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# ARBORICULTURAL IMPACT ASSESSMENT REPORT

**LOCATION:** Flat 1, 18 Platt's Ln, London NW3 7NS

**CLIENT:** Toby Vanhegan

**AUTHOR:** Oliver Tong ND Arb TechArborA

**DATE:** 8th November 2024

**REF:** 20240618-153842995

**VERSION:** FINAL v2.0

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|---|---|---|---|
| **Version** | **Report author** | **Date** | **Type** |
| V1.0 | Oliver Tong ND Arb TechArborA | 08/11/2024 | FINAL |

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## EXECUTIVE SUMMARY

Greenwood Environmental Ltd has been commissioned by Toby Vanhegan, to carry out a tree survey and to prepare an arboricultural impact assessment, in association with the following development proposal:

***Construction of single storey basement and front extension at Flat 1, 18 Platt's Ln, London NW3 7NS.***

A tree survey was carried out by the author on the 18th of July 2024, in accordance with British Standard 5837:2012 'Trees in Relation to design, demolition, and construction – Recommendations'.

The assessment included four individual trees and one hedge, which have been categorised in accordance with BS 5837:2012 Table 1 Cascade chart for tree quality assessment.

Trees are a material consideration for Local Planning Authorities (LPAs), when determining planning applications, whether they are afforded the statutory protection of a Tree Preservation Order (TPO) or Conservation Area (CA) or not.

BS5837:2012 sets out the principles and procedures to be applied to achieve a harmonious and sustainable relationship between trees and new developments.

To demonstrate how retained trees can be adequately protected during the construction stage of the development, the following have been included in the appendix of this report: Example Tree Protection Specifications; Preliminary Arboricultural Method Statement (AMS) & Draft Tree Protection Plan (TPP).

The impact of the development proposal is acceptable, providing the measures outlined in this report are implemented and secured by the provision of suitably worded planning conditions.

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## APPENDIX



## ANNEX



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# 1. INTRODUCTION

## 1.1 Instruction

1.1.1 Greenwood Environmental Ltd has been commissioned by Toby Vanhegan, to carry out a tree survey and to prepare an arboricultural impact assessment, in association with the following development proposal:

***Construction of single storey basement and front extension at Flat 1, 18 Platt's Ln, London NW3 7NS.***

1.1.2 This report considers all significant trees on the site or other areas as designated within our instructions. Land adjacent to the site may also contain trees that pose a constraint on development and where necessary their details have been included.

1.1.3 The tree survey is not intended to be a detailed risk assessment of trees. Where the structural integrity of trees has been noted and the trees' condition is such that imminent remedial works are recommended, these should be arranged by the landowner or manager responsible for the safety of the site, as soon as is practically possible.

1.1.4 Comments relating to non-arboricultural matters may be made throughout this report. Making comments on such matters is within the normal remit of our instructions and the range of the author's experience. Any opinion thus expressed should be deemed as provisional and confirmation sought from an appropriately qualified professional.

## 1.2 Limitations

1.2.1 Any other planning issues related to the subject trees were not investigated. Greenwood Environmental Ltd are under no obligation to provide further advice that is subsequently required as part of the planning process or assist with planning appeals unless further instructions are given, and terms agreed.

1.2.2 The information contained in this report may be relied upon for a period of up to two years, after which time a further assessment of the site will be required.

1.2.3 The content and presentation of this report are copyright of Greenwood Environmental Ltd and may not be copied or distributed to third parties not directly involved in the subject matter without the written consent of the author.

1.2.4 Greenwood Environmental Ltd's standard terms of business apply, which we provided along with our fee proposal, further copies of which are available on request.

1.2.5 All observations were made from ground level without detailed investigations and all measurements are estimated unless otherwise indicated.

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### 1.3 Methodology

1.3.1 Trees are a material consideration for Local Planning Authorities (LPAs), when determining planning applications, whether they are afforded the statutory protection of a Tree Preservation Order (TPO) or Conservation Area (CA) or not. British Standard BS 5837:2012 Trees in Relation to Design, Demolition and Construction sets out the principles and procedures to be applied to achieve a harmonious and sustainable relationship between trees and new developments.

1.3.2 The Standard recommends a sequence of activities (appendix a), that starts in the initial feasibility and design phase (RIBA Stage 2 'Concept Design'), with a survey to qualify and quantify the trees on site and establish the arboricultural constraints to development (above and below-ground), to inform the design in an iterative process, and continues with an assessment of the arboricultural impacts of the final design and measures to mitigate such impacts should they be negative.

1.3.3 Detailed technical specifications for mitigation and protection measures are devised in the design phase that follows (RIBA Stage 3-4 'Developed and Technical design'), and the sequence ends with the Implementation and Aftercare phase (RIBA Stages 5-7) with the implementation of those measures once planning permission is granted, guided by Arboricultural Method Statements (RIBA Stage 4-5, 'Technical Design and Construction) and professional guidance where appropriate.

### 1.4 Legal protection status of trees

1.4.1 We have **not** made any formal enquires with the Local Planning Authority (LPA) regarding the legal protection status of trees. However, the property is located within the **Redington Frognal** Conservation Area.

### 1.5 Soils Assessment

1.5.1 Soil assessments should be carried out on-site by a competent person, to inform decisions relating to root protection areas (RPA); tree protection; new tree planting; foundation design and construction methods.

1.5.2 The assessment should determine if the soil is of a shrinkable type, as trees and vegetation have the potential to cause indirect damage to structures when growing in soils such as London clay, which can be highly shrinkable. In such cases, desiccation assessments should be carried out to determine the level of soil drying. Soil characteristics and index properties (shrink/swell potential) can only be determined precisely by laboratory testing of soil samples.

1.5.3 The presence of a clay within the soil is significant in terms of tree protection. As clay soils are prone to compaction, particularly when wet, just a single movement of heavy machinery or repeated pedestrian movements over the RPA of a retained tree is enough to cause compaction of the underlying soil, which is detrimental to long-term tree health. It is therefore imperative that all recommended tree protection measures are implemented in full and remain in place throughout the course of the development.

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1.5.4 Soil structure, composition and pH should be included in the assessment for the purpose of designing new planting and landscape proposals.

## 2. TREE ASSESSMENT SUMMARY

2.1 The condition and quality of the existing tree (which has the potential to be impacted or impact upon the development), has been assessed in accordance with British Standard 5837:2012 'Trees in Relation to design, demolition, and construction – Recommendations'.

