

43 Langdon Park Road,
Highgate,
Haringey,
London
N6 5PY



BS:5837 Arboricultural Report
Arboricultural Impact Assessment
Arboricultural Method Statement

Ref: BS/699

Client: Mr. Paul Munro

December 2023

Report compiled by RH Tree Consultants Ltd.

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1. INTRODUCTION

1.1. Qualification and Experience

I have based this report on my site observations and have arrived at the following conclusions in light of my arboricultural experience. I have listed my qualifications and given a brief description of my arboricultural experience in Appendix F.

1.2. Instruction

I have been instructed by Mr. Paul Munro (referred to as the 'client' from here on) to provide a BS:5837 Tree Categorisation Report, Arboricultural Impact Assessment and Arboricultural Method Statement for proposed development works at 43 Langdon Park Road, Highgate, Haringey, London, N6 5PY.

The scope of the report is as follows;

- Complete an on-site survey assessing all trees potentially impacted by proposed future development at the site
- Produce a tree constraints plan and tree data schedule
- A schedule of any subsequent work that may be required
- A schedule of any subsequent inspections based on location targets
- A site overview
- Provide guidance for the architect to develop a design within the constraints plan
- Provide an Arboricultural Impact Assessment
- Provide tree protection plans outlining the location of all required tree protection
- Construct an Arboricultural Method Statement outlining how the trees will be protected during works and who is responsible for each element.

1.3. Limitations and Methodology

The survey is concerned with the arboricultural aspects of the site only in accordance with BS:5837.

The survey was undertaken using the Visual Tree Assessment (VTA) methodology. The survey was undertaken from ground level with the aid of binoculars and a sounding hammer where necessary. No aerial inspection nor root excavation was completed during this report.

Trees are a natural, dynamic organism whose condition can be subject to rapid change. Therefore, this survey and its findings are only valid for a 12-month period following the survey on 6th December 2023. In the event of extreme weather events, it would be prudent to re survey.

1.4. Relevant Background Information

No relevant background information has been provided.

1.5. Documents and Information Provided

I have been provided with drawings of the proposals which I have included in Appendix C.

1.6. Scope of This Report

This report is designed to accompany a planning application for development proposals at the above site. Its purpose is to assist and inform the planning process. It is produced according to the guidance and recommendations within BS 5837: 2012 - Trees in Relation to Design, Demolition and Construction.

Figure 1 The design and construction process and tree care

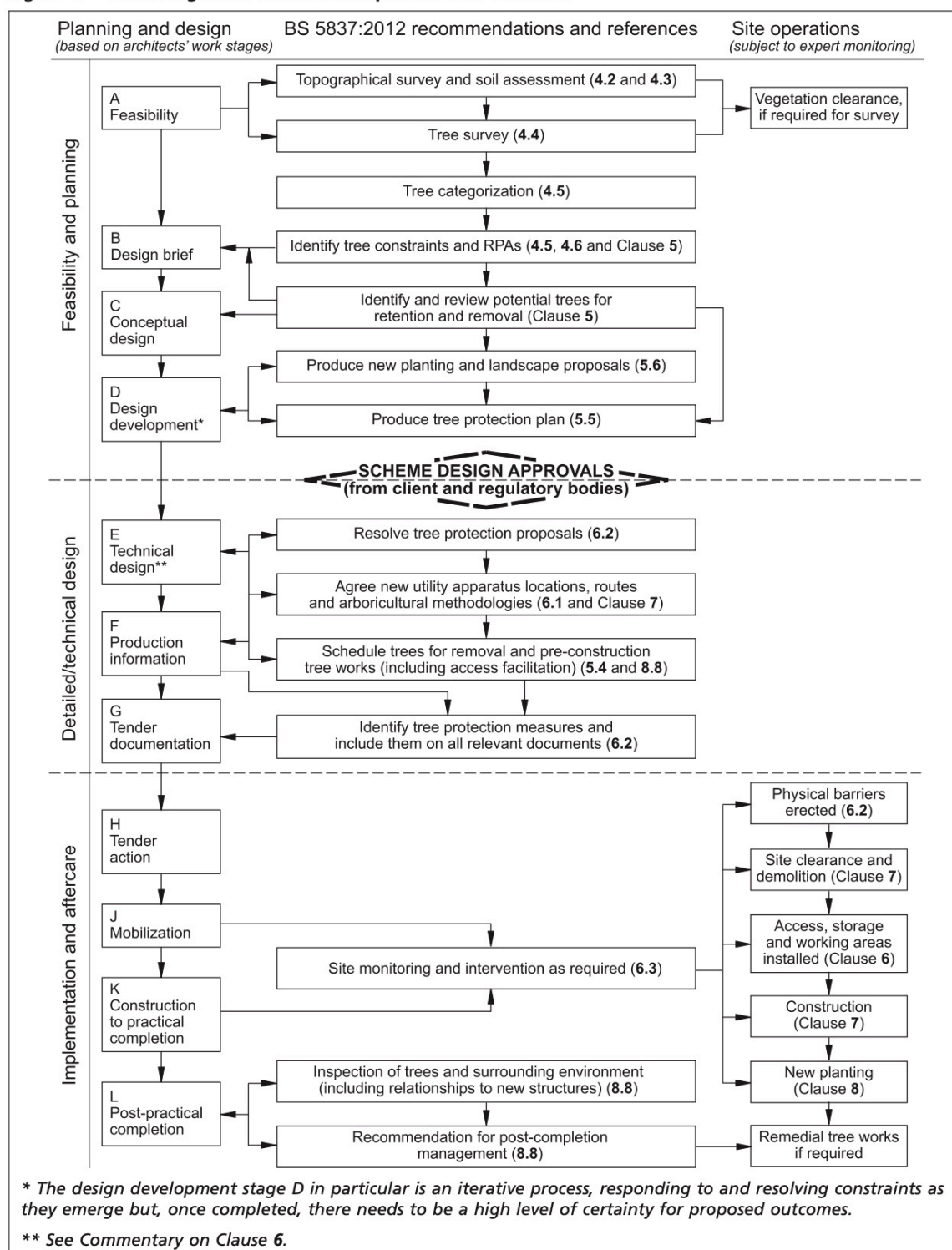


Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
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 are showing signs of significant, immediate, and irreversible overall decline - Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i>			See Table 2
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered 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)	See Table 2
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 remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	See Table 2
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 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

1.7. Mapping

- 1.7.1. All trees and relevant constraints and protection are plotted on the Tree Constraints and Tree Protection Plans in Appendix B. The plan was produced using measurements taken on site and plotted on a geo-referenced OS master map.

1.8. Technical References

This arboricultural report is based on the following primary technical references:

- British Standards Institution (2012) BS:5837 Trees in Relation to Planning
- British Standards Institution (2010) BS:3998 *Recommendations for tree work*
- Watson, P (2022) *A-Z of Tree Terms Compendium to British Arboriculture Third Edition*
- Lonsdale, D. (1999) *Principles of Tree Hazard Assessment and Management.*
- Mattheck, C and Breloer, H. *The Body Language of Trees*
- Strouts, R.G. and Winter, T.G (1994). *Diagnosis of Ill-Health in Trees*
- Weber, K and Mattheck, C. *The Manual of Wood Decay in Trees*
- The National Tree Safety Group. (2011). *Common Sense Risk Management of Trees.*
- Biddle. P.G. (1998). *Tree Root Damage to Buildings V1 & V2*
- Roberts, J. Jackson, N and Smith, M (2006). *Tree Roots in the Built Environment.*
- Mynors, C, Hall, S and Nicholls, E (2023) - *The Law of Trees, Forests and Hedges Third Edition.*
- Humpheries, D, Wright, C. (2021) – *Fungi on Trees, A photographic reference.*
- Boddy, L (2021) – *Fungi and Trees, Their complex relationships.*
- Littlefair, P (2011) – *Site Layout Planning for Daylight and Sunlight, A guide to good practice Second Edition.*

2. The Site

2.1. Description of Site

The site is a near end of terrace residential property with a small front garden and rear garden that backs on to residential properties. The garden to the rear is partially visible from Wembury Road. The rear garden shares boundaries with multiple residential properties.

2.2. Soils

The soil on site is understood to be London Clay Formation of clay and silt. This information has been provided by the British Geographical Society mapping system. This soil type exhibits a high tree related shrink/swell potential and as such NHBC and BRE guidance should be adhered to within both the design of the proposal and any future planting recommendations.

2.3. Survey Extent



2.4. The Proposed Development

The proposal is to develop a new extension to the original building after removing the current one. A small section of the garden will be landscaped as part of this proposal adding a new retaining wall and steps into the garden.

2.5. Tree Preservation Orders (TPO) or Conservation Areas

A Tree Preservation Order, referred to as a 'TPO', is an order made by a Local Planning Authority ('LPA') in respect of trees or woodlands. The principal effect of a TPO is to prohibit the: Cutting down, uprooting, topping, lopping, willful damage, or willful destruction of trees without the LPAs consent. The cutting of roots is potentially damaging and so, in the Secretary of State's view, requires the LPAs consent. Anyone who, in contravention of a TPO, willfully damages a tree in a way that is likely to destroy it is guilty of an offence. Anyone found guilty of this offence is liable, if convicted in a Magistrates Court, to a fine of up to £20,000. In serious cases a person may be committed for trial in the Crown Court and, if convicted, is liable to an unlimited fine.

Conservation Areas are areas of special architectural or historical interest with a character or appearance that is desirable to preserve or enhance. Trees may often contribute to the special character of the area. All trees in a Conservation Area are subject to controls which enable the LPA to protect the special character of the area created by the trees.

If trees have a specific Tree Preservation Order (TPO) on them, then the normal Tree Preservation Order controls apply. You must give the LPA 6 weeks' notice, in writing, of your intention to do any work to trees in a Conservation Area. You must not carry out any work during the six-week period, which starts from the date of receipt of your notification by the council, unless you receive written permission to do so. Work which is not exempt and is carried out without formal notification or within the six-week period without the written consent of the council is illegal. The LPA may prosecute offenders and fines of up to £20,000 for each tree may be imposed by the Magistrates Court in the event of offenders being convicted of an offence. If proceedings are instituted in the Crown Court fines are unlimited. There is a duty to replace any tree removed without permission.

