



Level 2 - Tree Survey, Condition and Management Report

SITE:

Morris Feinmann
178 Palatine Road
Didsbury
Manchester
M20 2UW

PREPARED FOR:

Belong Limited
Pepper Houe
Market Street
Nantwich
Cheshire
SK10 3DE

PREPARED BY:

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BARTLETT PROJECT REFERENCE:

BE.240581.R

SITE VISIT DATE:

10th December 2024



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1.0 SCOPE OF REPORT

1.1 Assignment

1.1.0 I have been instructed by Victoria Hanson on 1st October 2024 to:

1.1.1 Perform a Level 2 Basic survey of the principal trees located within the grounds of Morris Feinmann, 178 Palatine Rd, Didsbury, Manchester M20 2UW, following the visual tree assessment (VTA) techniques developed by Mattheck & Breloer (1994).

1.1.2 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 Assignment Item 1.1.1 above.

1.1.3 After review and discussion with the client, and my observations onsite the tree risk assessment will be conducted for the following target(s): Persons (occupiers/visitors/general public). Property (Buildings) and Vehicles (parked on site & passing on Spath Road and Palatine Road).

1.1.4 Provide a written report summarising the tree stock subject to the survey; providing 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 including 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

1.2.0 Belong Limited have commissioned a tree survey and inventory to fully understand the health and condition of their tree stock, to know what risks (if any) their trees pose, and to be advised on what management to complete.

1.3 Report Author

1.3.0 This report has been completed by me, Mr. Ben Edmonds. I have a degree in Applied Ecology, am a LANTRA Professional Tree Inspector and hold a Technician Grade Membership with the Arboricultural Association. My experience spans various aspects of arboriculture, from tree surgery and hazard surveys to report writing and client consultations. For 20 years I owned and ran Canopy Tree Services, an Arboricultural Association Approved Contractor. I spent over fifteen years working as a climbing arborist and a further ten years as a Arboricultural Consultant – currently I hold the position of Arboricultural Consultant for Bartlett Consulting, Bartlett Tree Experts.

1.3.1 Specifically, in relation to this project, I specialise in tree surveying, I have attended numerous relevant courses, including LANTRA Professional Tree Inspection, A practitioners guide to VTA; Fungi recognition and response; FLAC -THREATS; Bats and Arboriculture; Managing Veteran Trees and Tree Architecture.

1.0 SCOPE OF REPORT (Continued...)

1.4 Report Limitations & Methodologies

- 1.4.0 This report is restricted to the trees detailed in the Survey Schedule below.
- 1.4.1 My Level 2 survey and qualified risk assessment of trees surveyed at Morris Feinmann, 178 Palatine Road is based on a single site visit on 10th December 2024. All photographs, samples, and readings, if applicable, were taken at the time the assessment was performed.
- 1.4.2 This assessment was limited by the following factor(s): Ivy on tree T780 and dense epicormic growth on trees 794 and 795 restricted my ability to fully undertake a VTA.
- 1.4.3 *Targets and Occupancy Rates* considered in the tree risk assessment were determined based on based on observations during my visit. Targets considered in this tree risk assessment are Persons (occupiers/visitors/general public). Property (Buildings) and Vehicles (parked on site & passing on Spath Road and Palatine Road).
- 1.4.4 The *time frame* for the risk assessment is 3 years.
- 1.4.5 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.
- 1.4.6 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.
- 1.4.7 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.
- 1.4.8 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.
- 1.4.9 All tree information and data were captured using Pear Technology tree management software; the trees were plotted by GPS on an Ordnance Survey base map, using a Samsung hand-held unit. This combination of technology has resulted in the production of the Tree Location Plan found at the end of this report.
- 1.4.10 The tree dimensions are accurate as captured on the day.
- 1.4.11 The surveyed trees were individually tagged with tags numbered 757-801.

1.0 SCOPE OF REPORT (Continued...)

1.5 Assessment of Ecological Status of Tree & Potential Constraints

- 1.5.0 Following the site visit and tree survey and assessment, I believe that there is a MODERATE potential for wildlife and ecological associations with the tree subject to this report. Ecological associations are considered to be limited to nesting birds.
- 1.5.1 The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act 2000, and the Conservation of Habitats and Species Regulations 2010, provide statutory protection to birds, bats, insects and other species that inhabit trees, hedgerows, or other associated vegetation. It is my recommendation that professional, detailed, advice from an ecologist is sought (if not done-so already) to confirm my consideration and to check if any such constraints apply to this site and the trees associated with this survey.
- 1.5.2 All trees must be thoroughly assessed for nesting birds prior to any recommended tree works.

2.0 TREE PROTECTION STATUS

2.0.0 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.