2.2 A tree survey was carried out by the author on the 18th of July 2024, in accordance with British Standard 5837:2012 'Trees in Relation to design, demolition, and construction – Recommendations'.

2.3 The assessment included four individual trees and one hedge, which have been categorised in accordance with BS 5837:2012 Table 1 Cascade chart for tree quality assessment.

2.4 Both above ground and below ground constraints posed by trees on development have been considered as part of this assessment. The included plans provide a graphical representation of trees, indicating their BS 5837:2012 category and Root Protection Areas (RPA) displayed as a magenta-coloured circle centered around the trunk of the trees.

2.5 RPAs are the minimum rooting area required to maintain tree health and condition and are therefore to be considered as construction exclusion zones. RPAs may be adjusted where it is justified due to predicted eccentric root morphology. Root morphology will be influenced by the ground conditions; roots will proliferate where soil conditions are favourable and less so where the ground conditions are poor. Structures and metaled roads with deep foundations may inhibit root growth into the area for example.

2.6 The BS 5837 quality category and sub-categories of the trees is displayed in the chart below.

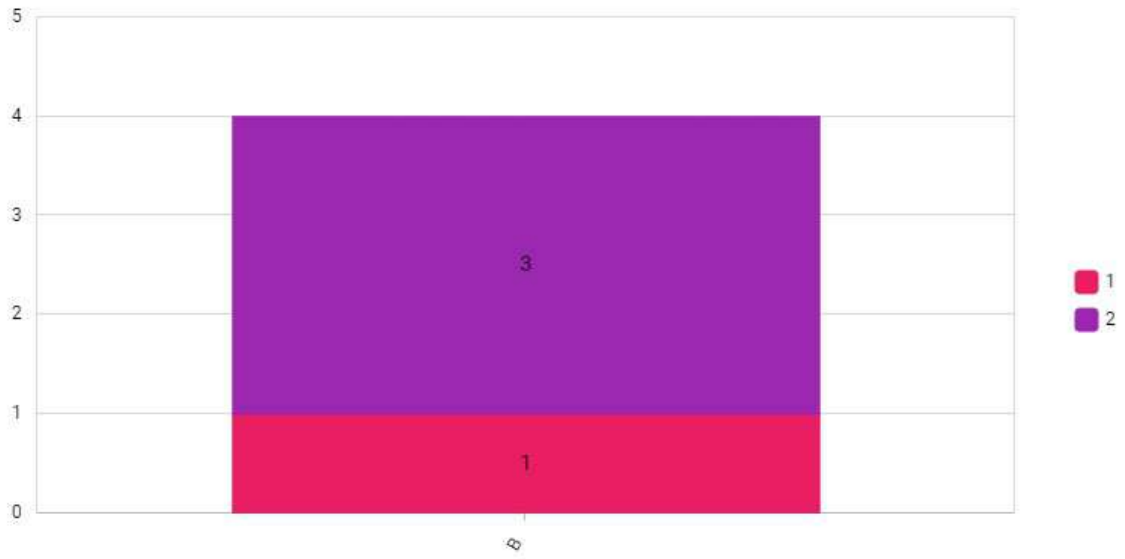


**Chart 1:** Quality Category by Sub-Category

## Common lime Tree ID #1

### Tree Details

| | |
|---|---|
| Full Tree ID: | T1 |
| Common Name: | Common lime |
| Latin Name: | Tilia x europaea |
| Tree Height [m]: | 12 |
| Number of Stems: | 1 |
| Stem Diameter [mm]: | 370 |
| (N) Branch Spread [m]: | 3.5 |
| (E) Branch Spread [m]: | 3.5 |
| (S) Branch Spread [m]: | 3.5 |
| (W) Branch Spread [m]: | 3.5 |
| Height of First Significant Branch [m]: | 3.5 |
| Height of Canopy Above Ground Level [m]: | 1.7 |
| Physiological Condition: | Good |
| Quality Category: | B |
| Quality Sub-Category: | 1 |
| Comments: | Off-site street on public highway, located 5.5m from application land boundary, managed as pollard, |
| Recommendations: | |

### Photo

1000058862.jpg
18/07/2024

## Maidenhair tree Tree ID #2

### Tree Details

| | |
|---|---|
| Full Tree ID: | T2 |
| Common Name: | Maidenhair tree |
| Latin Name: | Ginkgo biloba |
| Tree Height [m]: | 17 |
| Number of Stems: | 1 |
| Stem Diameter [mm]: | 650 |
| (N) Branch Spread [m]: | 8 |
| (E) Branch Spread [m]: | 4.5 |
| (S) Branch Spread [m]: | 3 |
| (W) Branch Spread [m]: | 5.5 |
| Height of First Significant Branch [m]: | 5 |
| Height of Canopy Above Ground Level [m]: | 3 |
| Physiological Condition: | Good |
| Quality Category: | B |
| Quality Sub-Category: | 2 |
| Comments: | Boundary tree facing public highway |
| Recommendations: | |

### Photo

1000058871.jpg
18/07/2024

## London plane Tree ID #3

### Tree Details

| | |
|---|---|
| Full Tree ID: | T3 |
| Common Name: | London plane |
| Latin Name: | Platanus x hispanica |
| Tree Height [m]: | 14 |
| Number of Stems: | 1 |
| Stem Diameter [mm]: | 800 |
| (N) Branch Spread [m]: | 4 |
| (E) Branch Spread [m]: | 4 |
| (S) Branch Spread [m]: | 5 |
| (W) Branch Spread [m]: | 5 |
| Height of First Significant Branch [m]: | 4 |
| Height of Canopy Above Ground Level [m]: | 4 |
| Physiological Condition: | Good |
| Quality Category: | B |
| Quality Sub-Category: | 2 |
| Comments: | Off-site street tree located on public highway, managed as pollard, open basal trunk cavity to west side |
| Recommendations: | |

### Photo

1000058886.jpg
18/07/2024

## Monterey pine Tree ID #4

### Tree Details

| | |
|---|---|
| Full Tree ID: | T4 |
| Common Name: | Monterey pine |
| Latin Name: | Pinus radiata |
| Tree Height [m]: | 23 |
| Number of Stems: | 1 |
| Stem Diameter [mm]: | 720 |
| (N) Branch Spread [m]: | 7 |
| (E) Branch Spread [m]: | 6 |
| (S) Branch Spread [m]: | 6 |
| (W) Branch Spread [m]: | 5 |
| Height of First Significant Branch [m]: | 9 |
| Height of Canopy Above Ground Level [m]: | 5 |
| Physiological Condition: | Good |
| Quality Category: | B |
| Quality Sub-Category: | 2 |
| Comments: | Boundary tree facing public highway, 2-3 needle species, some minor soil disturbance directly around west of trunk, some small dead branches in canopy |
| Recommendations: | |

