Tree Survey and Arboricultural Impact Assessment
In Accordance with BS 5837:2012

Project No **11082**	**The Old Stables, 77 Park Lane, Harefield, UB9 6BL**		
Client:		LPS Architecture	
Date of Report:	13/08/2024	Revision:	Original
Prepared by:	AT	Checked by:	AT

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Summary

In this circumstance it is intended to construct an extension from the existing house, a retaining wall and new hard surfacing. The arboricultural related implications of the proposal are summarised in Tables 1 and 2 below, and detailed where necessary within the report.

All trees and landscape features that are to remain as part of the development should suffer no structural damage provided that the findings within this report are complied with in full.

Table 1 - Construction and ongoing constraints from an arboricultural perspective (subject to necessary tree surgery being completed):

Potential Design/ Build Constraints	Arboricultural Impact?	Comments/Solution
Construction Access	No	Existing access from north will be used
Demolition	No	N/A
New Structures	Yes	New retaining wall is proposed in the RPA of one retained tree as explained in item 4.1.1
New Hard Surfaces	No	Impact is accounted for as part of item 4.1.1
Compound	No	There should be sufficient space for a site compound without impacting retained trees
Phasing	Yes	Tree protection fencing must be installed as shown on drawing no. 11082-D-AIA

Table 2 - Tree surgery and felling necessary to facilitate the proposal:

Feature No	Surgery or Fell	Reason for Works	BS Category
H001	Fell section as shown on drawing no. 11082-D-AIA.	Conflicts with proposed retaining wall.	C
T004	Root prune as shown on drawing no. 11082-D-AIA.	Conflicts with proposed retaining wall.	C
T006	Reduce crown on eastern aspect by 1m as shown on drawing no. 11082-D-AIA.	Conflicts with proposed working space.	C

Given the above, there are no overt or overwhelming arboricultural constraints that can be reasonably cited to preclude the proposed construction.

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1.0 Introduction

1.1 Purpose

1.1.1 As part of the United Kingdom planning process, applicants are required to supply local planning authorities with a detailed evaluation of how their proposals will impact trees. The nationally recognised procedure for doing this is laid out in *BS5837:2012 "Trees in relation to design, demolition and construction – Recommendations".* In summary, this must include the following information as a minimum: -

- A Tree Survey and Tree Constraints Plan.
- An Arboricultural Impact Assessment of sufficient detail to confirm the feasibility of the design from a tree perspective.
- A scaled Tree Retention and Removal drawing showing retained trees and their root protection area on the proposed layout.

1.1.2 This report has been prepared to ensure that this information is provided to the Local Planning Authority in a straightforward and clear way so that they can make an informed decision about how (if at all) trees are affected.

1.1.3 When planning permission is granted it is typically the case that the Local Planning Authority will require specific conditions to be fulfilled. This means that a subsequent detailed Arboricultural Method Statement and Tree Protection Plan may be required. This will be detailed on the Local Planning Authority's decision notice.

1.2 Scope

1.2.1 In accordance with the above, LPS Architecture have commissioned Hayden's Arboricultural Consultants to prepare a Tree Survey and Constraints Plan, Arboricultural Impact Assessment and scaled Tree Retention and Removal drawing for the existing trees at The Old Stables, 77 Park Lane, Harefield, UB9 6BL.

1.2.2 Unless stated within the survey, all trees were inspected from ground level with no climbing inspections undertaken. As such, the findings are of a preliminary nature. It is not always possible to access every tree and therefore some measurements may have to be estimated.

1.2.3 The trees were inspected on the basis of "*Visual Tree Assessment" (Mattheck & Breloer - 1994)* and *"Common Sense Risk Management of Trees" National Tree Safety Group guidance – 2011*.

1.2.4 Whilst this is an arboricultural report, comments relating to non arboricultural matters are given, such as built structures and soil data. Any opinion thus expressed should be viewed as provisional and confirmation from an appropriately qualified professional sought. Such points are clearly identified within the body of the report.

1.3 Documentation

1.3.1 The following documentation was provided prior to the commencement of the production of this report;

- Email of instruction from Josh Young dated 21/06/2024.
- Definition of site boundary, description of requirements/deadlines.
- Proposed site layout drawing no. Proposed Plans - REV 00

2.0 The Site

2.1 Overview

2.1.1. The site is The Old Stables, 77 Park Lane, Harefield, UB9 6BL. The site comprises an existing residential address

2.2 Soils

2.2.1 The soils type commonly associated with this site are generally slowly permeable, seasonally wet acid loamy and clayey soils. They are of low fertility and typically comprise season wet pastures and woodlands. This soil type constitutes approximately 7% the total English land mass.

2.2.2 The data given was obtained from a desktop study which provides indications of likely soil types. By definition, this information is not comprehensive and therefore any decisions taken with regards the management, usage or construction on site should be based on a detailed soil analysis.

2.2.3 Further to item 2.2.2, this report provides no information on soil plasticity. It may be necessary for practitioners in other disciplines (e.g. engineers considering foundation design) to obtain this data as required.

2.3 Statutory Tree Protection

2.3.1 Information on any Local Planning Authority or Forestry Commission controlled statutory tree protection (Tree Preservation Orders, Conservation Areas and Felling Licenses etc) is recorded on the attached drawing no. 11082-D-AIA.

2.3.2 Further details regarding any existing Statutory Tree Protection is recorded at Appendix B.

3.0 Tree Survey

3.1 The tree survey was carried out on 25/08/2022 in accordance with *BS5837:2012 "Trees in relation to design, demolition and construction – Recommendations",* the relevant qualitative and quantitative tree data was recorded in order to assess the condition of the existing trees and their constraints upon the proposed development. The survey of these arboricultural features was carried out 25/08/2022 and therefore the data should be viewed as indicative.

3.2 An accurate topographical survey was not available at the time of inspection. Therefore, the position of each tree shown on the attached drawing no. 11082-D-AIA has been fixed by use of a hand-held GPS surveying unit. Given this, the position of the trees must be considered indicative, although drawing no. 11082-D-AIA provides a fair representation of the relationship of the trees as distributed across the site.