2.0.1 I conducted an online enquiry on 16th December 2024 via emailing Manchester City Planning Department:

2.0.2 planning@manchester.gov.uk

2.0.3 The information sourced, confirmed the following:

2.1 Tree Preservation Order (TPO) Status

2.1.0 No response/reply received at time of writing.

2.2 Conservation Area (CA) Status

2.2.0 No response/reply received at time of writing.

2.3 Tree Management Implications

2.3.1 At time of writing the protected status of the surveyed trees is undetermined. The client is advised that they or their appointed contractor should clarify the situation prior to carrying out any recommended works.

3.0 TREE POPULATION OVERVIEW

- 3.0.0 A total of forty four (44) individual trees and one (1) groups of trees were surveyed and inventoried within the boundaries of Morris Feinmann. The age range of the tree population is composed of:
- 16 individual and 1 group of mature trees
 - 9 early mature trees
 - 11 semi-mature trees
 - 8 young trees
- 3.0.1 The Morris Feinmann residence is nestled within a densely populated neighbourhood in Manchester. The surrounding area is characterised by significant tree cover, including mature street trees and the expansive Marie Louise Gardens. The property itself is bordered by a perimeter of mature trees, enhancing its aesthetic appeal and providing a tranquil setting.
- 3.0.2 A diverse variation in age and species within a tree stock is important for the continued ecological, environmental, and amenity benefits that trees provide now and into the future. It can also help develop resilience to outbreaks of pests and diseases, or aid regeneration after storm losses.
- 3.0.3 It is my recommendation that any additional trees that are lost or removed should continue to be replaced, and that every given opportunity to increase the tree stock is to be encouraged, in order that the amenity the site provides to the owners/users of the site and the wider community is not merely maintained but is actively improved where reasonable.
- 3.0.4 Two trees (787 & 789) are in a poor structural condition and I have recommended that they are removed. The Lime tree 789 is in a particularly poor condition, with black exudate indicating the presence of *Phytophthora* and mycelium mats and rhizomorph bootlaces indicating the presence of Honey Fungus. While the crown looks to be in a fair condition *Phytophthora* and Honey Fungus can both lead to stem and root problems leading to root and basal failure.
- 3.0.5 All of the individual trees were considered to be in a good or fair physiological condition. However several of the Sycamore trees (767, 796 & 797) look to be declining. The reduction in health of trees 796 and 797 is likely to be a result of construction on the neighbouring property. A decline in tree health can be due to any combination of factors revolving around their growing environment and conditions, as well as previous tree management. In some instances, the decline in health can be addressed, and potentially reversed, by tree health care and cultural practices. Basal bark sprays of Potassium Phosphite (Silvanus) has been recommended. Potassium Phosphite can improve plant health by enhancing their defence systems (See Research Laboratory Technical Report, Attachment 4).
- 3.0.6 Group 764 consists of over 20 mature Laurel bushes, these look to have originally been maintained as a 2-3 m tall hedge but do not look to have been maintained in many years (historic google street view indicate not cut since before 2008). While not required for safety I have recommended these bushes are coppiced at approximately 1 m. These will sprout from this point and a hedge can then be re-established.
- 3.0.7 The Lime trees (770,777,781,782,789,794,795) are neglected pollards, historically pollarded at approx. 5 m above ground level. Lime trees are not great at resisting decay when hard pruned and it is likely that decay will be developing at the 5m pollard point. Given the current size and condition of the trees, reinstating a cyclical pollarding regime would be both costly and potentially harmful for the trees and so has not been recommended. However the historic pollard points have created a structural weakness into the trees. To prevent the trees falling apart at this point it is recommended that their size is managed. The trees have been reduced at approx. 15 m and I recommend repeating this procedure within the next 3 years.

3.1 Photographic Overview



Fig 1. Group 764



Fig 2. Trees 771 & 777



Fig 3. Tree 783



Fig 4. Tree 787



Fig 5. Tree 789



Fig 6. Trees 796 & 797

3.0 TREE POPULATION OVERVIEW (Continued...)

3.2 Prescribed Tree Works

3.2.0 For your convenience, the following work schedule has been brought forward from the recommendations given in Section 6.0, which provides all recommended tree works and plant health care programs for the entire tree population.

3.2.1 Section 6.0 contains additional information about the trees and should be read in conjunction with these extracted schedules of work.

3.2.2 All works are to be carried out in full compliance with *BS 3998:2010 Tree Works - Recommendations* and as modified by more recent research.