### Photo

1000058868.jpg
18/07/2024

## Hedge ID #1

### Hedge Details

| | |
|---|---|
| Common Name: | Cherry laurel |
| Life Stage: | Early-mature |
| Condition: | Good |
| Hedge Width [m]: | 7 |
| Estimated Remaining Contribution: | Medium (20 to 40 years) |
| Recommendations: | Reduce height by 2m and lateral spread by 1m on both sides |
| Comments: | Boundary hedge, irregularly maintained, offering screening from road |

### Photo

## 3. ARBORICULTURAL IMPACT ASSESSMENT

### 3.1 Impact assessment

3.1.1 The developments' impact upon trees has been assessed according to any canopy and/or RPA incursions, as proposed in the site plans provided.

3.1.2 The proposed basement level incurs into the root protection of area (RPA) of two category B trees: T2 Maidenhair tree and T4 Monterey pine. There is a minor incursion into the RPA of tree T3 London plane located on the adjacent public highway, however due to the difference in ground levels and barriers to root growth, it is predicted that the standard concentric circular RPA for this tree is not representative and therefore any potential impact from the proposed development on this tree is negligible.

3.1.3 To ensure that the impact to trees: T2 Maidenhair tree and T4 Monterey pine, is acceptable it will be necessary to design and employ a specialist excavation method which ensures that any disturbance to the RPA of these trees is kept to a minimum. Additionally, a safe construction method to support the retained soil and roots of the trees throughout the development and post development, so as not to undermine the trees structural stability.

3.1.4 Other retained trees are at risk of indirect impact from damage to upper parts of trees from general construction activity and also soil degradation and/compaction, which can lead to root damage and death.

3.1.5 To demonstrate how the trees can be adequately protected during the construction stages of the development, the following have been included in the appendix of this report: Example Tree Protection Specifications; Preliminary Arboricultural Method Statement (AMS) & Draft Tree Protection Plan (TPP).

### 3.2 Conclusions

3.2.1 The impact of the development proposal is deemed to be acceptable, providing the measures outlined in this report are implemented and secured by the provision of suitably worded planning conditions.

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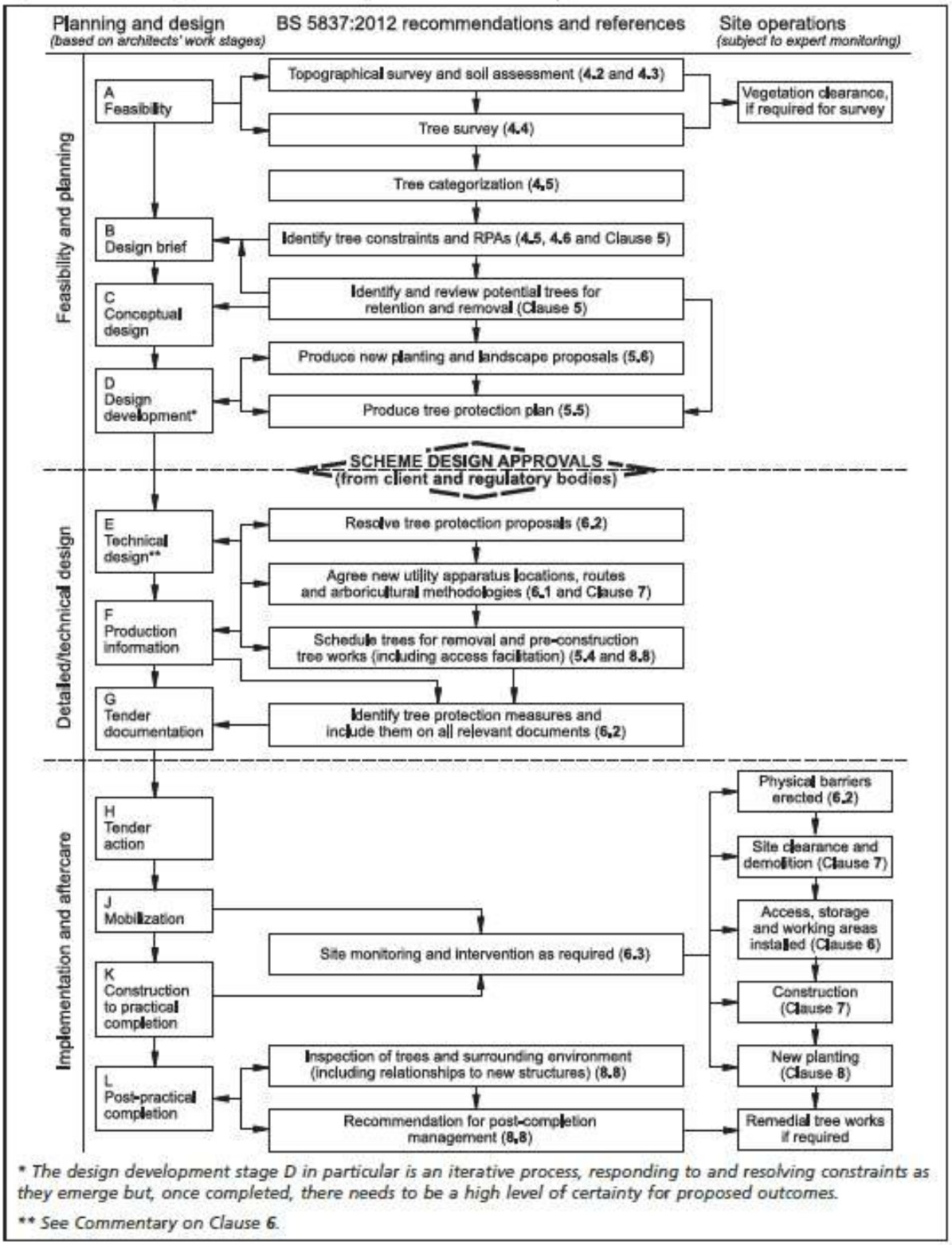
# Appendix A

## BS 5837:2012 FIGURE 1

Figure 1 **The design and construction process and tree care**




** The design development stage D in particular is an iterative process, responding to and resolving constraints as they emerge but, once completed, there needs to be a high level of certainty for proposed outcomes.*

