HAYDEN'S
Arboricultural Consultants

Tree Survey, Arboricultural Impact Assessment
Preliminary Arboricultural Method Statement & Tree Protection Plan
In Accordance with BS 5837:2012

Proj. No **10111**	**84 Swallowfield Way, Hayes, UB3 1DQ**		
Client:		Wrenbridge (FRELD HAYES) LLP	
Date of Report:	25/05/2023	Revision:	Original

Tree Survey, Arboricultural Impact Assessment, Preliminary Arboricultural Method Statement & Tree Protection Plan – In Accordance with BS 5837:2012

Summary

The purpose of this report is to provide a preliminary consideration of the arboricultural implications created by the proposed development. In accordance with the feasibility and planning sections of BS5837:2012 *"Trees in relation to design, demolition and construction – Recommendations"*, trees deemed to be within the influencing distance of the projected construction have been evaluated for quality, longevity and initial maintenance requirements. Where trees do not have to be removed for health and safety reasons, a detailed and objective assessment has been made of the consequences of the intended layout.

In this circumstance it is intended to demolish the existing structures within the site's curtilage and construct a new industrial building comprised of four units with associated service yards and parking. As a result, ten individual trees and one hedge were inspected. The arboricultural related implications of the proposal are as follows:

1 In addition to one tree which requires felling irrespective of development, it is necessary to fell two category 'B' trees (T002 and T003), one category 'C' tree (T001) and one category 'U' tree (T009) to achieve the proposed layout. Two small sections of one category 'C' hedge (H001) also require felling. Additionally, one tree (T004) requires minor surgery to permit construction.

2 One tree (T005) has been identified for removal irrespective of any development proposals. The removal of this tree does not coincide with the requirements of the proposed layout.

3 The alignment of the industrial units and substation do not encroach within the Root Protection Areas of any trees that are to be retained. In view of this and as assessed in accordance with BS5837:2012, no specialist foundation designs or construction techniques will be required to prevent damage to tree roots. Specialist foundations may still be required for other reasons, including mitigating the influencing distance of tree roots, subject to expert advice from a Structural Engineer.

4 The alignment of hard surfaces nominally intrudes within the Root Protection Area of one tree (T004) to be retained. This has only minor influence on the affected Root Protection Area. As such it is considered appropriate to undertake linear root pruning thereby obviating the need for specialist "no dig" construction techniques at this location, as discussed at item 4.4.2.

5 This report recommends that specialist advice is obtained by expert practitioners in other disciplines. Such input should always be sought prior to the commencement of construction to demonstrate that the techniques and methods hereby proposed are achievable. In this particular circumstance it is necessary to contact the following:

- Structural Engineer (foundation design, item 4.4.1)

6 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. This includes ensuring that protective fencing is erected as detailed at items 4.6 and 5.1 of this report.

7 Post Planning Permission – Subject to achieving Planning Permission, a detailed Arboricultural Method Statement and Tree Protection Plan will be required. This will include the following: fencing type, service drawings, drainage proposals, access facilitation pruning specification, project phasing and an auditable monitoring schedule.

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

Contact Details

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1.0 Introduction

1.1 Terms of Reference

1.1.1 Hayden's Arboricultural Consultants Limited has been commissioned by Wrenbridge to prepare a Tree Survey, Arboricultural Impact Assessment, Preliminary Arboricultural Method Statement and Preliminary Tree Protection Plan for the existing trees at 84 Swallowfield Way, Hayes, UB3 1DQ.

1.1.2 The site survey was carried out on 21/02/2023. The relevant qualitative and quantitative tree data was recorded to assess the condition of the existing trees, their constraints upon the prospective development and the necessary protection and construction specifications required to allow their retention as a sustainable and integral part of the completed development.

1.1.3 Information is given on condition, age, size and indicative positioning of all the trees, both on and affecting the site. This is in accordance with the British Standard 5837:2012 *Trees in relation to design, demolition and construction - Recommendations.*

1.2 Scope of Works

1.2.1 The survey of the trees and any other factors are of a preliminary nature. The trees were inspected on the basis of the Visual Tree Assessment (VTA) method as developed by Mattheck and Breloer (1994). The trees were inspected from ground level with no climbing inspections undertaken. It is not always possible to access every tree and as such some measurements may have to be estimated. Trees with estimated measurements are highlighted in the schedule of trees. No samples have been removed from the site for analysis. The survey does not cover the arrangements that may be required in connection with the removal of existing underground services.

1.2.2 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.

1.2.3 An intrinsic part of tree inspection in relation to development is the assessment of risk associated with trees in close proximity to persons and property. Most human activities involve a degree of risk with such risks being commonly accepted if the associated benefits are perceived to be commensurate. In general, the risk relating to trees tends to increase with the age of the trees concerned, as do the benefits. It will be deemed to be accepted by the client that the formulation of the recommendations for all tree management will be guided by the cost-benefit analysis (in terms of amenity) of the tree work.

1.3 Documentation

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

- Email of instruction received from Peter Jarman 1/2/2023.
- Topographical survey – drawing no. TS23-044
- Proposed site layout – drawing no. H067-CMP-SI-ZZ-DR-A-00100_P12

2.0 The Site

2.1 Overview

2.1.1 The site is 84 Swallowfield Way, Hayes. There is a linear group of mature trees situated adjacent to the front, northern boundary that comprise of mixed species and maturity and provide a range of amenity benefits.

2.2 Soils

2.2.1 The soil type commonly associated with this site are generally freely draining slightly acid loams. They are of low fertility and typically support neutral and acid pastures, and deciduous woodland type habitats. This soil type constitutes approximately 15.5% the total English land mass.