T001 – Lime is covered by a TPO ref LEG/TAD/4/3570.

2.6. Existing Trees on Site

Only trees with a trunk diameter of <75mm, when measured at 1.5m above ground level, are to feature on this report.

At the time of the site visit, all trees were noted to be in an acceptable condition, with no works recommendations outside of the scope for development requirements.

2.7. Existing Tree Stock

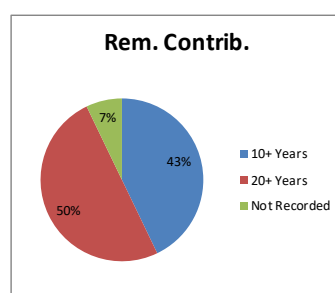
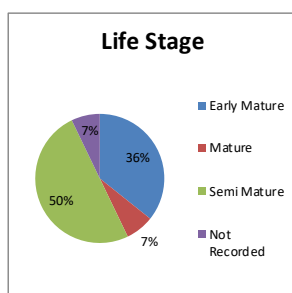
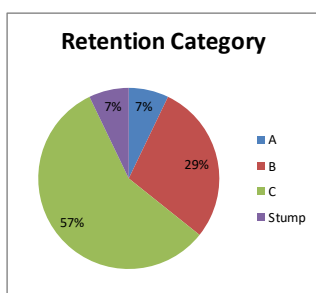
The existing tree stock is summarized as follows:

Estate Paul Munro
Site name 43 Langdon Park Road
Survey reference BS/699

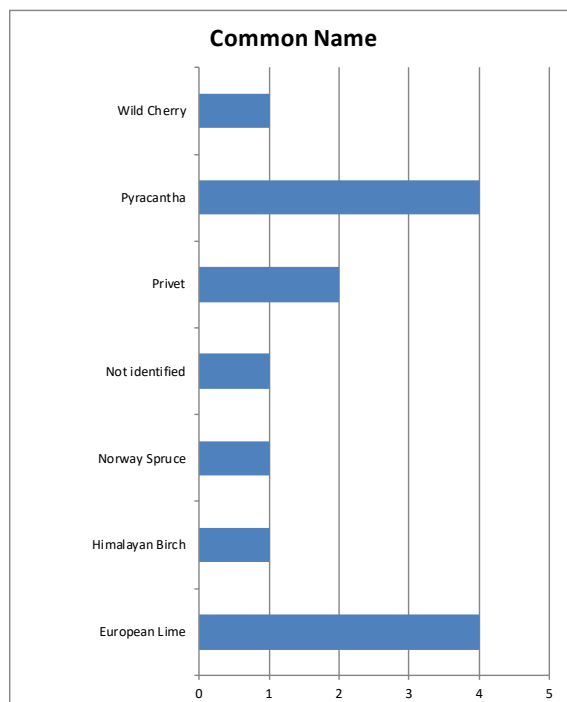
Retention Category	No. trees
A	1
B	4
C	8
Stump	1
Total	14

Life Stage	No. trees
Early Mature	5
Mature	1
Semi Mature	7
Not Recorded	1

Rem. Contrib.	No. trees
10+ Years	6
20+ Years	7
Not Recorded	1



Common Name	No. trees
European Lime	4
Himalayan Birch	1
Norway Spruce	1
Not identified	1
Privet	2
Pyracantha	4
Wild Cherry	1



3. Arboricultural Impact Assessment

3.1. The Proposal

It is proposed that the existing rear extension be demolished and a new rear extension be installed. The lower section of the garden will be landscaped including the addition of a curved retaining wall feature and new steps.

3.2. Trees to be Removed

None

3.3. Trees Requiring Tree Surgery Works

None

3.4. Impact to Existing Tree Stock from Proposals

- 3.4.1.** Excavation within the RPAs T001 and T003 could have harmful implications to roots and the loss of large structural roots or clumps of fine roots may cause harm to these retained trees.
- 3.4.2.** Disturbance to the rooting zone may have an impact on soil quality in terms of the reduction of air pockets required for water, nutrient and gas exchange through compaction or the removal of beneficial Mycorrhiza.
- 3.4.3.** Additional pressure on removal of some trees due to a perceived nuisance due to shading, etc.

3.5. Impact to Existing Tree Stock to Proposals

- 3.5.1.** Damage to the new structure due to seasonal tree related shrink/swell.
- 3.5.2.** Damage to structure due dampness caused by shading.
- 3.5.3.** Management required for detritus clearance (leaf).

3.6. Incursions into RPA

- 3.6.1.** Encroachment into the RPA's of T001, T003 and T008 will be required to access the site. The site access across the RPA of T008 is on existing hard surfacing that is deemed appropriate for the expected loading.
- 3.6.2.** Removal of the existing structure and hard surfacing is proposed within the RPA of T001 and T003.
- 3.6.3.** The location of the new extension falls within the RPA of T003.
- 3.6.4.** Existing hard surfaces within the RPA's of retained trees T001 and T003 will require removal to facilitate development.
- 3.6.5.** New hard surfacing is to be located within the RPA's of T001 and T003.
- 3.6.6.** All tree protective measures will be installed including primary fencing, secondary fencing and temporary ground protection.

3.7. Tree Protection Measures

All retained trees will be robustly protected in accordance with BS:5837 guidelines. Specifications for each protection type can be found in Appendix D

3.8. Conclusions

- 1.1. Having given full consideration to the arboricultural implications associated with this development, I am of the opinion that the proposal is arboriculturally sound subject to full compliance with the AMS (located in section 4), I believe that all retained trees will be protected and safeguarded in a sustainable manner.

4. Arboricultural Method Statement

4.1. Introduction

This Arboricultural Method Statement defines the site-specific specifications required to implement the above recommendations for tree protection in a realistic manner. This Arboricultural Method Statement must be read in conjunction with the attached Tree Protection Plan.

Definition of terms used:

- **Root Protection Area (RPA).** This is a theoretical area of ground around a tree where the roots are likely to proliferate. Ground disturbance in this area should be minimized and controlled in these areas to avoid significant impact on tree health. RPA's defined for this site are marked on all plans accompanying this report with a dotted red line.
- **Construction Exclusion Zone (CEZ).** These zones are created to protect roots and canopies from inadvertent damage by construction activity – see Section 6.6. - Construction Exclusion Zones. They are usually fenced off by protective barriers throughout the entire construction phase. No works are permitted in these zones other than minor landscaping works which do not require a change in ground level. Where practicable the entire Root Protection Area and the area beneath the tree canopy shall be treated as a Construction Exclusion Zone. These zones are marked purple on the Tree Protection Plan.

4.2. Method Statement Timeline

In overview, it is necessary to complete tasks in a specific order to facilitate works:

- Proposal including method statement approved by LPA
- Tree protection installed
- Pre-commencement site meeting
- Construction
- Sign off completion
- Protective fencing removed.

The following table informs the key principals for development operations proceeding in relation to arboricultural requirements conditioned as part of this method statement.

The actions and timescales within this table must be adhered to in order to discharge the arboricultural method statement planning condition of this site.

Any changes to precise timings or order of this table must be implemented or confirmed by a suitably qualified arboriculturalist as appointed by the contractor.

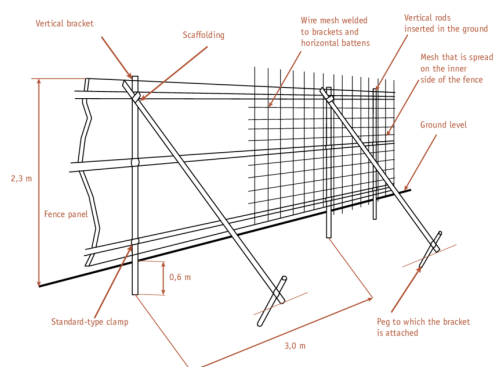
Sequence of Operations		
Stages	Action	Arboricultural input
1 Approval	This arboricultural method statement document is submitted and approved by the LPA	If required, liaise with contractor and LPA to discuss methodologies within this method statement
2 Tree Protection	Installing the tree protection measures which must take place before any demolition or storage of materials or machinery. Tree Protection shall be located as shown in the tree protection plan attached. The Tree Protection Fencing shall not be removed or breached or altered without prior authorization from the LPA or under arboricultural supervision as outlined in this AMS	If required, liaise with contractor installing the fencing until completed to the standards specified in this AMS
3 Site Meeting	Following the full installation of the protective measures, the LPA shall be invited to inspect the site to check the installation of protection measures	Meeting with a representative of the LPA and the site manager. Alternatively, compliance can be confirmed using photographs of all tree protections measures in place.
4 Excavation and Construction	Undertake construction phase of works. No excavations to take place within the RPA outside of those mentioned in the AMS.	Arboricultural Consultant to oversee works within RPA.
5 Site Finishing	Removal of tree protection once all construction phase works are completed and when all site machinery has left the area	Contractor to take photos of the site to forward onto LPA to gain approval for removal if required.

4.3. Tree Protection

4.3.1. Protective Barrier Fencing

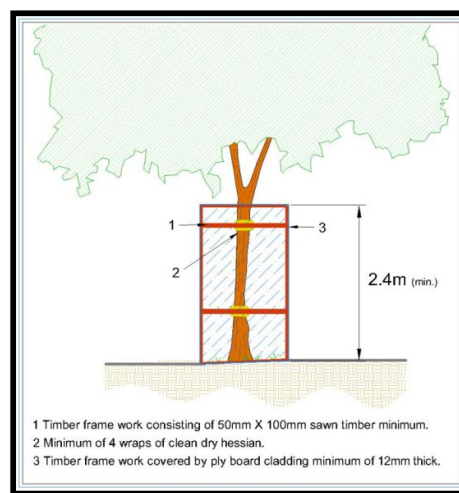
Protective barrier fencing will be appropriate for the intensity and proximity of the development to protect trees where development is in close proximity. This protective barrier type will be used for **ALL** tree protection. Given the site constraints and the location of the proposal, the entire RPA's of T001 and T002 will not be protected by this fencing. Existing hard surfacing on site is deemed suitable for the expected usage. Details of mitigation of potential damage to the RPA's can be found below.

