Site No. 272
Pinner Driving Test Centre
221 Tolcarne Drive
Pinner
Middlesex
HA5 2DZ

PREPARED FOR:

Mr. William Steele
National Accounts Director
MITIE Landscapes
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PREPARED BY:

Mr G Davies *FdSc Arb MArborA*
Senior Arboricultural Consultant

BARTLETT PROJECT REFERENCE:

GD- 240717/DVSA272

SITE VISIT DATE:

19th November 2024

BARTLETT CONSULTING
A DIVISION OF THE F.A. BARTLETT TREE EXPERT COMPANY

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1.0 SCOPE OF REPORT

1.1 Assignment

1.1.1 Bartlett Consulting were instructed by MITIE Landscapes on 19th August 2024 to:

a) Perform a Level 2 *Basic Assessment* of the principal trees located within the boundaries of The Pinner Driving Test Centre following the visual tree assessment (VTA) techniques developed by Mattheck & Breloer (1994).

b) Undertake a qualified tree risk assessment in accordance with the International Society of Arboriculture's (ISA's) Best Management Practices (BMP) *Tree Risk Assessment* and *Tree Risk Assessment Manual* of the trees detailed in element a) above.

After review and discussion with the client, the tree risk assessment will be conducted for the following target(s): Persons and property both private and public.

c) Provide a written report summarising the tree stock subject to the survey; a schedule of trees and the level of associated tree risk based on the likelihood of failure and impact to the identified targets detailed above; and fully informed management recommendations in accordance with current Arboricultural practice and tree health care techniques so that the tree owner (risk manager) can determine their tolerability of risk and take reasonable and proportionate action.

1.2 Background

1.2.1 A tree survey across the Department for Transport (DfT) DVSA estate was last completed in 2021. Given the passage of time, the DfT has requested an updated survey to understand the condition of their tree population, and what management is necessary to address their duty of care.

1.2.2 Bartlett Tree Experts | Bartlett Consulting have partnered with MITIE Landscapes to deliver the estate-wide tree survey, and provide a tree management plan, allowing for proactive management.

1.3 Report Author

1.3.1 This site survey and report has been completed by me, Mr Gareth Davies a senior consultant for Bartlett Consulting / Bartlett Tree Experts.

1.3.2 I have obtained a Level 5 *FdSc* in Arboriculture, hold ISA - Tree Risk Assessment and Lantra - Professional Tree Inspector qualifications and am a 'Professional member' of the Arboricultural Association with over 11 years' experience within the industry.

1.4 Report Limitations & Methodologies

1.4.1 This report is restricted to the trees detailed in Tree Survey & Management schedule found at the end of this report and referenced in the Assignment above.

1.4.2 My survey and qualified risk assessment of trees surveyed at the Pinner Driving Test Centre is based on a single site visit on 19th November 2024. All photographs, samples, and readings, if applicable, were taken at the time the assessment was performed.

1.0 SCOPE OF REPORT (continued...)

1.4 Report Limitations & Methodologies (continued...)

1.4.3 This assessment was limited by the following factor(s): access and clear visual sight of a number of third-party trees was inhibited by close board boundary fencing.

1.4.4 *Targets* and *Occupancy Rates* considered in my tree risk assessment were determined based on my site observations during the visit and tree survey. Targets considered in this tree risk assessment are persons and property both private and public

1.4.5 The *time frame* for my risk assessment is 3 years

1.4.6 This information is solely for the use of the tree owner and manager to assist in the decision-making process regarding the management of their tree or trees. Tree risk assessments are simply tools which should be used in conjunction with the owner or tree manager's knowledge, other information and observations related to the specific tree or trees discussed, and sound decision making.

1.4.7 The statements, findings and recommendations made within the report do not take into account any effects of extreme climate and weather incidences, vandalism, changes in the natural and/or built environment around the trees after the date of this report, nor any damage whether physical, chemical or otherwise.

1.4.8 Tree risk ratings are derived from a combination of three factors: the likelihood of failure, the likelihood of the failed tree part impacting a target, and the consequences of the target being struck. These factors are then used to categorize tree risk as extreme, high, moderate or low. The factors used to define your risk rating are identified in this report.

1.4.9 Tools used in the assessment included: a nylon hammer to 'sound' the tree and tree parts; a probe to measure the depth of cavities and open wounds, as well as explore soil conditions; and binoculars to observe upper portions of the tree. Tree dimensions were recorded using hand tools such as a laser range finder; diameter tape and measuring tape.

1.4.10 All tree information and data were captured using Pear Technology tree management software and a Trimble hand-held unit, with trees plotted by GPS on an Ordnance Survey base map. This combination of technology has resulted in the production of the Tree Location Plan found at the end of this report.

1.4.11 The tree dimensions are accurate as captured on the day.

1.4.12 The surveyed trees were referenced form T001-T006 and included individuals and groups.

2.0 TREE PROTECTION STATUS

2.1 Protective Legislation

2.1.1 The Town & Country Planning Act (Tree Preservation) (England) Regulations 2012 and the Town & Country Planning Act 1990 (as amended) provides legislative protection for trees within England.

