MORFE VALLEY ENVIRONMENTAL
ARBORICULTURAL AND ECOLOGICAL CONSULTANTS

Arboricultural Report

Tree Risk Management Survey And Recommendations.

Kenilworth Sports and Social Club

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Date: 18th August 2023

QTRA Tree Safety Management

Arboricultural ASSOCIATION Technician Member

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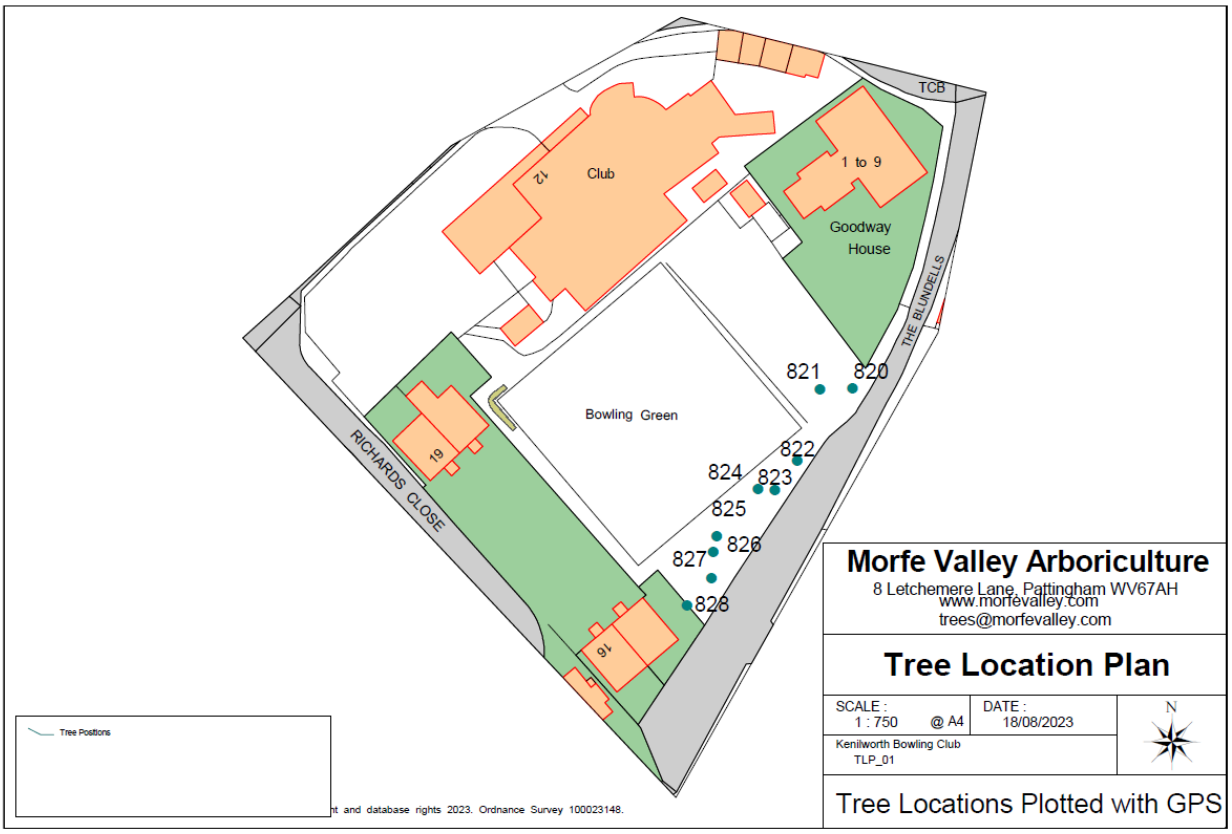
1. BRIEF:

1.1 I have been instructed by **Mr Nigel Williams** to inspect all trees within the survey area as detailed below where they pose a threat to people and/or property due to tree condition. The report is to include results from a VTA survey and comment upon the health and safety, identify structural and physiological conditions and to make appropriate management recommendations.