*** See Commentary on Clause 6.*

# Appendix B

## BS 5837:2012 TREE ASSESSMENT SCHEDULE

| Tree ID | Common Name | Stem Diameter [mm] | Tree Height [m] | (N) Branch Spread [m] | (S) Branch Spread [m] | (E) Branch Spread [m] | (W) Branch Spread [m] | Life Stage | Physiological Condition | Structural Condition | Height of Canopy Above Ground Level [m] | Height of First Significant Branch [m] | Direction of First Significant Branch | Comments | Recommendations | Estimated Remaining Life Expectancy | Quality Category | Quality Sub-Category | Root Protection Area [m] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T1 | Common lime | 370 | 12 | 3.5 | 3.5 | 3.5 | 3.5 | Early-mature | Good | Good | 1.7 | 3.5 | NE | Off-site street on public highway, located 5.5m from application land boundary, managed as pollard, | | Long (>40 years) | B | 1 | 4.44 |
| T2 | Maidenhair tree | 650 | 17 | 8 | 3 | 4.5 | 5.5 | Early-mature | Good | Good | 3 | 5 | SE | Boundary tree facing public highway<br><br>Trunk located 8m from nearest corner of bay window | | Long (>40 years) | B | 2 | 7.8 |
| T3 | London plane | 800 | 14 | 4 | 5 | 4 | 5 | Mature | Good | Fair | 4 | 4 | W | Off-site street tree located on public highway, managed as pollard, open basal trunk cavity to west side | | Long (>40 years) | B | 2 | 9.6 |
| T4 | Monterey pine | 720 | 23 | 7 | 6 | 6 | 5 | Mature | Good | Good | 5 | 9 | SE | Boundary tree facing public highway, 2-3 needle species, some minor soil disturbance directly around west of trunk, some small dead branches in canopy<br><br>Trunk located 9.20m from corner of nearest bay window | Remove dead branches in lower canopy | Medium (20 to 40 years) | B | 2 | 8.64 |
| H1 | Cherry laurel | 250 | 6 | 7m wide | 7m wide | 7m wide | 7m wide | Early-mature | Good | Good | 1 | N/A | N/A | Boundary hedge, irregularly maintained, offering screening from road | Reduce height by 2m and lateral spread by 1m on both sides | Medium (20 to 40 years) | N/A | N/A | N/A |

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## Survey Key

**No.:** This number identifies the trees and corresponds with the provided plans. Trees are prefixed: T (trees); G (groups) and H (hedges).

**Species:** The common name is given for each tree.

**Stem Diameter (Ø):** Taken with a diameter measuring tape at 1.5m above ground level as per Figure C1 of BS5837:2012 and recorded in millimetres. Where access has prevented direct measurement of a tree's trunk diameter, the value is estimated.

**Height:** Measured with a laser clinometer in metres.

**Crown Clearance:** Distance between the lowest point of the crown and ground level, measured with a laser clinometer in metres.

**Radial Crown Spread:** Measured with a laser clinometer in metres and given at cardinal compass points. Where access has prevented direct measurement, the value is estimated.

**Life Stage:** This refers to the age of the individual tree relating to the average life expectancy of each species in a similar environment:

- Y (Young): Recently planted or establishing tree that could be transplanted without specialist equipment i.e., up to 12-14cm stem girth.
- SM (Semi mature): An established tree but one which has not reached its potential ultimate height and has significant growth potential.
- EM (Early mature): A tree reaching its ultimate potential height, whose growth rate is slowing down but will increase in stem diameter and crown spread and has a safe useful life expectancy.
- M (Mature): A mature specimen with limited potential for any significant increase in size but with a reasonable safe useful life expectancy.
- LM (Late mature): A senescent specimen with a limited safe useful life expectancy. Possibly also containing sufficient structural defects with attendant safety and/or duty of care implications.
- V (Veteran): Veteran trees are trees which have features of ancientness but at a younger age. These features include missing branches, hollow trunks and habitat features.
- A (Ancient): An ancient tree is a tree which is remarkably old for its species, which can vary dramatically depending on the species. All ancient trees are also veterans.

**Physiology:** Overall physiological condition of tree: Good; Fair; Poor; Dead

**Structure:** Overall structural condition of tree: Good; Fair; Poor; Hazardous

**Estimated Remaining Life Expectancy:** is the life expectancy of the tree modified first by its age, health, condition, safety, and location (to give safe life expectancy), then by economics, effects on better trees and sustained amenity:

- <10 years
- 10+
- 20+
- 40+

**Quality Category:** See BS5837:2012 TABLE 1

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# Appendix C

## BS 5837:2012 TABLE 1

| **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**<br>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)<br>• Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline<br>• 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<br>*NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see **4.5.7**.* | | | |
| | **1 Mainly arboricultural qualities** | **2 Mainly landscape qualities** | **3 Mainly cultural values, including conservation** | |
| **Trees to be considered for retention** | | | | |
| **Category A**<br>**Trees of high quality** with an estimated remaining life expectancy of at least 40 years | Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue) | Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features | Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture) | |
| **Category B**<br>**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 | |
| **Category C**<br>**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 | |