2.1.2 I conducted an online enquiry via the London Borough of Hillingdon's interactive mapping website: https://lbhillingdon.maps.arcgis.com/apps/View/index.html?appid=7b18f60872a94d38a0c9bf1aea032760

2.1.3 The information sourced confirmed the following:

2.2 Tree Preservation Order (TPO) Status

2.2.1 TPO Ref 532A dated 11/11/1994

2.3 Conservation Area (CA) Status

2.3.1 None

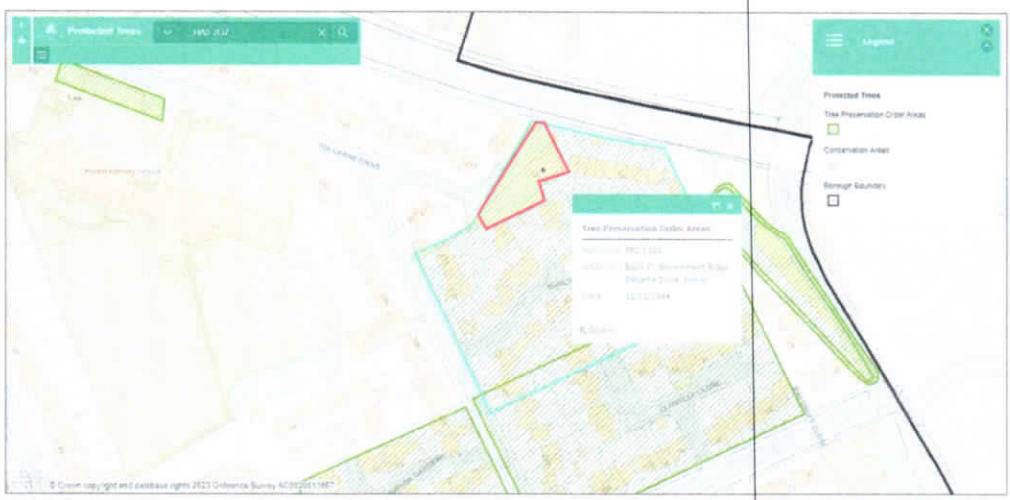


Figure 1: Annotated screenshot of TPO map, as obtained from LPA (London Borough of Hillingdon) with site highlighted in red line

2.4 Tree Management Implications

2.4.1 With reference to the London Borough of Hillingdon's interactive mapping service I have identified that the site is covered by an Area Tree Preservation Order (TPO).

2.4.2 Under the Town and Country Planning (Tree Preservation) (England) Regulations 2012, you cannot carry out any works to a protected tree before obtaining formal written permission as issued by the appropriate Local Planning Authority. This obligation requires the submission of a Tree Preservation Order planning application (TPO1APP) but cannot be acted upon until full Local Planning Authority permission is granted.

2.4.3 Please note that the removal of dead trees and the pruning of dead wood from living trees are permitted and "excepted" works under the legislation listed above. These works can be undertaken only after 5 working days' written notice has been given to the local authority.

3.0 TREE POPULATION OVERVIEW

3.0.1 I surveyed at total of six (6) individual trees and two (2) groups of trees / shrubs within or adjacent to the boundaries of the Pinner Driving Test Centre.

3.1 Structural Condition

3.1.1 Of the *tagged* trees and tree groups I advise the following:

Four (4) trees and two (2) groups where found to be within a *good* or *fair* structural condition

Two (2) where considered to be within a *poor* condition due to previous unsympathetic pruning of the crown

3.2 Physiological Condition

3.2.1 Of the *tagged* trees and tree groups I advise the following:

Four (4) trees and two (2) groups where considered to be within a good or *fair* physiological condition.
Two (2) trees where considered to be within a *poor* physiological condition.

3.2.2 A decline in tree health can be due to any combination of factors revolving around their growing environment and soil conditions such as compaction or nutrient deficiency; previous management; as well as a pest or disease pathogen.

3.2.3 In some instances the decline in health can be addressed, and potentially reversed, by tree health care and cultural practices. Where there are trees of such value and importance, I have made these recommendations.

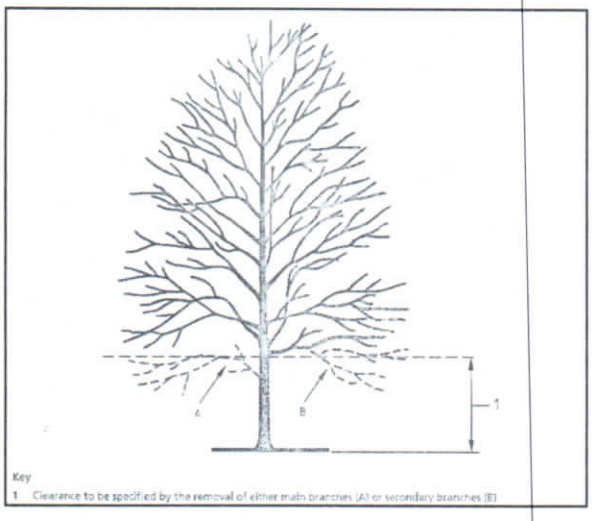
Figure 2: Image of the Pinner Test Centre as viewed adjacent to the site entrance