2.2.2 The data given was obtained from a desk top 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 shrinkability. 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 Hayden's Arboricultural Consultants Limited have been informed that at the *date of the tree inspection* the site's trees were not located within a Conservation Area or the subject of a Tree Preservation Order. As such, no written permission would be required from the Local Planning Authority (LPA), London Borough of Hillingdon Council, prior to commencing works to trees. However, it should be noted that London Borough of Hillingdon Council have the power to serve Tree Preservation Orders very rapidly and it is therefore incumbent upon anyone wishing to undertake work to any trees to first contact the LPA to ensure that the situation has not changed.

This information was sourced using the LPA's Online Mapping System 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 LPA to confirm that their online mapping system is definitive.

2.3.2 **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 License 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.

3.0 Tree Survey

3.1 As part of this survey a total of ten individual trees and one hedge have been identified. These have been numbered T001 – T010 and H001 respectively.

3.2 A topographical survey was provided which showed the position of the trees on site. However, it should be noted that topographical surveys are not always comprehensive and sometimes it is considered appropriate to record details of trees and landscape features omitted from or beyond the scope of the plan. If this circumstance occurs, the location of the individual tree or landscape feature is estimated. The position of each tree is shown on the attached drawing no. 10111-D-AIA.

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 Several items would benefit from tree surgery or additional investigation, be it for health and safety, cultural, aesthetic or structural reasons as detailed in the attached Schedule of Trees. Including the trees recommended for felling, the items requiring the **most urgent** intervention are as follows:

Within six months:

T005	Fell.
T010	Tip back branches to clear building by 1.5-2m. Crown lift over footpath to 2.3m. Remove hanging broken and truncated branches over road.

3.6 Over and above the general and prudent recommendation that all trees are inspected on an annual basis, the following items have been identified as requiring enhanced monitoring to assess any changes in faults and weaknesses etc as detailed in the Schedule of Trees:

T001	Monitor annually (fork between primary stems).

3.7 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

4.1 The Proposal

4.1.1 The proposal is to demolish the existing structures within the site's curtilage and construct a new industrial building comprised of four units with associated service yards and parking.

4.2 Access

4.2.1 Site access is unencumbered by the Root Protection Areas (RPA) of any trees to be retained. From a purely arboricultural perspective, it will therefore not be necessary to install a proprietary temporary load bearing road to protect tree roots.

4.3 Demolition

4.3.1 Demolition of existing structures or the removal of hard surfaces does not impact on the RPA of any retained trees. Other than the provision of protective fencing, no additional specialist protection measures are therefore required.

4.4 Construction

4.4.1 Construction of foundations or structural supports do not encroach within the RPA of any trees to be retained. From an arboricultural perspective, no specialised construction or foundation techniques will therefore be required to protect tree roots. 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.

4.4.2 Installation of new hard surfaces (i.e. a footpath) encroach within a small portion of the RPA of the following tree to be retained – T004. Given the minor extent of the intrusion, 5.3%, into the periphery of its RPA it is considered appropriate to undertake linear root pruning as part of the access facilitation pruning (AFP) works, as shown on the attached drawing no. 10111-D-AIA. This operation will obviate the need for "no dig" construction methods in this situation.

4.5 Implications of Sloping Ground

4.5.1 The arboricultural implications of the proposed structures are based on an assumption that because there are no significant existing slopes on site, level changes will not occur within the RPA of trees that are shown to be retained.

4.6 Requirement for Tree Barrier Fencing

4.6.1 Prior to the commencement of demolition and immediately after the completion of the necessary tree work, protective fencing will be erected on site. This must be fit for purpose, in full accordance with the requirements of BS5837:2012 and positioned as shown on the attached drawing no. 10111-D-AIA. Full details of fencing will be supplied by Hayden's Arboricultural Consultants in the detailed Arboricultural Method Statement & Tree Protection Plan.

4.7 Compound

4.7.1 The site provides adequate internal space to locate a construction compound outside the RPA of any trees and landscape features that are to be retained.

4.8 Phasing

4.8.1 The proposal involves the integration of a number of complex aspects that affect tree protection (e.g. – but not exclusively – roto pruning and the installation of services). For this reason, the project must be carefully phased to ensure the highest level of protection for retained trees at all times. As part of the detailed Arboricultural Method Statement & Tree Protection Plan, Hayden's Arboricultural Consultants will produce a phasing recommendation to cover the major operations on site as they affect retained trees.

4.9 Monitoring

4.9.1 In accordance with item 6.3 of BS5837:2012, the site and associated development should be monitored regularly by a competent Arboriculturalist to ensure that the arboricultural aspects of the planning permission are complied with. As part of the detailed Arboricultural Method Statement & Tree Protection Plan, Hayden's Arboricultural Consultants will produce an auditable monitoring schedule to assess the progress of key site events/activities.

4.10 Tree Surgery to Facilitate Proposed Development

4.10.1 To enable the proposed development it will be necessary to undertake the following tree surgery works to retained trees:

Feature No	Description of Works Required	BS Category*
T004	Undertake linear root pruning as shown on drawing no. 10111-D-AIA to facilitate construction of the footpath.	B

4.11 Landscape Implications

4.11.1 In addition to T005 requiring removal for health and safety reasons (as detailed in the attached Schedule of Works - Irrespective of Development), the trees listed in the table below require felling to permit the proposed development to proceed:

Feature No	Reason for Removal	BS Category*	Visual Amenity Assessment*
H001 (section)	Fell two small sections to facilitate construction of new footpaths.	C	High
T001	Fell to facilitate construction of Unit 1.	C	High
T002	Fell to facilitate construction of Unit 1.	B	High
T003	Fell to facilitate construction of Unit 1.	B	High
T009	Fell to facilitate construction of new footpath.	U	High

* Please see definitions in the Explanatory Notes attached to this report.

4.12 Post Development Implications

4.12.1 No adverse arboricultural implications are considered reasonably foreseeable for the trees that remain provided that the recommendations of this report are complied with in full.