3.3 Table 1: Tree works to be carried out within 6 months.

Tree ID	Common Name	Tree Works
789	Common Lime	Remove to ground level

3.4 Table 2: Tree works to be carried out within 1 year.

Tree ID	Common Name	Tree Works
760	Common Ash	- Clear street light by 1 m - Crown lift to 4 m - Remove epicormic growth - Sever ivy at ground level
767	Sycamore	Apply potassium phosphite basal bark spray
783	Common Holly	- Clear road sign by 1 m - Crown lift to 3 m over footpath
784	Common Yew	- Crown lift to 5.4 m over road - Clear street light
787	Lawson Cypress	Remove to stump
791	Horse Chestnut	Crown reduce by 2 m
796	Sycamore	- Root Collar Excavation to establish correct soil levels at the base of the tree - Apply potassium phosphite basal bark spray (Silvanus)
797	Sycamore	Apply potassium phosphite basal bark spray (Silvanus)

3.5 Table 3: Tree works to be carried out within 3 years.

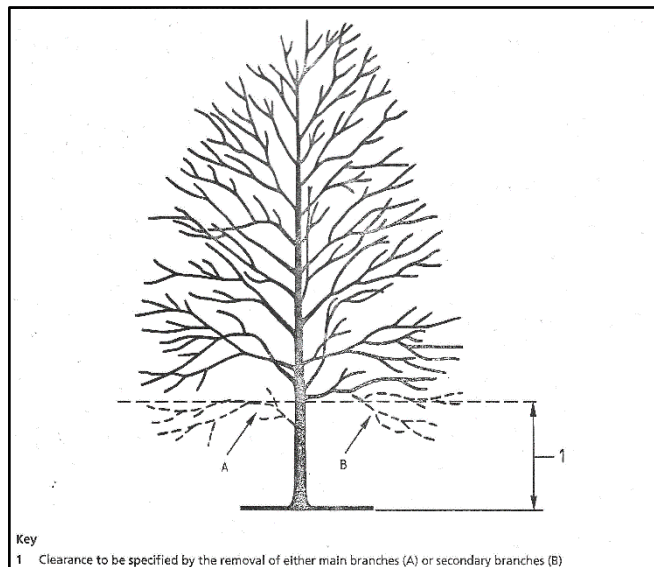
Tree ID	Common Name	Tree Works
764 grp	Cherry Laurel	Coppice at 1 m
770,777,781,782	Common Lime	Crown reduce by 3 m
794	Common Lime	- Crown reduce by 3 m - Deadwood - Clear epicormic growth
795	Common Lime	- Crown reduce by 3 m - Deadwood - Clear epicormic growth - Clear street light

4.0 RECOMMENDATIONS

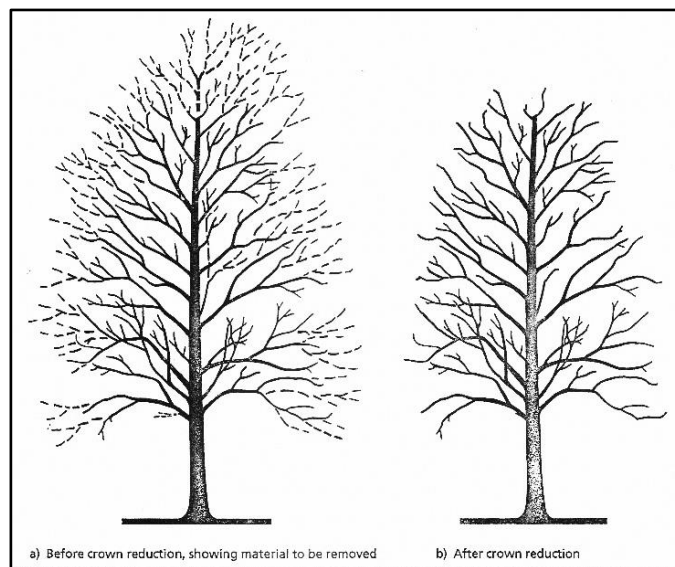
4.0.0 For reference and the benefit of the client, I have provided below detailed specifications and definitions of the various recommended tree work operations as well as tree health care practices.

4.1 Pruning Specifications

4.1.0 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.



4.1.1 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...)

- 4.1.2 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.
- 4.1.5 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.

4.2 Tree Health Care

- 4.2.0 Healthy soil is critical to the health and longevity of trees, as soil provides trees with the essential nutrients and conditions required for their growth. Many secondary problems such as reduced vigour, inadequate growth, branch dieback, and pest or disease concerns are related to the primary stress of poor soil conditions.
- 4.2.1 In many cases, trees in a landscaped environment suffer from inadequate soil fertility, soil compaction, root zone competition with turf or other ornamental plants, and inadequate total soil volume. Soil care recommendations are intended to correct these concerns and improve or maintain overall plant health.
- 4.2.2 I recommend a basal bark spray of Potassium Phosphite for the following trees; 767, 796 and 797, as described below and in Appendix 4.
- 4.2.3 Potassium Phosphite: Phosphites stimulate tree vitality leading to root development and development of new tissue. Phosphite based fertilisers have been shown to enhance a tree's defence system which can improve disease resilience and response to fungal pathogens. Phosphites are easily absorbed and moved to all areas of the plant as they are usually formulated as a liquid.
- 4.3.4 It is essential to get dosage rates correct for the tree and treatment area, must be employed following the basal bark spray. Further detail and information will be provide by Bartlett Tree Experts (or appointed arborist) once these programs are agreed and instructed.