4.0 RECOMMENDATIONS

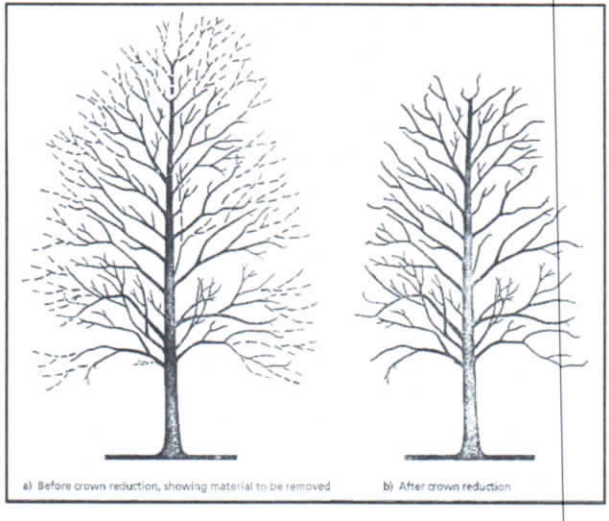
4.1 Pruning Specifications

4.1.1 For reference and the benefit of the client, I provide further information and definitions for the recommended tree work operations so that there is a better understanding when it comes to quoting and writing a specification.

Crown Lift: Will be carried out in accordance with Section 7.6 of British Standard 3998:2010 so to achieve a final clearance in height above ground level, as detailed in the tables below. Branch removal will be in accordance with Figure 3 of the British Standard and carried out by removing primary branches in the first instance and the secondary branches second instance, unless otherwise specified.



Crown Reduction: Will be carried out in accordance with Section 7.7 of BS3998:2010 by reducing the height and/or lateral branch spread, as detailed in the tables below. Pruning cuts will be made by using the selective pruning and 'drop-crotch' methodologies, as described in Section 7.7 and 7.8 of the British Standard and as per Figure 4 of the Standard.

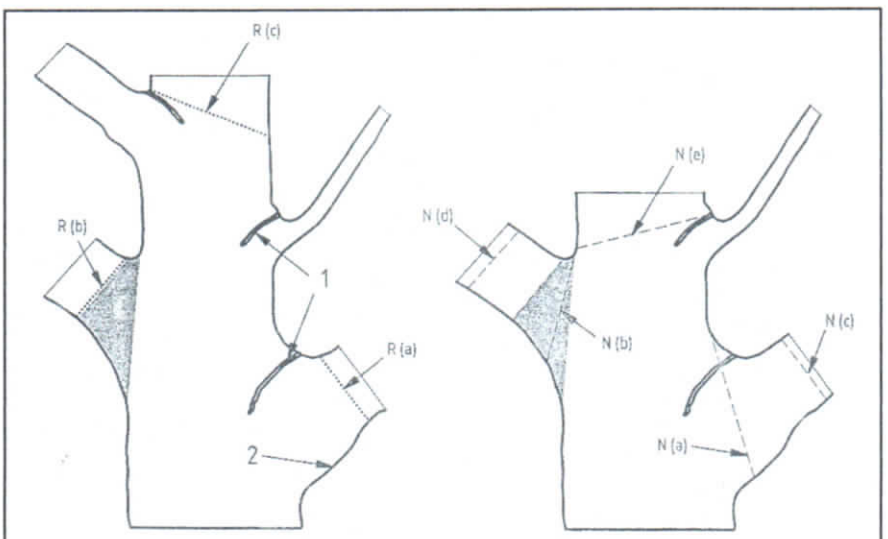


4.0 RECOMMENDATIONS (continued...)

4.1 Pruning Specifications (continued...)

Selective Pruning: Will be carried out in accordance with Section 7.7 and 7.8 of BS3998:2010 by shortening specified branching to achieve a desired distance of clearance or crown height and/or lateral spread, when undertaking the reduction works listed above. The amount of material to be removed and the diameters of the pruning cuts will be the minimum required for the purpose.

Pruning Cuts: All cuts will be made to significant lateral growth, and not back to a bud so that only a stubbed branch end remains – in accordance with Figure 02 of British Standard 3998:2010.



a) Recommended (R) b) Not recommended (N)

Key

1	Branch bark ridges
2	Branch collar
R(a)	Cut where branch collar and branch bark ridge are apparent
R(b)	Cut where neither branch bark ridge nor branch collar are apparent
R(c)	Position for end-cut in crown reduction – maximum size of cut in relation to size of lateral branch
N(a)	Cut too close (removing the branch collar and cutting into the bark branch ridge)
N(b)	Cut too close (injuring parent stem in the crotch and too steeply angled)
N(c/d)	Cut too far out, leaving a stub (but see C.2, Note 2 for exceptions)
N(e)	Incorrect end cut (made beyond a branch that is too small, but see 7.2.4 regarding groups of branches, rather than one branch of a required size)
.....	Recommended cut
– – – –	Not recommended cut
	Basal flare of the branch that does not show a distinct collar or ridge

NOTE The optimum position and angle of the end-cut cannot be exactly prescribed, as branch unions vary considerably in their conformation.

