

BS 5837:2012 Tree Survey, Arboricultural Impact Assessment, Arboricultural Method Statement and Tree Protection Plan



5 Southwood Avenue
London
N6 5RY

Date: 27/04/2026

Contents Page

1. Instruction	p1
2. Executive Summary	p1
3. The site	p1-2
4. Trees Survey Methodology	p2-4
5. Tree Survey Data & Appraisal	p5-6
6. Arboricultural Impact Assessment	p7-10
7. Arboricultural Method Statement	p11-13
8. Conclusion	p13
9. Qualifications and Experience	p13

Tables

1. Drawings and documents supplied.....	p1
2. Tree species and their botanical names.....	p5

Appendices

- A. Tree Survey Schedule
- B. Tree Survey Plan
- C. Arboricultural Impact Plan
- D. Tree Protection Plan
- E. Site Supervision Example

The content and format of this report are for the exclusive use of the client or their agents It must not be sold, lent, hired out or divulged to any third party not directly involved in the subject matter without the written consent of Usherwood Arboriculture

1. Instruction

Usherwood Arboriculture have been instructed to provide a tree survey, arboricultural impact assessment, arboricultural method statement and tree protection plan regarding Rear extension and fenestration alterations at 5 Southwood Avenue, London, N6 5RY. The document has been compiled in accordance with BS5837:2012, Trees in relation to design, demolition and construction-Recommendations.

Drawing/Document Ref.	Title	Drawn/Written by
2613.3/A102	Existing Floor and Roof Plans	Mulhern Iremonger Design Studios
2613.3/A104	Proposed Floor and Roof Plans	Mulhern Iremonger Design Studios

Table 1. Key drawings and documents supplied for consideration within this report

2.Executive Summary

This document considers the impact of proposed development upon a single off-site tree identified as T1 Evergreen magnolia. The tree is located within the rear garden of a neighbouring property to the immediate west.

Having surveyed the application site in detail, it is our conclusion that the existing boundary retaining wall will have curtailed any significant root growth into the site.

The proposed extension is lightweight in nature and its construction is not expected to have an impact on the subject tree.

A precautionary approach will be taken to construction as described within the arboricultural impact and method statements.

3.The Site

The application site comprises a semi-detached property located on the south side of Southwood Avenue.

The application proposal is confined to the paved passage leading to the garden. A boundary retaining wall separates the property to the west in which the subject tree grows.

Soil conditions

The British Geological Survey, Geology of Britain viewer describes the local bedrock geology as Claygate Member-Clay, silt and sand. There is no specific information available regarding local superficial deposits.

Legal Constraints

Trees can sometimes be the subject of a Tree Preservation Order (TPO) or a property may be situated within a designated conservation area. Both a TPO and conservation area designation require the owner/occupier or those wishing to work on trees to seek the Council's consent or provide written notice prior to carrying out any works. It is a criminal offence to carry out any works to protected trees without the Council's consent. The site is situated within the Highgate Conservation Area but is not subject to a TPO.



Image above, courtesy of Google Maps with the application site outlined in red and subject tree in green.

4. Tree Survey

The trees were assessed on 10/04/2026 in accordance with recommendations and guidelines contained within British Standard 5837:2012 - 'Trees in relation to design, demolition and construction-Recommendations' henceforth referred to as BS5837. The survey was carried out in relation to the condition and quality of trees growing either within or near the boundary of the site. Where details have been omitted including the heights of crown break and the direction of the first major lateral branch, these details were not seen as being relevant to this application. Where access allowed, tree heights were measured with a Haglof electronic clinometer and trunk diameters with a diameter tape measure. Crown spreads were measured with a tape measure or paced out at the four cardinal points.

All trees were assessed from the ground utilizing the Visual Tree Assessment method as developed by Mattheck and Breloer (The Body Language of Trees, Research for Amenity Trees No 4 Department of the Environment).

This tree survey should not be treated as a hazard assessment, it has been carried out to inform the planning process with regards to the appropriate retention and protection of trees as visual and ecological assets within the landscape. However, where clear and obvious defects are observed, the relevant parties would be informed.

Tree Assessment and Categorization

Tree quality ratings have been assessed in accordance with BS5837's Table 1, Cascade chart for tree quality assessment.