- 4.3.1.1.1. The default specification for T001, T002 and T003 is to comprise of a 2.3m high scaffold framework, well braced to resist impacts, with uprights to be spaced at a maximum distance of 3m intervals and driven into the ground by a minimum of 600mm. On to this, standard anti-climb welded mesh panels are to be securely fixed to each other with at least two scaffold clamps and to the scaffold frame with wire.



- 4.3.1.1.2. Given the requirement for continued usage of the pathway on site and the hard surfacing noted currently present across the majority of the calculated RPA of T008, normal protective fencing is not deemed to be appropriate or required for this project. Protective

barrier hording for T008 will be appropriate for the intensity and proximity of the development to protect trees where development activity is in close proximity. To compromise of 2.4m high wooden site hoarding constructed upon a timber framework situated around the outside of the planting pit. Where the timber frame is constructed around the tree trunk, a minimum of four layers of clean dry hessian is to be wrapped around the trunk to protect the bark. The timber ply covering shall be of a minimum of 12mm thickness. All part of this hording shall be clear of the trunk.



4.3.1.1.3. Signage denoting the words '*tree protection area*' on each carinal direction should be fixed to the protective barrier hording facing outside the CEZ.

4.3.2. Ground Protection

Where it is determined that any hard surfacing that is not adequate protection from any expected loading, ground boarding is to be installed to BS:5837 specification on top of the hard surfacing within the root protection areas of retained trees.

In the event that machinery will be stored or used from the ground boarding within an RPAs of retained trees an impervious barrier and or bunding to prevent oils, fuel or other harmful chemicals is to be installed to prevent leaching into the soil within or adjacent to the RPAs.

The objective of the ground boarding is to avoid soil compaction in that area so that the tree root function remain unimpaired.

4.3.3. Demolition

All demolition work within or immediately adjacent to RPA's or canopies of retained trees is now to be undertaken under the direct on-site supervision of an arboriculturalist.

- 4.3.3.1. Demolition of the existing extension and hard landscaping within the RPA's of retained tree numbers T001 and T003 are to be undertaken carefully as per this document.

The structures are to be taken down so that all debris and materials are to fall outside of the RPA's and away from the canopies of all retained trees.

Foundations within and adjacent to the RPAs of retained trees are to be left in situ where ever possible. Where this is not possible, demolition of the existing foundations are to be undertaken to the minimum depth to allow for the installation of new soft and hard landscaping.

The removal of the existing foundations within the RPA of retained trees are to be undertaken using a hand held pneumatic breaker, hand tools and wheel barrows to break up and remove the debris out of the RPA. In some situations and only at the discretion of the arboriculturalist, it may be possible to use an excavator using a hydraulic breaker and suitably sized toothless grading bucket.

It may be permitted by the project arboriculturalist for an excavator to undertake the demolition and removal of the foundation but it must be outside of the RPA, on top of the hard surface working away from any RPAs or from suitable ground boarding as described in 4.3.2.

If it is likely that there will be any soil collapse or the trench begins to collapse within the RPAs of any retained trees which will lead to the loss of rooting environment, excavations are to be stopped immediately and the trench is to be shored up to prevent further soil collapse.

Where the removal of foundations occurs within the RPAs of retained trees, these voids are to be back filled with clean top soil. Once demolition is complete, where required, ground protection will be placed as shown on

the Tree Protection Plan. This ground protection will be retained for as protection of roots until construction.

4.3.4. Construction

Prior to the construction of the proposed development, a copy of the construction method statement will be submitted and approved by the project arboriculturalist and LPA tree officer to ensure that there is no conflict with this method statement.

All excavations and construction work within or immediately adjacent to the RPAs or canopies of retained trees is to be undertaken under the supervision of an arboriculturalist.

Construction of the proposals fall within the unmodified RPA of T001 and T003 and as such works should strictly adhere to the details in this AMS.

4.3.5. Foundation

Given the soil type on the site (London Clay Formation), combined with the presence of mature trees within influencing distance of the proposed structures, foundation design will be influenced by NHBC and BRE guidance.

New foundations for buildings, structures and hard surfacing situated within RPAs of retained trees are to be designed in conjunction with arboricultural advice to accommodate the likely loading of the structure. The foundations will have been designed to limit the amount of excavation required within the RPA to retain the roots that are important to the trees as identified during site investigations.

The use of strip foundations within the RPAs of retained trees can cause extensive root loss and as such are to be avoided.

Design of foundations for the extension within the RPA of T003 have been designed to minimise the adverse impact upon trees.

- 4.3.5.1. Slabs for larger structures such as the dwelling should be designed and constructed with a ventilated air space between the underside of the slab and the existing soil surface. A specialist irrigation system is to be installed underneath the slab e.g., rain water run-off from roof.

4.3.5.2. Slabs for small structures such as the outbuilding (less than 20% of the total unsurfaced area of the RPA) may be formed or constructed directly onto the existing soil surface. It may be possible to use a multi-dimensional confinement system such as CellWeb or similar as the foundation for these structures (specialist advice should be sought from the manufacturer).

4.3.5.3. Where piling is to be installed near to trees, the smallest practical pile diameter should be used as this reduces the possibility of striking major tree roots and reduces the size of the rig required to sink the piles. If a piling mat is required, this should conform to the specifications for ground boarding (see 4.4.3).

4.3.5.4. All and any excavations that may be required for foundations within the RPAs of retained trees will initially be undertaken manually under the supervision of the project arboriculturalist.

4.3.6. Hard Surfacing

The new hard surfacing to be situated within the RPAs of trees numbered T001 and T003 is to be designed in conjunction with arboricultural advice to accommodate the likely loading. The design requires

Appropriate options for the sub base of hard surfacing situated within the RPAs of retained trees include multi-dimensional confinement systems (CellWeb or similar). Alternatively, piles, pads or elevated beams can be used to bridge over the RPAs or, following expletory investigations to determine location, to provide support within the RPAs while allowing retention of root 25mm or greater in diameter or clumps of fine roots.

Expletory investigation is to be undertaken manually under arboricultural supervision using hand tools.

Prior to the installation of the hard surfacing within the RPAs, vegetation may be removed using hand tools or sprayed with an approved non-residual herbicide such as Glyphosate.

4.3.7. Concrete Foundations

Prior to concrete being poured to form the foundations within or immediately adjacent to the RPAs of retained trees, the excavation is to be lined and sealed to

prevent any leaching of the concrete into the soil and causing desiccation of retained roots by concrete run off.

4.3.8. Manual Excavation

Excavation within or adjacent to the RPA of T001 and T003 will be undertaken by hand under supervision of the project arboriculturalist to the required depth of the foundation, or to a minimum depth of 600mm deep of the excavation for the proposed foundation.

The soil is to be loosened with the aid of a fork or pick axe and then cleared with the aid of an air space, air vac or shovel.

Any roots found with a diameter less than 25mm or those that do not occur in clumps will be cleanly severed under supervision from the project arboriculturalist using secateurs. Any roots greater than 25mm or clumps of roots shall be excavated all round without damaging them. The arboriculturalist shall decide if it is necessary or feasible to retain the root, if not it shall be severed.

The edge of the excavation closest to the trees will be covered with damp hessian to prevent soil collapse or contamination by concrete.

4.3.9. Monitoring and Supervision

Where trees have been identified within this method statement and tree protection plan for retention, there will be an auditable system of arboricultural monitoring to be recorded and retained by the project arboriculturalist. This is to extend to arboricultural supervision whenever demolition or construction activity is to take place within or adjacent to any canopy or RPA.

The developments tree protection measures are to be monitored and all demolition and construction works to be undertaken within or adjacent to the RPAs of retained trees are to be supervised by project arboriculturalist, who will be retained to record and report observations to the council at appropriate intervals.

- 4.3.9.1.** Prior to the commencement of any works or machinery and materials arriving on site a pre-commencement site meeting involving the project arboriculturalist, client and contractors (as appropriate) and the relevant LPA officers will be held to ensure that all aspects of the arboricultural method statement and tree protection are understood and for all parties to swap contact detail.

- 4.3.9.2.** The initial monitoring will be to check that the tree protective measures are in the correct location and as specified within the approved method statement; if so to sign off their installation.

There after monitoring visits are to take place at 1 month intervals, to ensure that tree protection measures are in place and are functioning as designed or whenever necessary to undertake works to be carried out under arboricultural supervision. The frequency of the monitoring visits may be reduced by the LPA tree officer at the pre-commencement site meeting should suitable justification be agreed.

If during the course of the development it is necessary for areas to be re-designed so that they would require changes to the approved arboricultural method statement or tree protection plan and so affecting retained trees the project arboriculturalist and LPA tree officer will be invited to attend a site meeting with all relevant parties. Prior to any changes being implemented these must have been approved in writing by the LPA tree officer.

- 4.3.9.3.** The project arboriculturalist will be required to supervise all demolition and construction works that are to be undertaken within or adjacent to the RPAs of all retained trees and will be advised a minimum of 72 hours prior to the commencement of any works that require his attendance.

These may include:

Demolition:

1. Pre-commencement site meeting
2. Locations of protective measures
3. Arboricultural sign off of the demolition phase prior to the removal of protective measures.

Construction:

1. Pre-commencement site meeting
2. Re-location of protective measures
3. Any excavations within and immediately adjacent to RPAs including; foundations, hard surfacing or underground services with the RPA of T001 and T003.
4. Arboricultural sign off and removal of protective measures and sign off.

4.3.9.4. *Once all construction works have been completed and all materials and machinery has been removed from site, the project arboriculturalist shall be informed and will invite the LPA tree officer to meet on site to discuss the process and discuss any final remedial works that may be required. They will also need to sign off the development so that the protective measures may be removed.*

5. Signature

This report represents a true and factual account of the trees and potential impact of development along with proposed protection measures at:

43 Langdon Park Road
Highgate
Haringey
London
N6 5PY

Signed:



.....