5.0 RISK ASSESSMENT & DUTY OF CARE

5.1 Limitations of Tree Risk Assessments

- 5.1.0 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, I 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.
- 5.1.1 The information and recommendations within this report have been derived from the level of tree risk assessment identified in this report, using the information and practices outlined in the *International Society of Arboriculture's Best Management Practices for Tree Risk Assessment*, as well as the information available at the time of the inspection.
- 5.1.2 However, the *overall tree risk rating*, the mitigation recommendations, or any other conclusions do not preclude the possibility of failure from undetected conditions, weather events, or other acts and/or influences of humans or nature on the tree(s). 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.
- 5.1.6 All recommendations made by Bartlett Tree Experts will be based on the defects that are present and detectable at the time of the inspection or assessment, and the commonly accepted industry practices for reducing or minimising the risks associated with the trees and are meant to assist the owner/client with the decision-making process regarding the trees. Tree conditions, though, can change, and some features/hazards may not be present or detectable through the inspection process. As such, Bartlett Tree Experts can make no guarantees or warranties of any kind that all features/hazards will be detected; nor can Bartlett Tree Experts accept any liability in any manner whatsoever for any damage caused by any tree on this property, whether the tree was assessed or not, or whether any recommendations to mitigate risk were followed or not.
- 5.1.7 Therefore, to the fullest extent permitted by law, the owner/client agrees to indemnify and hold harmless Bartlett Tree Experts from any third party law suits or claims based on the past, present, or future conditions of the owner/client's trees, or decisions made by the owner/client regarding the trees, or injuries or damages caused by any future tree or tree part failures, which are under the ownership and control of the owner/client, that Bartlett Tree Experts may suffer as the result of any negligent action, inaction, or decisions made by the owner/client regarding the trees. Such obligations shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this paragraph.

5.0 RISK ASSESSMENT & DUTY OF CARE (Continued...)

5.2 Tree Owner's Duty of Care

- 5.2.0 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.
- 5.2.1 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

- 5.3.0 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.
- 5.3.1 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.

6.0 TREE SURVEY & CONDITION AND MANAGEMENT SCHEDULE

Client:	Belong Limited, Pepper House, Market Street, Nantwich, Cheshire, SK10 3DE	Report No:	BE.240581.R
Site:	178 Palatine Road, Didsbury, Manchester, M20 2UW	Weather:	Good, clear
Completed by:	Ben Edmonds	Trees Tagged:	Yes 757-801
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:	10 th December 2024

Timescale for Works

ASAP	6 Months	1 Year	2 Years	3 Years
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Tree No.	Species	DBH (mm)	Height (m)	Crown Spread (m)	Age	Vitality	Condition	Works Required	Time Scale	Risk Factor	Re-Survey
757	Paper Birch	120	5	1.5	Y	Good	• Good • Single stem • Typical branch structure for species	• None	N/A	Low	Three years
758	Paper Birch	120	5	1.5	Y	Good	• Good • Single stem • Typical branch structure for species	• None	N/A	Low	Three years
759	Silver Birch	70	5	1	Y	Fair	• Fair • Stem kinks at 2 m NSS at this time	• None	N/A	Low	Three years
760	Common Ash	250	8	3	SM	Good	• Fair • Multiple stems (x7) from ground level • Regrown from stump • Epicormic growth at base • Ivy obscuring base restricting full VTA • Ivy has been severed and is dying back on stem • Obscuring street light	• Clear street light by 1m • Crown lift to 4m • Remove epicormic growth • Sever ivy at ground level	1 year	Low	Three years
761	Western Red Cedar	360	9	3	SM	Fair	• Fair • No D3 or FFB observed • Solid tones when sounded with mallet to 2 m AGL • Stem splits into 3 co dominant stems at 4 m Crown thinning with tip dieback	• None	N/A	Low	Three years
762	Common Holly	280	10	4	EM	Good	• Good • No D3 or FFB observed • Previously topped at 4 m AGL • Multiple stems at topping point	• None	N/A	Low	Three years