1.2 SITE CONTEXT.

Fig 1: Survey Area



1.3 The site is a social club and bowling green with associated carparks and open spaces. The trees inspected side on to a puvlic highway and a school site.

2.0 METHODOLOGY.

2.1 The survey has been carried out in the use of "Visual Tree Assessment" VTA and "Quantified Tree Risk Assessment" QTRA methodology. The survey and the subsequent report will use both approaches to identify significant visual defects within the trees structure and physiological condition while conducting VTA and assess the level of risk such defects present to persons and/or property as a result.

2.2 VTA is a concept idea founded by Prof Claus Mattheck's book the body language of trees which describes the structural growth patterns of trees and specifically identifies the trees responses to abiotic and biotic effects from decay and physical damage. It enables the practitioner to clearly observe defects and identify appropriate management requirements for the benefit of the trees and the safe use of land.

2.3 QTRA combines the components of tree failure risk. It is possible to calculate with some accuracy the usage of vehicular and pedestrian targets upon which trees or parts of trees could fail. it is also possible to estimate the repair or replacement costs of property that could be damaged in the event of tree failure. The QTRA takes account of 3 principle components: -

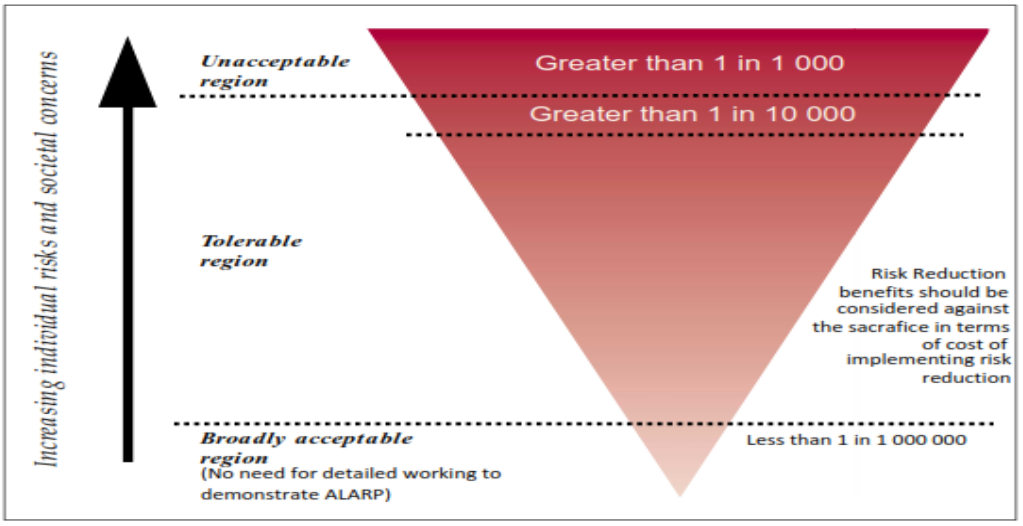
1. TARGET – HUMAN/PROPERTY/VEHICULAR = 6 RANGES

2. SIZE OF PART TO FAIL ->450MM – 25MMDIA = 4 RANGES

3. PROBABILITY OF FAILURE – 1/1 – 1/10M MULTIPLIER = 7 RANGES

2.4 It is broadly accepted that a probability of failure score within 1/1 – 1/10,000 is the unacceptable range for risk requiring necessary work being completed to bring the risk into the tolerable range of >1/10,000. This is broadly based on the health and safety executives "tolerability of risk framework property owners and managers have a duty under English law to ensure, insofar as reasonably practicable, that people and property are not exposed to unreasonable risk from the failure of structurally impaired trees within their ownership or management.

Fig 1. Adapted from the Tolerability of Risk Framework (HSE 2001)



2.5 The general guidance is to complete periodic professional inspections of tree(s) within proximity to high risk targets, but it is not essential to have a written report for each assessment, but the tree(s) should be recorded where they are identified as having defects whether significant or not if they are close to high risk targets and are to be retained, with a suitable management regime identified.

2.6 Where it has been considered during the survey that trees have significant defects and are close to high risk targets, then they have been scored in accordance with QTRA with score ratings shown in part 1 of this report.