Rory Hobbs
Arboricultural Consultant

19th December 2023

RH Tree Consultants Ltd
Field Barn House
Rymer Point
Barnham
IP24 2PR
www.rhtrees.co.uk

Appendix A:

Schedule of Trees

BS5837 Report

Paul Munro
43 Langdon Park Road

Retention Category	No. trees
A	1
B	4
C	8
Not Recorded	1
Total	14

Rem. Contrib.	No. trees
10+ Years	6
20+ Years	7
Not Recorded	1



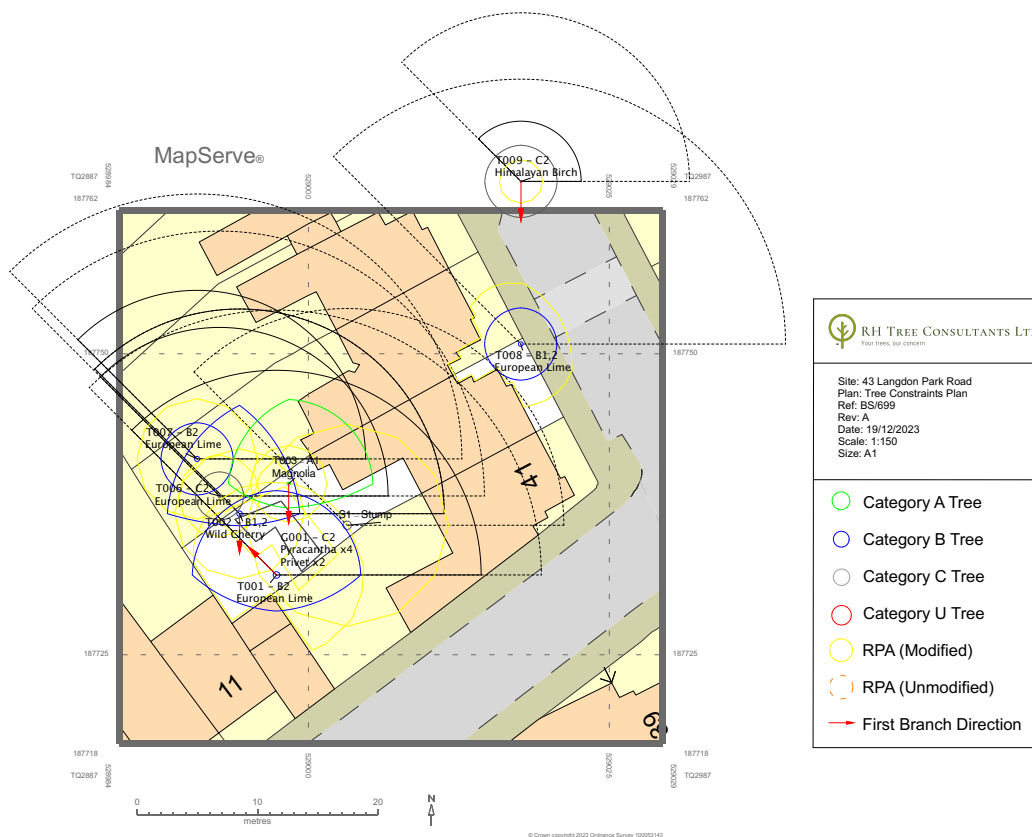
Ref.	Species	Full Structure	Measurements	Survey Notes	Retention Category	RPA	Comments	Measurements2	Recommendations	Photo
G001	Pyracantha x4 (Pyracantha sp.) Privet x2 (Ligustrum vulgare)	Group 4 trees	Height (m): 5 4 stems (mm): 50, 50, 50, 50 Spread (m): 2N, 2E, 2S, 2W Crown Clearance (m): 1 Lowest Branch (m): 1 Life Stage: Semi Mature Rem. Contrib.: 10+ Years	Self set group of low value.	C2	Area: 41 sq m.	It is proposed that this group is removed to improve the garden area.	Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Fair Structural Cond: Fair Bat Habitat: None	Pre construction: Remove group. During construction: No action required. Post construction: No action required.	
S1	Norway Spruce (Picea abies)	Stump	Stem Diam(mm): 700	Stump historically removed.	NA	Radius: 8.4m. Area: 222 sq m.	This stump and associated roots will require removal to facilitate the proposal.	Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Dead Structural Cond: Bat Habitat:	Pre construction: No action required. During construction: No action required. Post construction: No action required.	
T001	European Lime (Tilia x europaea)	Tree	Height (m): 17 Stem Diam(mm): 540 Spread (m): 7N, 7E, 3S, 7W Crown Clearance (m): 2 Lowest Branch (m): 1(NW) Life Stage: Mature Rem. Contrib.: 20+ Years	TPO on tree. Located on raised earth mound. Historic girdling wound likely from washing one at 1m. Historically pollarded at 8m with approximate 3 years regrowth. Encroaching on third party building.	B2	Radius: 6.5m. Area: 133 sq m.	Excavation works required adjacent to and within RPA for landscaping and addition of new steps. Do not disturb/remove soil at base unless necessary.	Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Pre construction: No action required. During construction: Protect trees with protective barriers - as shown on plans. Manual excavation for construction within RPA as shown on drawings Post construction: No action required.	
T002	Wild Cherry (Prunus avium)	Tree	Height (m): 17 Stem Diam(mm): 450 Spread (m): 9N, 5E, 1S, 6W Crown Clearance (m): 2 Lowest Branch (m): 3(S) Life Stage: Early Mature Rem. Contrib.: 20+ Years	Prolific ivy obstructing inspection. Crown bias to north west due to historic suppression.	B1,2	Radius: 5.4m. Area: 92 sq m.		Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Medium	Pre construction: Sever ivy at base. During construction: Protect trees with protective barriers - as shown on plans. Post construction: No action required.	
T003	Magnolia (Magnolia spp.)	Tree 2 stems	2 stems (mm): 220, 150 Spread (m): 7N, 7E, 2S, 5W Crown Clearance (m): 1 Lowest Branch (m): 1(S) Life Stage: Early Mature Rem. Contrib.: 20+ Years	Crown bias to north east due to suppression and historic reduction away from adjacent garden.	A1	Radius: 3.2m. Area: 32 sq m.	Demolition of existing structure and construction works required within RPA as shown on drawings	Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Good Structural Cond: Fair Bat Habitat: Low	Pre construction: No action required. During construction: Protect trees with protective barriers - as shown on plans. Manual excavation for construction within RPA as shown on drawings Post construction: No action required.	

Ref.	Species	Full Structure	Measurements	Survey Notes	Retention Category	RPA	Comments	Measurements2	Recommendations	Photo
T006	European Lime (Tilia x europaea)	Tree	Height (m): 14 Stem Diam(mm): 280 Spread (m): 2N, 2E, 2S, 2W Crown Clearance (m): 1 Lowest Branch (m): 1 Life Stage: Early Mature Rem. Contrib.: 20+ Years	Third party tree protected by fence. Unable to access so dimensions estimated. Previously pollarded.	C2	Radius: 3.4m. Area: 36 sq m.	This tree does not form a site constraint.	Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Pre construction: No action required. During construction: No action required. Post construction: No action required.	
T007	European Lime (Tilia x europaea)	Tree	Height (m): 14 Stem Diam(mm): 420 Spread (m): 3N, 3E, 3S, 3W Crown Clearance (m): 1 Lowest Branch (m): 1 Life Stage: Early Mature Rem. Contrib.: 20+ Years	Third party tree protected by fence. Unable to access so dimensions estimated. Previously pollarded.	B2	Radius: 5.0m. Area: 79 sq m.	This tree does not form a site constraint.	Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Pre construction: No action required. During construction: No action required. Post construction: No action required.	
T008	European Lime (Tilia x europaea)	Tree	Stem Diam(mm): 380 Spread (m): 3N, 3E, 3S, 3W Crown Clearance (m): 5 Lowest Branch (m): 4 Life Stage: Early Mature Rem. Contrib.: 20+ Years	Maintained as pollard. Significant lifting of adjacent hard surfaces.	B1,2	Radius: 4.6m. Area: 65 sq m.	Unable to protect rootplate. Existing hard surfaces adequate protection for expected site traffic.	Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Fair Structural Cond: Good Bat Habitat: Low	Pre construction: No action required. During construction: Tree protection box to protect ... Post construction: No action required.	
T009	Himalayan Birch (Betula utilis)	Tree	Height (m): 5 Stem Diam(mm): 150 Spread (m): 3N, 3E, 3S, 3W Crown Clearance (m): 1 Lowest Branch (m): 2(S) Life Stage: Semi Mature Rem. Contrib.: 20+ Years	LPA tree Encroaching on highway and footpath	C2	Radius: 1.8m. Area: 10 sq m.		Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Good Structural Cond: Good Bat Habitat: None	Pre construction: No action required. During construction: No action required. Post construction: No action required.	

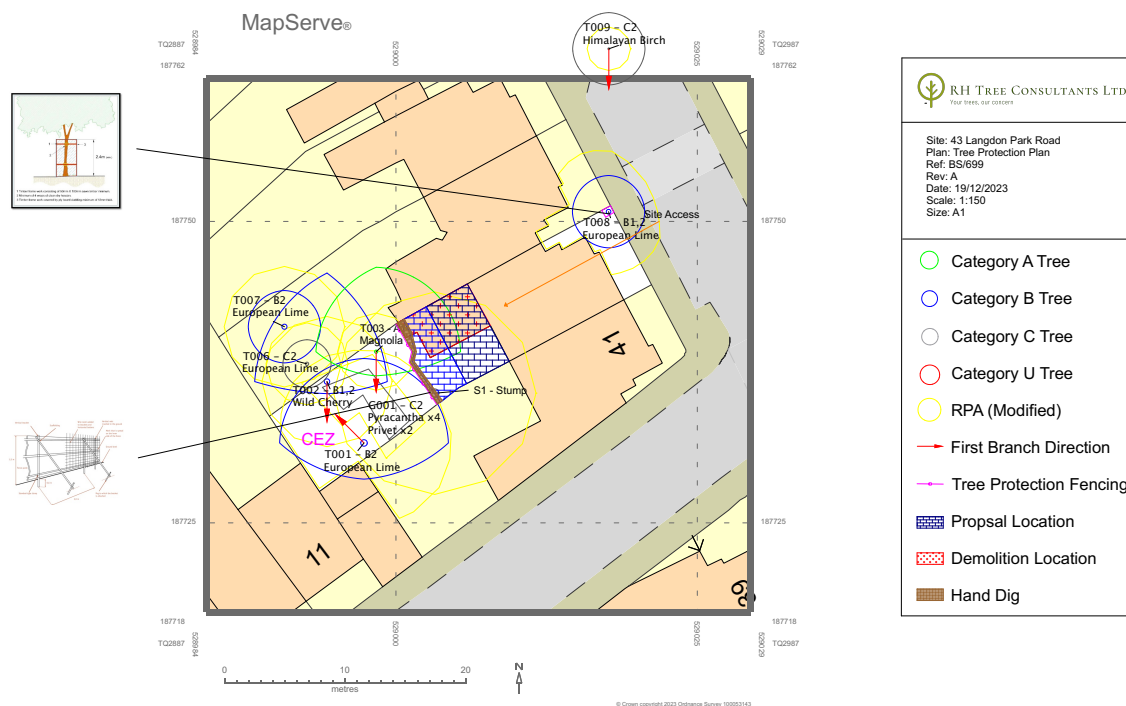
Appendix B

Tree Constraints Plan and Tree Protection Plan

All printouts designed for A1.