5.0 RISK ASSESSMENT & DUTY OF CARE

5.1 Limitations of Tree Risk Assessments

5.1.1 It is important for the tree owner or tree manager to know, and understand, that all trees pose some degree of risk from failure or other conditions, and as trees are living and dynamic organisms, it is not possible to maintain them free of risk. Some level of risk must be accepted to experience the full range of benefits that trees provide. As such, we reference the National Tree Safety Group (NTSG) publication *Common Sense Risk Management of Trees* (Forestry Commission 2011). This document provides guidance on trees and public safety in the UK for owners', managers, and advisors.

5.1.2 However, the overall tree risk rating; mitigation recommendations; or any other conclusions do not preclude the possibility of failure from undetected conditions, weather events, or other acts of humans or nature. Trees can unpredictably fail even if no defects or other conditions are present. Tree failure can cause adjacent trees to fail resulting in a "domino effect" that impacts targets outside the foreseeable target zone of this tree. It is the responsibility of the tree owner or manager to schedule repeat or advanced assessments, determine actions, and implement follow up recommendations, monitoring and/or mitigation.

5.1.3 Bartlett Consulting and Bartlett Tree Experts can make no warranty or guarantee whatsoever regarding the safety of any tree, trees, or parts of trees, regardless of the level of tree risk assessment provided, the risk rating, or the residual risk rating after mitigation. Bartlett Consulting and Bartlett Tree Experts cannot accept any liability in connection with these factors, nor where recommended tree management is not carried out in accordance with modern tree health care techniques, within the timelines proposed and specification provided.

5.1.4 The information in this report should not be considered as making safety; legal; architectural; engineering; landscape architectural; nor land surveying advice, nor any other professional advice.

5.1.5 This information is solely for the use of the tree owner or tree manager to assist in the decision-making process regarding their duty of care, tolerability of risk, and management of their tree or trees. Tree risk assessments are simply tools which should be used in conjunction with the owner or tree manager's knowledge, other information and observations related to the specific tree or trees discussed, and sound decision making.

5.2 Tree Owner's Duty of Care

5.2.1 A tree owner has a duty of care to ensure that all visitors, guests, employees, etc. to their land shall be safe from harm, and that there is no exposure to risks to that visitor's health and safety. This duty of care means that reasonable care must be taken to avoid acts or omissions that could be reasonably foreseen, leading to harm.

5.2.2 This duty must also be reasonable, proportionate, and reasonably practicable when managing tree risk. Therefore, the tree owner can take a balanced approach to manage the risk, retain the many benefits trees provide, and not waste resources on unnecessary tree management.

5.3 Tolerability of Risk

5.3.1 Some level of risk must be accepted to experience the full range of benefits that trees provide, and an evaluation of what is reasonable to balance the benefit of trees and the risk they pose should be undertaken by the tree owner.

5.3.2 Risks which are considered tolerable are risks which the tree owner, visitors, guests, employees, and the wider public are prepared to accept to secure the associated tree benefits. However, tolerable risks come with expectations, such as the trees being accurately assessed; control measures being in place; residual risk as low as reasonably practical; and the risk rating is periodically reviewed.

TREE SURVEY & MANAGEMENT SCHEDULE			
Client:	Mite Landscapes	***Report No:***	GD/240717/DVSA272
Site:	Pinner Driving Test Centre, 221 Tolcarne Drive, Pinner, Middlesex, HA5 2DZ	***Weather:***	Overcast
Completed by:	Mr G Davies	***Trees Tagged:***	No
Contact Details:	Bartlett Consulting, Unit 22-25 Cross Lane Farm, Cross Lanes, Pill, Somerset, Bristol BS20 0JJ T: +44 (0)1275 371 000 Option 2 / E: Consultancy@Bartlett.com / W: www.bartlett.com	***Date of Survey:***	19th November 2024

Timescale for Works

Within 6-Months	Within 1 Year	Within 2 Years	Within 3 Years

Tree No.	Species	Height Class	Crown Class	Age	Physiological Condition	Structural Condition			Observations	Works Required	Priority	Risk Factor
						Basal	Stem	Crown				
T1	Hawthorn	SM	SM	EM	Poor	Fair	Fair	Poor	• Multiple stem specimen • Previously topped at 2.5m • Regrowth at base and on main stem • Rose growing through • Overhanging adjacent residential drive	• Carry out height reduction and lateral pruning back to site boundary to prevent encroachment over private drive	1 Year	Low
T2	Hawthorn	S	SM	EM	Poor	Fair	Fair	Poor	• Suspect third party tree • Growing other side of boundary fence • Multiple stem specimen • Previously topped at 2.5m • Regrowth at base and on main stem • Previous pruning to provide clearance over site • Sycamore growing at base	• Carry out height reduction and lateral pruning to maintain suitable clearance from site	1 Year	Low