2.7 All tree data, observations and recommendations can be found in tabular format in tree data of this report.

Common names have been used for species types.

All tree dimensions are estimate unless otherwise stated.

2.8 All tree(s), tree group(s) and hedge(s) have been given a unique number reference on the plan and within the tabular schedules.

3. REPORT LIMITATIONS:

3.1 Trees are influenced by a variety of environmental variables, which can affect the health of trees causing biomechanical and physiological changes. All comments made on tree health reflects their physical condition at the time of the survey. Due to the changeable nature of trees and other site/environmental conditions which may influence trees, this report and any recommendations made within it are valid for a period of 12 months from the date of the site survey which was 18 August 2023.

3.2 The report is preliminary in nature and therefore all observations were made from ground level only and are visual in nature unless otherwise stated. Full aerial inspections using a rope and harness for access, ultra-sonic decay detection was **not** completed, and results detailed herein. Root collar excavation, or any other form of intensive investigation were not carried out as part of the survey. **There are trees within the survey which are clad with ivy, excessive epicormic growth or vegetation that restricts the inspection. I am unable to take responsibility for defects which are hidden from view in this way but would be happy to re-inspect the trees if the ivy, epicormic growth and vegetation is removed, updating this report at additional costs (where appropriate).** Where appropriate further detailed investigation recommendations have been made in tree schedules (Appendix 2) and summary.

3.3 Any management recommendations have been made in accordance with "BS3998: 2010 Tree Works – Recommendations" and in accordance with industry best practice. Works have been recommended in accordance with any statutory obligations owed by the landowners or occupiers. Any reference to structural damage to buildings and associated structures is preliminary in nature, and further investigation will need to be sought from a qualified and experienced engineer.

3.4 No soil samples were taken, or soil analysis completed for the purpose of indirect damage analysis or new tree planting this survey.

3.5 This survey did not include an ecological survey of vegetation or habitat areas. Any ecological issues incidentally observed during the survey are reported on in the tree schedule. Further detailed habitat assessments may be necessary.

3.6 For the purpose of this report no samples where attained from site for analysis or any other reason.

3.7 The report and its contents are subject to copyright and as such are for the use solely of the client, copying or editing without the authors permission is prohibited.

4.0 STATUTORY LEGAL PROTECTION

4.1 There are two main sources of protection afforded to trees:

4.2 Trees within Conservation Areas (CA) are protected under Planning and Listed Buildings Act 1990, which affords the protection of trees with a stem diameter of 75mm or more by virtue of being within a Conservation Area.

4.3 Trees may also be protected by a Tree Preservation Orders (TPO) under the Town and Country Planning (Trees) England Regulations 2012.

4.4 It is an offence to carry out unauthorised works to trees protected by a TPO or within a CA the main offences to which the Local Planning Authority may seek prosecution relate to contravention of the Town and Country Planning act 1990 (as amended) for trees protected in a CA or protected by TPO where it is considered trees have been:

- Cut down, uprooted or wilfully destroyed; or wilfully damaged in such a manner as likely to destroy it; or to cause or permit any such activity.
- To carry out any other works in contravention of the regulations.

4.5 It is important to note that under the Regulations it is not only destruction of the tree(s) which is considered an offence but also any actions which may render the tree(s) less worthy of protection by TPO. In addition, the fine is extended not only to the person or persons undertaking the physical works upon the tree(s), but also to the person or persons who have either organised or allowed the works to proceed. If found guilty of an offence under the terms of the regulations a fine of up to £20,000 can be imposed by a Magistrates Court, or an unlimited fine on indictment.

4.6 For this report MVA have not contacted the local planning authority to ascertain the protected status of the trees. It is therefore recommended that prior to completing works to any of the trees that written consent from the local planning authority is sought.

5.0 PROTECTED SPECIES

5.1 Trees can contain features such as cavities, cracks, splits and loose bark which can offer potential habitat to species such as bats. Bats and their roosts are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) as well as the Conservation of Habitats and Species Regulations 2012 (as amended) and are also listed under Section 41 of the Natural Environment and Rural Communities Act 2006.