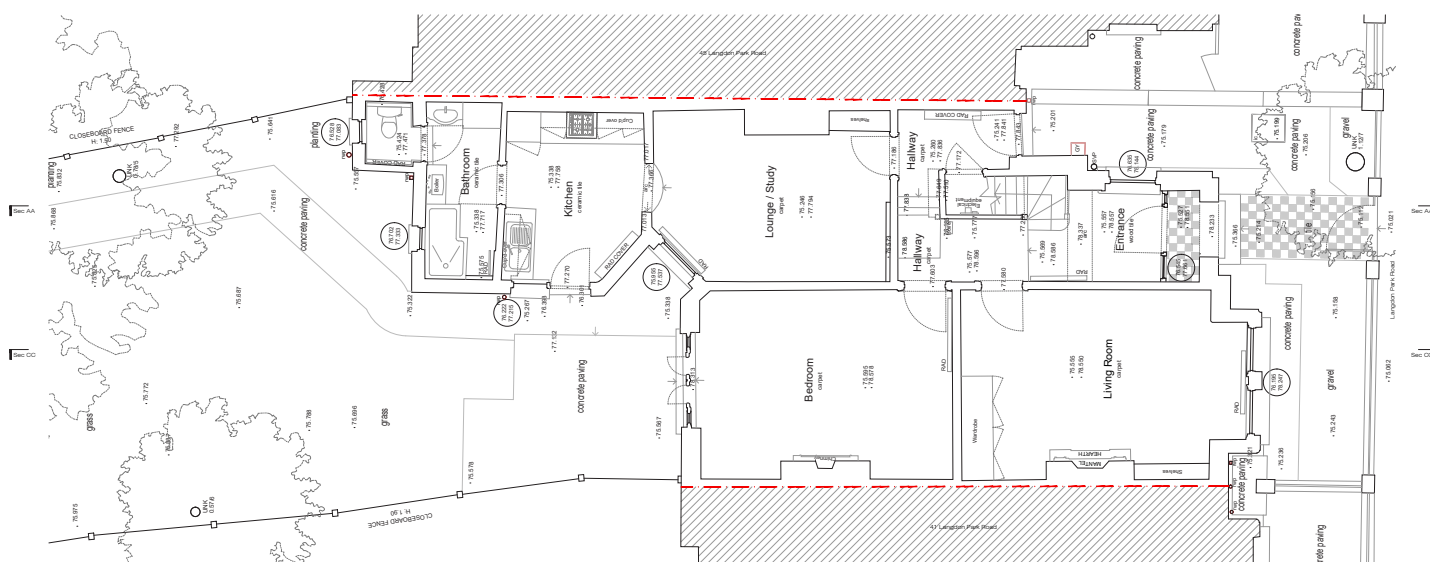


RH TREE CONSULTANTS LTD Your trees, our concern	
Site: 43 Langdon Park Road Plan: Tree Constraints Plan Ref: BS/699 Rev: A Date: 19/12/2023 Scale: 1:150 Size: A1	
Category A Tree Category B Tree Category C Tree Category U Tree RPA (Modified) RPA (Unmodified) First Branch Direction	



APPENDIX C

Relevant Documents and Information Provided



Existing - Ground Floor Plan

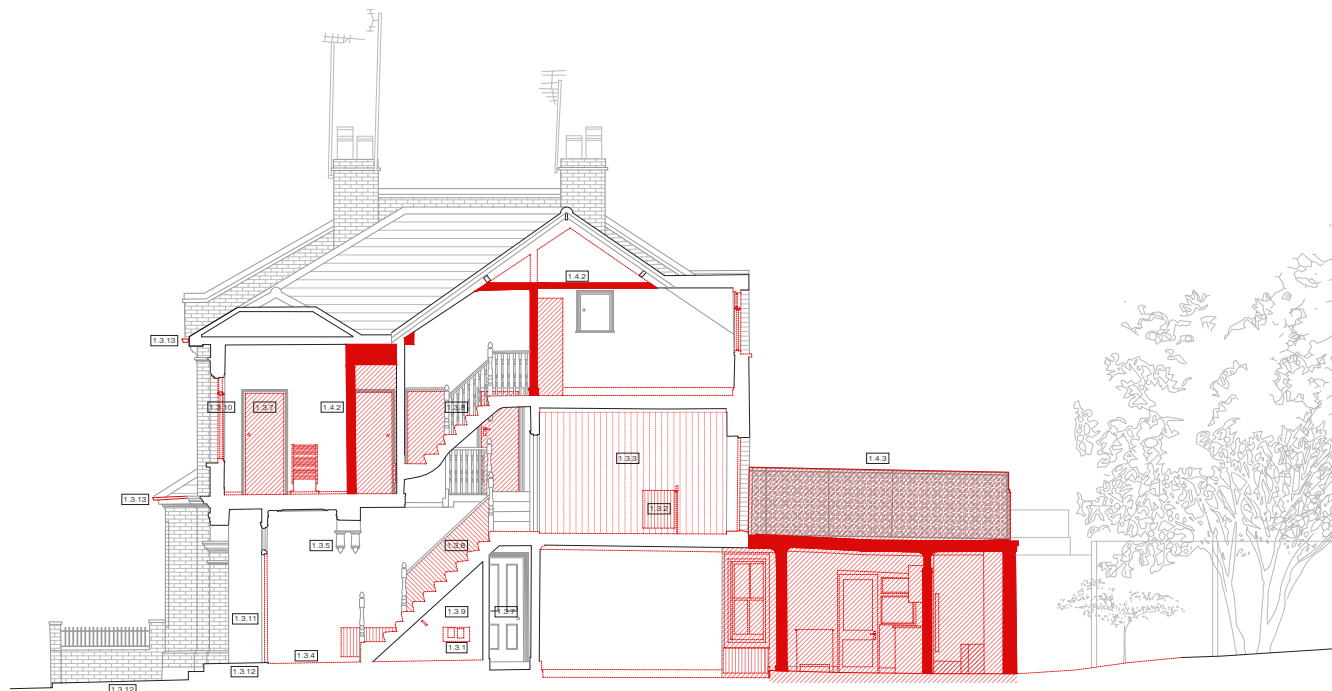
[illegible]

This architectural section drawing illustrates a two-story residential building. The structure features a gabled roof with two chimneys. The ground floor includes a front entrance, a large living area, a kitchen, and a dining space. A staircase leads to the upper floor, which contains a bedroom and a bathroom. The house is surrounded by a garden area with trees and a fence. The drawing is a black and white line art representation.

Condition	Control (%)	MCI (%)	AD (%)
A	~95	~75	~55
B	~90	~70	~50
C	~95	~75	~55
D	~90	~70	~50

[illegible]

Do not scale off this drawing. All measurements to be checked on site. Accuracy of dimensions scaled from drawings is not guaranteed. All dimensions shall be taken on site. Contractor shall notify of any discrepancies in dimensions affecting procedures on site and alternative solutions if required shall be agreed prior to proceeding with affected works. This information is provided for design intent. Drawings to be read in conjunction with specification and accompanying schedules. Drawings to be read in conjunction with with accompanying documentation by structural engineer.



Refer to Specification Notes for detailed descriptions.
Read in conjunction with Structural Engineer's drawings.

- 1.0 Demolition, Strip Out and Excavation
- 1.1 Sequencing
- 1.2 General

- 1.3 Strip Out
- 1.3.1 Service Connections and Meters
- 1.3.2 Fittings Appliances Joinery
- 1.3.3 Wall / Ceiling Finishes
- 1.3.4 Floor Finishes
- 1.3.5 Mouldings
- 1.3.6 Fireplace

- 1.3.7 Internal Doors
- 1.3.8 Staircase
- 1.3.9 Panelling
- 1.3.10 Fenestration
- 1.3.11 Front Entrances
- 1.3.12 Entrance Tiling
- 1.3.13 External Elevations

- 1.4 Demolition
- 1.4.1 Site and External Hardstanding
- 1.4.2 Chimney Breasts and Internal Partitions
- 1.4.3 Rear Extension
- 1.5

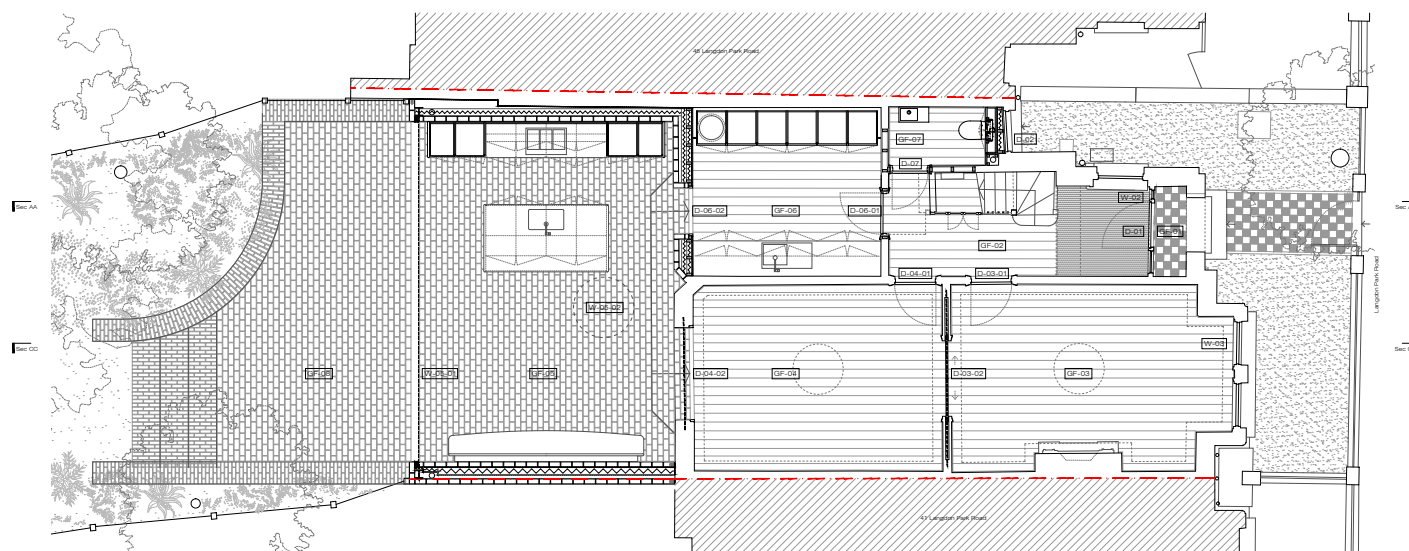
Key

	Strip out
	Remove existing fenestration.
	Remove external concrete paving and hardstanding, garden path and shed.