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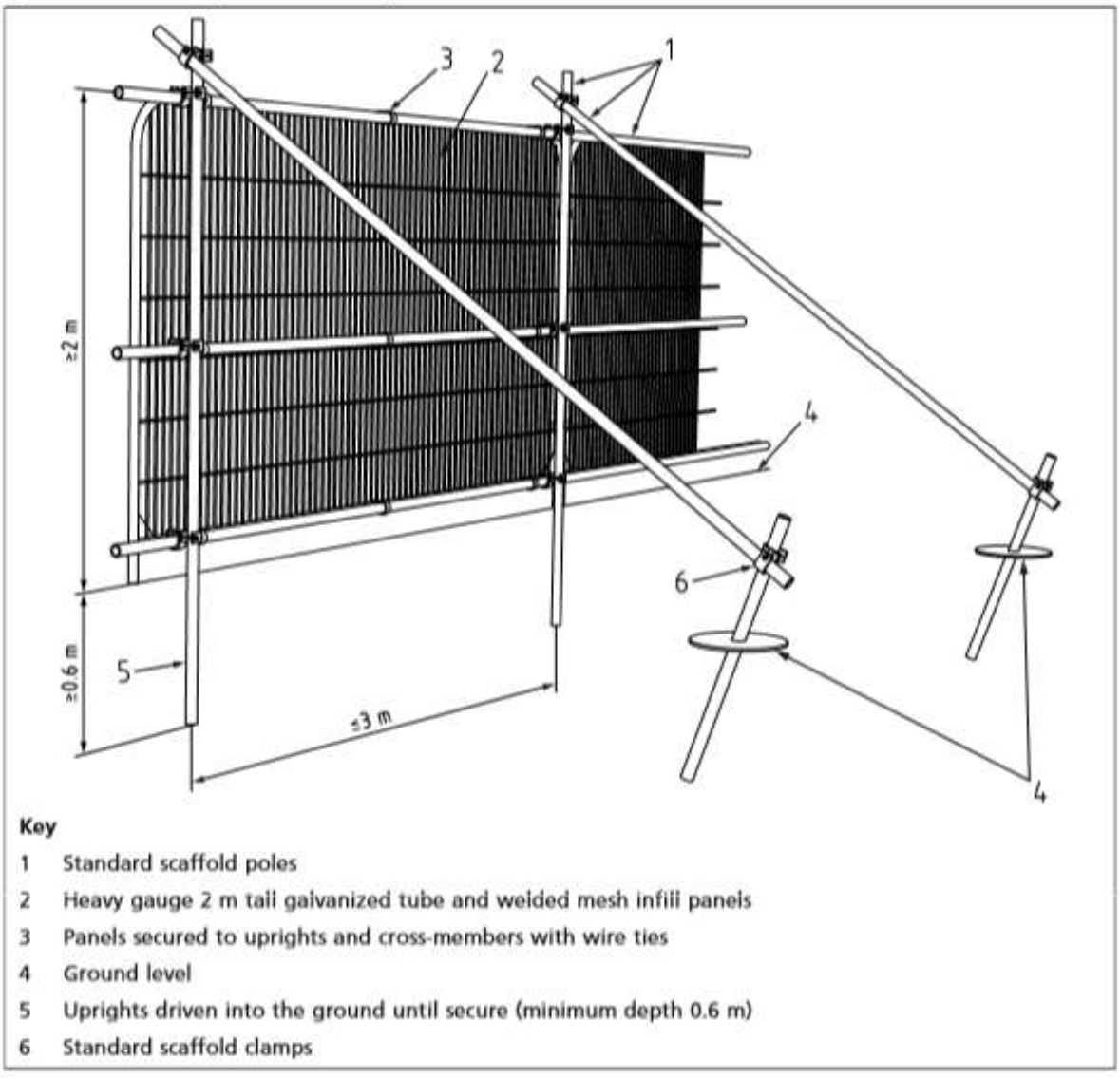
# Appendix D

# EXAMPLE TREE PROTECTION SPECIFICATIONS

Figure 2 **Default specification for protective barrier**




**Key**

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

**Figure 1.** Image reproduced with permission from BSI

Figure 3 **Examples of above-ground stabilizing systems**

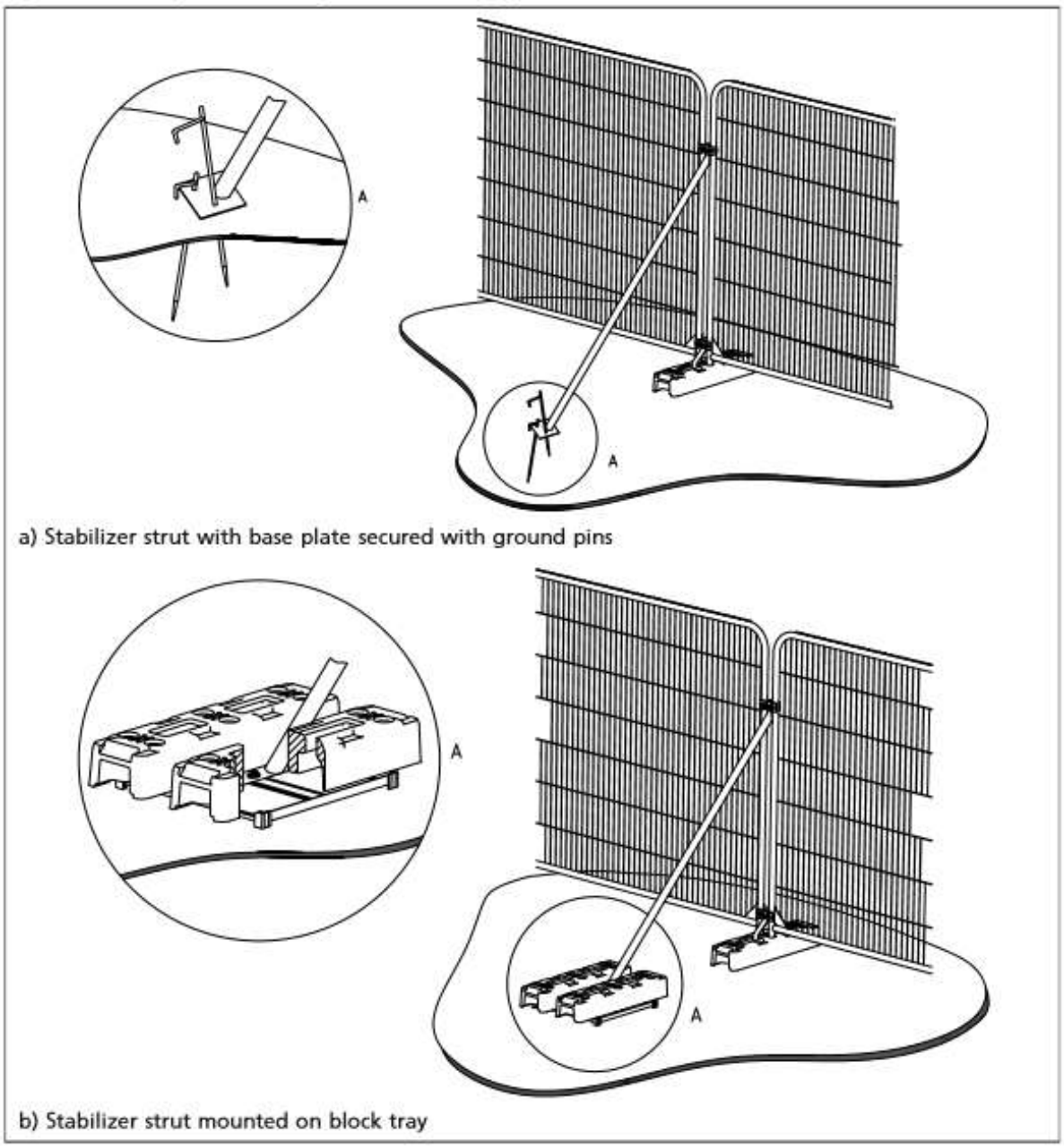



**Figure 2.** Image reproduced with permission from BSI


**Figure 3.** Example of all-weather sign to be attached to protective fencing at 3 metre spacings

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**Temporary Ground Protection**

New temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil.