5.2 Trees provide potential nesting habitat for birds and all UK birds are protected while on the nest under the Wildlife and Countryside Act (WCA) 1981, as amended. Bird species that are listed on WCA Schedule 1 are given further protection, including increased penalties as well as protection against disturbance of their active nest(s).

6.0 SITE VISIT.

6.1 The site was visited on 18th August 2023 by me Craig Watkins. The day was dry and overcast.

7.0 FINDINGS.

7.1 There were 8 Individual trees were inspected during the survey, each tagged with numbers from 820-828 inclusive.

7.2 The vast majority of the trees were mature and part of an historic treescape.

7.3 The majority of the trees were difficult to inspect due to ivy and/or vegetation restricting inspection.

7.4 Generally the trees were considered healthy, there were some trees that required works including deadwood removal, felling, further investigation using tomography and aerial inspections to assess cavities and scaffold unions.

7.5 Soil and waste staked at the base of trees made inspection of the lower stem and basal buttresses restricted.

8.0 RECOMMENDATIONS.

8.1 The survey was for negative reporting of trees where they had defects only. The recommendations and associated scores can be found in Appendix 2.

8.2 Where ivy and vegetation restrict inspection this should be removed to allow future inspection of the trees.

8.3 Soil and waste should be removed and prohibited from been stacked at the base of the trees or within the rooting area as it is likely to cause physiological dysfunction.

8.4 "**Advisories"** have been provided in tree schedules in Appendix 2. This is a general recommendation for works and is not considered as a risk associated action but works should be considered and actioned for the long-term benefit of the site.

8.5 **Table 1** below should be used in conjunction with tree schedules in Appendix 2 to determine the risk rating and action required, anything below 1/10,000 then generally the risk should be controlled anything above 1/10,000 the cost of risk control should be assessed and controlling the risk is necessary or its tolerable (ALARP As Low As Reasonably Practicable). Any risk over 1/1000,000 is broadly acceptable and no action required.

Table 1.

QTRA Advisory Risk Thresholds

Thresholds	Description	Action
	Unacceptable Risks will not ordinarily be tolerated	Control the risk
1/1 000	Unacceptable (where imposed on others) Risks will not ordinarily be tolerated	Control the risk Review the risk
	Tolerable (by agreement) Risks may be tolerated if those exposed to the risk accept it, or the tree has exceptional value	Control the risk unless there is broad stakeholder agreement to tolerate it, or the tree has exceptional value Review the risk
1/10 000	Tolerable (where imposed on others) Risks are tolerable if ALARP	Assess costs and benefits of risk control Control the risk only where a significant benefit might be achieved at a reasonable cost Review the risk
1/1 000 000	Broadly Acceptable Risk is already ALARP	No action currently required Review the risk

1. Authors Qualifications and Experience

Qualifications:

QCF Level 6 arboriculture	Expected 2025
Lantra Accredited Mortgage (Home Buyer) Tree Report	2015
Technicians Certificate in Arboriculture (Merit)	2009
RFS Certificate in Arboriculture (Merit)	2007
Lantra Accredited – Professional Tree Inspector	2006
BTEC 1st Diploma Horticulture	1993

Experience:

Owner Morfe Valley Arb	2016 - Present
Tree Services Manager (National Company)	2015 – 2016
Senior Arboricultural Consultant Wardell Armstrong	2014 – 2015
Local Authority Tree Officer. (Risk Management / Asset Management)	2006 – 2014
Chargehand Arborist	2004 – 2006
Arborist (Tree Surgeon)	1998 – 2004
Horticulturalist	1994 – 1998
Trainee Horticulturalist	1993 – 1994

Continuing Professional Development:

Mortgage Report Writing	2017
Resistograph and Tomography	2016
Getting to Grips with Subsidence	2015
Valuing and Managing Veteran Trees	2015
Engaging Arboricultural Contractors	2010
Quantified Tree Risk Assessment System	2009/2016
Bats and Arboriculture – A Guide for Practitioners	2004

Memberships:

To stay up to date with current issues, Craig is a member of the following organisations:

1. The Arboricultural Association – Technician Member.
2. The Consulting Arborists Society – Member.
3. Accredited PTI Expert.
4. Quantified Tree Risk Assessment Licensed User

2. Tree Schedules (Attached Separately)

Location: Kenilworth Bowling Club

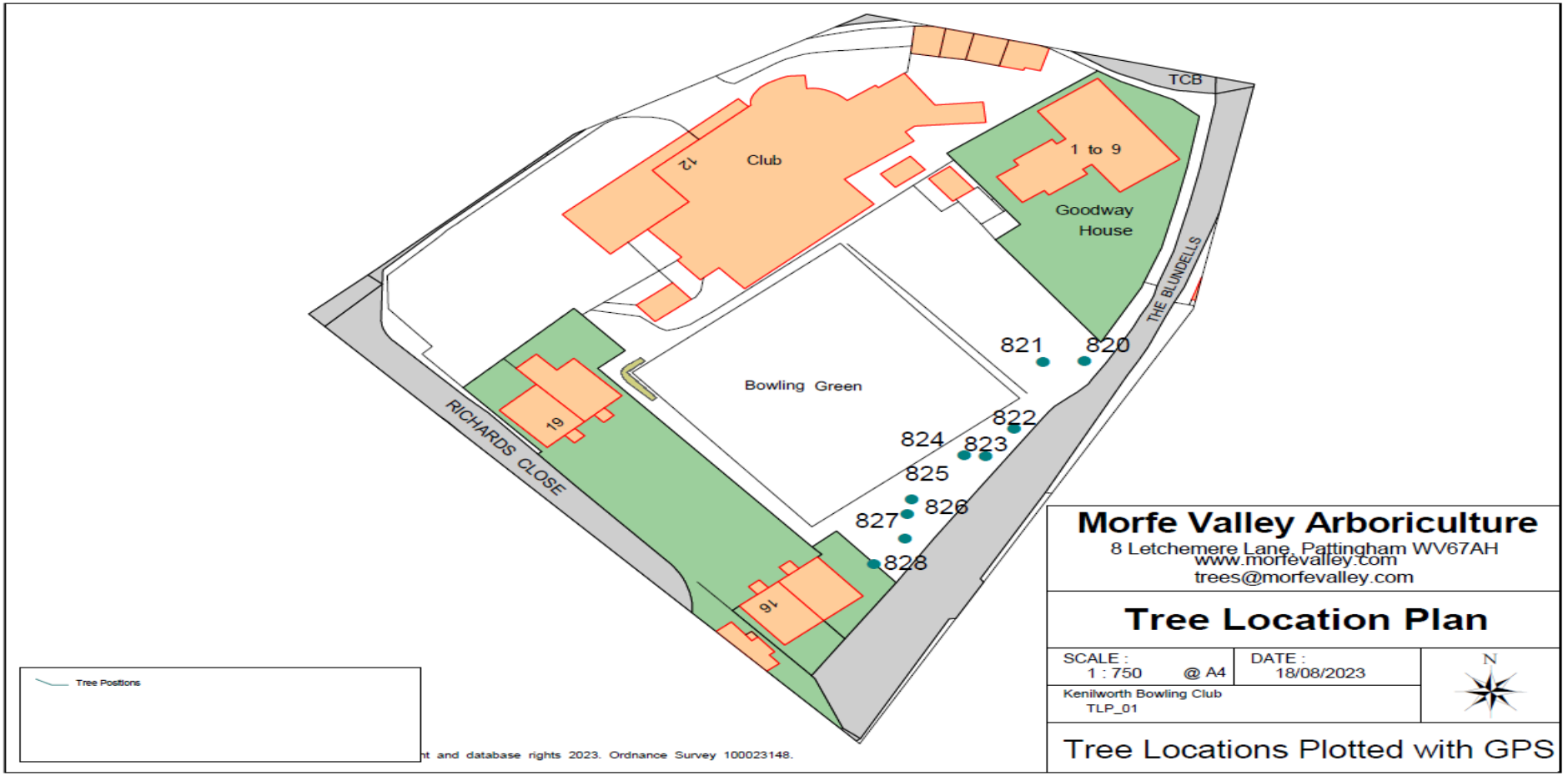
Inspected by: Craig Watkins

Date: 18/08/2023

Tag Number	Species	Botanical Name	Age Range	Tree Height: Small (<8m); Medium (8m - 16m); Large (>16m)	Crown Spread: Small (<3m); Medium (3m - 8m); Large (>8m)	Diameter @ 1.5m (mm)	Vitality	Comments	Management	Target potential	Size of part	Probability of failure	Risk of harm	Review Years
820	Black Walnut	Juglans nigra	M	Large	Large	M	G	Multi stemmed tree, cavity development in stem over fence and road, extensive deadwood throughout the canopy. Basal growth restricting inspection.	Reduce stem with cavity over road back to previous reduction points, remove basal growth to allow inspection, remove deadwood and ivy, aerial inspection of canopy. Reinspection once basal growth removed. Crown lift over highway to a height of 4m	2	1	3	1/4K	2024
821	Copper Beech	Fagus sylvatica 'Purpurea'	M	Large	Large	M	G	Previous branch removal on stem occluded. Fungal fruiting bodies on North Western aspect at approximately 6m off ground level, possibly Ganoderma applanatum, however difficult to assess from ground level.	Aerial inspection and picus tomography of area around the location of the fruiting bodies to ascertain extent of decay.	2	1	1	1/4	2024
822	Common Ash	Fraxinus excelsior	M	Large	Large	M	G	Inspection restricted by ivy. Extensive deadwood throughout the canopy. Cavities in scaffold branches in the crown.	Aerial inspection of cavities, remove deadwood and basal ivy to allow inspection.	2	3	3	1/5K	2024