 Demolition.
Ensure structural elements fully supported
This plan is an indicative diagram only.

[illegible]

DRAFT - WORK IN PROGRESS



Drawing Notes

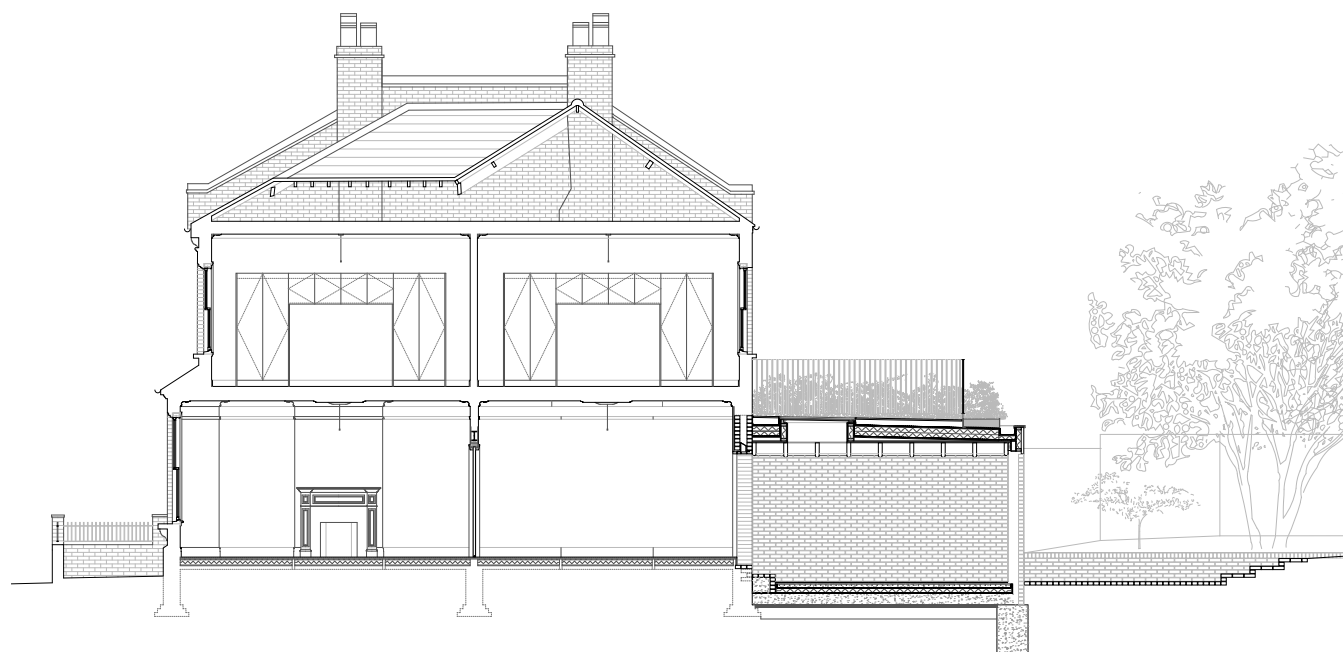
Ground Floor Plan

[illegible]

Do not scale off this drawing. All measurements to be checked on site. Accuracy of dimensions scaled from drawings is not guaranteed. All dimensions should be taken on site. Contractor shall notify of any discrepancies in dimensions affecting procedures on site and alternative solutions if required shall be agreed prior to proceeding with affected works. This information is provided for design intent. Drawings to be read in conjunction with specification and accompanying schedules. Drawings to be read in conjunction with with accompanying documentation to structural engineer.

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DRAFT - WORK IN PROGRESS



Room Code:
GF-01 Covered Entrance
GF-02 Hall
GF-03 Living Room
GF-04 Bath
GF-05 Kitchen / Dining
GF-06 Laundry
GF-07 WC
GF-08 Rear Terrace

Drawing Notes

Section CC

Russell Jones Limited 5 Warrbury Mews London SE20 Tel: +44 (0)20 3770 3020 mailto:info@rjones.net	Project	43 Langdon Park Road													Section	
			Revision	Comment	Date	Revision	Comment	Date	Revision	Comment	Date	Revision	Comment	Date	Drawing No	1-50 @ A2
	Project Code	43 LPR													43LPR-GA201	
			Client												Drawn by: RJA	Checked by: RJA

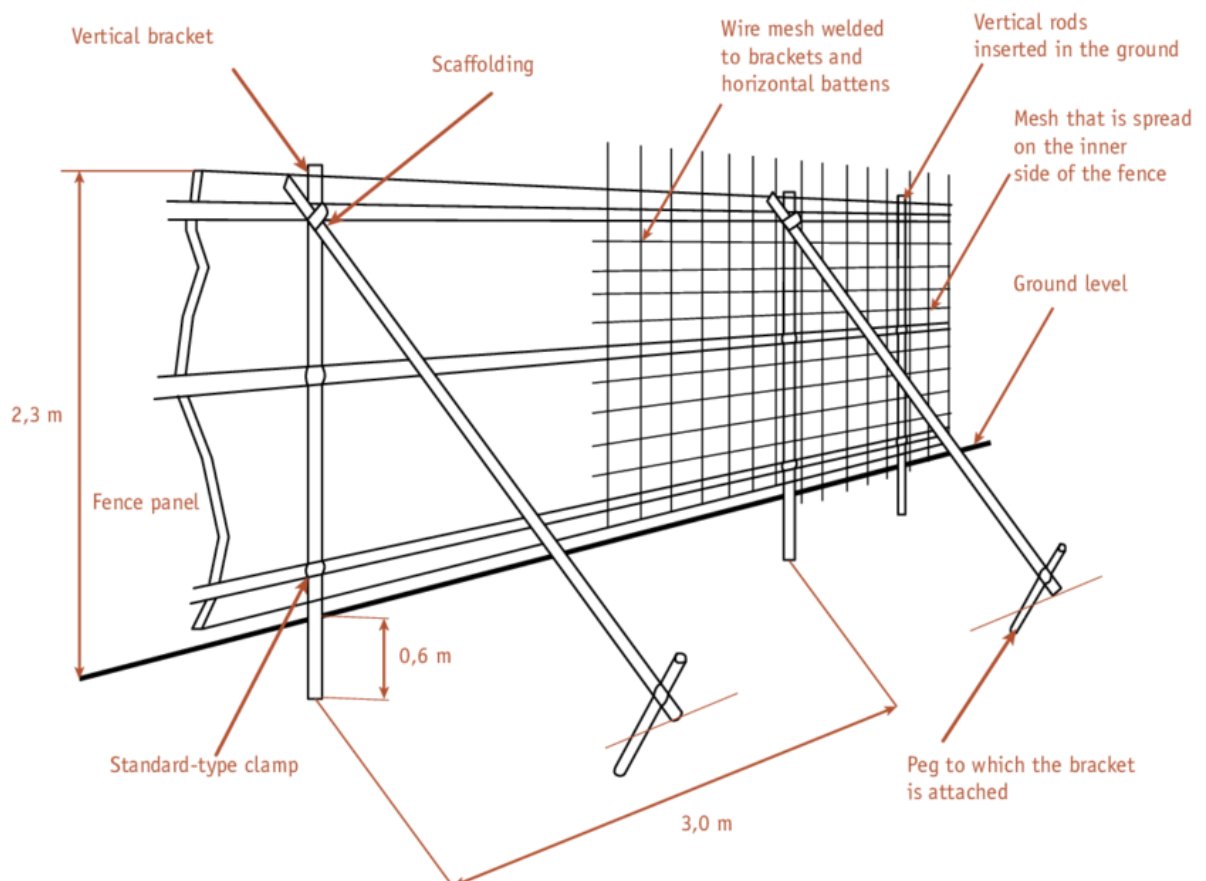




APPENDIX D

Tree Protection Specifications

Given the existing soft surface onto which the fencing will be placed in addition to the small, constrained nature of the site, it is considered that Heras fencing will be most appropriate form of tree protection. The Heras fencing will comprise of continuously joined panels, and will be secured utilising an 'above ground stabilizing system', with the fencing base stabilizer strut secured with ground pins with a base plate, as illustrated below:



Location: Fencing shall be positioned as far as possible on the perimeter of the Root Protection Area (RPA) to define a Construction Exclusion Zone and will be further identified by 'Tree Protection' warning signs (see image below).