U = Trees in such a condition that any existing value would be lost within 10 years and which should in the current context, be removed for reasons of sound arboricultural management. (Trees that have serious, irreparable structural defects, such that their early loss is expected due to collapse or ill health including trees that will become at risk due to the loss of other U category trees).

A = Trees of high amenity quality and value in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested).

- 1) Trees that are particularly good examples of their species if rare, unusual or essential components of groups or formal or semi-formal arboricultural features.
- 2) Trees, groups of trees or woodland which provide a definite screening or softening effect to the locality in relation to views in or out of the site, or those of particular visual importance.
- 3) Trees groups or woodlands of significant conservation, historical, Commemorative or other value (e.g. veteran tree or wood pasture).

B = Trees of moderate quality and amenity value: those in such a condition as to be able to make a significant contribution (a minimum of 20 years is suggested).

- 1) Trees that might be included in the high category but are down-graded because of impaired condition (e.g. remediable defects).
- 2) Trees, groups of trees or woodland that form distinct landscape features but do not form essential components of the landscape.
- 3) Trees with clearly identifiable conservation or other cultural benefits.

C = Trees of low quality and amenity value currently in adequate condition to remain until new planting is established (a minimum of 10 years is suggested) or trees under 150 mm stem diameter.

- 1) Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.
- 2) Trees presenting groups or woodlands but not with a significantly higher landscape value and or offering low or temporary/transient screening benefit.
- 3) Trees with no conservation or other cultural benefits.

Note: Category C trees are the least suitable for retention, where they would impose a significant constraint on the development their removal for development purposes may be considered acceptable by the LPA.

5.Tree Survey Data & Appraisal

This survey concerns a single tree, full details of the survey data can be found in the Tree Survey Schedule at **Appendix A**. An explanation of Tree Quality category ratings is set out on the previous page.

Category A individual trees and groups of trees.

No trees have been graded as category A (trees of high quality) as part of this survey.

Category B individual trees and groups of trees.

1 tree has been graded as category B (trees of moderate quality) as part of this survey.

Category C individual trees and groups of trees.

No trees have been graded as category C (trees of low quality) as part of this survey.

Category U individual trees and groups of trees.

No trees have been graded as category U (trees unsuitable for retention) as part of this survey.

1 tree species has been recorded as part of this survey, it's common and botanical names are set out within the table below.

Common Name	Botanical Name
Evergreen magnolia	<i>Magnolia grandiflora</i>

Table 2. Tree species recorded on site and their botanical names.

The mature category B *Magnolia grandiflora* identified as T1 is located within the rear garden of 7 Southwood Avenue.

The tree's canopy extends over the application site as seen in the photos on the following page.

The tree grows beyond a boundary retaining wall at a level approximately 900mm higher than the application site.

The tree grows within a low raised planter surrounded by hard paving.

T1 has been subject to previous crown reduction pruning in order to contain the tree within it's restricted location.

From a visual tree assessment carried out from No.5 Southwood Avenue, T1 appears to be in good physiological and structural condition.



Photos above of T1 *Magnolia grandiflora*.

6. Arboricultural Impact Assessment

The Arboricultural Impact Assessment (AIA) sets out the potential risks and threats associated with proposed construction to trees both within and near to an application site and seeks to minimise those risks through the implementation of a sound and recognised methodology set out within an arboricultural method statement.

Construction and development in general can impact trees in a number of ways, the most notable being damage to the tree's root system leading to physiological decline and structural instability. BS5837 recognises this and sets out recommendations to minimise damage associated with the effects of soil compaction and root severance.

The AIA also considers the impacts of tree loss on the character of the immediate and wider landscape.

Tree Removals

No trees are to be removed as a result of the proposal.

Existing tree

Based on existing site conditions we have determined that the boundary retaining wall to the immediate east of **T1** Evergreen magnolia will have curtailed any substantial root growth into the application site.

The tree plans at appendices B, C, and D show the root protection area (RPA) of **T1** as a standard circle (magenta dashed lines).

The modified and more accurately correct RPA is shown as a solid magenta outlined that importantly contains the same area and soil volume as the standard circle.

For the purposes of this report, we are considering that root distribution accords with the modified RPA. However, a precautionary approach will still be adopted when constructing the proposed rear extension and replacement paving.

A precautionary approach

Notwithstanding the previous information, we recommend a precautionary approach to construction.

Where excavation is required in proximity to RPAs, excavation will be carried out with the use of hand tools only to a maximum depth of approximately 500mm. Excavation will be carried out under arboricultural supervision.