Ground protection might comprise one of the following:

a) for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane;

b) for pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane.

c) for wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

**Figure 4.** Example of propriety inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane, suitable for pedestrian-operated plant up to a gross weight of 2 t

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# Appendix E

# PRELIMINARY ARBORICULTURAL METHOD STATEMENT

## Sequence of events

**Before demolition and construction work starts (including bringing of plant and materials on site):**

**A pre-commencement site meeting** shall be held prior to the commencement of any works associated with the proposed development. The meeting is required for the Local Planning Authority (LPA), the Arboricultural Consultant and construction personnel to agree all approved site processes. This meeting may be used to formally agree on site tree protection measures prior to the commencement of the development.

**Tree works to be completed.** Any tree works will be agreed at the pre-commencement site meeting.

**After tree works but before the removal of existing structures and construction work starts (including bringing of plant and materials onto site):**

**Tree protection fencing** will be constructed in accordance with the recommendations in section 6.2.2 of BS5837:2012 before any construction has commenced. The fencing will be installed as shown on the draft tree protection plan (TPP).

**Temporary ground protection** will be installed in accordance with the recommendations in section 6.2.3.3 of BS5837:2012. Where existing hard surfaces are retained, these may be suitable as ground protection for pedestrian and vehicular traffic over RPAs, however its suitability to withstand the applied load should be assessed. All ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil.

**During construction:**

**Tree protection will not be moved or altered** without written consent from the Local Planning Authority's tree officer and the area within (Construction Exclusion Zone (CEZ) will be considered sacrosanct.

**Post-construction works and following removal of all plant and materials from site:**

**Remove tree protection** This will only be permitted once all construction work is complete.

## Tree work

Where works inc. root pruning are required to trees covered by a TPO or in a conservation area, written consent shall be obtained from the LPA prior to these works being undertaken.

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All tree work must comply with British Standard 3998: 2010 'Recommendations for tree work'.

Should the requirement for additional tree works become apparent during the construction process; written consent shall be obtained from the LPA prior to these works being undertaken.

## Interpretation

A laminated copy of the method statement must be kept on-site in a prominent location for the duration of the development.

Dimensions and positions of the approved tree protection will be drawn onto all plans used by site operatives.

## Site Monitoring & Arboricultural Supervision

Results of any site monitoring or arboricultural supervision will be recorded and available for scrutiny by the LPA and developer. Any defects requiring remediation or rectification shall be notified to the site foreman/manager and the client.

Should any tree protection become damaged to impair its function, all works shall cease in the vicinity of the damage until it has been repaired.

Should damage occur to any of the retained trees for whatever reason, the damage should be reported to the site foreman/manager immediately. The site foreman/manager will then report to the arboricultural consultant to enable remediation to be implemented as necessary and agreed with the LPA.

## Construction Method Statement

**Construction operations in the vicinity of retained trees must be carried out with caution to prevent negative impacts:**

Care must be taken when planning site operations involving wide or tall loads or plant with booms, jibs, and counterweights to ensure that they do not encounter retained trees.
Any transit or traverse of plant such as described above will be conducted under the supervision of a banksman, to ensure adequate clearance is maintained.
Many building materials are toxic to trees. Excess cement, cement washings, wastewater, diesel fuel and even clean water in excess can kill or seriously damage trees. Any spillage run off should be controlled so that they do not contaminate the RPAs.

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Changes (increases or decreases) in ground levels within the RPA will kill roots and harm the tree. Any changes in soil levels around trees during demolition, construction or landscaping must be approved in advance by the LPA's tree officer.

Fire, either deliberate or accidental is harmful to trees. If fires are proposed, they must not be carried out within 10m of the outer crown (drip line).

Trenches for services (electricity, gas, water etc.) can damage tree roots. Service runs should be routed to avoid the RPA of any retained tree. If services are unavoidable within the RPA, then it will be necessary to prepare method statements for protecting tree roots if no-dig techniques e.g. a mole are not practical.

Where scaffolding is required, it should be erected outside of RPAs. However, where it is essential for scaffolding to be erected within RPAs, pruning should be kept to a minimum. This can be achieved by designing scaffolding to avoid branches or tying back branches where necessary. Where pruning is unavoidable it must be carried out by an arborist in accordance with British Standard 3998: 2010 'Recommendations for tree work' and may first require permission from the local planning authority. Temporary ground protection must also be installed beneath all scaffolding within RPAs, in accordance with the recommendations in section 6.2.3.3 of BS5837:2012 and remain in place until the scaffolding is removed. No ground excavation is to be carried out for the soleplates.

## Excavation within root protection areas (RPAs)

Any excavation required within RPAs must be carried out carefully using spades, forks and trowels, taking care not to damage the bark and wood of any roots. All soil removal must be undertaken with care to minimise the disturbance of roots beyond the immediate area of excavation. Where possible, flexible clumps of smaller roots, including fibrous roots, must be retained if they can be displaced temporarily or permanently beyond the excavation without damage. If digging by hand, a fork should be used to loosen the soil and help locate any substantial roots. Once roots have been located, the trowel should be used to clear the soil away from them without damaging the bark.

Any exposed roots that require removal will be cut cleanly with a sharp saw or secateurs 10-20cm behind the final face of the excavation. Roots temporarily exposed must be protected from direct sunlight, drying out and extremes of temperature by appropriate covering. Roots greater than 25mm in diameter should be retained where possible. Roots 25-100mm in diameter should only be cut in exceptional circumstances. Roots greater than 100mm in diameter should only be cut after consultation with the appropriate supervisory officer.

Any excavation within RPAs will be carried out under direct arboricultural supervision.

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## Installation of New Structures in RPAs

New structures in RPAs are potentially damaging to trees because they may disturb the soil and disrupt the existing exchange of water and gases in and out of it. Mature and over-mature trees are much more prone to suffer because of these changes than young and maturing trees.

Before the installation of the new structures start, all RPAs that may be affected should be covered with temporary ground protection as set out in BS 5837.

