



DUCKWORTHS
ARBORICULTURE LTD.

BS:5837 ARBORICULTURAL REPORT

ARBORICULTURAL SURVEY & IMPACT ASSESSMENT

WOODLANDS FARM HOUSE
BATH ROAD
KNOWL HILL
WOKINGHAM
RG10 9UP

WBC PLANNING APPLICATION REF: 241902

DECEMBER 2024

Ref: SCD 06571 / 2024

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EXECUTIVE SUMMARY

Wokingham Borough Council's Tree and Landscape Officer has requested further information in the form of an Arboricultural Impact Assessment in their assessment of planning application 241902, a householder application for the 'proposed erection of entrance canopy, followed by a single storey side extension (external balcony atop), single storey side and rear extension, two storey rear extension, single storey side to rear extension, external alterations comprising formation of bay window and external staircase along with changes to fenestration and demolition of existing buildings. (Retrospective)'.

The purpose of the Arboricultural Impact Assessment is to review the impact on trees where demolished buildings appear to have been removed below tree canopies and where the retaining wall at the front of the property appears to be within the rooting areas of trees adjacent to the site's eastern boundary'.

A site visit was held on Monday 18th November 2024 with the client and Sarah Duckworth (Arboricultural Consultant) in attendance. The purpose of the site visit was to review the works and to assess any impact these works may have had on the adjacent trees.

In this report I have discussed the impact of the works on trees and where appropriate considered whether site enhancements are required by which any impact on trees may be satisfactorily mitigated.

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1. INTRODUCTION

1.1 INSTRUCTION

This Arboricultural report has been prepared by Sarah Duckworth, Arboricultural Consultant and provides an Arboricultural Survey & Impact Assessment relating to trees growing on and adjacent to Woodlands Farm House, Bath Road, Knowl Hill, Wokingham, RG10 9UP. I have been instructed to survey relevant trees in accordance with BS:5837 (2012) to ascertain the constraints posed by the trees to the construction of a new replacement dwelling.

The Arboricultural Impact Assessment in this report uses the tree data to identify any short or longer-term impact the proposed building works might have had on the surrounding trees and makes recommendations for amendments or mitigation where appropriate.

1.2 SCOPE

The British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction' is designed to assist those concerned with trees and planning to form balanced judgments. This report does not therefore seek to put arguments for or against development but provides a means of protecting the trees which may be affected during development.

The report is for the sole use of the client and its reproduction or use by anyone else is forbidden unless written consent is given by the author.

1.3 DOCUMENTS

The location of the trees at Woodlands Farm House has been taken from a topographical survey provided by the client. The position of the trees should not be taken as exact but the plan is a good representation of tree locations in relation to the extended property.

1.4 CAVEATS

The report is valid for a period of two years from the date of issue being 9th December 2024 and will expire on 9th December 2026.

The report is not a Tree Risk Management Report or a Hazard Analysis Report and its use as such is invalid.

The report refers to the condition of tree(s) and an assessment of the site on the day the evaluation was undertaken. The trees were assessed from ground level only and not climbed. My assessment of third-party trees was limited where direct access was not available to the adjoining properties.

DISCLAIMER: This is an independently produced Arboricultural Report. I have no connection with any of the parties involved in this site or application that could influence or bias the opinions expressed in this report.

2. ARBORICULTURAL IMPACT ASSESSMENT

2.1 INTRODUCTION

The purpose of the Arboricultural Impact Assessment (AIA) is to evaluate the direct and indirect impact recent building works may have had on trees growing at Woodland Farm House.

Wokingham Borough has listed specifically the following works which may have impacted on trees:

- Demolition of original outbuildings
- Low level retaining wall to mark edge of new patio
- Extension to parking area at the front by relocating a brick retaining wall at the front of the property

2.2 SOIL

The soil on site was assessed by an appraisal on the British Geological Drift Survey Map only. According to the 1:50,000 scale map records, the bedrock geology for Woodlands Farm House is Lambeth Group (formerly Woolwich and Reading Beds) which consists of clay, silt and sand.

Lambeth Group can contain 'shrinkable' clay soil¹. The soil at Woodlands Farm House may therefore have some capacity to shrink and swell with changing moisture levels and can be vulnerable to damage as a result of compaction.

2.3 PLANNING CONSTRAINTS

TREE PRESERVATION ORDERS

I have confirmed on the Wokingham Borough Council online Tree Preservation Order Plan that trees at Woodlands Farm House are protected by an Area Tree Preservation Order ref TPO-1639-2018.

The area category is a means of protecting individual trees dispersed over an area. Authorities may either protect all trees within an area defined on the Order's map or only those species which it is expedient to protect in the interests of amenity.