Tree No.	Species	DBH (mm)	Height (m)	Crown Spread (m)	Age	Vitality	Condition	Works Required	Time Scale	Risk Factor	Re-Survey
763	Common Holly	230	10	4	EM	Good	• Good • No D3 or FFB observed • Previously topped at 4 m AGL • Multiple stems at topping point	• None	N/A	Low	Three years
764 grp	Cherry Laurel	160	4	4	M	Good	• Neglected hedge	• Coppice at 1 m	3 years	Low	Three years
765	Common Holly	180	5	2	EM	Good	• Good • No D3 or FFB observed • Previously topped at 4 m AGL and again at 5 m AGL • Multiple stems from ground level and topping points	• None	N/A	Low	Three years
766	Common Laburnum	200	7	2	M	Good	• Fair • No D3 or FFB observed • 13 degree lean to north measured at 1.4 m AGL due to competition from other vegetation • NSS at this time • Stem splits at 2 m AGL with cup shaped union • Very asymmetric crown to north	• None	N/A	Low	Three years
767	Sycamore	460	15	7	M	Fair	• Fair • No D3 or FFB observed • Solid tone when sounded with mallet to 2 m AGL • Co dominant stems from 1.5 m • Asymmetric crown to north due to competition from neighbouring tree • 150 mm diameter branches removed from main stem at 4 m AGL with cavity behind, occluding well • 2x 150 mm diameter branches removed from main stem at 5 m AGL with little evidence of occlusion • Former pollard at 6 m AGL • Thin crown	• Apply potassium phosphite basal bark spray	1 year	Low	Three years
768	Common Yew	210	8	2	SM	Good	• Good • No D3 or FFB identified • Asymmetric crown to north due to competition from neighbouring tree	• None	N/A	Low	Three years
769	Common Holly	250	5	4	EM	Good	• Good • No D3 or FFB observed • Previously topped at 5m AGL • Multiple stems from ground level	• None	N/A	Low	Three years

Tree No.	Species	DBH (mm)	Height (m)	Crown Spread (m)	Age	Vitality	Condition	Works Required	Time Scale	Risk Factor	Re-Survey
770	Common Lime	660	18	7	M	Fair	- No FFB observed - Epicormic growth at base - Swelling of lower trunk from ground level to 1.4 m AGL - Solid tones when sounded with mallet to 2 m AGL - Soil filled pocket at 1.4m AGL on north aspect, 100 mm diameter probed down to depth of 250 mm. - Assessed to be from dead branch and decay compartmentalised - Historic pollard at 5 m AGL - Multiple stems from pollard point with 2 co dominant stems and tight forks - Sub dominant stem rubbing and causing damage on main stem at 6-7 m AGL - Decay likely at this point - Reduced at 15 m AGL	Crown reduce by 3m	3 years	Low	Three years
771	Holly 'Golden King'	150	5	1.5	EM	Good	- Fair - Lean to north east due to competition from neighbouring tree, NSS at this time - Asymmetric crown to north east - Topped at 5m AGL	None	N/A	Low	Three years
772	Common Yew	200	8	3	SM	Good	- Good - No D3 or FFB identified - Multiple stems from 1m typical for species	None	N/A	Low	Three years
773	Silver Birch	590	19	7	M	Good	- Good - No D3 or FFB observed - Solid tone when sounded with mallet to 2 m AGL - Stem breaks into co-dominant stems at 5 m AGL with cup shaped union - Slightly asymmetric crown to north	None	N/A	Low	Three years
774	Common Holly	190	8	2	SM	Good	- Good - No D3 or FFB observed - Typical branch structure for species	None	N/A	Low	Three years
775	Common Yew	220	6	2	SM	Good	- Good - No D3 or FFB observed - Asymmetric crown to north due to competition from neighbouring trees	None	N/A	Low	Three years
776	Holly 'Golden King'	320	9	3	M	Good	- Fair - No D3 or FFB observed - Cavity 200x50 mm on south aspect at 20 mm AGL - Occlusion around cavity and exposed heartwood - Solid tones when sounded with mallet to 2 m AGL - Previously topped at 4 m with multiple stems at this point	None	N/A	Low	Three years