The proposed glass structure is lightweight in nature. The foundation is likely to comprise a screw pile and beam system with suspended floor.

All works will be carried out with the use of hand tools with no requirement for mechanical excavation.

Excavation will take place in the location shown below.

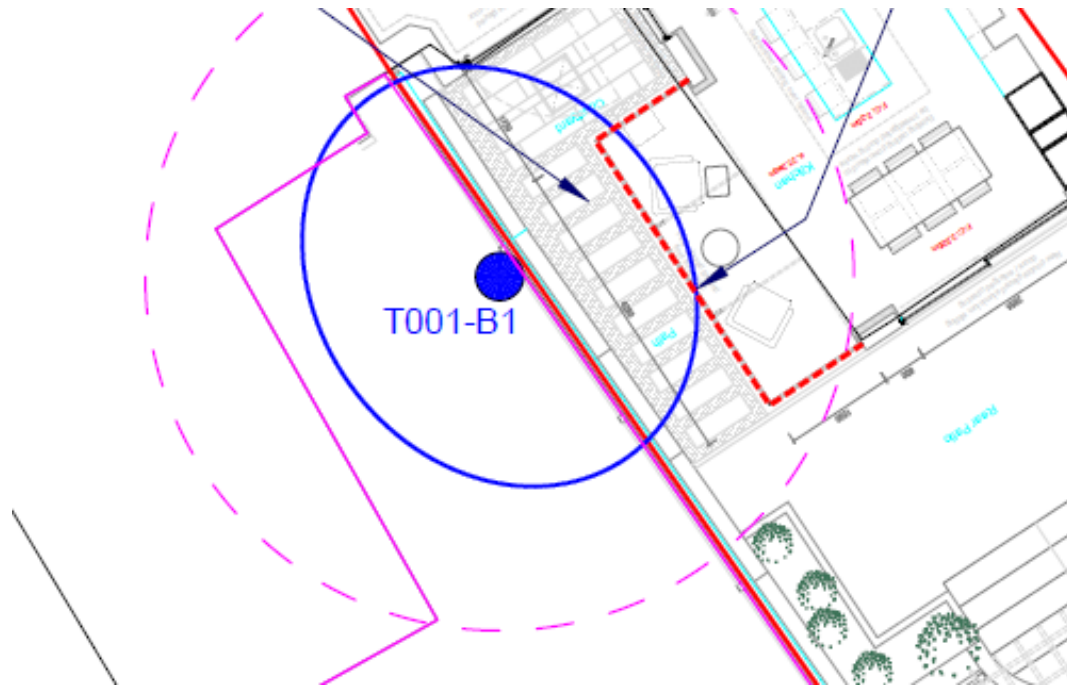


Figure 1 above is an extract from the Tree Protection plan at appendix D. The red dashed line represents the location and outer edge of the proposed foundation excavation.

The excavation will comprise a trench with sufficient depth to accept a beam set upon screw piles, details still to be confirmed.

Ground beneath the proposed excavation will also be excavated in order to create a void. Excavation depths have yet to be confirmed.

In the event that any roots are exposed, the following protocol will be recognised.

Any exposed roots with a diameter below 25mm will be carefully cut back to the excavation edge. Roots of 25-50mm diameter may be cut back with approval from the LPA.

Roots of 50mm diameter and above will be retained and the construction methodology modified accordingly.

The Existing surface surrounding the extension will be removed and replaced with new paving slabs.

The new surface will be installed at the previous level with no requirement for further excavation other than the careful removal and replacement of the subbase.

Above ground, we suggest a removal of lower lateral branches where they overhang the application site.



The image above shows the minor crown lift required to provide clearance above the single storey glass extension.

Pruning cuts will be kept to a minimum diameter with overhanging lateral branches being cut back to suitable pruning points.

Pruning works will be carried out in accordance with current industry best practice, BS3998: 2010, Tree work – Recommendations.

Root Protection Areas- General information.

BS 5837 describes the root protection area (RPA) as a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.

The **Root Protection Areas (RPA)** have been calculated in accordance with Table D1 of BS5837:2012. Notional RPA's are plotted on the arboricultural impact assessment plan at **appendix C**. The RPA is defined by the formula in paragraph 4.6 from the British standard and may be refined by considering current on-site constraints to root activity such as buildings, walls, earthworks, hard paving and services.