3.3 In order to provide a systematic, consistent and transparent evaluation of the trees included within this survey, they have been assessed and categorised in accordance with the method detailed in item 4.3 of *BS5837:2012 "Trees in Relation to Design, Demolition and Construction - Recommendations"*. For further information, please see the attached Explanatory Notes.

3.4 The detailed assessment of each tree and its work requirements with priorities are listed in the attached Schedule of Trees.

3.5 In accordance with item 4.2.4 (c) of BS5837:2012, the items inspected and detailed within this report have been selected for inclusion due to the likely influence of any proposed development on the trees, rather than strictly adhering to the curtilage of the site. However, it must be understood that there may be trees beyond the site and not included in this survey which may exert an influence on the development. Where works for cultural, health and safety, quality of life, or development purposes have been recommended on trees outside the ownership of the site, these can only progress with the agreement of the owner, except where it involves portions of the trees overhanging the boundary.

4.0 Arboricultural Impact Assessment (Additional or Specific Comments)

4.1 Construction

4.1.1 Construction of footings for the proposed retaining wall encroaches within the calculated RPA of the following tree to be retained – T004. Given the inevitable impact and extent of the intrusion at this location it is considered appropriate to undertake linear root pruning as part of the access facilitation pruning (AFP) works. This operation will obviate the need for arboriculturally imperative specialised foundation construction methods in this situation. It will also account for the proposed footpath that will be located between this wall and the extension. However, dependent on the soil type, species and topography, trees may have an influence on the soil beyond their calculated RPA. Given the proximity of the proposed construction to the trees to be retained, it is recommended that a Structural Engineer is consulted to assess the implications of the tree retention on the required foundation design.

4.2 Services

4.2.1 New service routes are not available. However, it is important to establish the principle that wherever possible, all underground service runs will be placed outside the Root Protection Areas (RPA) of the trees on or adjacent to the site. Where it is not possible to do this, any infringement must be addressed by hand digging or trenchless technology. Similarly, all routes for overhead services will aim to avoid the trees and where this is not possible, any necessary tree work must be agreed with the Local Planning Authority. It is assumed, given the nature of the extension, that any new services will be routed from the existing dwelling.

4.3 Phasing

4.3.1 The proposal involves the integration of several complex aspects that affect tree protection (e.g. – but not exclusively – access, movement of materials and the installation of services). For this reason, the project must be carefully phased to ensure the highest level of protection is maintained for retained trees. As part of the detailed Arboricultural Method Statement & Tree Protection Plan, Hayden's Arboricultural Consultants will produce an in-depth phasing recommendation to cover the major operations on site as they affect retained trees.

5.0 Limitations & Qualifications

Tree inspection reports are subject to the following limitations and qualifications.

General exclusions

Unless specifically mentioned, the report will only be concerned with above ground inspections. No below ground inspections will be carried out without the prior confirmation from the client that such works should be undertaken.

The validity, accuracy and findings of this report will be directly related to the accuracy of the information made available prior to and during the inspection process. No checking of independent third-party data will be undertaken. Hayden's Arboricultural Consultants Limited will not be responsible for the recommendations within this report where essential data are not made available or are inaccurate.

This report will remain valid for one year from the date of inspection subject to the recommendations specified within being adhered to. It must also be appreciated that recommendations proposed within this report may be superseded by extreme weather, or any other unreasonably foreseeable events.

Tree surgery should be completed as detailed in the Schedule of Trees. Where this has been identified for reasons other than to permit development, this work should be completed within the advised timescales irrespective of any development proposals.

Tree surgery works may also be proposed as part of this Survey to mitigate any identified problems that may be caused by trees in close proximity to the proposed development. To this end, should these recommendations be overruled, this Survey stands as the opinion of Hayden's Arboricultural Consultants Limited, and therefore any damage or injury caused by trees recommended by this practice for felling or tree surgery works, to which the proposed schedule of works has been altered or the tree has been requested to be retained by the Local Planning Authority, cannot be the responsibility of this practice.

Moreover, if any additional alterations to the property or soil levels are carried out and/or further tree works undertaken other than specified within the report, it will become invalid and a new tree inspection required.

It will be appreciated, and deemed to be accepted by the client and their insurers, that the formulation of the recommendations for the management of trees will be guided by the following: -

1. The need to avoid reasonably foreseeable damage.
2. The arboricultural considerations - tree safety, good arboricultural practice (tree work) and aesthetics.

The client and their insurers are deemed to have accepted the limitation placed on the recommendations by the sources quoted in the attached report. Where sources are limited by time constraints or the client, this may lead to an incomplete quantification of the risk.

Signed:

August 2024
For and on Behalf of Hayden's Arboricultural Consultants Limited

6.0 References

British Standards Institute. (2010). *Recommendations for Tree Work BS3998:2010* BSI, London.

British Standards Institute. (2012). *Trees in Relation to Design, Demolition and Construction – Recommendations BS5837:2012* BSI, London.

Ministry of Housing, Communities & Local Government. (2014). *Tree Preservation Orders and trees in conservation areas.* London: Ministry of Housing, Communities & Local Government.

Mattheck & Breloer, H. (1994). *Research for Amenity Trees No.4: The Body Language of Trees*, HMSO, London.

NHBC Standards (2007) *Chapter 4.2 'Building Near Trees'.* National House-Building Council.

NJUG 4 Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees. Issued 16 November 2007.

Forestry Commission (2007). *Tree Felling – Getting Permission.* Country Services Division, Forestry Commission, Edinburgh.

Patch, D. Holding, B. (2006) *Arboricultural Practice Note 12 (APN12)*, *Through the Trees to Development.* Arboricultural Advisory and Information Service (AAIS).

Lonsdale, D. (1999). *Research for Amenity Trees No 7: Principles of Tree Hazard Assessment and Management*, HMSO, London.

National Tree Safety Group (2011). *Common Sense Risk Management of Trees.* Forestry Commission.