Tree No.	Species	Height Class	Crown Class	Age	Physiological Condition	Structural Condition			Observations	Works Required	Priority	Risk Factor
						Basal	Stem	Crown				
T3	Ash	M	MD	SM	Fair	Fair	Fair	Fair	• Suspected third party tree • Growing the other site of boundary fence • Twin stem specimen • Previous pruning of the overhanging eastern crown to provide suitable clearance over hardstanding area	• Crown lift to maintain suitable clearance over hardstanding area	2 Years	Low
T4	Ash	M	M	SM	Fair	Fair	Fair	Fair	• Suspected third party tree • Growing other side of boundary wall • Trifurcation at base • Previous pruning of the overhanging eastern crown to provide suitable clearance over hardstanding area and from lamp post	• Crown lift to maintain suitable clearance over hardstanding area and from lamppost	2 Years	Low
T5	Red Robin	S	S	SM	Good	Good	Good	Good	• Third party shrub • Partially overhanging site and carpark bays • Previous pruning to crown lift providing effective clearance	• Carry out crown lift to maintain suitable clearance over parking bay	2 Years	Low
T6	Ash	M	M	SM	Good	Good	Good	Good	• Third party tree • Lower western crown overhanging site and in proximity to building	• Carry out selective lateral reduction of the lower western crown to maintain suitable clearance from the building	1 Year	Low
G1	A Group Buddleia	SM	SM	SM	Fair	Fair	Fair	Fair	• Growing within a area fenced off area • Overgrown and unmanaged • Crown overhanging site and bin store • Previous pruning to manage encroachment over fence line	• Cut back to fence line	1 Year	Low
G2	Mixed group	S	S	SM	Fair	Fair	Fair	Fair	• Group of third-party shrubs • Partially overhanging the site and walkway • Crown in proximity to building	• Carry out selective pruning of the overhanging crowns to maintain suitable clearance over the footpath and from the building	1 Year	Low

Tree Survey Schedule Key:

Tree No. – tree reference on Tree Location Plan and tree tag. **Species** – tree species giving English common name. **Height Class – S** (small) 0-5 metres, **M** (medium) 5-15 metres, **L** (large) 15+metres. **Crown Class (crown diameter) – S** (small) 0-5 metres, **M** (medium) 5-15 metres, **L** (large) 15+metres **Age Class** – recorded as ; **NP** = Newly Planted, **Y** = Young (recently planted and establishing within landscape) **SM** = Semi-Mature (established within landscape and developing / growing) **M** = Mature (having reached anticipated size and age for species / growth has slowed) **OM** = Over Mature (tree of exceptional age for species) **V** = Veteran (exceptional chronological age as well as size with decay / wildlife habitat / broken limbs / etc.). **Physiological Condition** – an assessment of the health and vitality of the tree expressed as **Good** – vigorous annual extension growth and bud development, dense and full canopy, good leaf colour and size typical for species; **Fair** – parts of canopy with reduced annual extension growth and bud development, gaps within the canopy, leaf discolouration and/or unusual leaf size and shape, some tip dieback; **Poor** – over 30% of canopy exhibiting dieback and decline with the canopy exhibiting a fragmented appearance, numerous broken dead and decaying branches, poor leaf colour and growth; **Dead**. **Structural Condition (Buttress, Stem, Crown) –** is reference to physical and structural observations of the tree expressed as: **Good –** no features or observations of note / concern; **Fair**: minor remedial or non-concerning features or observations such as storm damage, unsympathetic management or presence of decay or cavities; **Poor** – significant, numerous structural weaknesses, extensive decay and / or tree parts in the process of failure which have compromised the tree.. **Observations –** qualification of health and structure via visual tree assessment. **Works Required –** tree works prescribed to address health, condition, risk or good tree management. **Priority –** recommended timeframe in which tree management should be completed, including **N/A** (not applicable as no priority). **Risk Factor** – as per Appendix 1 of report.

Note on Time Scale: Where a program of coppicing, re-pollarding, or stand thinning has been recommended, the time scale is the recommended time in which the program should commence.

Tree Survey Abbreviations & Definitions:

ADB: Ash Dieback; **Cup-shaped Union**: a union which started as included bark, but created ribs on-top, forming a cup-shape; **D3**: damage, decay, dysfunction; **FFB**: fungal fruiting body; **Haptic Vibrations**: When sounding buttress roots, if vibrations are felt through the soil (and your foot) at a distance of approximately 300 millimetres from the entry point of the root into the ground, this indicates the likely presence of root decay. **IB Union**: included bark union, a structural weakness at branch or stem unions; **NSS**: not structurally significant; **Notable Tree**: large, over-mature, 'magnificent' locally important tree for cultural, social, historical, landscape or other similar reasons; **Sounding:** Trees are sounded as part of the visual assessment, using a nylon hammer, to listen for variations in resonance. Where there is wood decay and cavities, the sound will resonate with a deeper tone than when the wood is solid. Areas of dead bark will return a loud and sharp 'crack'. **SULE**: safe useful life expectancy; **VTA:** visual tree assessment;

We trust that the contents and recommendations contained within this report were informative, easy to understand and helpful to you, with regards to managing your tree(s).

Should you have any further questions or concerns, please do not hesitate to contact us again.

REPORT CLASSIFICATION: Tree Condition Survey & Management Report

REPORT STATUS: Final

REPORT COMPLETED BY: Mr G Davies *FdSc Arb MArborA*
Senior Arboricultural Consultant

SIGNATURE:

DATE: 27th November 2024

APPENDIX 1 – Tree Risk Assessment Glossary

Bartlett Consulting uses the International Society of Arboriculture's (ISA) Tree Risk Assessment methodology, referred to as TRAQ. This is a 'qualitative' system which uses a matrix-based combination of ratings, to reach a conclusion of associated risk. The standard Bartlett Consulting time-line within the TRAQ system is three (03) years, unless otherwise stated within the report.