Localised loss of roots may be unavoidable so each situation should be assessed on its own merits by an appropriate supervising officer once the careful excavations have been completed. Any roots found should be dealt with as set out above. When installing any of these structures, the ground protection must remain in place until the construction is completed and there is no risk of damage to RPAs.

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# Appendix F

## EXAMPLE SITE MONITORING RECORDING TABLE

| Date | Purpose | Attendees | Notes |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

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# Appendix G

# GUIDANCE ON PLANNING AND LEGISLATION FOR TREES

**Tree Legislation and Guidance (England)**

- Certain trees are protected by law, and unauthorized work on them can lead to fines or prosecution. Before carrying out any work, check the legal status of the trees. Protection includes Tree Preservation Orders (TPOs), Conservation Areas, Planning Conditions, Felling Licences, and Restrictive Covenants.

**Tree Preservation Orders (TPOs)**

- TPOs are issued by Local Planning Authorities (LPA) to protect trees of significant local value. They cover trees, but not hedges, bushes, or shrubs.
- It is generally illegal to cut, top, lop, uproot, or damage a protected tree without LPA permission. Severe violations can result in unlimited fines in Crown Court.
- Applications for tree work can be made through the Planning Portal or directly to the LPA. Refer to the National Planning Policy Framework for guidance on TPOs.

**Conservation Areas**

- If a tree in a Conservation Area is not protected by a TPO, you must notify the LPA at least six weeks before starting work. This allows the LPA to decide whether to issue a TPO.
- No notice is needed for trees under 7.5 cm in diameter (1.5 meters above ground) or 10 cm if thinning to aid other trees' growth.

**Trees and the Planning System**

- LPAs must consider tree protection and planting when granting planning permission. Statutorily protected trees require adherence to specific procedures before any work.
- Planning conditions often secure tree retention during development. For long-term protection, a TPO may be more appropriate than planning conditions.

**Felling Licences**

- Felling Licences, managed by the Forestry Commission, are required for felling trees outside gardens. Some exemptions apply. Visit the Forestry Commission's website for more information.

**Restrictive Covenants**

- These are agreements that restrict certain actions on a property. They may apply even if TPO, CA, or felling licence regulations do not. Consult a solicitor for advice on restrictive covenants.

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**National Planning Policy Framework (NPPF) 2023**

- The NPPF 2023 emphasizes sustainable development and the protection of irreplaceable habitats, such as ancient and veteran trees. Planning permission should be refused if development harms these habitats unless there are exceptional reasons with a strong compensation strategy.

**Biodiversity Net Gain (BNG)**

- BNG, introduced by the Environment Act 2021, mandates a 10% biodiversity increase for new developments starting November 2023. Ancient and veteran trees are exempt from BNG as they cannot be replaced. Developments must avoid damage to these trees, and any loss should be minimized, with overall net gain applied to other areas.

**Ancient Woodland and Veteran Trees**

- These habitats receive special protection under the NPPF. Developments affecting these areas must have a detailed assessment and mitigation strategy. Development should be avoided unless exceptional reasons are provided.

**Environmental Impact Assessment (EIA)**

- Certain developments require an EIA to assess environmental impacts, including effects on trees. Detailed tree surveys and impact assessments must be included in EIA reports for relevant projects.

**Sites of Special Scientific Interest (SSSI)**

- SSSIs are protected areas with specific management plans. Unauthorised damage can result in fines up to £20,000 or unlimited fines on an indictment.

**The Habitats Directive & Wildlife & Countryside Act**

- European protected species, such as bats and dormice, are legally protected. Activities disturbing these species or their habitats require a licence from Natural England.

**Wildlife and Countryside Act 1981 & Countryside and Rights of Way Act 2000**

- It is illegal to disturb or destroy active nests of wild birds. Check for nesting birds before starting work and stop if any are found.

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**Planning Obligations (Section 106 Agreements)**

- Section 106 agreements may require tree planting or maintenance as part of development approvals, helping to preserve and enhance local biodiversity.

**Hedgerow Regulations 1997 and 2024 Update**

- Important hedgerows are protected under these regulations. Landowners need permission before removal, and non-compliance leads to enforcement action. The 2024 regulations include buffer zones, cutting restrictions, and stricter compliance measures.

**Occupiers Liability Act (1957 & 1984)**

- Tree owners must ensure no foreseeable harm comes to people or property due to their trees. Reasonable steps should be taken to prevent risks.

**High Hedges (Anti-social Behaviour Act 2003)**

- Councils can order action on high hedges if they adversely affect neighbors' enjoyment of their property. The government provides an information leaflet, Over the Garden Hedge.

**Forestry Act 1967 (as amended)**

- Felling trees outside of gardens often requires a licence. The Forestry Commission enforces penalties for illegal felling, including fines or prosecution.

**Common Law**

- Allows pruning back to the property boundary, provided it doesn't harm the tree's health or safety. TPO and other restrictions still apply.

**Conservation of Habitats and Species Regulations 2010**

- This protects species like bats. Any work must stop immediately if bats are found, and further guidance should be sought.

**Tree Work Standards**

- All tree work should comply with BS3998: 2010 and relevant health and safety legislation.

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**Biosecurity**

- To prevent pathogen spread, disinfect tools and clean boots and vehicle tires before leaving the site.

**Further Information**

- More detailed guidance can be found on the government's website: TPOs and Conservation Areas.

# Appendix H

# REFERENCES AND BIBLIOGRAPHY

- BSI. BS 5837:2012: Trees in Relation to design, demolition and construction - Recommendations.
- BSI. BS 3998: 2010: Tree work - Recommendations.
- BSI. BS 8545:2014 - Trees: from nursery to independence in the landscape – Recommendations.
- Department for Communities and Local Government (2014) Tree Preservation Orders and trees in conservation areas.
- Department for Communities and Local Government (2023). National Planning Policy Framework.
- John Roberts, Nick Jackson, Mark Smith, Centre for Ecology and Hydrology (Great Britain). Tree Roots in the Built Environment Issue 8 of Research for amenity trees. The Stationery Office, 2006.
- Handley, P., Walker, H., Ansine, J., Baden, R., Craig, I., Dewhurst-Richman, N., Doick, K.J., Fay, L., Mackie, E., Parratt, M., Perez-Sierra, A., Sparrow, K., Wheeler, P. (2022) Individual Tree Data Standard. Forest Research, Farnham. p:52. ISBN: 978-1-83915-015-9
- The Arboricultural Association (24/11/2015 - Last Modified: 01/07/2019) - A brief guide to legislation for trees.