7.0 Appendices

Appendix	**A**	Species List & Tree Problems
Appendix	**B**	Statutory Tree Protection Advice & Tree Preservation Order Enquiry/Response
Appendix	**C**	Schedule of Works - Irrespective of Development
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1. BS 5837:2012 Figure 1 - Flow Chart – Design and Construction & Tree Care
2. European Protected Species and Woodland Operations Checklist (v.4)
3. BS 5837:2012 Figure 2 - Default specification for protective barrier
4. BS 5837:2012 Figure 3 - Examples of above-ground stabilising systems

Appendix	**G**	Drawing No 11082-D-AIA.

Appendix A - Species List & Tree Problems

Species List:

Apple	*Malus sp*
Cherry	*Prunus sp*
Cypress	*Cupressus sp*
Laburnum	*Laburnum anagyroides*
White Willow	*Salix alba*
Wild Cherry	*Prunus avium*

Tree Problems:

This gives a brief description of the problems identified in the attached Tree Survey.

Name: Deadwood	
Symptoms/damage type and cause:	This relates to dead branches in the crown of the tree. In the majority of cases, this is caused by the natural ageing process of the tree or shading due to its close proximity to neighbouring trees. However, in some situations, it may be related to fungal, bacterial or viral infection.
Consequence:	Depending upon the location and mass of dead wood removal of the affected tissue may be necessary to prevent harm to persons or property as the wood will become unstable as it decays and in some circumstances is likely to fall from the tree with little or no warning.
Control:	Detailed monitoring should be undertaken on those trees showing signs of excessive deadwood production to identify the underlying cause.
Species affected:	Most tree species.
Images:	 

Name: ***Inonotus hispidus*** **(Ash Heart Rot or Shaggy Polypore)**	
Symptoms/damage type and cause:	This is common and widespread, found most frequently on Ash as a serious cause of stem rot associated with wounds but also occurs on other broad-leaved trees (see species affected). The fruiting body is hoof or bracket shaped, rusty-red but later black, markedly shaggy (hence the alternate name 'shaggy polypore'), with red-yellow ragged pore surface underneath. The fruit bodies develop on the trunk or major branches and can enter the tree through wounds on the trunk and branches. The rot is indefinite but affected wood is softer and lighter than sound tissue. The wood turns a yellow-brown and spongy surrounded by a brown zone, which has a gummy appearance.
Consequence:	The strength of the wood is greatly reduced often leading to branch or stem failure.
Control:	Removal of affected tissues may be feasible to make the tree safe where there is risk of harm to persons or property from falling branches or stems. Tree removal may be required in some cases.
Species affected:	*Fraxinus* spp, *Platanus* spp, *Juglans* spp, *Ulmus* spp, *Malus* spp, *Acer pseudoplatanus*
Images:	 

Appendix B - Statutory Tree Protection Advice & Tree Preservation Order Enquiry/Response

Statutory Tree Protection Advice

Conservation Area

The site is located within a locality specifically identified by the Local Planning Authority as a "Conservation Area". This is a planning designation that seeks to provide control over the built environment, but which also has provision for tree protection. The effect of this on the owners, managers or any persons wishing to undertake work on trees sited within a Conservation Area is to require them to submit 6 weeks written notice detailing the surgery or felling they plan to undertake. No work may be carried during the 6-week period unless written permission has been received from the Local Planning Authority. The Local Planning Authority can only prevent works notified to them within the 6-week period by serving a Tree Preservation Order. If this happens, the owner of the tree has a right to object to the serving of the order.

There are certain circumstances where written permission from the Local Planning Authority may not be necessary before undertaking works. These include;

- Making a tree safe if it is an imminent threat to people or property.
- Removing dead wood, or a dead tree.
- Trees with stem diameters of less than 75mm (measured at 1.5m from ground level). If the works being carried out are to help promote the growth of other trees then trees with stem diameters of less than 100mm (at 1.5m) may be removed or pruned.

Owners, managers or any persons wishing to undertake work as an exemption to the written notification process are **required** to provide the Local Planning Authority with 5 days' notice prior to attending to a tree which they deem as being dead or dangerous; unless such works are required in an emergency. It is the tree owner's responsibility to provide proof that the tree was indeed dead or dangerous should this exception be challenged; hence, it is advisable always to request an inspection by the Local Planning Authority prior to carrying out such operations. Furthermore, and even in the event of an emergency situation, there is still a duty to notify the Local Planning Authority that work has been completed including supplying an explanation of the necessity. Failure to comply with the requirements of Conservation Area legislation can lead to a maximum fine of up to £20,000 per tree in the Magistrates Court. Fines in the Crown Court are unlimited.

NB: If **detailed planning permission** is granted and as part of the relevant approval, works (felling or surgery) to trees located within a Conservation Area are agreed as acceptable by the Local Planning Authority, no **additional** written permission to proceed will be required provided that (i) the planning permission remains live, (ii) the works are in strict accordance with the specification of the extant planning permission, and (iii) the works are being completed solely to implement the detailed planning permission.

This information was sourced using the Local Planning Authority's Online Mapping System (as instructed by them) and to our best knowledge was current and accurate at the time the information was accessed. We would advise it prudent that before any tree work commences, this is checked directly with the Local Planning Authority to confirm that their online mapping system is definitive.