4.12.2 Due to the dynamic nature of trees and their interaction with the environment, their health and structural integrity is liable to change over time. It is therefore recommended that all trees on or adjacent to the site be inspected on an annual basis.

4.12.3 As stated in BS5837:2012, regular maintenance of newly planted trees is of particular importance for at least three years during the critical post-planting period and might, where required by site conditions, planning requirements or legal agreement, be necessary for five years or more. The designer of the new landscaping should therefore, in conjunction with the landscape design proposals, prepare a detailed maintenance schedule covering this period and appropriate arrangements made for its implementation.

5.0 Design Advice, Preliminary Arboricultural Method Statement & Tree Protection Plan

5.1 Securing of Tree Structure and Root Protection Areas (RPA)

5.1.1 The trees to be retained will be protected by the use of stout barrier fencing erected in the positions indicated on the attached Preliminary Arboricultural Impact Assessment & Tree Protection drawing no. 10111-D-AIA. This fencing will be in accordance with the requirements of BS5837:2012.

5.1.2 All fencing provided for the safeguarding of trees will be erected prior to any demolition or development commencing on the site, therefore ensuring the maximum protection. This fencing, which must have all weather notices attached stating “Construction Exclusion Zone – No Access” will be regarded as sacrosanct and once erected will not be removed, or altered, without the prior consent of the LPA.

5.2 Location of Site Office, Compound and Parking

5.2.1 The position of the office, compound and parking will be agreed in writing with the LPA prior to commencement of any permitted development works. Any proposed re-location of these items through the various phases of development will be agreed prior to re-siting with the LPA.

5.3 On Site Storage of Spoil and Building Materials

5.3.1 Prior to and during all construction works on site, no spoil or construction materials will be stored within the RPA of any tree on, or adjacent to the site, even if the proposed development is to be within the RPA. This is to reduce to a minimum the compaction of the roots of the trees. Details of the RPA for each tree where no spoil or building materials will be stored are indicated on the attached Preliminary Arboricultural Impact Assessment & Tree Protection drawing no. 10111-D-AIA.

5.3.2 Any facilities for the storage of oils, fuels or chemicals shall be sited on impervious bases and surrounded by impervious bund walls. The volume of the bund compound shall be at least equivalent to the capacity of the tank plus 10%. If there is a multiple tankage, the compound shall be at least equivalent to the capacity of the largest tank, or the combined capacity of interconnected tanks, plus 10%. All filling points, vents, gauges and sight glasses shall be located within the bund. The drainage system of the bund shall be sealed with no discharge to any watercourse, land or underground strata. Associated pipework shall be located above ground and protected from accidental damage. All filling points and tank overflow pipe outlets shall be detailed to discharge downwards into the bund.

5.3.3 All material storage facilities and work areas must consider the effects of sloping ground on the movement of potentially harmful liquid spillages towards or into protected areas.

5.4 Programme of Works

5.4.1 All tree surgery works, once approved by the LPA, will be carried out prior to any other site works. Once completed, the proposed protective fencing will be erected. All of this will be carried out prior to commencement of any development works on the site. Outline details of the proposed programme are given in the Design and Construction and Tree Care flow chart attached (Appendix G-1).

5.5 Tree Surgery

5.5.1 All tree work will be agreed with the LPA and will be carried out in line with BS 3998:2010 (Recommendations for Tree Works). An appropriately qualified and insured arboricultural contractor will carry out the work. Any alterations to the proposed schedule of works will be agreed with the LPA prior to commencement of works.

5.6 Levels

5.6.1 Other than for any specific exception which may be referred to at item 4.0, no alterations to soil levels within the RPA of retained trees are envisaged. However, if it is necessary for these to occur, appropriate measures must be taken to prevent or minimise any detrimental effects on the affected root systems as detailed in 5.6.2 and 5.6.3 below.

5.6.2 If it is necessary to excavate so close to trees that roots greater than 50mm diameter are likely to be encountered, particular care will be taken to avoid damage. Excavation in these areas will be undertaken by hand or using an air spade, avoiding any damage to the bark. The roots will be surrounded with sharp sand prior to the replacing of any soil or other material in the vicinity.

5.6.3 If it is necessary to raise levels, it is essential that adequate supplies of water and oxygen pass through the soil to the trees' roots. Therefore, where necessary, a granular material will be used which will not inhibit gaseous diffusion. Possible options are no-fines gravel, cobbles or granite. All hard surfaces will be of suitable specification to allow such gaseous diffusion, e.g. brick pavers.

5.7 Services

5.7.1 At the time of writing this report, no details on proposed services were available. However, the following principles should be adhered to when planning for their installation.

5.7.2 It is proposed that all underground service runs will be placed outside the RPA of the trees on or adjacent to the site. Where it is not possible to do this, the proposed length infringing the RPA will be hand dug 'broken trenches' (NJUG 4 paragraph 4) to ensure the maximum protection of the trees' roots. The trenches may also be excavated using an air spade, or trenchless technology can be employed if this methodology is considered appropriate by the relevant service company (thus allowing services to pass below and through the roots without the need for traditional excavation). If it is necessary to cut any small roots as part of any of these processes, they should be severed in such a way as to ensure that the final wound is as small as possible and free from ragged, torn ends.

5.7.3 All service providers (Statutory Authorities) will be consulted prior to commencement of works with the aim of minimising the number of service runs on the site.

5.7.4 All service runs/trenches where they encroach within the RPA of retained trees will be agreed with the LPA prior to commencement of works, in addition to the methodology for their installation.