The Area Order only protects those trees standing at the time it was made (2018).

¹ Figure 4.3 'Principal Geological Strata, indicating strata which often comprise 'highly shrinkable' and 'shrinkable' clays.' P.G. Biddle, Tree Root Damage to Buildings. Volume 1 – Causes, Diagnosis and Remedy. Pub.1998 Willowmead Publishing Limited.

CONSERVATION AREA

Woodlands Farm House is not within a Conservation Area.

ANCIENT WOODLAND

Woodlands Farm House is not located in Ancient Woodland or within an Ancient Woodland Buffer Zone.

2.4 APPLICATION ASSESSMENT

DEMOLITION OF ORIGINAL OUTBUILDINGS FROM UNDER THE CROWNS OF PROTECTED TREES.

I confirmed at my site visit that the original main outbuilding which is located directly north of Woodland Farm House remains in situ.

The outbuilding which has been demolished is a garage north of the property. This building is outside of the root protection areas of all trees therefore its removal will not have had any impact on trees.

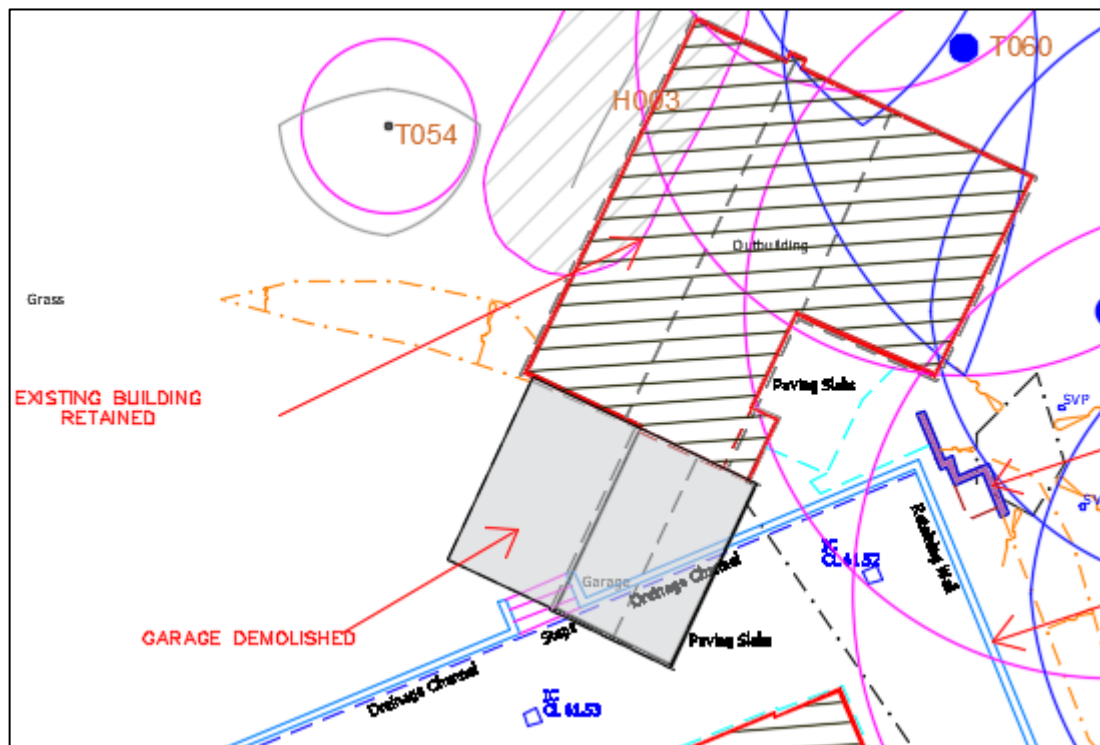


Figure 1 – Site plan showing outbuildings retained and demolished



Photo 1 – Existing outbuildings have been retained.

LOW LEVEL BRICK RETAINING WALL & PATIO

To the north (rear) of Woodlands Farm House is an old underground Air Raid Shelter which has been retained during the renovation works in order to preserve the heritage of the property. The Air Raid Shelter is a massive concrete structure which is expected to have deflected the growth of tree roots to the southwest and west towards the dwelling.

To the rear of the extended property there is a new patio which is edged by a new low-level brick retaining wall.

Ref	Species	BS:5837 Category	New building construction within RPA (m ²)	New hard surface within RPA (m ²)	Total BS:5837 RPA (undeveloped)	% Additional new building footprint	% Additional new hard standing over previously undeveloped RPA
T061	Beech	B1	0	13	320m ² (277m ²)	0%	4.7%
T062	Horse Chestnut	B1	3.4	39.4	373m ² (372m ²)	1%	10.5%

Figure 1 – Calculations of incursions into rooting areas of trees.