Felling Licence

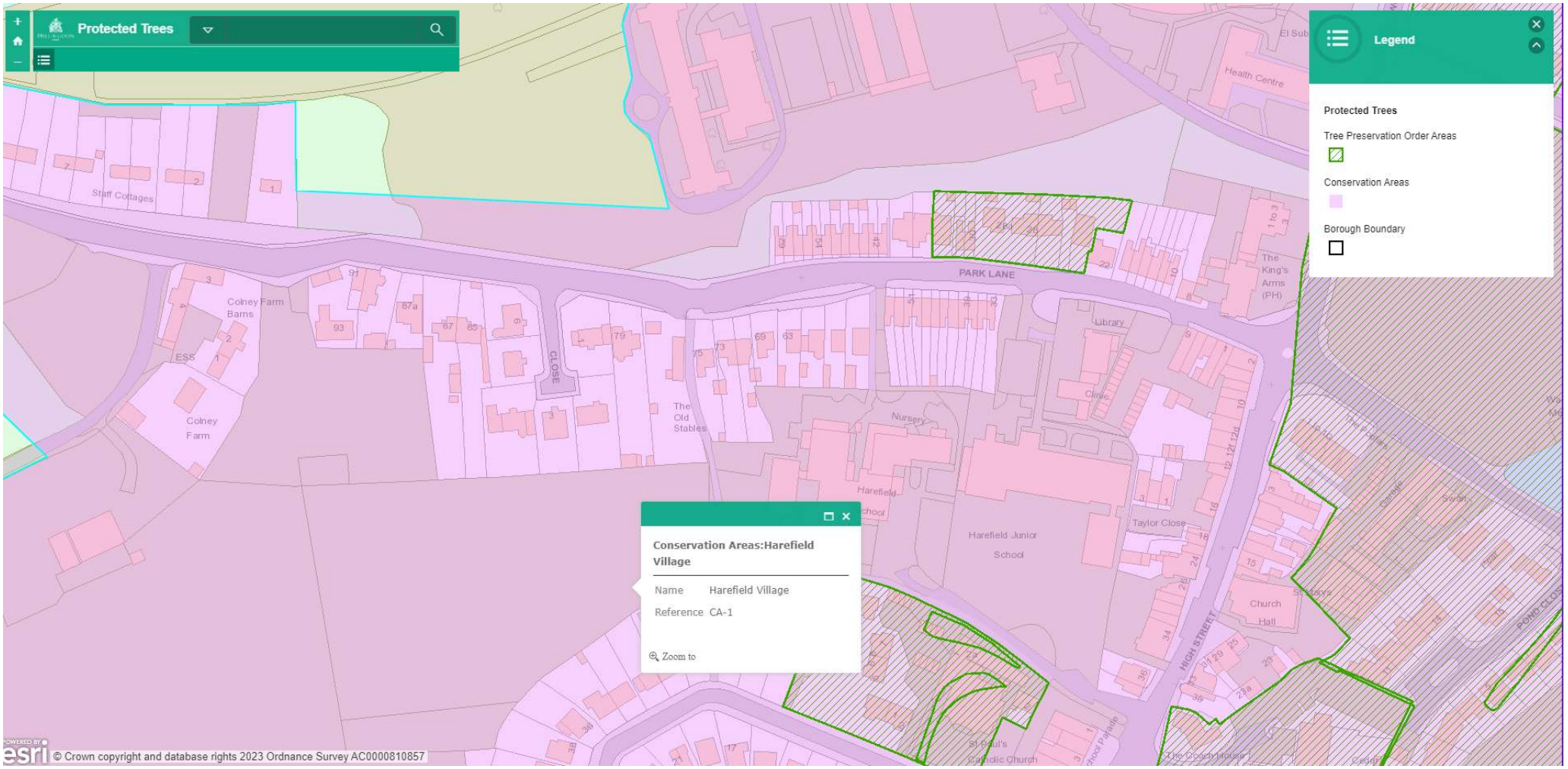
All trees within the United Kingdom are protected under the Forestry Acts. In general, anyone felling more than 5 cubic metres of timber in any calendar quarter requires a Felling Licence from the Forestry Commission. There are exemptions however and these are as follows:-

A Felling Licence is not required in the following instances:

- To fell trees in a garden, an orchard, a churchyard, or a designated open space (Commons Act 1899).
- To carry out surgery operations such as pruning, reduction, dead wooding or pollarding.
- To fell less than 5 cubic metres in a calendar quarter. (Please note that not more than 2 cubic metres in a calendar quarter may be sold).
- To fell trees that are 8 centimetres or less in diameter when measured 1.3 metres from the ground. Trees removed for thinning may have a diameter of up to 10 centimetres and trees managed under a coppice regime may have a diameter of up to 15 centimetres.
- To fell trees previously approved for removal under a Dedication Scheme, or where Detailed Planning Permission has been granted.

Substantial fines exist for not complying with the requirements of a Felling Licence.

Tree Preservation Order / Conservation Area Online Mapping Extract



Appendix C

Schedule of Trees

SCHEDULE OF TREES (AIA)

The Old Stables, 77 Park Lane, Harefield,

Surveyed By: Alex Turner Date: 25/08/2022
Managed By: Alex Turner

TreeNo	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
		Min Dist	Crown Base	Lowest Branch	Age	Water Demand						
On site		RPA (m²)	Aspect	Aspect	SULE	Ground Cover						
G001	Unknown	210	5		Low	N3.5, E3.5, S1.5, W1.5	Pair of large shrubs. Crowns favour north and east aspects. Dense crowns. Fair form and condition.	C1	No work required.	4		
		2.52	0.3		M	High						
Yes		20			10+ years	Bare earth, Grass						
H001	Cypress Spp	320	7		Moderate	N2.5, E2.5, S2.5, W2.5	Dense hedge feature growing at gate entrance to garden. All dimensions are estimated due to dense crown blocking access to record detailed measurements. Retaining wall is being pushed out by roots. Fair form and condition.	C2	No work required.	4	Fell section as shown on drawing no. 11082-D-AIA.	0
		3.84	0.1		SM	High						
Yes		46.3			10+ years	Grass, Block paving						
T001	Apple Sp	330	5		Moderate	N3.5, E2, S2.5, W2.5	Garden fruit tree. Evidence of past pruning typical for managing fruit trees. Majority of leaf-bearing branches are rejuvenated small diameter extensions from established but pruned branching structures. Crown on eastern aspect is more strictly managed with its shape changed to accommodate the adjacent swimming pool. Exposed sapwood where tree becomes twin stemmed. Inonotus hispidus fungal bracket present low in crown on western aspect at a site of past pruning. Overall fair form and condition.	C1	No work required.	4		
		3.96	2.3		M	Moderate						
Yes		49.3			10+ years	Grass, Block paving						
T004	Laburnum	540	8		Moderate	N3.5, E3.5, S4, W4.5	Multi-stemmed form from 1 metre. Congested union. Tight unions. Crossing and rubbing branches. Minor deadwood in crown but no ground target. Fair form and condition.	C1	No work required.	4	Root prune as shown on drawing no. 11082-D-AIA.	0
		6.48	1.5		M	Moderate						
Yes		131.9			10+ years	Bare earth, Ivy						
T005	White Willow	170	6		Low	N5, E3, S2.5, W2.5	Off-site tree. No topo position so location is indicative. Tree included within survey extent due to proximity and water demand. All dimensions are estimated due to lack of access. Stem leans northwards. Sparse crown. Fair form and condition.	C1	No work required.	4		
		2.04	1.8		Y	High						
No		13.1			10+ years	Grass						