Root systems and compaction.

Root systems can easily be damaged during construction works, leading to the sometimes-rapid decline of valuable trees. The biggest problem for trees on or close to construction sites is the compaction of soil caused by inappropriate vehicular movement and storage of materials especially where the site is founded on a compressible clay.

Numerous surveys have shown that a significant proportion of a tree's roots proliferate in the top 600-1000mm of soil. There will of course be roots that may go down to depths of 3 metres or more although these will be in the minority. Roots in the upper soil surface find it far easier to intercept moisture, acquire oxygen and perform gaseous exchange. You also find that as soil depth increases so does its strength or compaction, making it harder for roots to exploit.

Root morphology differs from species to species and is largely dependent on the soil type and ground conditions, however, the fine roots responsible for moisture and nutrient uptake can last anything from 10 days to over a year (Eissenstat and Yanai, 1997), with the tree producing new fine roots on a regular basis. The larger and more structural roots are a permanent feature of the tree and convey moisture and nutrients from the soil via the fine roots and into the trunk and canopy. The larger roots are of course responsible for the tree's stability as well as being areas of carbohydrate storage. Younger trees are more able to adapt to change and have more potential energy to explore alternative rooting environments whereas more mature trees are slow to react to a changing soil environment and are adapted to expend their energy on other important functions.

The National Geology of Britain Viewer advises that the local soil comprises a bedrock geology of clay. Therefore, we suggest that the risk of soil compaction is moderate-high.

Root severance

As mentioned above, the roots are responsible for a number of functions including stability and the transport of water and nutrients. Studies have shown that trees can withstand and recover from the loss of a proportion of their root systems, especially where those roots have been removed in a single direction. The proposal may expose roots from **T1** off-site magnolia. However, a precautionary approach will be taken with supervised hand dig only for the excavation of foundation trenches. The arboricultural method statement includes recognised root pruning parameters which will be observed during excavation operations.

7.Arboricultural Method Statement (AMS)

The arboricultural method statement sets out a precautionary approach towards tree protection. Any operations including access, proposed within the RPA (or crown spread where this is greater) will be described within an arboricultural method statement, to demonstrate that the operations can be undertaken with minimal risk of adverse impact to retained trees.

Phase 1-Access facilitation and pre-start tree works.

- Tree surgeon to reduce overhanging lateral branches to a maximum of 1 metre above the existing canopy height.
- A virtual site meeting will be held following completion of pruning works.

Phase 2- Installation of tree protective fencing and ground protection

- None necessary with regards to this application.

Phase 3- Excavation of foundations and construction of extension.

- The outer face of the strip foundation will be marked out and existing paving slabs lifted in proximity to the extension footprint
- A trench will be dug by hand to the required depth to accept a suitable ground.
- The trench will be dug with the use of hand-held tools and under arboricultural supervision.
- Ground between the trench edge and existing house wall will also be lowered by hand to a depth to be confirmed.
- We do not expect to encounter any substantial roots, however, if roots believed to be from **T1** are exposed, they will be carefully pruned to the excavation edge with the use of sharp bypass loppers and secateurs.
- Root pruning will be carried out by the project arboriculturalist and confined to roots of <25mm diameter.
- Roots will be cut with sharp secateurs or bypass loppers, perpendicular to their direction of travel.
- Exposed roots of 25mm-50mm will be retained and not cut, unless approved by the LPA tree officer.
- Roots of 50mm diameter and above will be retained and the construction methodology modified accordingly.

- Any exposed root ends will be covered with damp hessian sacking to be removed prior to the installation of foundations.
- Following excavation, screw piles will be driven into the ground with the use of a mechanical hand held auger.
- The size and number of screw piles is yet to be confirmed, however, disturbance will be minimal.
- Once above ground, construction may commence without the requirement for specific arboricultural methodologies.

Pre-commencement meeting & Site supervision.

- A virtual pre-commencement meeting will take place between the project arboriculturalist and building contractor. This is for the project arboriculturalist to clarify that the contents of the report have been fully understood and that any unforeseen issues may be dealt with in a timely manner.
- A single site supervision visit will be carried out to oversee the hand excavation for the ground beam.
- The site supervision visit will be pictorially documented with findings shared with the client and LPA tree officer within 5 working days of the visit (**see appendix E**).

General measures to be adopted in proximity to trees.