5.8 **Reporting and Monitoring Procedures**

5.8.1 In accordance with item 6.3 of BS5837:2012, the site and associated development should be monitored regularly by a competent Arboriculturalist to ensure that the arboricultural aspects of the planning permission (e.g. the installation and maintenance of protective measures and the supervision of specialist working techniques) are implemented. Furthermore, regular contact between the Site Manager and the Arboriculturalist allows them to effectively deal with and advise on any tree related problems that may occur during the development process. This system should be auditable. Should any issues arise during the arboricultural monitoring of the development the Arboriculturalist will contact the LPA and appropriate action taken only with the prior permission of Wrenbridge and the LPA.

6.0 Recommendations

6.1 It is recommended that the measures detailed in this report are implemented in full to provide retained trees with the highest level of protection during the process of demolition and construction.

6.2 Subject to achieving Planning Permission, it is recommended that a detailed Arboricultural Method Statement & Tree Protection Plan should be provided. This will include the following: fencing type, service drawings, drainage proposals, access facilitation pruning specification, project phasing and an auditable monitoring schedule.

6.3 Tree work 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.

6.4 The tree work proposed as part of this survey are recommended 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 LPA, cannot be the responsibility of this practice.

7.0 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.

However, 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 strongly recommended.

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:

May 2023
For and on Behalf of Hayden's Arboricultural Consultants Limited

8.0 References

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

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

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Strouts, R.G. & Winter, T.G. (1994). *Research for Amenity Trees No.2: Diagnosis of Ill-Health in Trees*. Department of the Environment, HMSO, London.

Weber, K., Mattheck, C. (2003). *Manual of Wood Decays*. The Arboricultural Association.

9.0 Appendices

Appendix	**A**	Species List & Tree Problems
Appendix	**B**	Schedule of Trees
Appendix	**C**	Schedule of Works - Irrespective of Development
Appendix	**D**	Preliminary Schedule of Works to Allow Development
Appendix	**E**	Explanatory Notes
Appendix	**F**	Tree Preservation Order Enquiry/Response
Appendix	**G**	Advisory Information & Sample Specifications

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
5. Figure 4 Detail of protective barrier where construction encroaches within BS5837:2012 Root Protection Area

Appendix	**H**	Drawing no. 10111-D-AIA

Appendix A - Species List & Tree Problems

Species List:

Cherry	*Prunus sp*
False Acacia	*Robinia sp*
Hawthorn	*Crataegus sp*
Privet	*Ligustrum sp*
Pyracantha	*Pyracantha sp*

Tree Problems:

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

Name: Canker	
Symptoms/damage type and cause:	This is a clearly defined patch of dead and sunken, or malformed bark which can be caused by either bacterial or fungal agents. Affected branches or stems can die due to being girdled by cankers.
Consequence:	Depending upon the affecting organism can cause death of limbs or in extreme cases death of whole tree.
Control:	In some instances, it may be possible to excise the infected area by tree surgery operations however this is dependent upon the distribution of infected tissues and outcomes may vary.
Species affected:	A wide range of tree species

Name: Deadwood	
Symptoms/damage type and cause:	This relates to dead branches in the crown of the tree. In most, this is caused by the natural ageing process of the tree or shading due to its 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: ***Hedera helix*** **(Ivy)**	
Symptoms/damage type and cause:	Ivy may grow to varying degrees on all areas of a tree from the base to the upper crown. It is possible that in doing so it will out-compete the host tree for available light thereby suppressing the host.
Consequence:	This is generally only harmful to the tree on already unhealthy specimens which may be constricted by large ivy stems around the trunk or may have their top growth suppressed by a mass of flowering shoots in the crown. Ivy can also mask potentially dangerous faults on a tree.
Control:	Ivy should only be removed if absolutely necessary because it provides abundant cover to wildlife and then by severing twice close to the ground and removing a length of stem thereby causing the gradual dying away of the aerial parts of the plant providing extended benefit to wildlife whist relieving the pressure on the tree.
Species affected:	Most trees can be affected.
Images:	 

Appendix B

Schedule of Trees

SCHEDULE OF TREES (AIA) 84 Swallowfield Way, Hayes,

Surveyed By: Liz Beckett Date: 21/02/2023
Managed By: Liz Beckett

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						
H001	Privet, Pyracantha	50	2		High	N1.2, E1.2, S1.2, W1.2	Well maintained 2.5 metre wide hedge comprising of Privet and Pyracantha north of the palisade fence.	C2	No work required.	4	Fell two small sections shown on drawing no. 10111-D-AIA to facilitate construction of new footpaths.	0
		0.6	0		M	Moderate						
Yes		1.1			10+ years	Tarmac Shrub bed, Bare earth						
T001	Cherry	400	11		High	N3.5, E4, S4.5, W3.5	Bifurcates at approx. 1.2m above ground level. However, single stem measurement taken due to included bark/tight fork with companion Hazel stem embedded between stems. Bark inclusion is a notable structural defect that currently appears stable. Ivy congesting lower stem and crown. Low branches touching roof of container cabin.	C2	Remove Ivy and reinspect. Tip back branches to clear structure by 1m. Monitor annually (fork between primary stems).	3	Fell to facilitate construction of Unit 1.	0
		4.8	1.5		M	Moderate						
Yes		72.4			10+ years	Shrub bed, Building						
T002	Cherry	320	11.5		High	N5, E2.5, S5, W5	Prominent buttress roots raised above ground level. Trifurcates at approximately 2m above ground level. Deadwood and crossing branches.	B2	No work required.	4	Fell to facilitate construction of Unit 1.	0
		3.84	2		M	Moderate						
Yes		46.3			20+ years	Ivy, Shrub bed						
T003	Cherry	370	9.2		High	N3, E3, S5.5, W3.5	Prominent buttress roots extending beneath building. Crossing branches. Small diameter branches touching building. Deadwood.	B2	Tip back branches to clear building by 1.5m.	3	Fell to facilitate construction of Unit 1.	0
		4.44	2		M	Moderate						
Yes		61.9			20+ years	Shrub bed, Ivy, Building						
T004	Cherry	400	12		High	N4, E4.5, S6, W4.5	Inspection chamber for mains drain at base north aspect, waste products at base of tree. Prominent buttress roots. Ivy. Crossing branches and small diameter branches touching building.	B2	Tip back branches to clear building by 1.5m.	3	Undertake linear root pruning as shown on drawing no. 10111-D-AIA to facilitate construction of the footpath.	0
		4.8	2		M	Moderate						
Yes		72.4			20+ years	Ivy, Shrub bed						
T005	False Acacia	550	10.5		High	N4.5, E4, S6, W4	Trifurcates at approx. 1.7m above ground level (agl). Fork has partially failed between north and western stems. Notable inclusion between north and southern stems. Southern stem has small cavity circa 1.6m agl on south aspect. Included bark between south and western stem appears unstable and liable to failure. Nest in crown.	U	Fell.	2		
		6.6	2.2		M	Moderate						
Yes		136.8			<10 years	Shrub bed, Gravel , Bare earth						