TreeNo	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
		Min Dist	Crown Base	Lowest Branch	Age	Water Demand						
On site		RPA (m^2)	Aspect	Aspect	SULE	Ground Cover						
T006	Wild Cherry	110	5		Low	N2.5, E4, S2, W4	Young tree growing within wider feature. Poor line of sight due surrounding vegetation and branches extending off-site. Fair form and condition.	C1	No work required.	4	Reduce crown on eastern aspect by 1m as shown on drawing no. 11082-D-AIA.	0
		1.32	1		Y	Moderate						
Yes		5.5			10+ years	Bare earth, Ivy						

Appendix D

Schedule of Works to Allow Development

SCHEDULE OF WORKS (AIA)

The Old Stables, 77 Park Lane, Harefield,

Surveyed By: Alex Turner
Surveyed: 25/08/2022
Managed By: Alex Turner

Tree No.	Species	Work required	Priority
H001	Cypress Spp	Fell section as shown on drawing no. 11082-D-AIA.	**0**
T004	Laburnum	Root prune as shown on drawing no. 11082-D-AIA.	**0**
T006	Wild Cherry	Reduce crown on eastern aspect by 1m as shown on drawing no. 11082-D-AIA.	**0**

Appendix E

Explanatory Notes

Explanatory Notes

Categories

No	Identifies the tree on the drawing.
Species	Common names are given to aid understanding for the wider audience.
BS 5837 Main Category	Using this assessment (BWS 5837:2012, table 1), trees can be divided into one of the following simplified categories, and are differentiated by cross-hatching and by colour on the attached drawing. **Category A** - Those of high quality with an estimated remaining life expectancy of at least 40 years; **Category B** - Those of moderate quality with an estimated life expectancy of at least 40 years; **Category C** - Those of low quality with an estimated remaining of at least 10 years, or young trees with a stem diameter below 150 mm; **Category U** - Those trees in such condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.
BS 5837 Sub Category	Table 1 of BS 5837:2012 also requires a sub category to be applied to the A, B, C, and U assessments. This allows for a further understanding of the determining classification as follows: **Sub Category 1** - Mainly arboricultural qualities; **Sub Category 2** - Mainly landscape qualities; **Sub Category 3** - Mainly cultural values, including conservation. Please note that a specimen or landscape feature may fulfil the requirements of more than one Sub Category.
DBH (mm)	Diameter of main stem in millimetres at 1.5 metres from ground level. Where the tree is a multi-stem, the diameter is calculated in accordance with item 4.6.1 of BS 5837:2012.
Height	Recorded in metres, measured from the base of the tree.
Crown Base	Recorded in metres, the distance from ground and aspect of the lowest branch material.
Lowest Branch	Recorded in metres, the distance from ground and aspect of the emergence point of the lowest significant branch.

Age	Recorded as one of seven categories: **Y** Young. Recently planted or establishing tree that could be transplanted without specialist equipment, i.e. less than 150 mm DBH. **S/M** Semi-mature. An established tree, but one which has not reached its prospective ultimate height. **E/M** Early-mature. A tree that is reaching its ultimate potential height, whose growth rate is slowing down but if healthy, will still increase in stem diameter and crown spread. **M** Mature. A mature specimen with limited potential for any significant increase in size, even if healthy. **O/M** Over-mature. A senescent or moribund 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. A tree considered a 'survivor' having endured injury, disease and/or decay, developing important habitat features such as decay, trunk hollowing, deadwood, fungal fruiting bodies (plus others) not solely as a consequence of time. Veteran trees are afforded additional protection within the planning system where they may be influenced by change. **A** Ancient. A tree that has the features of a Veteran tree but has also surpassed the typical lifespan for its species. These trees may differ in appearance from a Veteran tree, such as having a thick/wide trunk and a small crown. Ancient trees are usually considered to have exceptional cultural significance. Ancient trees are afforded additional protection within the planning system where they may be influenced by change.
Safe Useful Life Expectancy (SULE)	Relates to the prospective life expectancy of the tree and is given as 4 categories: 1 = 40 years+; 2 = 20 years+; 3 = 10 years+; 4 = less than 10 years.
Crown Spread	Indicates the radius of the crown from the base of the tree in each of the northern, eastern, southern and western aspects.
Minimum Distance	This is a distance equal to 12 times the diameter of the tree measured at 1.5 metres above ground level for single stemmed trees and 12 times the average diameter of the tree measured at 1.5 metres above ground level tree for multi stemmed specimens. (BS 5837:2012, section 4.6).
RPA	This is the Root Protection Area, measured in square metres and defined in BS5837:2012 as "a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority". The RPA is shown on the drawing.. Ideally this is an area around the tree that must be kept clear of construction, level changes of construction operations. Some methods of construction can be carried out within the RPA of a retained tree but only if approved by the Local Planning Authority's tree officer.
Water Demand	This gives the water demand of the species of tree when mature, as given in the NHBC Standards Chapter 4.2 "Building Near Trees".

Visual Amenity	Concerns the planning and landscape contribution to the development site made by the tree, hedge or tree group, in terms of its amenity value and prominence on the skyline along with functional criteria such as the screening value, shelter provision and wildlife significance. The usual definitions are as follows: Low — An inconsequential landscape feature. Moderate — Of some note within the immediate vicinity, but not significant in the wider context. High — Item of high visual importance.
Problems/ Comments	May include general comments about growth characteristic, how it is affected by other trees and any previous surgery work; also, specific problems such as deadwood, pests, diseases, broken limbs, etc.
Works Required (TS)	Identifies the necessary tree work to mitigate anticipated problems and deal with existing problems identified in the “Problems/comments” category.
Work Required (AIA)	Identifies the tree work specifically necessary to allow a proposed development to proceed.
Priority	This gives a priority rating to each tree allowing the client to prioritise necessary tree works identified within the Tree Survey. 1 Urgent – works required immediately; 2 Works required within 6 months; 3 Works required within 1 year; 4 Re-inspect in 12 months, 0 Remedial works as part of implementation of planning consent.