Risk is the combination of the 'likelihood' of an event: in this case the failure of a tree or part of a tree, and the severity of the potential consequences. A hazard is the likely source of harm. The two tables below define both the likelihood and risk levels as per the TRAQ system.

Tree risk assessment has a unique set of terms with specific meanings. Definitions of all specific terms may be found in the International Society of Arboriculture's *Best Management Practice for Tree Risk Assessment.* Definitions of some of these terms used in this report are as follows:

Classification	**Description of Likelihood of Failure** (As per Dunster, Smiley, Matheny, Lilly 2017)
Improbable	The tree or tree part is not likely to fail during normal weather conditions, and may not failure in extreme weather conditions, within the specified time frame.
Possible	Failure may be expected in extreme weather conditions, but it is unlikely during normal weather conditions, within the specified time frame.
Probable	Failure may be expected under normal weather conditions, within the specified time frame.
Imminent	Failure has started or is most likely to occur in the near future, even if there is no significant wind, weather, or increased load.

Targets are people, property, or activities that could be injured, damaged or disrupted by a tree failure.

Likelihood of Impact may be categorized as high meaning that a failed tree or tree part will most likely impact a target; medium meaning the failed tree or tree part is as likely to impact the target as not; low meaning that the failed tree or tree part is not likely to impact a target; and very low meaning that the likelihood of a failed tree or tree part impacting the specified target is remote.

Consequences of a known target being struck may be categorized as severe meaning that impact could involve serious personal injury or death, damage to high-value property, or disruption to important activities; significant meaning that the impact may involve property damage of moderate to high value, considerable disruption, or personal injury; minor meaning that impact could cause low to moderate property damage, small disruptions to traffic or a communication utility, or very minor injury; and negligible meaning that impact may involve low-value property damage or disruption that can be replaced or repaired, and do not involve personal injury.

Risk Level	**Description of Risk** (As per Dunster, Smiley, Matheny, Lilly 2017)
Extreme Risk	Failure is *imminent*, impact & failure is *very likely*, and the consequences of the failure are *severe*. Mitigation will be a high priority or targets must be temporarily controlled.
High Risk	Impact & Failure is *likely* to *very likely* with *significant* consequences; or consequences are *severe* and the Impact & Failure is *likely*. Mitigation measures should be taken.
Moderate Risk	Impact & Failure is *likely* to *very likely* with *minor* consequences; or consequences are *significant* to *severe* with a *somewhat likely* Impact & Failure. Mitigation will be determined by tolerance of risk.
Low Risk	Consequences are either negligible or minor, with corresponding Impact & Failure ratings of either unlikely or somewhat likely respectively. Mitigation may be desirable but not strictly necessary.

Overall Tree Risk is the highest individual risk identified for the tree.

Residual Risk is the level of risk the tree should pose after the recommended mitigation

APPENDIX 2 – Tree Survey & Assessment Glossary

The scientific study of tree hazard evaluation and assessment is not an exact science, and there is still much to learn with constantly developing technology, research and calculations. Most limitations of tree hazard evaluation arise from uncertainties with trees and the loads the trees are subjected to.

The three levels of tree evaluation and assessment employed by Bartlett Consulting are those defined in the International Society of Arboriculture's (ISA) *Best Management Practices for Tree Risk Assessment* and *ANSI A300 Tree Risk Assessment Standard*. All three levels are described below, along with the basic limitations of each.

I. Level 1 Limited Visual Assessment

A *Level 1 Limited Visual Assessment* (also referred to as a Hazard Survey or Negative Tree Survey) is a visual assessment from a specific perspective of an individual tree or a population of trees near specified targets. These assessments are conducted to identify obvious defects or specified tree conditions (such as dead trees) as agreed with the client and tree owner / manager.

A *Level 1 Limited Visual Assessment* is typically performed from a pre-defined and specified perspective (i.e. from the pavement, street, car parking area(s), woodland edge, etc.), and typically of one side of the tree from that specified perspective. The specified tree or trees are visually assessed to identify tree features, defects, or specific conditions constituting a hazard which result in a likelihood of failure of probable or imminent and would impact the specified target(s).

Level 1 Limited Visual Assessments are typically performed to quickly assess large populations of trees to identify trees with the highest likelihood of failure ratings in the population, or trees that are recommended for higher level of assessment.

A *Level 1 Limited Visual Assessment* typically includes:

1. Identifying the location and/or selection criteria of trees to be assessed.
2. Determining and documenting the most efficient route to be taken.
3. Determining and documenting the method of visual assessment (e.g. walk-by, drive-by).
4. Recording the location of, and assessing the condition of, tree(s) of concern from the defined perspective meeting the predefined criteria (e.g. dead trees, broken branches).
5. Evaluating the risk (a risk rating is optional).
6. Identifying trees needing a higher level of assessment (*Level 2 Basic or Level 3 Advanced*) and/or priority corrective action.
7. Submitting risk mitigation recommendations and/or report.