823	Common Horse Chestnut	Aesculus hippocastanum	M	Large	Large	M	G	Deadwood throughout the canopy, large spreading crown.	Removal deadwood, assess scaffold unions during work for cavities, inclusions or signs of subsiding.	2	3	3	1/5K	2024
824	Copper Beech	Fagus sylvatica 'Purpurea'	M	Large	Medium	M	G	Inspection restricted by ivy. Slightly suppressed by adjacent tree, non progressive lean over lamp. Soil, and clipping spoil at base.	Advisory - stop tipping waste at base of trees, this is likely to cause dysfunction at the base of the tree between the roots and the crown. Remove ivy to allow inspection	2	3	3	1/5K	2024
825	Copper Beech	Fagus sylvatica 'Purpurea'	M	Large	Large	M	G	Inspection heavily restricted by vegetation and ivy. Slightly suppressed by adjacent trees. Deadwood throughout the canopy.	Remove basal ivy to allow inspection, remove deadwood.	2	3	3	1/5K	2024
826	Corsican Pine	Pinus nigra var.maritima	M	Large	Medium	M	G	Inspection restricted by ivy. No significant defects identified.	Remove ivy to allow future inspection.	2	3	3	1/5K	2024
827	Corsican Pine	Pinus nigra var.maritima	M	Large	Medium	M	G	Extensive deadwood throughout the canopy. Inspection restricted by ivy. Slight lean non progressive.	Remove deadwood and ivy to allow inspection	2	3	3	1/5K	2024
828	Copper Beech	Fagus sylvatica 'Purpurea'	M	Large	Large	M	P	Inspection restricted by ivy. Extensive deadwood throughout the canopy, previous branch failures. Declining crown and extensive dieback. Unable to inspect base and graft union.	Fell and replant, extensive dieback, thinning crown and overall physiological decline.	3	N/A	2	1/3K	2024

3. Tree Location Plan (approximate and attached separately)



4. Survey Methodology

The following features of each tree, group of trees or woodland have been recorded in the Arboricultural Data Sheets:

- Species including the common names.
- Height measured in metres from the stem base. Where the ground has a significant slope the higher ground is selected.
- Crown height is measured in metres and is an indication of the average height at which the main crown begins.
- Stem diameter is measured in millimetres at 1.5m above the adjacent ground level (upslope on sloping ground) or immediately above the root flare for multi-stemmed trees.
- Crown spread is measured in metres and taken at the four cardinal points to derive an accurate representation of the crown.
- Age class of the tree is described as young, semi-mature, early-mature, mature, over-mature or Veteran: -
- Y – Young (newly planted tree)
- SM – semi-mature (1st 1/3rd of life expectancy)
- EM - mature (final 1/3rd of life expectancy)
- M - middle aged (2nd 1/3rd of life expectancy)
- OM - over mature (beyond life expectancy)
- V - veteran (over mature and of special conservation value)
- Physiological condition is classed as good, fair, poor, or dead. This is an indication of the health of the tree and takes into account vigour, presence of disease and dieback: -
- good – no health problems
- fair – symptoms remedial of ill health
- poor – declining
- dead – dead
- Structural condition is classed as good, fair or poor. This is an indication of the structural integrity of the tree and takes into account significant wounds, decay and quality of branch junctions: -
- good no significant defects
- fair - remedial defects
- poor – defects
- very poor –significant defects
- Comments include a brief description, if required, of the tree with comments on the form, vitality, health and any significant defects that may be present.

5. Glossary of Arboricultural Terms

For the avoidance of confusion, the terms used in this report follow the definitions given below:

Abscission	The shedding of a leaf or other short lived part of a woody plant.
Abiotic	Pertaining to non-living agents e.g. environmental factors.
Absorptive Roots	Non-woody short lived roots, generally having a diameter less than one millimetre, the primary function of which is the uptake of water and nutrients.
Access facilitation pruning	One off pruning operation to provide access for development operation. Pruning that will not be detrimental to trees health or amenity.
Arboricultural Method Statement	A methodology for the implementation of development where encroachment within the RPA has the potential to cause damage or loss of retained trees.
Arboriculturist	Someone who through relevant training and experience has gained knowledge in the expertise of trees.
Adaptive Growth	The process by where wood formation rates increasing in the cambial zone, as well as wood quality, responds to gravity and other forces acting on the cambium.
Adaptive Roots	The adaptation of existing roots; or a production of new roots in response to damage or decay.
Adventitious buds, roots, shoots	Which grow in other than primary apical control.
Anchorage	The process in which a tree uses its roots system to support itself within the soil structure.
Arisings	Parts of the tree that has been removed for disposal, branches, leaves, roots etc.
Bacteria	Microscopic single-celled organisms, many species of which break down dead organic matter, and some of which cause diseases in other organisms
Bark	A term usually applied to all the tissues of a woody plant lying outside the vascular cambium, thus including the phloem, cortex and periderm; occasionally applied only to the periderm or the phellem.
Basidiomycotina (Basidiomycetes).	One of the major taxonomic groups of fungi; their spores are borne on microscopic peg-like structures (basidia), which in many types are in turn borne on or within conspicuous fruit bodies, such as brackets or toadstools. Most of the principal decay fungi in standing trees are basidiomycetes.
Bottle-butt	A broadening of the stem base and buttresses of a tree, in excess of normal and sometimes denoting a growth response to weakening in that region, especially due to decay involving selective delignification.
Bracing	The use of rods or cables to restrain the movement between parts of a tree.
Branch (Primary)	A first order branch arising from a stem
Branch (Lateral)	A second order branch, subordinate to a primary branch or stem and bearing sub-lateral branches.
Branch (Sub-lateral)	A third order branch, subordinate to a lateral or primary branch, or stem and usually bearing only twigs.