BS 5837:2012 Terms and Definitions

Access Facilitation Pruning	One-off tree pruning operation, the nature and effects of which are without significant adverse impact on tree physiology or amenity value, which is directly necessary to provide access for operations on site.
Arboricultural Method Statement	Methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained.
Arboriculturist	Person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction.
Competent Person	Person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached. NOTE - a competent person is expected to be able to advise on the best means by which the recommendations of this British Standard may be implemented.
Construction	Site-based operations with the potential to affect existing trees.
Construction Exclusion Zone	Area based on the root protection area from which access is prohibited for the duration of a project.
Root Protection Area (RPA)	Layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.
Service	Any above or below ground structure or apparatus required for utility provision. **NOTE** - examples include drainage, gas supplies, ground source heat pumps, CCTV and satellite communications.
Stem	Principal above ground structural component(s) of a tree that supports its branches.
Structure	Manufactured object, such as a building, carriageway, path, wall, service run, and built or excavated earthwork.
Tree Protection Plan	Scale drawing, informed by descriptive text where necessary, based upon the finalized proposals, showing trees for retention and illustrating the tree and landscape protection measures.

Veteran/Ancient Tree Buffer

A diagrammatic representation of the additional protection measures afforded to Veteran and Ancient Trees by the imposing of a geographical 'buffer' space between the Veteran/Ancient Trees and any potential activity such as construction, that may affect the trees. The buffer zones are calculated as follows:

For ancient woodlands, the proposal should have a buffer zone of at least 15 metres from the boundary of the woodland to avoid root damage (known as the root protection area). Where assessment shows other impacts are likely to extend beyond this distance, the proposal is likely to need a larger buffer zone. For example, the effect of air pollution from development that results in a significant increase in traffic.

For ancient or veteran trees (including those on the woodland boundary), the buffer zone should be at least 15 times larger than the diameter of the tree. The buffer zone should be 5 metres from the edge of the tree's canopy if that area is larger than 15 times the tree's diameter. This will create a minimum root protection area.

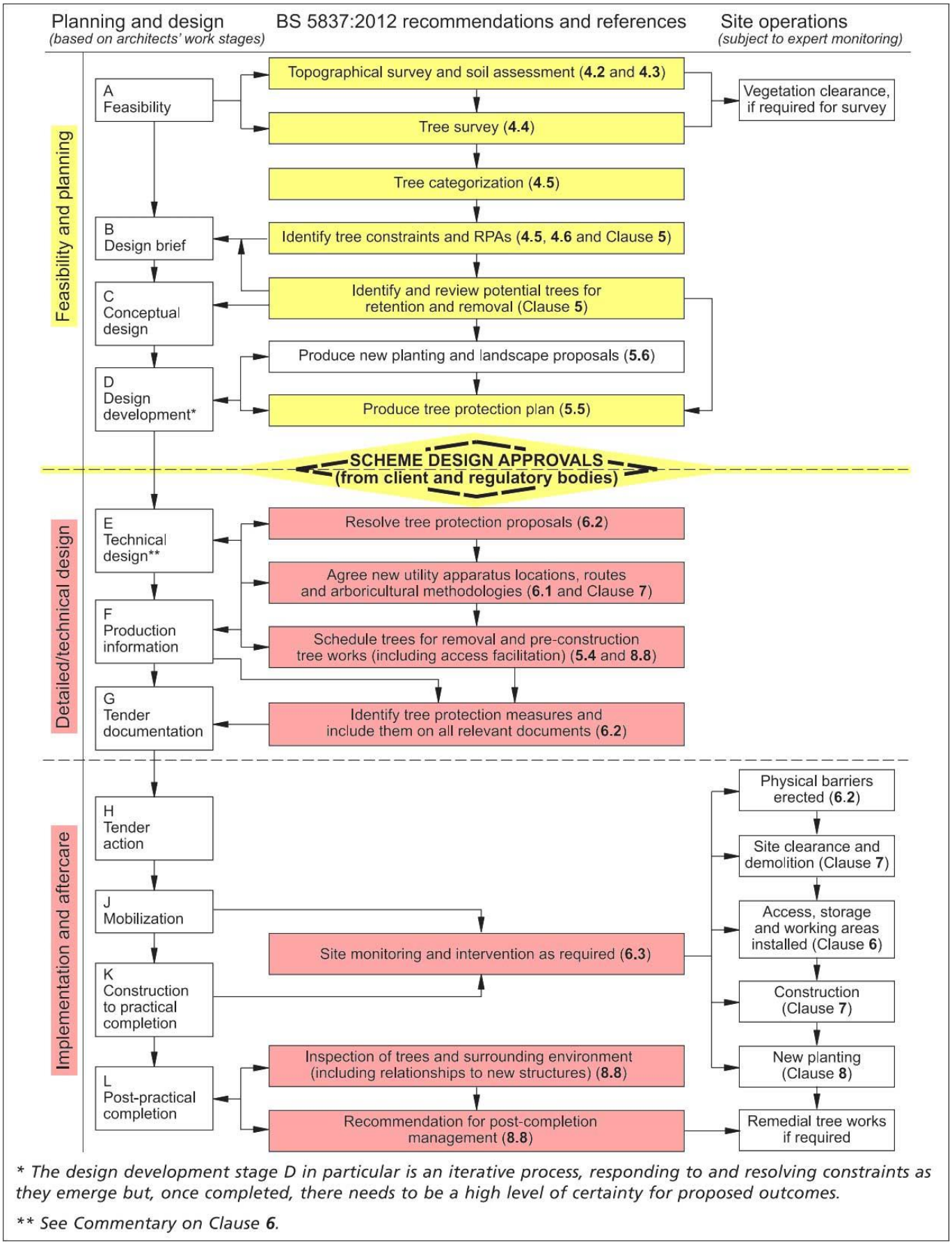
Where assessment shows other impacts are likely to extend beyond this distance, the proposal is likely to need a larger buffer zone.

Source: Natural England; The Forestry Commission; The UK Government Dept. for The Environment.