Limitations of *Level 1 Limited Visual Assessments*

As the least thorough means of assessment, tree features and/or conditions may not be visible as the inspection is from a particular viewpoint; not all tree features and observations may be visible or apparent at different times of the year; climbers, undergrowth, basal growth, etc. will not be removed inhibiting the inspection; and the inspection may not be adequate enough to make a risk mitigation recommendation. Residual risk designations for trees are not included.

APPENDIX 2 – Tree Survey & Assessment Glossary (Continued...)

II. Level 2 Basic Visual Assessment

A *Level 2 Basic Visual Assessment* is a more detailed visual inspection of a tree and its surrounding site, and a synthesis of the information collected. It requires complete inspection around a tree including the site and ground conditions / growing environment; visible buttress roots; main stem(s); and branches (as defined in the International Society of Arboriculture's (ISA) *Best Management Practices for Tree Risk Assessment* and *ANSI A300 Tree Risk Assessment Standard*).

A *Level 2 Basic Visual Assessment* allows for all aspects of the tree(s) to be surveyed and removal of climbers, undergrowth and basal growth. The crown, branches, stem(s), and buttress roots of the specified tree(s) are all assessed to look for notable features including any defect, decay, dysfunction or other structural weakness, as well as assessing the overall health and vitality of the tree(s). A *Level 2 Basic Visual Assessment* will include the use of hand-tools such as a sounding hammer; depth probe; binoculars; and measuring tapes / laser range finders to record tree dimensions; and possibly a trowel to uncover buttresses. Recommendations for trees that need a higher level of assessment are typically included.

A *Level 2 Basic Visual Assessment* typically includes:

1. Locating and identifying the tree or trees to be assessed.
2. Determining the *targets* and *target zone* for the tree or branches of concern.
3. Reviewing the site history and conditions, and species failure profile.
4. Assessing the potential load on the tree and its parts.
5. Visually assessing general tree health based on observable features at the time.
6. Completing the tree inspection and assessment using tools listed above.
7. Recording all details and observations.
8. Analysing all captured field data to determine the *likelihood of failure* and *consequences of failure* in order to complete a tree risk assessment.
9. Developing mitigation options, recommending a further Level 3 Advanced Assessment, if deemed necessary, and estimating *residual risk* for each mitigation option.
10. Producing and submitting the report, including when appropriate, advice on re-inspection intervals.

Limitations of Level 2 Basic Visual Assessments

This visual assessment will only include details and information on tree features and conditions that can be detected from a ground-based inspection on the day of the assessment, using the tools listed in the introduction above. The extent of some internal decay, as well as the type of wood decay, and below ground or high canopy features or conditions may be difficult to observe, determine or assess.

APPENDIX 2 – Tree Survey & Assessment Glossary (Continued...)

III. Level 3 Advanced Assessment

A *Level 3 Advanced Assessment* is performed to provide detailed information about specific tree parts, conditions or features, targets, or site conditions. A *Level 3 Advanced Assessment* typically incorporates all aspects of a *Level 2 Basic Visual Assessment* and is usually conducted after a *Level 2 Basic Visual Assessment* with client approval.

Specialized equipment, data collection and analysis, and/or expertise are typically required for these advanced assessments to provide detailed and in-depth information about a specific tree parts, conditions or features, and the likelihood of failure, previously identified in a *Level 2 Basic Visual Assessment*.

A *Level 3 Advanced Assessment* typically includes:

1. Locating and identifying the tree or trees to be assessed.
2. Determining the *targets* and *target zone* for the tree part of concern.
3. Reviewing and updating the *Level 2 Basic Visual Assessment* data as necessary.
4. Completing the advanced assessment using methods and/or techniques as determined necessary and appropriate by the Arborist, and as defined in the Scope of Work.
5. Interpreting and analysing the advanced assessment data and information to update and revise the *likelihood of failure* and *consequences of failure* in order to complete a tree risk assessment.
6. Developing mitigation options and estimating *residual risk* for each mitigation option.
7. Producing and submitting the report, including when appropriate, advice on re-inspection intervals.

Limitations of Level 3 Advanced Assessments

Using technology, methodologies and equipment listed below always involves a degree of uncertainty as well as limitations in use. Furthermore, most data is not an accurate measure, but a qualified or quantified estimation.

Arborists employing advanced assessment equipment and technology must have an advanced knowledge of the application and use of the various equipment (e.g. when and where it is appropriate for use and which method); in-depth knowledge of decay fungi and host tree species relationships; training and experience in interpreting data; and likelihood of failure assessment.