Branch bark ridge	The raised arc of bark tissues that forms within the acute angle between a branch and its parent stem.
Branch collar	A visible swelling formed at the base of a branch whose diameter growth has been disproportionately slow compared to that of the parent stem; a term sometimes applied also to the pattern of growth of the cells of the parent stem around the branch base.
Brown-rot	A type of wood decay in which cellulose is degraded, while lignin is only modified
Buckling	An irreversible deformation of a structure subjected to a bending load.
Buttress zone	The region at the base of a tree where the major lateral roots join the stem, with buttress-like formations on the upper side of the junctions
Canker	Area of dead cambium killed by overlying pathogenic tissues.
Cavity	A hole in the woody structure of the tree; often caused through decay.
Cleaning out	The removal of dead, diseased crossing branches, damaged branches and alien structures.
Competent Person	Person with training and experience in accordance with the proposed matter being addressed, having an understanding of a particular matter being approached.
Condition	An indication of the physiological vitality of a tree, but not the stability of a tree.
Construction	A site based operation that has the potential to affect retained trees.
Construction Exclusion Zone	An area based on the RPA from which construction activity is prohibited.
Coppicing	Removal of all aerial parts of the tree leaving a stump for regeneration of new shoot.
Crown/canopy	The parts of the tree that supports the leaves.
Crown lifting	The removal of limbs and small branches to a specified height above ground level.
Crown thinning	The removal of a proportion of secondary branch growth throughout the crown to produce an even density well balanced crown structure.
Crown reduction	Removal in the height to a specified description to maintain a flowing crown structure.
Deadwood	Non – functional branches which no longer support natural growing conditions of the tree, but may be beneficial for the support of habitats.
Defect	Any area of the tree that longer has an optimal mechanical uniformity of stress, making the tree unsuitable for its location.
Dieback	Death of woody parts of the tree starting at distal ends of the tree.
Disease	Damage occurring to living organisms as a result of pathogenic micro-organisms.
Distal	Furthest distance away from the main body of the tree.
Dysfunction	In woody tissues, the loss of physiological function, especially water conduction, in sapwood.
Epicormical growth	Growth from dormant or adventitious buds, not developing from the first shoot.
Girdling roots	A circling root which constricts the stem or roots, with the potential to cause death and the restriction of flow within the phloem.
Heartwood	Dysfunctional xylem which no longer has conductive properties, but which has become an integral structural part of the tree.
Heave	The swelling of shrinkable clay soils, often when vegetation has been removed allowing soil rehydration to develop, with the potential for listing structures i.e walls.
Included bark/acute forks.	Face to face contact of bark usually at fork unions, or branch unions.
Lopping/Topping	A term used to describe the removal of large sized branches.
Mulch	Material lay down over the rooting area of trees to suppress weed competition, increase moisture retention and increase some cases organic material and nutrients.
Pathogen	A micro-organism that causes disease within another organism.

Phytotoxic	Toxic to plants
Pollarding	The removal of the tree canopy to produce knuckles where new growth develops and is removed cyclically usually performed on young trees.
Pruning	Selective removal of parts of the tree to achieve a desired outcome.
Root protection area	An area around a tree identified by multiplying the stem diameter at 1.5 by 12 to produce a radial area or rooting volume around a tree to be protected. BS 5837 2012.
Service	Any above and below ground structure or apparatus for utility provision.
Size of part	Relating to risk assessments, identifying the size of the hazard, or parts of a tree which may cause harm if failure occurs.
Stem(s)	The main structure from the ground up supporting the crown
Stress	In plants, the physiological depletion as a result of environmental influences.
Structure	manufactured object, such as building, roads, path, wall or excavated structures.
Structural roots	The primary larger diameter roots which hold and support the aerial parts of the tree.
Subsidence	The shrinkage of soil through the absorption of water via vegetation and the sinking effects on surrounding architectural structures.
Targets	In risk assessment, persons or property at risk of harm as a result of a hazard (falling tree, branch etc.).
Tree Protection Plan	A scaled drawing informed by descriptive text where necessary, based upon finalised site proposals, showing trees for retention and illustrating the tree and landscape protection measures.
Veteran Tree	Tree that, by recognised criteria, shows features of biological, cultural or aesthetic characteristics of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.
Windthrow	The blowing over a tree at its roots.

REFERENCES

British Standard, BS 3998:2010 Tree work. Recommendations. (The British Standards Institution, 2010)

The Body language of Trees (C.Mattheck, K. Bethge, K Weber 2015)

Quantified Tree Risk Assessment User Manual, (QTRA User_Manual_as amended). (Incorporating extracts).