Appendix F

Advisory Information & Sample Specifications

1. BS 5837:2012 Figure 1 - Flow Chart – Design and Construction & 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**.*

2.

European Protected Species and woodland operations. (V4)

Complete all sections of the Checklist

✔

Checklist

1 **Are you within, or close to, the known mapped range of any of the protected species OTHER THAN BATS which are potentially everywhere? Tick any that apply.**
See distribution maps in the Good Practice Guidance for each species -

- ☐ Dormice
- ☐ Otters
- ☐ Great crested newts
- ☐ Sand lizards
- ☐ Smooth snakes

YES ☐ NO ☐

2 **Does your wood contain any of the following habitats? Tick any that apply.**

- ☐ Old trees with holes and crevices which might be used bats
- ☐ Species rich scrub/coppice, early growth stage plantations and forest interfaces
- ☐ Rivers on which otters might be found
- ☐ Ponds which might be occupied by great crested newts
- ☐ Open areas on heathy soils

YES ☐ NO ☐

3 **Have any of the protected species been recorded in this wood or on adjoining sites? Tick any that apply.**
Indicate which sources of information you have checked:

- ☐ National Biodiversity Network (www.nbn.org.uk)
- ☐ Local Biological Records Centre
- ☐ Local Wildlife Trust
- ☐ Other

Specify Other:

YES ☐ NO ☐

4 **Have your inspections or any expert surveys found any of the following signs or evidence? Tick any that apply.**

- ☐ Signs (e.g. otter spraint, nuts gnawed by dormice, leaves folded by newts)
- ☐ Sightings (or echo-location)
- ☐ Potential breeding or roosting sites (e.g. veteran trees, old trees with crevices, riverside hollow trees, ponds, timber stacks, large fallen deadwood)
- ☐ Confirmed breeding or roosting sites (i.e. evidence of sites actually being used)

Details:

YES ☐ NO ☐

Details

Name of Wood:

Grid Reference:

Area: (ha) .

Date of Assessment:

Name of Assessor:

CHECK POINT

If you have answered NO to ALL of the above then only bats need to be considered in your operations.

If you have answered YES to any of the above then the species concerned must be considered as well as bats.

Notes

5 **Do the operations comply with Good Practice for bats and any other species found (or likely to be found in your wood) or can the operations be modified to do so?**
Details: Use reverse of form to expand as required:

YES ☐ A licence is not required but continue to sections 6 and 7 below

NO ☐ You will need to obtain a licence BEFORE carrying out the work (see EPS Licence Application Forms and Notes)

6 **Whether or not a licence is required...**
Has the information been communicated to operators (including the location of breeding sites and sensitive areas)? Tick any that apply.

- ☐ Included in documentation (e.g. contract, letter of instruction, site assessment or other management plan)
- ☐ Shown to operators and/or their supervisor
- ☐ Marked with paint or hazard tape
- ☐ Shown on the site plan

Other means:

YES ☐

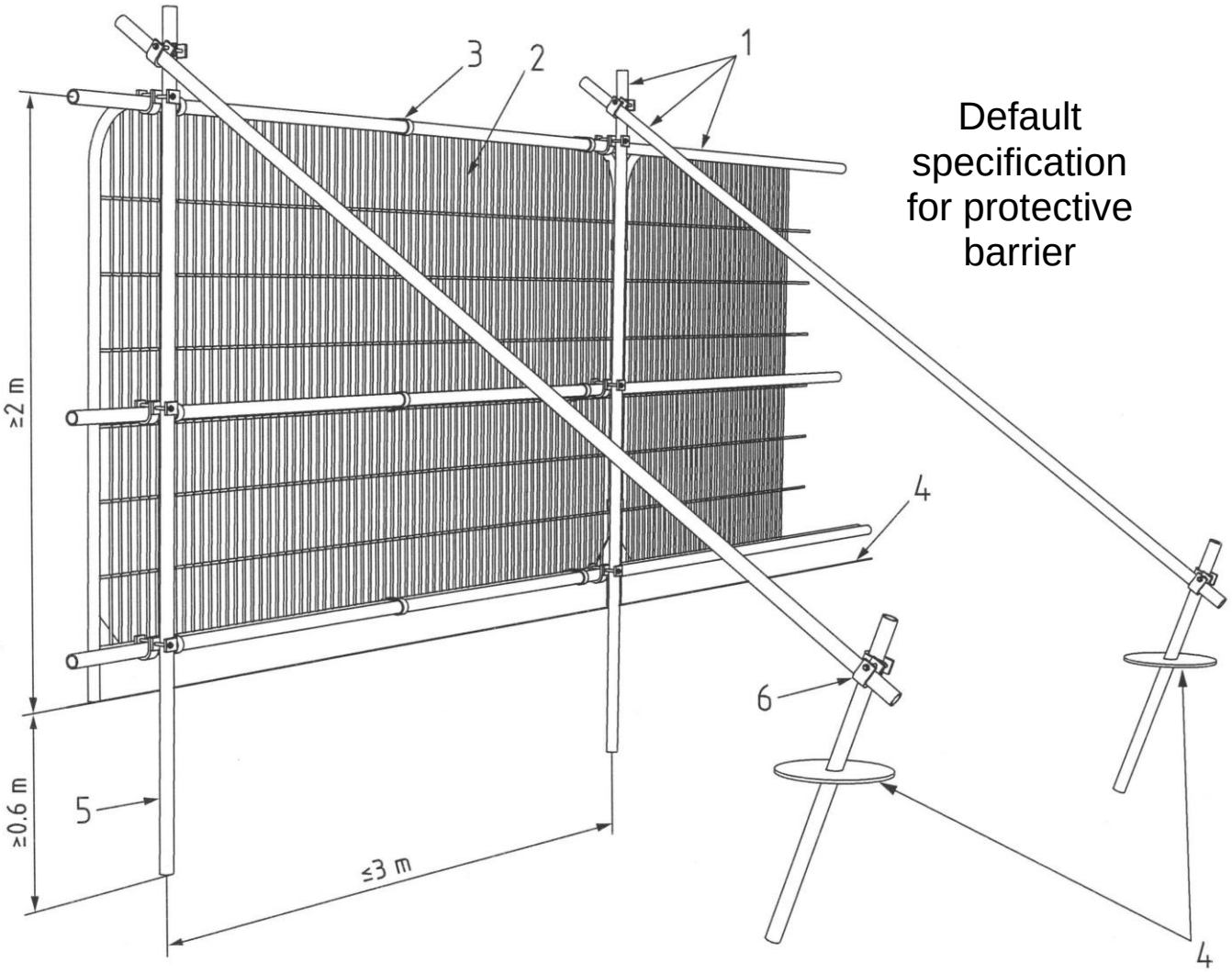
NO ☐ You may commit an offence if you do not tell your operators about the protected species in your wood.