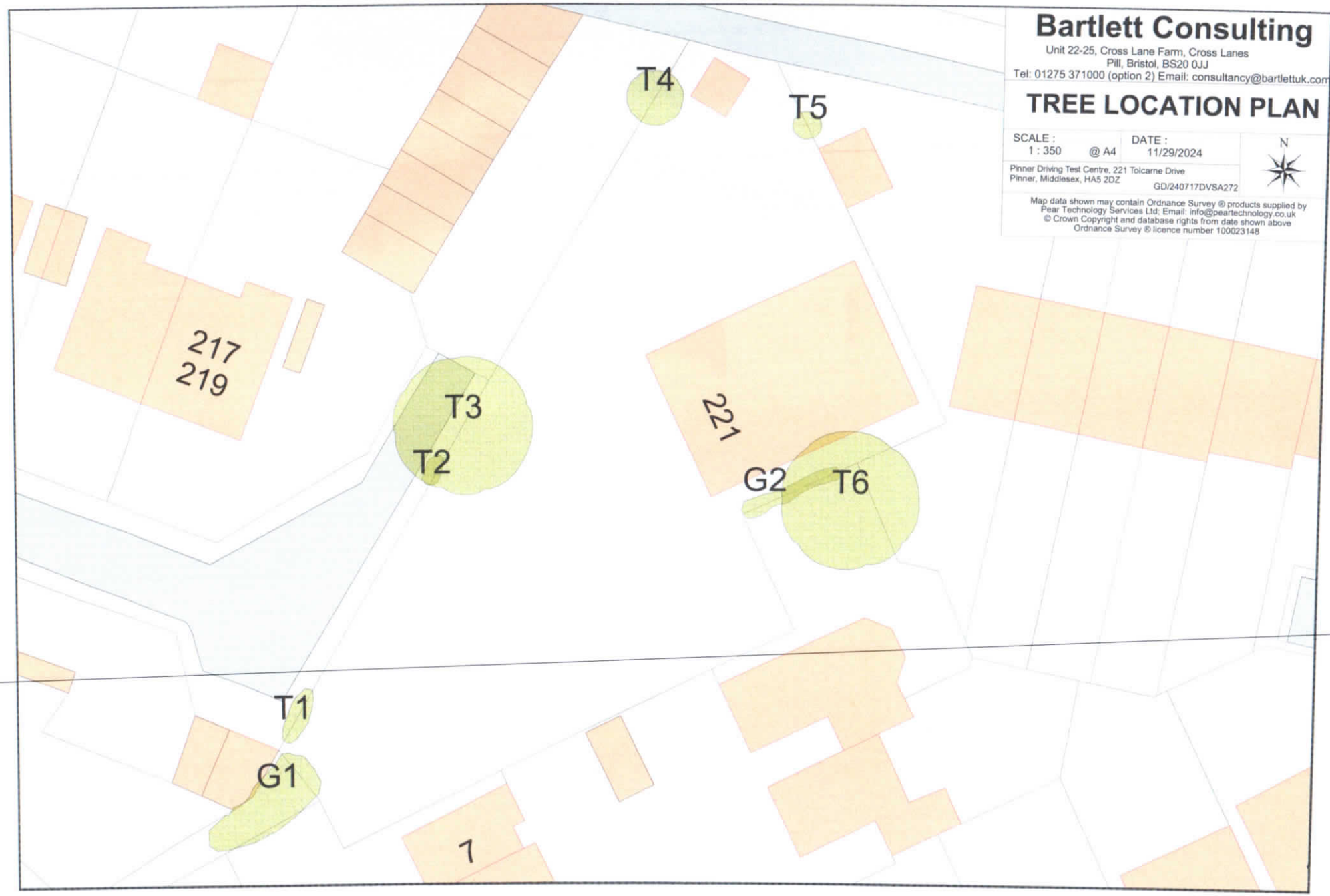
APPENDIX 2 – Tree Survey & Assessment Glossary (Continued...)

III. Level 3 Advanced Assessment (continued...)

Methods of Advanced Assessment

Procedure	Methodology
Aerial Tree Inspection (evaluation of tree structure within crown)	• visual inspection from within the tree crown or from a lift • unmanned aerial vehicle (UAV) photographic inspection • decay testing of branches
Detailed Target Analysis	• property value • use and occupancy statistics • potential disruption of activities
Detailed Site Evaluation	• history evaluation • soil profile inspection to determine root depth • soil mineral and structural testing
Decay Testing	• increment boring • drilling with small-diameter bit • resistance-recording drilling • single path sonic (stress) wave • sonic / impulse tomography • electrical impedance tomography • radiation (radar, X-ray) • advanced analysis for pathogen identification
Tree Health Evaluation	• tree ring analysis (in temperate zone trees) • shoot length measurement • detailed health/vigour analysis • starch assessment
Root Inspection and Evaluation	• root and root collar excavation • root decay evaluation • ground-penetrating radar • sonic / impulse tomography
Storm / Wind Load Analysis	• detailed assessment of tree exposure and protection • computer-based estimations according to engineering models • wind reaction monitoring over a defined interval
Measuring & Assessing the Change in Tree Lean	• visual documentation • plumb line • digital spirit level
Load Testing	• hand pull • measured static pull • measured tree dynamics

Note: All levels of tree inspection, evaluation and assessment consider visible, and detectable, tree observation, conditions and features in proximity to the known and/or assigned targets of the tree or trees being assessed. Regardless of the level selected, any tree risk assessment will be limited to the tree or trees selected, and the detectable conditions at the time of the defined and assigned assessment. The client should also recognize that not all defects will be detectable, and not all failures can be predictable



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TREE LOCATION PLAN

SCALE : 1 : 350 @ A4

DATE : 11/29/2024

N

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