British standard 5837 ('Trees in relation to design, demolition and construction') advises (par.7.4.2.3) that any new permanent hard surfacing should not exceed 20% of any existing unsurfaced ground within the RPA.

The incursion of the new patio / retaining wall into the root protection areas of T061 (Beech) and T062 (Horse Chestnut) equates to 4.7% and 10.5% respectively. However, in this location on the far side of the Air Raid Shelter, few substantial roots are likely to have been present. Furthermore, the original patio of the dwelling is also likely to have impacted on tree roots to a certain extent.

The new wall was constructed to create a formal edge to the patio. The client has confirmed the wall has very shallow footings less than 1ft / 30cm deep. Again, as mentioned previously, in this location on the far side of the Air Raid Shelter, few substantial roots are likely to have been present.

T061 (Beech) and T062 (Horse Chestnut) are mature trees in good physiological health as observed at the time of both site visits (April 2024 & November 2024). The canopy of both trees and bud density shows no indication of recent stress or decline which can occur when tree roots are damaged. I have therefore concluded that there has been no permanent harm to the adjacent trees because of this work.



Photo 2 – New low-level brick wall (blue) beyond retained historic Air Raid Shelter

EXTENSION TO PARKING AREA AT THE FRONT BY RELOCATING A BRICK RETAINING WALL AT THE FRONT OF THE PROPERTY

Prior to the recent renovation and associated ground works, Woodlands Farm House had a terraced front garden which stepped down to a flat lawn area and pergola. As part of the renovation the driveway has been extended along the front of the property and its width increased in order to accommodate parked vehicles.

To achieve this, a new retaining wall and steps were constructed beyond the original retaining wall and the void behind the wall filled in with porous aggregate to achieve the required levels and ensuring a free-draining infill behind the new retaining wall.

The new wall is 2.6m from the base of T064 (Horse Chestnut) beyond which a series of concrete panels have been used to continue the feature without the need for excavation near the tree.



Photo 3 – Terracing to the front of Woodlands Farm House prior to renovation.

I have noted that T064 (Horse Chestnut) is in a slightly exposed location with an asymmetrical canopy following the collapse of an adjacent Beech (stump remains).

Whilst there is no visible evidence of tree root damage it is likely that the excavation of foundations for the retaining wall within the RPA may have required tree roots to be cut. However, the orientation of the retaining wall which runs radially to the tree's base and the changes in ground level which preceded the works will have limited any harm to the tree as a result of the excavation work.



Photo 4 – Replacement retaining wall to the front of Woodlands Farm House.



Photo 5 – Replacement retaining wall to the front of Woodlands Farm House.

T064 (Horse Chestnut) is in reasonable health for a tree of this age and species. The canopy / bud density is normal, and the tree exhibits no signs of stress or decline which can occur when tree roots are damaged. At this point the tree can regrow and adapt to the changes within its rooting area. Removing the retaining wall and infill would cause more ground disturbance and potential harm for tree roots and would not necessarily benefit the tree.

2.5 CONCLUSIONS

This is a retrospective application for extensions to Woodlands Farm House.

As part of the renovation works, a series of exterior ground works and hard landscaping was carried out to improve the accessibility of the property. Although in several areas the new retaining walls, patio and driveway have resulted in some changes in ground level within the root protection areas of trees – the existing structures and previous changes in ground levels within the site have prevented any major damage to trees as a result of the work.

All trees surveyed are currently in good health and showing no sign of physiological stress which can occur when there is damage within rooting areas. On balance, the removal of the new structures is likely to cause more ground disturbance and potential harm for tree roots and is not advised at this time.

All trees are subject of a Tree Preservation Order. There is provision within the Tree Preservation Order Legislation for the Council to require replacement planting should any of the trees go into decline in the future.

APPENDICES

- A. Survey Data
- B. Key
- C. Cascade Chart for Tree Quality Assessment
- D. Tree Data
- E. Tree Plans
- F. Qualifications

APPENDIX A - SURVEY DATA

- The trees were surveyed on Tuesday 28th May 2024 and 18th November 2024 from ground level only.
- The weather conditions were dry and sunny. Visibility was good.
- Heights were estimated as part of a group. Soil samples were not taken.
- The trees on site were assessed for their quality and benefits within the context of the proposed development and categorised in accordance with the recommendations in the BS: 5837:2012 – ‘Trees in Relation to Design, Demolition and Construction’.