Tree No.	Species	DBH (mm)	Height (m)	Crown Spread (m)	Age	Vitality	Condition	Works Required	Time Scale	Risk Factor	Re-Survey
777	Common Lime	660	18	7	M	Fair	- Fair - No FFB observed - Epicormic growth at base - Solid tones when sounded with mallet to 2 m AGL - Co-dominant stem from 1.5 m - Soil filled pocket between co-dominant stems probed down to depth of 100 mm - Historic pollard at 5 m AGL - Multiple stems from pollard point with tight forks - Decay likely at this point - Large 200mm diameter limbs rubbing at 7 m AGL - Significant deadwood in crown - Reduced at 15 m AGL	Crown reduce by 3m	3 years	Low	Three years
778	Holly 'Golden King'	170	5	2	SM	Good	- Good - No D3 or FFB observed - Asymmetric crown and lean to north east due to competition from neighbouring trees, NSS	None	N/A	Low	Three years
779	Holly 'Golden King'	230	5	2	SM	Good	- Good - No D3 or FFB observed - Asymmetric crown and lean to north east due to competition from neighbouring trees, NSS	None	N/A	Low	Three years
780	Holly 'Golden King'	230	5	2	SM	Good	- Good No D3 or FFB observed - Asymmetric crown and lean to north east due to competition from neighbouring trees, NSS	None	N/A	Low	Three years
781	Common Lime	460	15	6	M	Fair	- Fair - No FFB observed - Solid tones when sounded with mallet to 2 m AGL - Historic pollard at 5 m AGL - Multiple stems from pollard point with tight forks - Decay likely at this point	Crown reduce by 3m	3 years	Low	Three years
782	Common Lime	420	16	6	M	Fair	- Fair - No FFB observed - Solid tones when sounded with mallet to 2 m AGL - Historic pollard at 5 m AGL - Multiple stems from pollard point with tight forks - Decay likely at this point - Reduced at 13 m AGL	Crown reduce by 3m	3 years	Low	Three years
783	Common Holly	339	9	5	M	Good	- Good - No D3 or FFB observed - Solid tones when sounded with mallet to 2 m AGL - Multiple stems from 3.5 m - Obscuring Road sign	- Clear road sign by 1m - Crown lift to 3m over footpath	1 year	Low	Three years

Tree No.	Species	DBH (mm)	Height (m)	Crown Spread (m)	Age	Vitality	Condition	Works Required	Time Scale	Risk Factor	Re-Survey
784	Common Yew	420	9	4	EM	Good	• Good • No D3 or FFB observed • Multiple stems from 1.5 m AGL • Asymmetric crown to north due to competition from neighbouring tree • Obscuring street light	• Crown lift to 5.4m over road • Clear street light	1 year	Low	Three years
785	Holly 'Golden King'	180	5	2	SM	Good	• Good • No D3 or FFB observed • Superficial damage on stem at ground level and 1m on south aspect, NSS	• None	N/A	Low	Three years
786	Holly 'Golden King'	290	7	R	SM	Good	• Good No D3 or FFB observed • Asymmetric crown and lean to north east due to competition from neighbouring trees, NSS	• None	N/A	Low	Three years
787	Lawson Cypress	460	13	6	M	Fair	• Poor • Damage on south west aspect at ground level • Triangle of decay 300 mm wide at base extending 750 mm AGL on stem • Twin stem at 1.5 m with 380mm sub dominant stem to south, included bark union with poor attachment to dominant stem • Clear stem to 6 m Tree has become exposed by removal of tree directly to east • Main stem bifurcates at 7 m Western stem turns at right angle before turning upwards with swollen compensatory growth • 75mm diameter branch snapped out at 9 m AGL on north west aspect	• Remove to stump	1 year	Moderate	Three years
788	Cherry	140	6	2.5	Y	Good	• Good • No D3 or FFB observed • Typical branch structure for species	• None	N/A	Low	Three years
789	Common Lime	500	17	8	M	Fair	• Poor • Black exudate on stem from ground level to 4 m AGL - <i>Phytophthora</i> • Bark peeling off in strips from ground level to 2 m AGL • Poor tone on all aspects to at least 2.5 m AGL • White mycelium mat under bark indicative of honey fungus (<i>Armillaria sp</i>) • <i>Armillaria sp</i> boot laces/rhizomorphs identified under bark • Stem separates into 3 co dominant stems at 2 m • Former pollard at 5 m AGL • Tree in terminal condition • Reduced at 15 m AGL	• Remove to ground level	6 months	High	N/A
790	Common Yew	250	7	3	EM	Good	• Good • No D3 or FFB observed • Multiple stems from ground level • Asymmetric crown to north due to competition from neighbouring tree	• None	N/A	Low	Three years
791	Horse Chestnut	750	18	8	M	Good	• No FFB observed • Solid tones when sounded with mallet to 2 m AGL • Stem bifurcates into 2 co-dominant stems at 2.5 m AGL • Tight union with included bark and crack on north and south aspect of tree	• Crown reduce by 2m	1 year	Moderate	Three years