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	Hawthorn	280	8		Moderate	N3, E3, S3, W3.5	Multi stemmed x 4 included bark and occluding stems typical of species, appears stable. Nests in crown. Low branches over parking area.	C2	Crown lift to 3m over car park.	3		
		3.36	1.7		M	Low						
Yes		35.5			10+ years	Bare earth, Shrub bed, Gravel						
T007	Cherry	430	11		High	N5, E4, S6, W3.5	Prominent buttress roots. Twin stemmed from approximately 1.2m above ground level. Truncated, dead and low branches over parking area.	C2	Remove dead and truncated branches over car park and crown lift to 3m over car park.	3		
		5.16	2		M	Moderate						
Yes		83.6			10+ years	Bare earth, Shrub bed, Gravel						
T008	Cherry	260	9		Moderate	N3, E3, S3.5, W2.5	Ivy and bramble obscuring lower stem and impeding inspection. Truncated branches and poor bud formation indicating declining physiological condition.	C2	Remove Ivy and reinspect and remove truncated branches.	3		
		3.12	3.5		M	Moderate						
Yes		30.6			10+ years	Shrub bed, Grass						
T009	Cherry	340	11		High	N3, E3.5, S3.5, W4	Slight lean and crown asymmetry with bias to the north. Bifurcates at approx. 3m above ground level (agl). Southern stem has bark wound on south aspect at approximately 5m agl which wraps around stem and descends to approximately 2.5m agl on north aspect of northern stem. Early canker formation and bark dysfunction visible at this point on north aspect. Imminent risk of failure low but SULE compromised.	U	Monitor annually (bark wounds on north and south aspect).	3	Fell to facilitate construction of new footpath.	0
		4.08	2		M	Moderate						
Yes		52.3			<10 years	Shrub bed, Bare earth						
T010	Cherry	280	9		High	N4, E5.5, S4, W4.5	Inspection chamber at base north aspect. Low truncated branches affecting footpath and on-street parking. Small diameter branches touching adjacent building. Hanging broken and crossing branches and deadwood.	B2	Tip back branches to clear building by 1.5-2m. Crown lift over footpath to 2.3m. Remove hanging broken and truncated branches over road.	2		
		3.36	1.7		M	Moderate						
Yes		35.5			20+ years	Building , Tarmac, Shrub bed, Grass, Gravel						

Appendix C

Schedule of Works - Irrespective of Development

SCHEDULE OF WORK IRRESPECTIVE OF DEVELOPMENT

84 Swallowfield Way, Hayes,

Surveyed By: Liz Beckett
Surveyed: 21/02/2023
Managed By: Liz Beckett

Tree No.	Species	Work required	Priority
T005	False Acacia	Fell.	**2**
T010	Cherry	Tip back branches to clear building by 1.5-2m. Crown lift over footpath to 2.3m. Remove hanging broken and truncated branches over road.	**2**
T001	Cherry	Remove Ivy and reinspect. Tip back branches to clear structure by 1m.	**3**
T003	Cherry	Tip back branches to clear building by 1.5m.	**3**
T004	Cherry	Tip back branches to clear building by 1.5m.	**3**
T006	Hawthorn	Crown lift to 3m over car park.	**3**
T007	Cherry	Remove dead and truncated branches over car park and crown lift to 3m over car park.	**3**
T008	Cherry	Remove Ivy and reinspect and remove truncated branches.	**3**

Schedule of Enhanced Monitoring

84 Swallowfield Way, Hayes,

Surveyed By: Liz Beckett
Surveyed: 21/02/2023
Managed By: Liz Beckett

Tree No.	Species	Work required	Priority
T001	Cherry	Monitor annually (fork between primary stems).	**3**
T009	Cherry	Monitor annually (bark wounds on north and south aspect).	**3**

Appendix D

Preliminary Schedule of Works to Allow Development

SCHEDULE OF WORKS (AIA)

84 Swallowfield Way, Hayes,

Surveyed By: Liz Beckett
Surveyed: 21/02/2023
Managed By: Liz Beckett

Tree No.	Species	Work required	Priority
H001	Privet, Pyracantha	Fell two small sections shown on drawing no. 10111-D-AIA to facilitate construction of new footpaths.	**0**
T001	Cherry	Fell to facilitate construction of Unit 1.	**0**
T002	Cherry	Fell to facilitate construction of Unit 1.	**0**
T003	Cherry	Fell to facilitate construction of Unit 1.	**0**
T004	Cherry	Undertake linear root pruning as shown on drawing no. 10111-D-AIA to facilitate construction of the footpath.	**0**
T009	Cherry	Fell to facilitate construction of new footpath.	**0**

Appendix E

Explanatory Notes

Explanatory Notes

HAYDEN'S Arboricultural Consultants

Categories

Below is an explanation of the categories used in the attached Tree Survey.