APPENDIX B - KEY

Ref: T001 = Tree 1

G001 = Group 1

A001 = Area 1

W001 = Woodland 1

Species: Common name (Botanical name)

Height: Measured with a clinometer (m) where possible or estimated when part of a group

Stem: Stem diameter taken at 1.5m with girth tape or rule and recorded in millimeters

Branch spread: Paced measurements at compass points or with a laser measure.

Crown clearance: Existing height above ground level of canopy and / or first significant branch direction of growth in metres e.g., 2.4 (N) where relevant.

Epics: Lower canopy created by epicormic growth.

Age Class: Newly planted - 3 years following planting.

Young - Tree well established but with juvenile crown form

Young Mature - Tree in first third of usual life expectancy for species

Mature - Tree in second third of usual life expectancy for species

Over Mature - Tree in final third of usual life expectancy for species / exhibiting signs of crown retrenchment & senescence.

Veteran - Older than usual for species or with historical/ cultural / ecological value

General Observations: Made with reference to physiological condition (health, vigour) and structural condition, noting evidence of decay, structural weakness and physical defect and preliminary management recommendations.

Estimated Remaining Contribution: Estimated in years - less than 10, 10-20, 20-40, 40+

BS: 5837:2012 category rating: In accordance with the guidelines of the British Standard.

● Category 'A' tree (Green) ● Category 'C' tree (Grey)

● Category 'B' tree (Blue) ● Category 'U' tree – Fell (Red)

RPA Area BS:5837 (2012) Root Protection Area calculation in square metres

RPA Radius BS:5837 (2012) Root Protection Area calculation circle radius in metres²

² The root protection area radius is for information only and may not be appropriate in every case. BS:5837 advises that *'the RPA for each tree should initially be plotted as a circle centered on the base of the stem. Where pre-existing site conditions or other factors indicate that rooting may have occurred asymmetrically, a polygon of equivalent area should be produced. Modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distributions.'*

APPENDIX C - BS:5837 (2012) TABLE 1: CASCADE CHART FOR TREE QUALITY ASSESSMENT

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

APPENDIX D - TREE DATA

Ref.	Species	Measurements	Spread	General Observations	Retention Category	RPA	Condition
T054	Common ash (Fraxinus excelsior)	Height (m): 7 Stem Diam(mm): 200 Crown Clearance (m): 2 Life Stage: Mature Rem. Contrib.: 10+ Years	N:1 E:2.5 S:3 W:3	Small tree, asymmetrical crown. Pests and Diseases: Ash Dieback Infection Level 1: 0% to 25%	C1	Radius: 2.4m. Area: 18 sq m.	Physiological Condition: Diseased Structural Condition: Poor Public Amenity Value: Low
T055	Common ash (Fraxinus excelsior)	Height (m): 7 Stem Diam(mm): 200 Crown Clearance (m): 2 Life Stage: Mature Rem. Contrib.: 10+ Years	N:2 E:2 S:2 W:2	Small tree, kinked trunk. Pests and Diseases: Ash Dieback Infection Level 1: 0% to 25%	C1	Radius: 2.4m. Area: 18 sq m.	Physiological Condition: Diseased Structural Condition: Poor Public Amenity Value: Low
T056	Common ash (Fraxinus excelsior)	Height (m): 17 Stem Diam(mm): 440 Crown Clearance (m): 4 Life Stage: Mature Rem. Contrib.: 20+ Years	N:7 E:7 S:7 W:7	High, broad canopy. Dead ivy stems on trunk. Deadwood in lower canopy. Pests and Diseases: Ash Dieback Infection Level 1: 0% to 25%	C2	Radius: 5.3m. Area: 88 sq m.	Physiological Condition: Fair Structural Condition: Fair Public Amenity Value: Low
T057	Pedunculate oak (Quercus robur)	Height (m): 13 Stem Diam(mm): 650 Crown Clearance (m): 6 Life Stage: Dead	N:3.5 E:3.5 S:3.5 W:3.5	Ivy clad standing dead tree. Habitat value	U	No RPA due to Retention Category of U.	Physiological Condition: Dead Structural Condition: Fair Public Amenity Value: Moderate Inspection Limitations: Ivy
T058	Common beech (Fagus sylvatica)	Height (m): 19 Stem Diam(mm): 1100 Crown Clearance (m): 6 Life Stage: Mature Rem. Contrib.: 10+ Years	N:8 E:8 S:6 W:5	Swept stem, pronounced buttress roots. Asymmetrical crown. Basal decay. Previous major branch failure in upper crown. Foliage density normal. Fungus: Kretzschmaria deusta (Brittle Cinder)	U	No RPA due to Retention Category of U.	Physiological Condition: Good Structural Condition: Physical Defect Public Amenity Value: Moderate
T059	Common beech (Fagus sylvatica)	Height (m): 9 Stem Diam(mm): 1100 Crown Clearance (m): 5 Life Stage: Mature Rem. Contrib.: 20+ Years	N:4 E:6 S:4 W:4	Main stem topped at 4m. Canopy formed from low branches before this point. Foliage density normal.	C1	Radius: 13.2m. Area: 547 sq m.	Physiological Condition: Good Structural Condition: Physical Defect Public Amenity Value: Low
T060	Pedunculate oak (Quercus robur)	Height (m): 18 Stem Diam(mm): 750 Crown Clearance (m): 3 Life Stage: Mature Rem. Contrib.: 40+ Years	N:8 E:2 S:9 W:5	Ivy clad mature tree, suppressed crown. Foliage density normal.	B1	Radius: 9.0m. Area: 254 sq m.	Physiological Condition: Good Structural Condition: Fair Public Amenity Value: Moderate Inspection Limitations: Ivy