Tree No.	Species	DBH (mm)	Height (m)	Crown Spread (m)	Age	Vitality	Condition	Works Required	Time Scale	Risk Factor	Re-Survey
792	Common Holly	200	7	3	M	Good	- Fair - No D3 or FFB observed - Multiple stems from ground level - Tangled form, typical for species	None	N/A	Low	Three years
793	Common Holly	210	7	3	M	Good	- Fair - No D3 or FFB observed - Multiple stems from ground level	None	N/A	Low	Three years
794	Common Lime	450	15	6	M	Fair	- Fair - Dense epicormic growth obscuring base and restricting full VTA - Honey fungus FFB (<i>Armillaria</i> sp) at base of tree - Historic pollard at 5 m AGL - Multiple stems from pollard point with tight forks - Decay likely at this point Reduced at 13 m - Minor deadwood (below 40mm diameter) in crown	- Crown reduce by 3m - Deadwood - Clear epicormic growth	3 years	Low	Three years
795	Common Lime	450	14	6	M	Good	- Fair - Dense epicormic growth obscuring base and restricting full VTA - Several sub dominant stems from ground level - Cavity at 2 m height on west aspect, good occlusion - Historic pollard of main stem at 5 m AGL - Co dominant stems from pollard point with tight fork and included bark union - Reduced at 13 m AGL - Minor deadwood (below 40 mm diameter) in crown - Obscuring street light	- Crown reduce by 3m - Deadwood - Clear epicormic growth - Clear street light	3 years	Low	Three years
796	Sycamore	340	10	3	EM	Fair	- Fair – declining - Little evidence of root buttresses soil levels - Suspected of soil level being raised - No D3 or FFB observed - Solid tones when sounded with mallet to 2 m AGL - Tree has been excessively crown lifted to 6 m AGL 150mm diameter limbs removed at 4 and 5 m AGL on south aspect - Crown looks thin - Evidence of recent ground work by neighbours may have adversely impacted tree	- Root Collar Excavation to establish correct soil levels at the base of the tree - Apply potassium phosphite basal bark spray	1 year	Low	Three years
797	Sycamore	359	8	3	EM	Fair	- Fair - declining - No D3 or FFB observed - Solid tones when sounded with mallet to 2 m AGL - Tree has been excessively crown lifted to 5 m AGL 150mm diameter limbs removed at 3.5 and 4.5 m AGL on south and west aspect - Crown looks thin - Evidence of recent ground work by neighbours may have adversely impacted tree	Apply potassium phosphite basal bark spray	1 year	Low	Three years

Tree No.	Species	DBH (mm)	Height (m)	Crown Spread (m)	Age	Vitality	Condition	Works Required	Time Scale	Risk Factor	Re-Survey
798	Purple Plum	100	5	2	Y	Good	• Good • No D3 or FFB observed • Typical branch structure for species	• None	N/A	Low	Three years
799	Cherry	100	5	2	Y	Good	• Good • No D3 or FFB observed • 13 degree lean measured at 1.4 m to east • Tree reduced at 4m AGL • Supported with stakes	• None	N/A	Low	Three years
800	Paper Birch	100	5	1.5	Y	Good	• Good • No D3 or FFB observed • Typical branch structure for species	• None	N/A	Low	Three years
801	Paper Birch	100	5	1.5	Y	Good	• Good • No D3 or FFB observed • Typical branch structure for species	• None	N/A	Low	Three years

Tree Survey Schedule Key:

Tree No – tree reference on Tree Location Plan and/or tree tags where used. **Location** – what3words address. **Species** – tree species giving English common name. **DBH** – the individual stem diameters when typically measured at 1.5m above ground level unless otherwise stated. **Height** – tree height recorded in metres. **Crown Spread** - crown spread in the four cardinal compass points, or as average using broadest radial spread, recorded in metres. **Age Class** – recorded as **NP** (newly planted); **Y** (young) up-to 1/5 of trees life-cycle; **SM** (semi-mature) up-to 2/5 of trees life-cycle; **EM** (early-mature) up-to 3/5 of trees life-cycle; **M** (mature) up-to 4/5 of trees life-cycle; **OM** (over-mature) up-to 5/5 of trees life-cycle; **Vet** (veteran) exceptional age for species with features such as cracks, cavities and decay which enhance biological associations and value of tree with senescence/retranchment. **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**. **Condition and Observations** – 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 and qualification of health and structure via visual tree assessment.. **Works Required** tree works prescribed to mitigate risk. **Time Scale** – recommended priority and timeframe in which recommended actions should be completed, including **N/A** (not applicable as no priority). **Risk Factor** – as per Appendix 1 of report. **Re-inspection Frequency** – as expressed in assessment table.

Note on Time Scale: Where a program of coppicing has been recommended, the time scale is the recommended time in which the program should commence.