- No further trees or vegetation are to be removed other than that described as being removed within approved arboricultural and landscape documents.
- All tree protection measures will be set in place prior to commencement of any works relating to the approved planning consent.
- No bonfires on site.
- No storage of products or mixing of materials within the RPA's of trees.
- No materials are to be stored within the confines of the protective fencing (CEZ).
- Storage of materials on soft ground in proximity to any other trees and hedges away from construction is to be avoided.
- No discharging of any products associated with construction near trees or hedges
- No refueling/topping up of hydraulic fluids etc. on plant machinery within or close to the RPA of trees.
- There will be no lowering or raising of soil levels within the root protection areas of retained trees except where specified and agreed by the LPA.
- There will be no excavation or trenching for the installation of services within the root protection areas of retained trees except where specified and agreed by the LPA.

8. Conclusion

Providing works are carried out in accordance with the arboricultural method statement, there will be no impacts upon the off-site tree.

9. Qualifications & Experience

I have been involved in the horticultural and arboricultural industries for over 40 years, firstly as a contractor and for the last 20 years as a Local Authority tree officer and consultant. I hold the AA Tech cert arb, and ND Arb (RFS) as well as being a Lantra accredited Professional Tree Inspector.

Lawrence Usherwood
Usherwood Arboriculture

Phone: 07753 211306

email: lawrence@usherwoodarboriculture.co.uk

<http://usherwoodarboriculture.co.uk/>

Appendix A: Tree Survey Schedule

Trees have been listed on the schedule with both their common and scientific names.

Tree height is normally measured and rounded up to the nearest metre for trees above 10 metres in height using a Haglof electronic clinometer.

Stem or trunk diameters were measured using a diameter tape in mm at 1.5 metres above ground where access allowed, otherwise diameters have been estimated.

Crown spread has been measured in metres from the trunk to the tips of the live lateral branches taken at the four-cardinal points N-E-S-W using a ground tape.

Age Class

Young - Trees in the first fifth of full life expectancy

Semi-mature - Trees in the second fifth of full life expectancy

Early-mature - Trees in the third fifth of full life expectancy

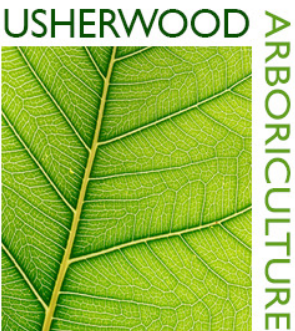
Mature - Trees in the fourth fifth of full life expectancy

Post-mature – Trees having reached full life expectancy and trees in natural decline

Veteran - Trees of interest biologically, culturally and aesthetically due to certain features and/or age.

ERCY-The estimated remaining contribution in years calculated considering the tree's species, location, current age and physiological and structural condition at the time of the survey.

BS5837 Survey Data



Ref.	Species	Measurements	General Observations	Category	Recommendations
T001	Evergreen magnolia (Magnolia grandiflora)	Height (m): 7.5 Stem Diam(mm): 400 Spread (m): 3N, 2.5E, 3S, 2.5W Life Stage: Mature Rem. Contrib.: 20+ Years	Attractive off-site tree, previously reduced.	B1 RPA Radius: 4.8m. Area: 72 sq m.	Pre construction: Initial excavation to be carried out under arboricultural supervision. During construction: Precautionary construction including the use of a screw pile and beam foundation.

Appendix B: Tree Constraints Plan

General Notes
Do not scale off drawing - refer to the tree data schedule for accurate crown spread measurements.
Depictions of tree canopies are based on measurements taken to four cardinal compass points.
No liability of any kind is accepted for any omissions or inaccuracies in respect of this plan.
The original of this drawing was produced in colour; a monochrome copy should not be relied upon.
All rights reserved.

SOUTHWOOD AVENUE

Key

Trees
Showing Canopy extents, category colour and tag number (with category).

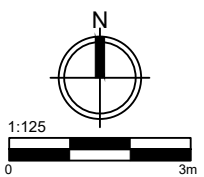
Category A
Trees of high quality with an estimated remaining life expectancy of at least 40 years.

Category B
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

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.

Category U
Trees in such a condition that they can not realistically be retained as living trees in the context of the current land use for longer than 10 years.