Ref.	Species	Measurements	Spread	General Observations	Retention Category	RPA	Condition
T061	Common beech (Fagus sylvatica)	Height (m): 18 Stem Diam(mm): 840 Crown Clearance (m): 3 Life Stage: Mature Rem. Contrib.: 40+ Years	N:8 E:5 S:7 W:5	Mature tree on raised mound, suppressed crown. Entwined branches in upper crown. Foliage density normal.	B1	Radius: 10.1m. Area: 320 sq m.	Physiological Condition: Good Structural Condition: Fair Public Amenity Value: Moderate
T062	Horse chestnut (Aesculus hippocastanum)	Height (m): 18 Stem Diam(mm): 910 Crown Clearance (m): 2 Life Stage: Mature Rem. Contrib.: 40+ Years	N:8 E:6.5 S:8.5 W:6	Mature tree dense crown. Epicormic shoots throughout crown.	B1	Radius: 10.9m. Area: 373 sq m.	Physiological Condition: Good Structural Condition: Fair Public Amenity Value: Moderate
T063	Pedunculate oak (Quercus robur)	Height (m): 15 Stem Diam(mm): 650 Crown Clearance (m): 5 Life Stage: Mature Rem. Contrib.: 40+ Years	N:3 E:3 S:3 W:7	Ivy clad mature tree swept stem, asymmetrical crown. Foliage density normal. Trunk obscured by dense ivy. New gravel driveway 1m from base. Possible shallow excavation in this area.	B1	Radius: 7.8m. Area: 191 sq m.	Physiological Condition: Good Structural Condition: Fair Public Amenity Value: Moderate Inspection Limitations: Ivy
T064	Horse chestnut (Aesculus hippocastanum)	Height (m): 18 Stem Diam(mm): 800 Crown Clearance (m): 1 Life Stage: Mature Rem. Contrib.: 40+ Years	N:4 E:7.5 S:5 W:8	Mature tree dense crown. Epicormic shoots on trunk and throughout crown. Possible ground level changes +300 1.3m from base. Brick pillar 2.6m from base. Asymmetrical upper crown following collapse of adjacent Beech.	B1	Radius: 9.6m. Area: 290 sq m.	Physiological Condition: Good Structural Condition: Fair Public Amenity Value: Moderate
H003	Common hawthorn x4 (Crataegus monogyna)	Height (m): 6 4 stems, avg.(mm): 200 Crown Clearance (m): 1.5 Life Stage: Mature Rem. Contrib.: 20+ Years	N:1 E:1.5 S:3 W:1	Lapsed hedge group	C2	Radius: 2.4m. Area: 45 sq m.	Physiological Condition: Fair Structural Condition: Fair Public Amenity Value: Low

APPENDIX E – TREE PLAN

Attached as separate pdf documents

- Tree Plan ref: [WOODLANDS FARM HOUSE TPP 06571 2024](#)

APPENDIX I - QUALIFICATIONS

This Arboricultural report has been prepared by Sarah Duckworth, Independent Arboricultural Consultant, trading as Duckworth's Arboriculture Limited.

I have over 19 years' experience working in the field of Arboriculture and for the past 16 years I have worked as a Local Authority Tree Officer both directly and independently providing contracted support. Since 2010 I have worked as a private consultant carrying out a range of Arboricultural Reports and Assessments for private clients.

I hold the Royal Forestry Society's Professional Diploma (Level 6) for which I received the Lockhart Garrett Award. I also hold the Arboricultural Association's Technicians Certificate (with Distinction).

I am a LANTRA qualified Professional Tree Inspector and a Professional Member of the Arboricultural Association.