Tree Survey Abbreviations & Definitions:

ADB: Ash Dieback; **AGL:** Above ground Level; **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 Survey & Condition and Management Report

REPORT STATUS: Final

REPORT COMPLETED BY: Ben Edmonds *Bsc Tech.Arbor.A*
Arboricultural Consultant



SIGNATURE:

DATE: 17th December 2024

REPORT REVIEWED BY: Bruce Hauxwell
Arboricultural Consultant



SIGNATURE:

DATE: 16th December 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 <i>imminent</i> , impact & failure is <i>very likely</i> , and the consequences of the failure are <i>severe</i> . Mitigation will be a high priority or targets must be temporarily controlled.
High Risk	Impact & Failure is <i>likely</i> to <i>very likely</i> with <i>significant</i> consequences; or consequences are <i>severe</i> and the Impact & Failure is <i>likely</i> . Mitigation measures should be taken.
Moderate Risk	Impact & Failure is <i>likely</i> to <i>very likely</i> with <i>minor</i> consequences; or consequences are <i>significant</i> to <i>severe</i> with a <i>somewhat likely</i> 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

APPENDIX 3 – Fungal, Disease or Insect Pathogen

Armillaria sp Honey Fungus

The presence of fungal fruiting bodies suspected to be Honey Fungus (*Armillaria* sp) were found at the Base of trees

Type: Parasitic & Saprobic

Appearance: Honey coloured yellow to brown or an olive green usually found growing within clusters. Hemispherical young cap, flatter when older with white or cream coloured gills on the underside.

Black “bootlace” (rhizomorphs) generally flattered root like structures found in the local soils and behind the bark of affected trees along with a thick white felty fans of mycelium.

Type of Decay: Often initial wood discolouration (yellow to brown), decay is dry and firm changing to a wet white rot and reduction in wood strength often shot through with black zone lines.

Area affected: Predominantly affecting the lower stem and root system although occasionally rising in the trunk.

Season & Persistence: Active throughout the year however commonly form during autumn. Due to their fleshy texture they are short lived decaying and leaving a black residue and standing stems in situ.

Principle Species: Wide range of coniferous and broadleaf tree species affected. The Black Walnut & Box Elder have good resistance.

Consequence: Rarely a primary cause of death in affected trees and often a secondary coloniser; establishing on trees irreversibly damaged/weakened by other fungal pathogens.

Green. T & Watson. G. (2011)
Fungi on Trees - An Arborists Field Guide. Arboricultural Association, Stonehouse



Figure A3.1. Bartlett library image showing the Honey Fungus fruiting bodies.

APPENDIX 4 – Technical Report

RESEARCH LABORATORY TECHNICAL REPORT



Potassium Phosphite Plant Health Care Applications

By Drew Zwart, PhD, Plant Physiology

Potassium phosphite is a soil applied material that has recently gained attention as a method for improving plant vigor and health. Research and field experience have shown that this improvement of plant health after application of potassium phosphite is related to an increase in resistance against a variety of plant pathogens, as well as increased tolerance of many environmental stress factors, including drought stress.

What is potassium phosphite?

The chemical formula of potassium phosphite is $\text{H}_2\text{KO}_3\text{P}$. Various products containing potassium phosphite are sold as either fertilizers to address potassium deficiencies, or as fungicide products to manage specific disease issues. Potassium phosphite has the unique property of increasing resistance against several disease and environmental stress issues by boosting both the rate and intensity of the existing plant defense systems.

How does this work?

Application of potassium phosphite enhances the plants' existing defense responses. This includes the formation of necrotic zones (programmed cell death to limit pathogen spread), production of plant hormones involved in defense, production of defense lytic enzymes, thickening of cell walls, and phytoalexin (antibody) production. Interestingly, this increase in plant resistance extends beyond the time-frame when the material is detected in plant tissue, indicating a systemic 'immunization' effect.

Phosphite vs. Phosphate

The phosphite component of this material affects plants in a manner that is different than the common phosphorous fertilizer, phosphate. While chemically similar, phosphite is far more mobile in plant tissue, and does not actually provide

appreciable phosphorous to the plant. This is not a concern because across North America, it is very rare to find landscape soils that are actually lacking in phosphorous. Phosphate is also a common source of fertilizer contamination of water, but this is not a concern with phosphite.

How is potassium phosphite applied?

As a fully systemic material, phosphite can be applied as a foliar spray, a soil injection for root uptake, or as a bark spray, depending on the situation and specific goal. Following any of these applications, the effects of the potassium phosphite can be seen throughout all plant parts. Rates and application equipment vary depending on application type.

Where should potassium phosphite be used?

- 1) Management of specific soil borne diseases, including Phytophthora root disease and Armillaria root rot
- 2) As a direct treatment for bleeding cankers on tree trunks, including those caused by Phytophthora species and some bacterial species
- 3) As a means of enhancing general resistance against a variety of secondary or 'stress-related' pathogens
- 4) To promote general plant vitality
- 5) To enhance resistance against environmental stress factors such as drought or water-logged soils



Bartlett Tree Experts

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Tree Location Plan Morris Feinmann

SCALE :
1 : 700

@ A4

DATE :
16/12/2024

MAP FILENAME :
BE.240581.TLP.Belong.178 Palatine Rd



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