BS 5837:2012 Root Protection Area



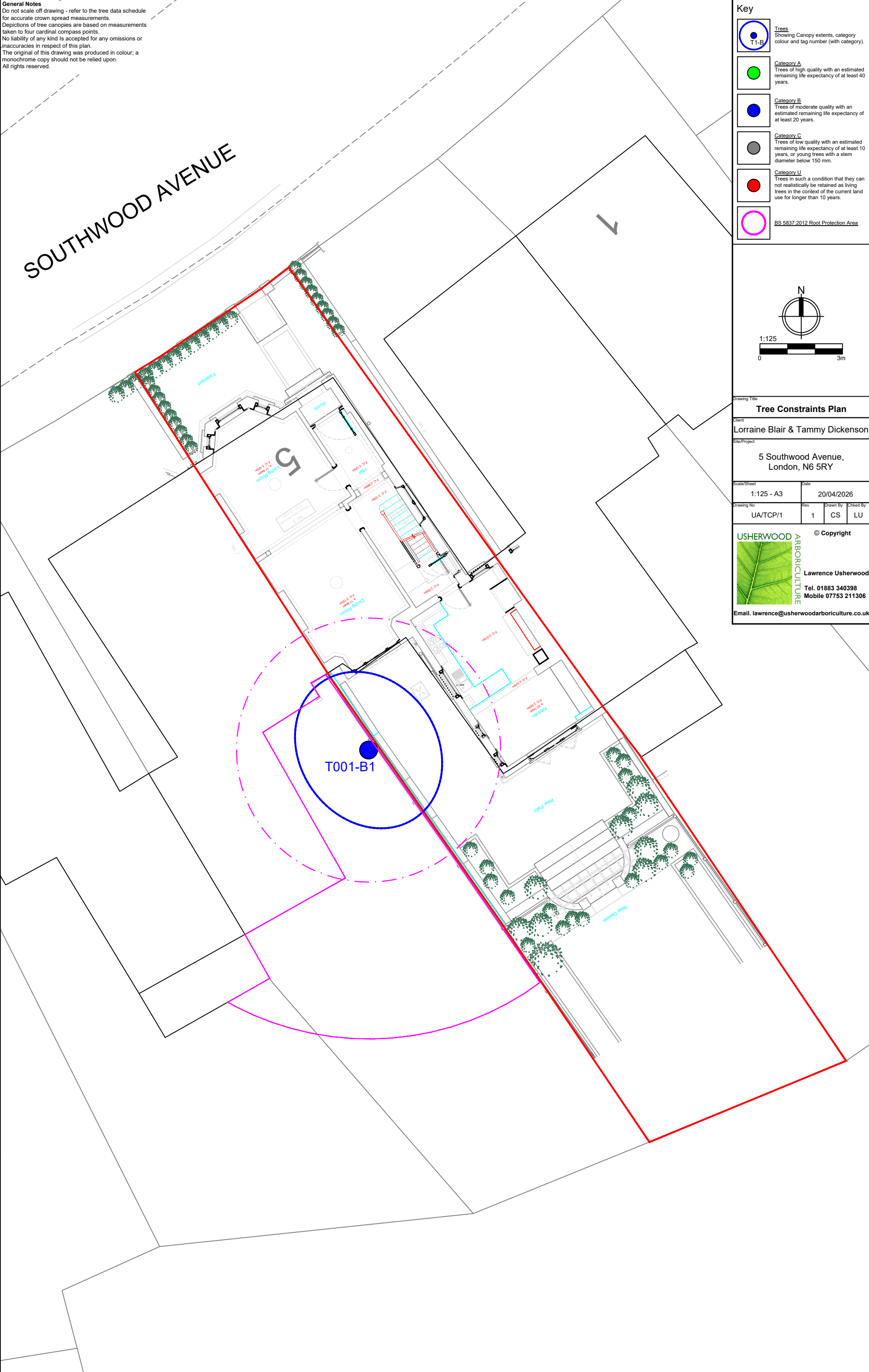
Drawing Title
Tree Constraints Plan

Client
Lorraine Blair & Tammy Dickenson

Site/Project
5 Southwood Avenue,
London, N6 5RY

Scale/Sheet 1:125 - A3	Date 20/04/2026		
Drawing No UA/TCP/1	Rev 1	Drawn By CS	Checked By LU