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 (BS 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 remaining life expectancy of at least 20 years;

Category C - Those 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 - 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.

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.

D Dead.

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.
Life Expectancy	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.
Work 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 Tree	Tree that, by recognized criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned. **NOTE** - these characteristics might typically include a large girth, signs of crown retrenchment and hollowing of the stem.

Appendix F

Tree Preservation Order Enquiry/Response


Protected Trees
Legend
Protected Trees
Tree Preservation Order Areas
Conservation Areas
Borough Boundary
RIGBY LANE
Waterway Park
Ryman House
Warehouse
Warehouse
Warehouse
Warehouse
Abenglen Estate
Works
WBs
Tank
El Sta
Sta
El Sub Stas
Dawley Park
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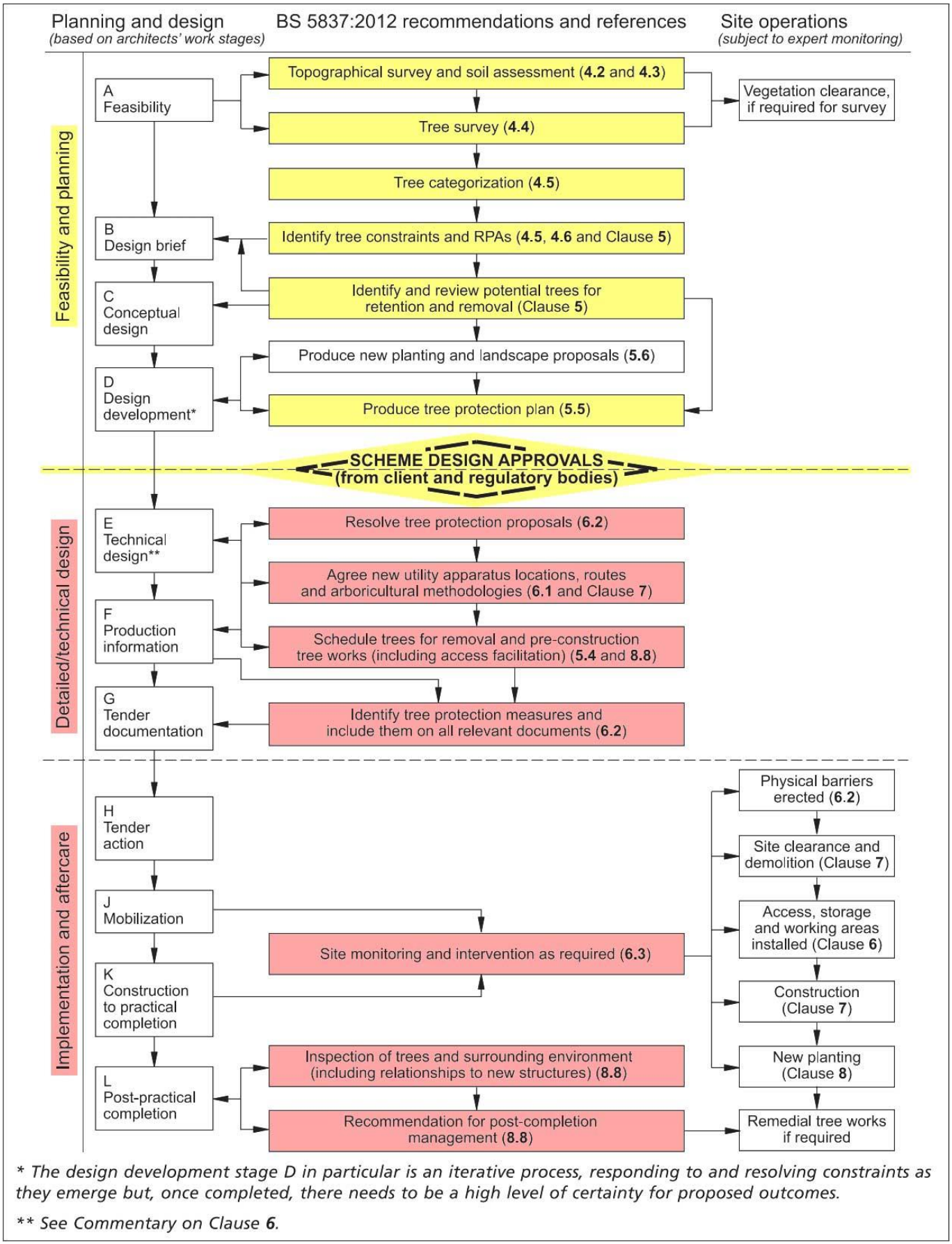
Appendix G

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

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.

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 / NO

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

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

YES / NO

Details

Name of Wood:

Grid Reference:

Area: (ha)

Date of Assessment:

Name of Assessor:

Notes

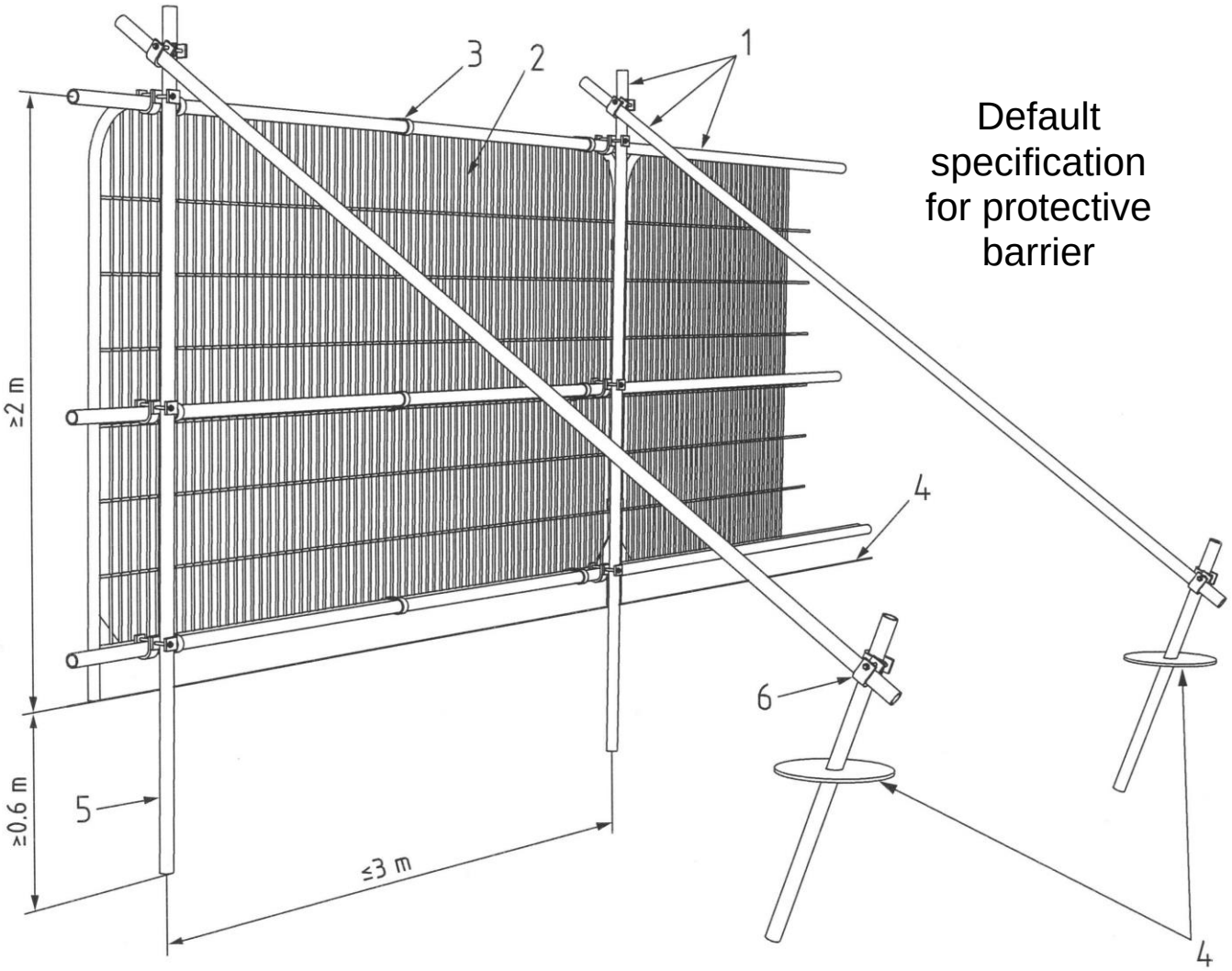
A licence is not required but continue to sections 6 and 7 below

You will need to obtain a licence BEFORE carrying out the work (see EPS Licence Application Forms and Notes)

You may commit an offence if you do not tell your operators about the protected species in your wood.

You may commit an offence if you do not take steps to ensure that your operators comply with the Good Practice guidance.

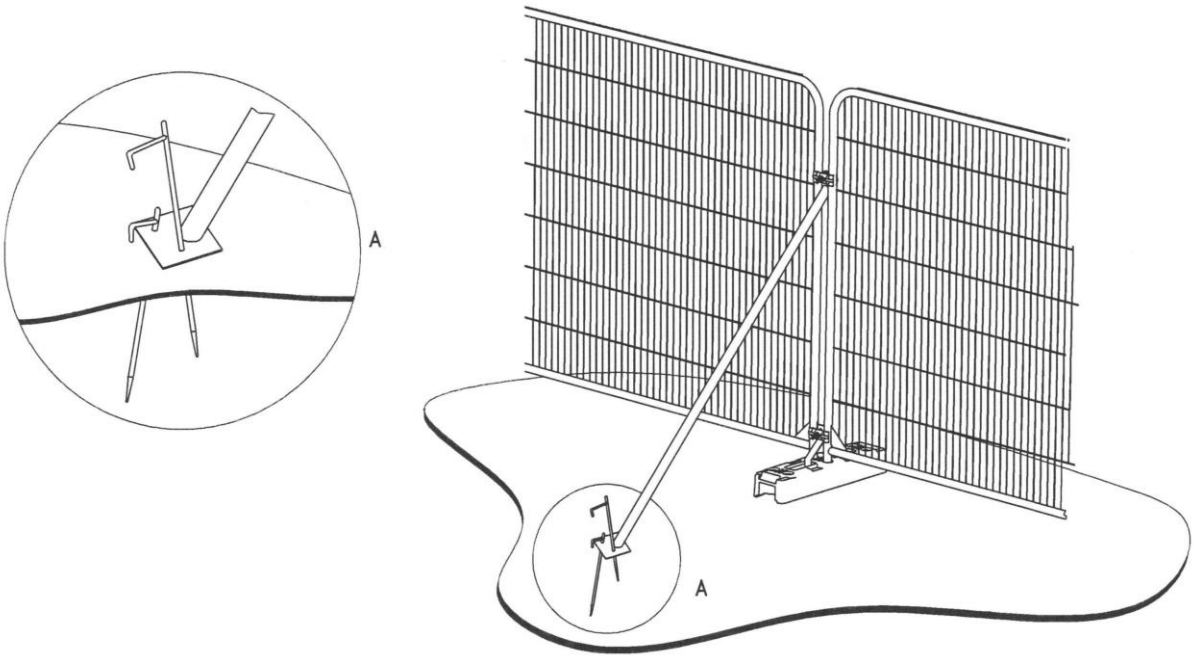
3. BS 5837:2012 Figure 2: Default specification for protective barrier