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# Annex 1

# BS 5837:2012 TREE CONSTRAINTS PLAN

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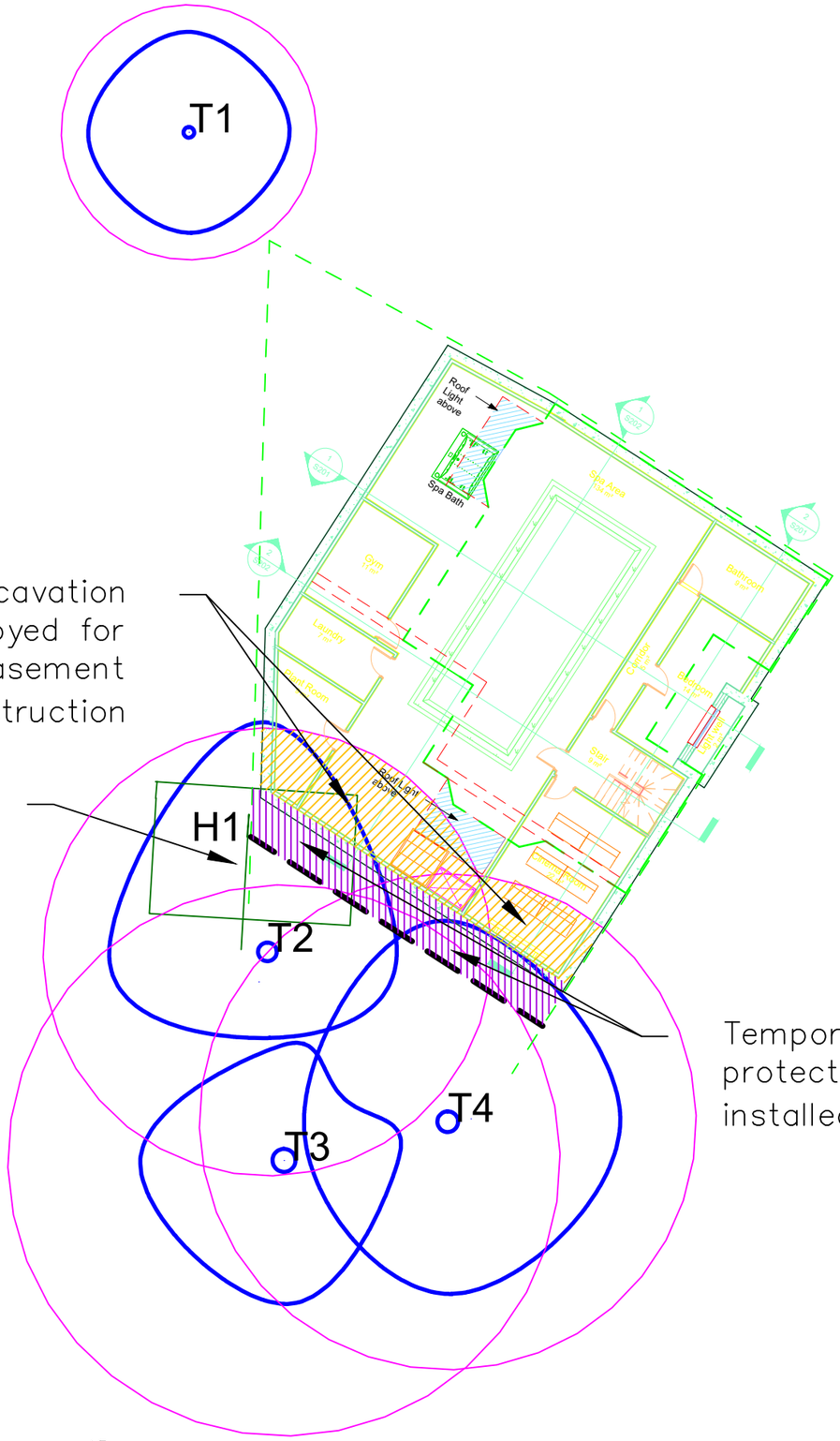
Legend
A
B (4)
C
U
Not Specified
T1
H1
T2
T3
T4
Briardale Gardens
Briardale Gardens
Platt's Ln
Platt's Ln
Ferncroft Ave
Ferncroft Ave
24
22
41
1
18
39
3
2
37
4
2-39
35
6
33
31
10 m
Google
Map data ©2024 Imagery ©2024 Airbus

# Annex 2

# BS 5837:2012 DRAFT TREE PROTECTION PLAN

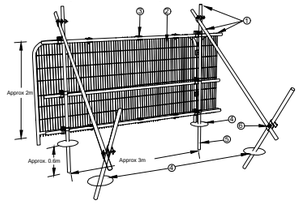



Specialist ground excavation method to be employed for proposed basement construction

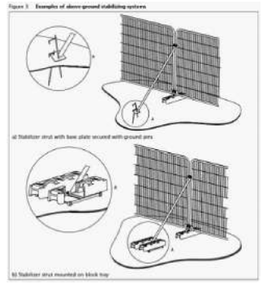
Hedge to be reduced in height by 2m and lateral spread by 1m on both sides

Temporary ground protection to be installed

**Default specification for protective barrier**




① Standard scaffold poles
② Heavy gauge 2m tall galvanised tube and welded mesh infill panels
③ Panels secured to uprights and cross-members with wire ties
④ Ground level
⑤ Uprights driven into the ground until secure (minimum depth 0.6m)
⑥ Standard scaffold clamps




**Example sign**

**Example temporary ground protection method**

BS 5837: 2012 - Tree Survey Key

| | |
|---|---|
| | Cat B tree |
| | Root Protection Area |
| | Protective Fencing |
| | Temporary ground protection |
| | Specialist ground excavation method to be employed |

This drawing has been produced in colour, a monochrome copy should not be relied upon.

Site:
Flat 1, 18 Platt's Ln, London NW3 7NS

Client:
Toby Vanhegan

Job:
20240618-153842995

Drawing Title:
DRAFT TREE PROTECTION PLAN

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Greenwood Environmental Ltd has been provided with a plan for this site, however as they do not always show the position of all trees and additional features, any missing trees or additional features have been positioned as accurately as possible and should therefore not be taken as exact but as a fair representation of their position on-site.

| | |
|---|---|
| Date: 08/11/2024 | Drawn by: OT |
| Scale: 1:200@A3 | CAD File: 20240618-153842995 DRAFT TPP.dwg |

Drawing Number: 20240618-153842995
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