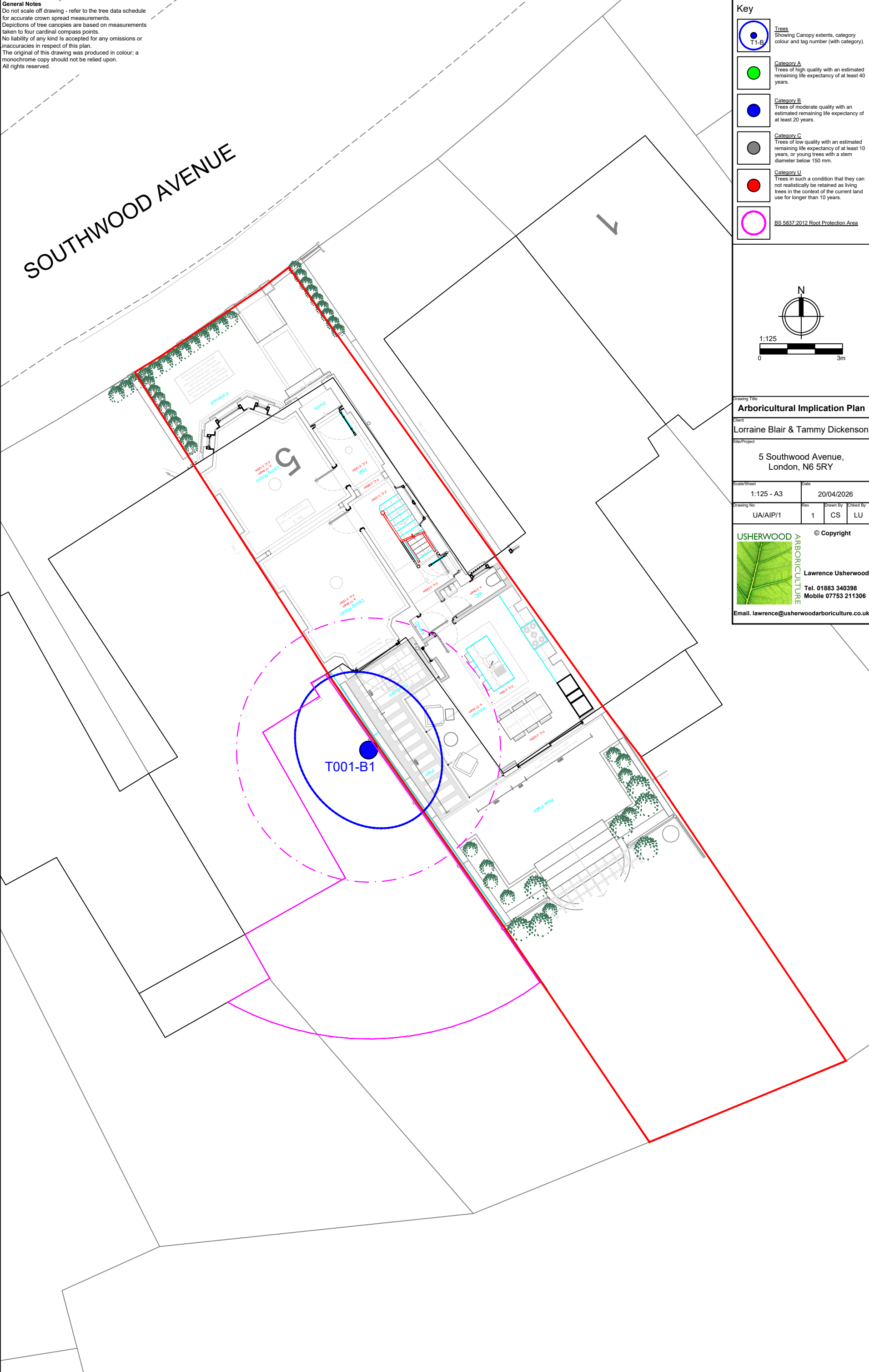
© Copyright
Lawrence Usherwood
Tel. 01883 340398
Mobile 07753 211306
Email. lawrence@usherwoodarboriculture.co.uk



Appendix C: Arboricultural Impact Plan

General Notes
Do not scale off drawing - refer to the tree data schedule for accurate crown spread measurements.
Depictions of tree canopies are based on measurements taken to four cardinal compass points.
No liability of any kind is accepted for any omissions or inaccuracies in respect of this plan.
The original of this drawing was produced in colour; a monochrome copy should not be relied upon.
All rights reserved.