Appendix E

Terminology Guidance

General Observations

- i) **Numbering System:** Each item of vegetation has its own unique number prefixed by a letter such that **T1**=Tree 1, **G2**=Group 2, **H3**=Hedge 3 and **W4**=Woodland 4, **S5**=Shrub
- ii) **Age Categories:** Young Usually less than 10 years old.
 - **Semi-Mature** Significant future growth to be expected, both in height and crown spread (typically below 30% of life expectancy).
 - **Early-Mature** Full height almost attained. Significant growth may be expected in terms of crown spread (typically 30-60% of life expectancy).
 - **Mature** Full height attained. Crown spread will increase but growth increments will be slight (typically 60% or more of life expectancy).
 - **Veteran** A level of maturity whereby significant management may be required in order to keep the tree in a safe condition.
 - **Over Mature** As for veteran except management is not considered worthwhile.
- iii) **Species:** Common names and Latin names are given.
- iv) **Height:** Measured from ground level to the top of the crown.
- v) **Stem Diameter:** Taken at 1.5m above ground level where possible. On multi-stemmed trees this measurement may be taken at ground level, though usually an indication of the number of stems and average diameter is given, e.g. 3 x 30cm.
- vi) **Crown Height:** Measured from ground level to the height at which the main crown begins. Where the crown is unbalanced it is measured on the side deemed to be most relevant. This is usually the side facing the area of anticipated development.
- vii) **Tree Diagram:** This scaled drawing is computer generated based on measurements taken for stem diameter, crown height and spread, and overall height. It is designed to help the reader rapidly assess the data. It is not an accurate representation of the form of the tree.
- viii) **Crown Spread:** Measured N, E, S & W, taken from the center of the stem and usually rounded up to the nearest meter.
- ix) **Observations:** If a tree's position is considered to be relevant it will be commented upon (e.g. overhanging a children's play area). Tree form and pruning history are also recorded along with

an account of any significant defects. Defects and descriptive terms are dealt with in more detail at the end of this section.

x) **Recommendations:** Usually based on any defects observed and intended to ensure that the tree is in an acceptable condition.

xi) **Priority Scale:** Depending upon the threat posed by the tree, and the likelihood of failure, recommendations should be carried out according to the following priority scale: Urgent To be carried out as soon as possible.

- **Very High** To be carried out within 1 month.
- **High** To be carried out within 3 months.
- **Moderate** To be carried out within 1 year.
- **Low** To be carried out within 3 years.

xii) **Inspection Frequency:** An interval of 6 months, 1 year, 1.5 years or 3 years is allocated before the next inspection is due. Wherever practical, consideration should be given to seasonal changes so that deciduous trees are not always surveyed in winter when they have no leaves, or in summer when leaves may obscure branches within the upper crown.

xiii) **Vigor:** An indication of growth rate and the tree's ability to cope with stresses:

- **High** Having above average vigor.
- **Moderate** Having average vigor.
- **Low** Having below average vigor.
- **Very Low** Tree is struggling to survive and may be dying.

xiv) **Physiological Condition:** Good Healthy and with no symptoms of significant disease. Fair Disease present or vigor is impaired. Poor Significant disease present or vigor is extremely low. Very Poor Tree is dying.

- **Structural Condition:** Good Having no significant structural defects. Fair Some defects observed though no high priority works are required. Poor Significant defects found. Tree requires monitoring or remedial works. Very Poor Major defects which will usually require significant remedial works or tree removal.
- **Amenity Value:** Very High Exceptional specimen, observable by a large number of people. High Attractive specimen, observable by a significant number of people. Moderate One of the above factors is not applicable. Low Unattractive specimen or largely hidden from view.

xv) **Life Expectancy:** The estimated number of years before the tree may require removal. Classified as

- >10
- 10-20
- 20-40
- 40+

Glossary of Terms

Adaptive Growth - In tree biomechanics, the process whereby wood formation is influenced both in quantity and quality by the action of gravitational forces and mechanical stresses on the cambial zone.

Aerobic Conditions - In which oxygen is freely available, or to biomechanical processes that depend on the presence of oxygen.

Anaerobic - A condition marked by the absence of oxygen; Generally, such areas are unsuitable for normal life and growth of plant tissues. These sites tend to be populated by bacteria capable of surviving low oxygen conditions often associated with Slime Flux.

Arboriculture - The culture and management of trees as groups and individuals primarily for amenity and other non-forestry purposes.

Arborist - A person possessing the technical competence through experience and related training to provide management of trees or other woody plants in a landscape setting. Generally involved with the development or management of trees for visual amenity or land management rather than the growth of trees for product or profit.

Barrier Zone - A layer within an annual increment of wood which contains abnormal xylem cells, laid down by the cambium in response to wounding or another trauma.

Body Language in Trees - The outward display of growth responses and or deformation in response to mechanical stress.

Bole or Trunk - The main stem of a tree below its first major branch.

Bracket - A type of fruiting body produced by various fungal species, plate like to hoof like in shape and often a one-sided attachment to the wood or bark.

Branch Bark Ridge - A ridged area located at the union of a branch to a trunk or stem.

Branch Collar - Trunk tissue that forms around the base of a branch between the main stem and the branch, or between a main branch and a lateral branch. As a branch decreases in vigor or begins to die, the collar usually becomes more pronounced and completely encircles the branch.

Brown Rot - Form of decay where cellulose is degraded, while lignin is only modified.

Buttress Root - Roots that emerge from the base of the tree stem, normally large and well developed that rapidly reduce in diameter to create the Root Plate this offers structural support for the tree. Buttress roots divide rapidly forming the connection between the stem and the transport roots.

Cabling Bracing - Installing cables within the crown of a tree to prevent collapse.

Callus - Undifferentiated cells often formed at the edges of recent injuries. This tissue quickly becomes differentiated, forming cells of the type characteristic of that position on the tree (e.g. forming wood, bark, roots, etc.) see wound response tissue.

Cambium - A thin layer of actively growing and dividing cells, located between the xylem (sapwood) and bark of a plant; the part responsible for radial growth of a tree stem or branch.

Canopy - The topmost layer of twigs and foliage in a woodland, tree or group of trees.

Canker - A localized area of dead bark and cambium on a stem or branch, caused by fungal or bacterial organisms, characterized by wound wood development on the periphery. This may be annual or perennial.

Cavity - An open and exposed area of wood, where the bark is missing and internal wood has been decayed and dissolved.

Chlorotic Also Chlorosis - A condition of the plant marked by yellowing of normally green foliage, often indicating nutrient deficiency or plant dysfunction.

Clinometer - Device that measures vertical angles, and provides direct height measurements of objects by triangulation.

Co-dominant Stems/Trunk - Are forked branches or trunks of nearly the same size in diameter and lacking a normal branch union.

Compacted Soils - Soils in which the air-space (oxygen space) has been reduced or eliminated, reducing water infiltration and percolation, reducing root presence and inhibiting new root development.

Compartmentalization - The physiological process that creates the chemical and mechanical boundaries that act to limit the spread of disease and decay organisms.

Compression Failure - Localized buckling of fibres and other longitudinal elements produced by compression of wood along the grain; compression failures sometimes develop in standing trees.

Compression Strength - The ability of a material or structure to resist failure when subjected to compressive loading; measurable in trees using special drilling devices

Compression Wood - Abnormal wood formed on the lower side of branches and curved stems, with physical properties different from normal wood.

Conservation Area - In Great Britain, designated areas of architectural or historical interest, in which there are special procedures for planning applications. Additionally, tree works cannot generally be undertaken without prior notification (Currently 6 weeks) to the relevant local planning authority. See also Tree Preservation Orders.

Core Sample - A sample of wood extracted from a trunk or branch, using an increment borer tool. The resulting core can be analysed for characteristics of growth, wood strength, structure, decay, and for species identification.

Crotch - The union of two or more branches; the auxiliary zone between branches.

Crown - The upper canopy of a tree, including upper trunk, scaffold branches, secondary branches, stems and leaves.

Crown Lifting / Raising, Crown Lift - The removal of the lowest branches, usually to a given height. It allows more residual light and greater clearance underneath for vehicles etc.

Crown Reduction - The reduction of a tree's height or spread while preserving its natural shape.

Crown Thinning - The removal of some of the density of a tree's crown, usually 5-25% allowing more light through its canopy and reducing wind resistance.

Deadwood (noun) - Deadwood is often present within the crown or on the stems of trees. It may be an indication of ill health; however, it may also indicate natural growth processes. If a target is present beneath the tree, deadwood may fall and cause injury or damage and should be removed, otherwise deadwood can remain intact for conservation purposes (insects, fungi, birds etc.).

Deadwood (verb) - The removal of dead branches from a tree's canopy, usually of a specified size (in diameter).

Decay - Progressive deterioration of organic tissues, usually caused by fungal or bacterial organisms, resulting in loss of cell structure, strength, and function. In wood, the loss of structural strength.

Decay Detection - The assessment of decay within a tree has been traditionally difficult, but recent advances have made it possible to achieve accurate representations of the internal section of a tree in both 2D and 3D, removing doubt over the condition of the tree and allowing accurate management decisions.

Defect - In relation to tree hazards, any feature of a tree which detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment.

Defoliation - The losing of plants foliage.

Dieback - Progressive death of buds, twigs and branch tissues, on individual limbs resulting in Deadwood, or throughout the canopy, extreme cases can result in Stag Heading.

Dripline - A projected line on the ground that corresponds to the spread of branches in the canopy; the farthest spread of branches.

Epicormic Shoots - Fast growing, weakly attached shoots/branches that often grow as a response to stress factors upon a tree or branch removal.

Failure - In connection with tree hazards, a partial or total fracture within the wood tissue or loss of cohesion between roots and soil. (In total failure affected parts will snap or tear away completely, Partial failure there is a crack or deformation, which results in an altered distribution of mechanical stress.

Feeder Roots - Fine Fibrous water and nutrient absorbing roots located in the outer root system.

Flush-Cut - In trees and shrubs, a pruning cut close to the parent stem, which removes the branch bark ridge.

Foliage - The live leaves or needles of the tree; the plant part primarily responsible for photosynthesis.

Formative Pruning - The trimming of a tree to remove weaknesses and irregularities which may lead to problems. The formative pruning operation is aimed at reducing the potential for future weaknesses or problems within the tree's crown.

Gall - An abnormal, disorganized growth of plant tissues, caused by parasitic or infectious organisms such as insects, fungi, bacteria, or viruses.

Girdling - In woody plants, any form of damage that destroys the bark and / or the Cambium all the way around the stem, branch or root, normally resulting in death of the damaged section.

Girdling Root - In woody plants, a root that grows across the buttress, or across other roots, eventually causing constriction of the radial growth.

Growth Increment - The incremental growth added as new annual ring develops each season over existing wood. This is seen as (growth) rings in cross-sections of wood.