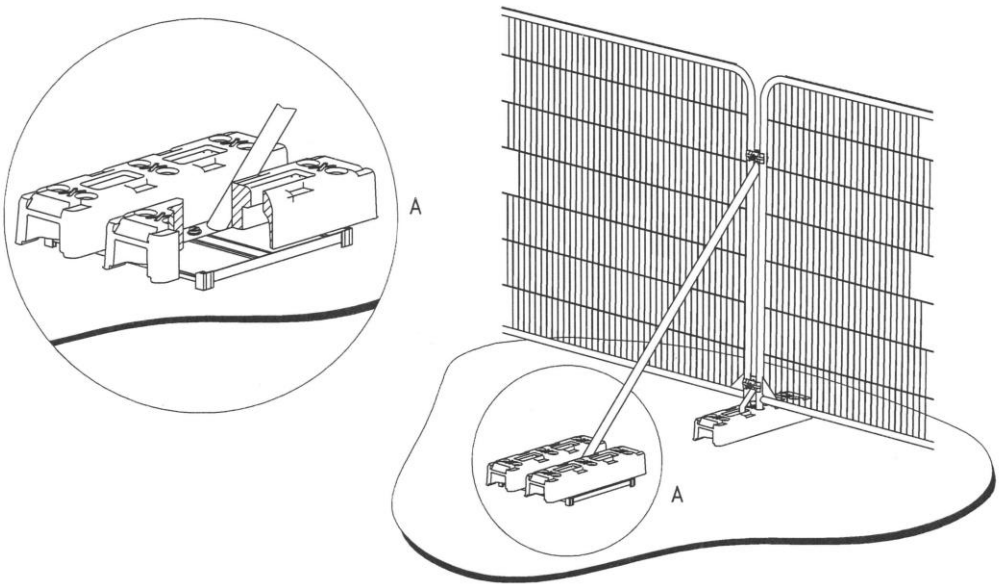
Key

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

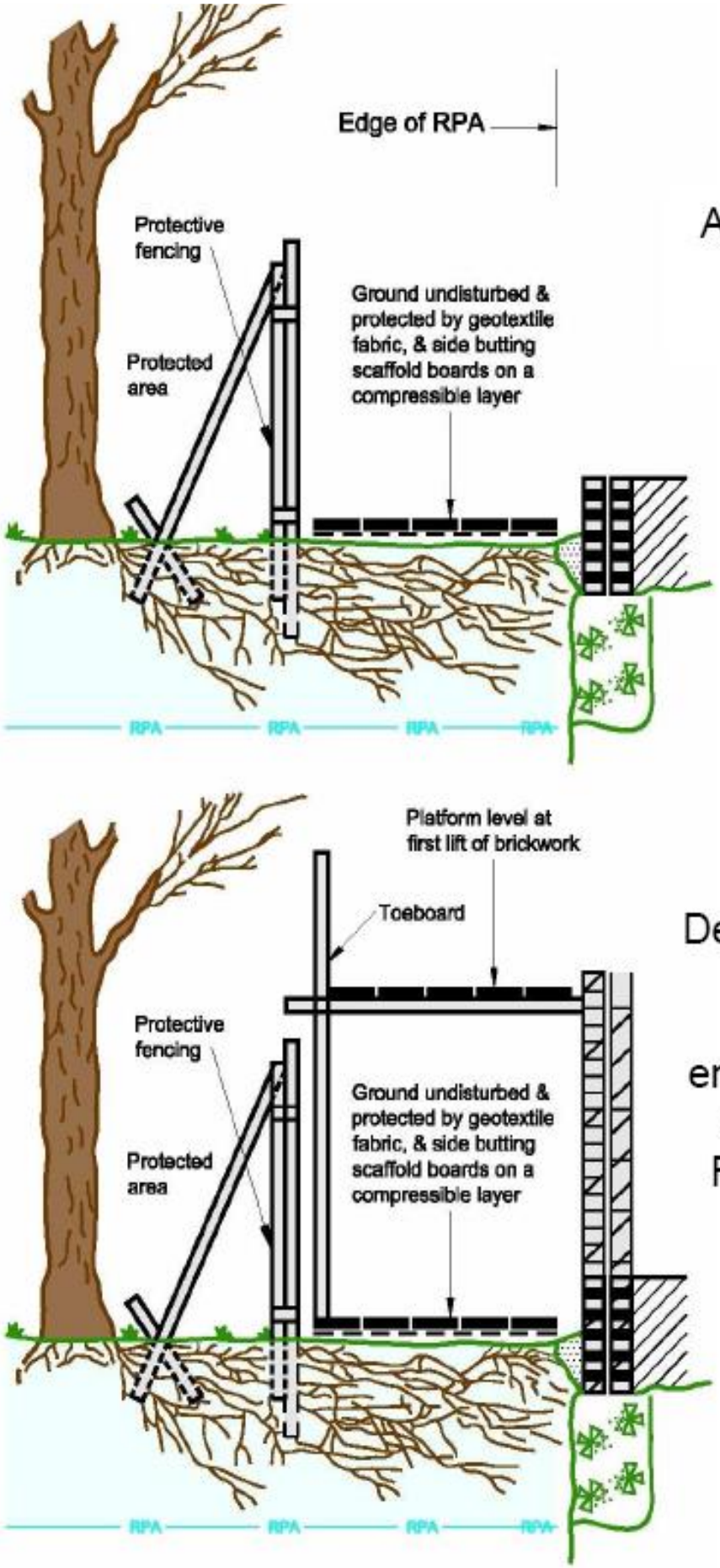


a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

5. Figure 4 Detail of protective barrier where construction encroaches within BS5837:2012 Root Protection Area



Appendix No 2.1

Figure 4 –

Detail of protective barrier where construction encroaches within BS 5837:2012 Root Protection Area (RPA)

Appendix H

Hayden’s 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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