SOUTHWOOD AVENUE



Key

Trees
Showing Canopy extents, category colour and tag number (with category).

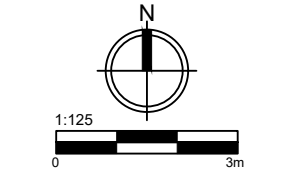
Category A
Trees of high quality with an estimated remaining life expectancy of at least 40 years.

Category B
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

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.

Category U
Trees in such a condition that they can not realistically be retained as living trees in the context of the current land use for longer than 10 years.

BS 5837:2012 Root Protection Area



Arboricultural Implication Plan

Client
Lorraine Blair & Tammy Dickenson

Site/Project
5 Southwood Avenue,
London, N6 5RY

Scale/Sheet
1:125 - A3

Date
20/04/2026

Drawing No
UA/AIP/1

Rev
1

Drawn By
CS

Checked By
LU

USHERWOOD ARBORICULTURE
© Copyright
Lawrence Usherwood
Tel. 01883 340398
Mobile 07753 211306
Email. lawrence@usherwoodarboriculture.co.uk

Appendix D: Tree Protection Plans

General Notes
Do not scale off drawing - refer to the tree data schedule for accurate crown spread measurements.
Depictions of tree canopies are based on measurements taken to four cardinal compass points.
No liability of any kind is accepted for any omissions or inaccuracies in respect of this plan.
The original of this drawing was produced in colour; a monochrome copy should not be relied upon.
All rights reserved

SOUTHWOOD AVENUE

Existing paving to be lifted and replaced with new paving at existing level. There is no requirement for additional excavation.

Precautionary excavation zone. The initial excavation will be carried out by hand and under arboricultural supervision.

T001-B1

Key



Trees
Showing Canopy extents, category
colour and tag number (with category).



Category A
Trees of high quality with an estimated remaining life expectancy of at least 40 years.



Category B
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.



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.



Category U
Trees in such a condition that they can not realistically be retained as living trees in the context of the current land use for longer than 10 years.



BS 5837:2012 Root Protection Area



Precautionary excavation zone. The initial excavation will be carried out by hand and under arboricultural supervision.



1:125

Drawing Title

Tree Protection Plan

1

Client
Lorraine Blair & Tammy Dickenson

10

5 Southwood Avenue,
London, N6 5RY

Scale/Sheet
1:125 - A3

Date	20/04/2026
------	------------

Drawing No
UA/TPP/1

Rev	Drawn By	Chkd By
1	CS	LU

USHERWOOD

© Copyright



Lawrence Usherwood

Tel. 01883 340398
Mobile 07752 214206

Mobile 07753 211306

Email. lawrence@usherwoodarboriculture.co.uk

Appendix E: Site Supervision Form Example

Date: _____ Time: _____ Site:		Planning application reference:	
Those present in addition to project arboriculturalist: Client /Agent: Project / Site manager: LPA arboricultural officer: Other (specify):			
	Yes	No	Action Required?
Tree Protection measures located in accordance with TPP?			
Any disturbance within construction exclusion zone?			
Any materials stored within construction exclusion zone?			
Any evidence of damage to tree roots, stems or canopies?			
Any works programmed before next planned site visit that may affect retained trees?			
Notes: 			
Signed:		Date:	

When is site supervision necessary-

Site supervision is normally specified where construction and development activity take place within or adjacent to the root protection area (RPA) of retained trees as calculated within the Arboricultural Impact Assessment (AIA) and described within the Arboricultural Method Statement (AMS).

The AMS will note where site supervision is recommended, and the local planning authority may require the provision of site supervision as a condition of planning consent.

Site supervision may cover several actions as set out below. The conclusions of each of the actions will be documented and shared with the client and local authority tree officer.

- Initial site meeting.
- Toolbox talk with all operatives having responsibility for works in proximity to trees.
- Correct installation of tree protection systems including fencing, ground protection, CCS, site huts etc.
- Technical supervision including excavation/trenching within RPAs, piling, installation of services, installation of lightweight structures such as bin and bike sheds, and installation of load bearing surfaces.

Reporting systems and site notes-

Additional notes taken during supervision of works within or close to the RPAs of retained trees.

Information will include the following-

- Date of works
- Description of works
- Operatives present
- Photographic records
- Scaled Section diagram and/or plan, showing location, size, and condition of any exposed roots.

Information will be shared with the client and local authority tree officer.