7 **Have arrangements for supervision been made to ensure Good Practice guidance is complied with during the operations?**
Details:

YES ☐

NO ☐ You may commit an offence if you do not take steps to ensure that your operators comply with the Good Practice guidance.

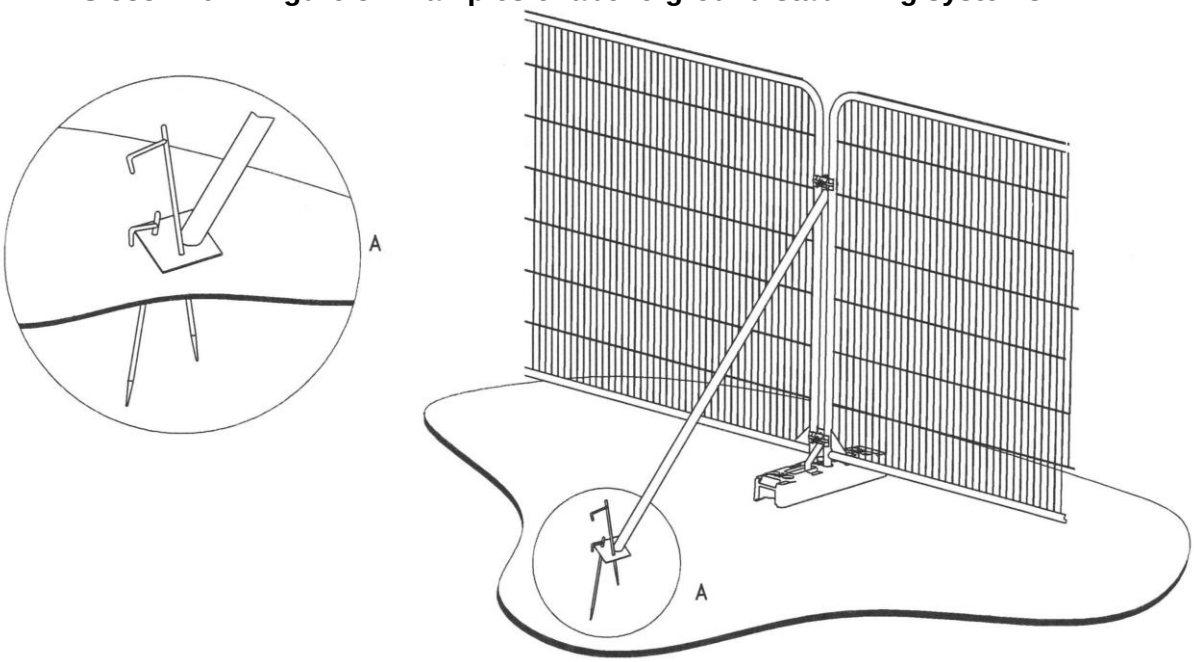
3. BS 5837:2012 Figure 2: Default specification for protective barrier



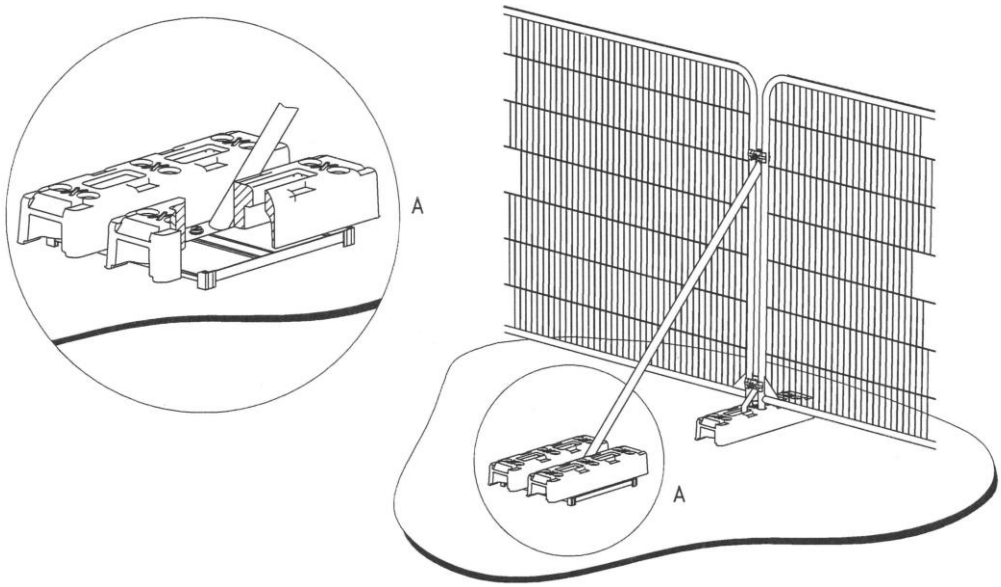
Key

1	Standard scaffold pole
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

4. BS 5837:2012 Figure 3: Examples of above-ground stabilizing systems



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

Appendix G

Haydens Drawing

- Arboricultural Impact Assessments
- Arboricultural Method Statements
- Tree Constraints Plans
- Arboricultural Feasibility Studies
- Shade Analysis
- Picus Tomography
- Arboricultural Consultancy for Local Planning Authority
- Quantified Tree Risk Assessment
- Health & Safety Audits for Tree Stocks
- Tree Stock Survey and Management
- Mortgage and Insurance Reports
- Subsidence Reports
- Woodland Management Plans
- Project Management
- Ecological Surveys

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