Hazard Beam - An upwardly curved branch in which strong internal stresses may occur without the compensatory formation of extra wood (longitudinal splitting may occur in some cases).

Heartwood - Inner nonfunctioning tissues that provide structural support to trunk.

Heave - In relation to shrinkable clay soils, expansion due to rewetting of a volume of soil previously subjected to the removal of water by plant / trees following felling or root severance. Also in relation to root growth, the lifting of pavements and other structures by radial expansion. Also in relation to tree stability, the lifting of one side of a wind rocked root plate.

Herbicide - A chemical compound that causes the death of a plant.

Included Bark - Bark that becomes embedded in a crotch between branch and trunk or between co-dominant stems, usually found in narrow or tight crotches, and causes a weak structure.

Increment Borer - A tool that cuts and extracts a narrow cylinder of wood from a tree for analysis of the wood tissue and growth increments.

Leader - The primary terminal shoot or trunk of a tree.

Limb - A large lateral branch growing from the main trunk or from another larger branch.

Lion Tailing - Often the result of poor pruning practices; the main leader or branches are largely devoid of side branches, growth is restricted to the end of branches and is likely to suffer damage through end loading.

Monitoring - Due to the relative life span of trees in relation to our own, long-term monitoring provides a valuable insight to the health of trees, identifying decline and or stabilisation and or improvement.

Mulch - A material laid over the root system of a tree to help conserve moisture within the soil. Additionally, it may help control the development of weeds close to the tree.

Mycelium - A mass of growing filaments (hyphae) formed by fungi.

Mycorrhizae - The symbiotic relationship between roots and certain beneficial fungi. Mycorrhizae are the combined root / fungal growth.

Occluding Tissue - The general term of wood, cambium and bark that develop around the site of a wound on a woody plant

Pathogen - A microorganism that causes diseases within another organism.

Phloem - The principle conductive tissue that the products of Photosynthesis are transported around the plant

Photosynthesis - The process where light energy is used to create energy (Carbohydrate) for use within the plant.

Pollard - A term for a pollarded tree.

Pollard Head - The swollen section of branch / stem that forms behind the pollarding cut.

Pollarding - The complete or partial removal of the crown of a young tree so as to encourage the development of numerous branches either for amenity or historically as fodder, repeated management is required cyclically to maintain the feature.

Prune or Pruning - Selective removal of woody plant parts of any size, using saws, Loppers, Secateurs, or other pruning tools.

Reaction Wood - Wood with distinctive anatomical characteristics, formed in parts of leaning or crooked stems and in branches to provide additional strength / support. In hardwoods, tension wood usually forms. In conifers, compression wood is usually found.

Reaction Zone - A zone normally darker than surrounding wood that denoted the boundary often a defensive one between functional sapwood and dysfunctional or decaying wood.

Re-grading - The raising or lowering of a soil profile from its original grade.

Remedial Pruning - The removal of old stubs, deadwood, epicormic growth, rubbing or crossing branches and other unwanted items from the tree's crown.

Resistograph - Invasive decay detection technique whereby the resistance offered by the timber to a spinning probe is measured and plotted.

Rib - In tree body language, a long narrow, axial protuberance which often overlies a crack.

Ring Barking - Artificial Girdling of the stem, to result in the death of a tree. May be used in habitat creation where the retention of dead standing trees is required.

Rod Bracing / Bolting - Traditionally, this has relied upon the installation of steel rods or bolts through the stems or limbs, to reduce twisting or splitting of the wood. The installation of such features does require legal interpretation.

Root Barriers - Both Buildings and services can benefit from the installation of root barriers to protect a soil volume from the ingress of roots.

Root Collar - The basal area of the tree; transition zone from trunk to root. Also, sometimes called trunk flare.

Root Plate - The primary support area for the tree; an area of the root system close to the base that structurally anchors the tree to the soil.

Root Rot - Either a general term for decay within the wood of the lower stem / buttress roots, or a disease in which the fine roots are killed.

Root System - The portion of the tree containing the root organs, including buttress roots, transport roots, and fine absorbing roots; all underground parts of the tree.

Root Zone - The area and volume of soil around the tree in which roots are expected. May extend to three or more times the branch spread of the tree, or several times the height of the tree.

Sail Area - That area of the tree subjected to wind load.

Sapwood - Xylem wood tissue, usually light in colour, representing the outer growth rings of the wood. Usually living, reactive wood tissue, in a healthy tree. See heartwood.

Scaffold Limbs / Scaffold Branches - The branches that form the main network framework of the crown of a tree.

Senescent - A decline in growth and vigour due to age or stress factors.

Shrub - A woody plant that branches at or close to the ground level and so does not have a single stem.

Slime Flux - Relating to a toxic condition from the spreading of bacteria or their products from a source of infection; characterized by malodorous gases, or salt deposits upon the bark. If these products enter the sap stream, localised vessel necrosis can result, usually associated with anaerobic conditions.

Soft Rot - A kind of wood decay, where a fungi degrades cellulose within the cell wall, without causing overall degradation.

Soil Compaction - The compression of soil, causing a reduction of pore space and an increase in the density of the soil. Air is squeezed out and nutrients become locked. Tree roots cannot grow in compacted soil.

Sonic Decay Detection - Noninvasive method whereby sound waves are passed through the tree and the speed is measured. Slow speeds indicate decay and a tomography picture representing the inner stem is produced.

Stag Heading - In a tree, a state of dieback where dead branches protrude beyond the current living crown.

Stress - In plant physiology, conditions where one or more physiological functions are not working within normal parameters.

Stump Grinding - The removal of a tree stump using a specialist grinding machine.

Subsidence - In relation to vegetation, the removal of water by plant growth resulting in localised shrinkage in the soil volume.

Sucker - Same as sprout.

Suppressed - Trees which are dominated by surrounding vegetation and whose crown development is restricted from above.

Systemic - Affecting the whole plant or organism. A systemic compound is carried throughout the entire plant to all parts through the vascular system.

Target - Any person or object within reach of a falling tree or part of a tree that may be injured or damaged.

Target Pruning - The pruning of a branch where the wound affects only branch material, often result in a target shaped wound.

Tension Wood - Reaction wood typically formed on the upper side of limbs or curved stems; characterized by lack of cell wall lignification's (higher ratios of cellulose to lignin).

Tight Union / Tight Crotch Also, Narrow Crotch - A crotch with a narrow angle between branches, often having included bark.

Tomography (PiCUS) - The comparison of sound or stress waves through the tree allows the creation of a 2D or 3D representation of the internal structure of a stem or branch section and highlights areas of damage. Virtually non-injurious.

Topography - The configuration of surface features, including the vertical and horizontal relationships of the ground and other features.

Topping - Cutting large limbs back severely, without regard to form or habit of the tree. Cuts are usually made between lateral branch nodes. This practice is extremely injurious to trees, and promotes decay and structural weakness within the crown.

Tree - A woody plant that typically has a single stem, at maturity has a height of at least 4 metres and a stem diameter at breast height of at least 75mm.

Tree Preservation Order - In Great Britain, an order made by the local planning authority, where consent must be gained before undertaking all but exempt works to a tree.

Trunk Flare - The basal area of the trunk that flares or widens, and merges with the main roots. See root collar. Veteran trees are often found in large parks or estates and commonly affected by extensive decay or have been subject to extensive works. These trees are retained for historical importance and often pose greater risk than normal, which is generally justified. They need careful management and often propping or bracing to support them, some require fencing to limit access.

Vigor - Active, healthy growth of plants: ability to respond to stress factors.

Visual Tree Assessment (VTA) - An assessment of the mechanical condition of trees based upon their 'body language'. Trees are dynamic and respond to faults / decay / environmental factors in various ways, these responses can be indicative of structural integrity.

Wetwood - An infection caused by bacteria living inside the plant tissues. The bacteria ferment the plant fluids, resulting in death of nearby cells, and often causing exudations of fluid from the bark, often referred to as a Slime Flux.

White Rot - A kind of wood decay where a fungi attacks the lignin within the wood matrix.

Wind Loading - Forces placed upon tree canopy, branches, trunk and roots of a tree under windy conditions.

Wind Throw - The failure of a tree due to wind loading.

Witches Broom - A deformed or unusual growth of twigs from adventitious buds, caused by insects, disease, or dieback of twigs and buds.

Wood Secondary Xylem - The main structural support and water conducting tissue of trees and shrubs.

Wound Response Tissue Also Occluding Tissue - Wound Wood or Callus. Differentiated wood tissue that grows around the margins of a wound or injury.

Wound Wood - Wood with atypical features, formed in the vicinity of a wound and a term to describe the occluding tissues around a wound

Xylem - Plant tissues with special function of translocation of water and dissolved nutrients.

Appendix F

Qualifications and Experience

Date	Board	Qualification
09.11.07	City & Guilds	CS30.1
09.11.07	City & Guilds	CS30.2
09.11.07	City & Guilds	CS31
08.06.08	City & Guilds	CS39
24.09.09	City & Guilds	CS40
24.09.09	City & Guilds	CS41
20.03.15	IPAF	MEWP 1b (Renewal)
22.10.16	ABC	Emergency First Aid at Work + F
10.06.17	LANTRA	BS:8586 2015 Surveying Bats in Trees and Woodland (Renewal)
21.02.18	SWQR	S1 Monitoring Signing, Lighting and Guarding
10.04.18	CSCS	Skilled Worker
08.08.18	NCC	Ash Dieback Seminar
12.02.19	LANTRA	Professional Tree Inspection
04.06.19	AA	BS5837:Tree Surveying and Categorisation
01.10.19	Sorbus International	PiCUS Sonic Tomography Refresher Course
23.10.19	AA	East Anglian Autumn Seminar
24.11.20	AA	Getting to Grips with Subsidence
14.12.20	AA	Subsidence Investigation

I have worked in Arboriculture for over 17 years, with many years' experience as a practitioner and moving on to surveying and consultancy. I became operations manager for a large AA approved contractor, focusing on the commercial sector before becoming the Arboricultural lead for Keir Highways working on the Highways England Areas 6 and 8 contract. In this role, I was responsible for the management of over 7 million roadside trees. I launched RH Tree Consultants Ltd in 2019.