HAYDEN'S
Arboricultural Consultants

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

Proj. No **5487**	**26 Thurlow Road, Hampstead, NW3 5PP**		
Client:		Retrouvius	
Date of Report:	30/06/2016	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 convert two self-contained flats into a single family dwelling and enlarge the existing lightwell to the rear of the property. As a result nine individual trees and one group of trees were inspected. The arboricultural related implications of the proposal are as follows:

1 It is necessary to fell one low quality Cypress and a Wisteria in order to achieve the proposed layout.

2 The alignment of the enlarged lightwell does 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.

3 This report recommends that specialist advice is obtained by expert practitioners in other disciplines. Such input should always be sought prior to the submission of this report in support of a planning application in order 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 4.3.1)

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

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

Contact Details

Client – Retrouvius			
Address 2A Ravensworth Road 26 Thurlow Road Hampstead NW3 5PP	**Contact** Ms Anthi Grapsa	**Tel:** **E-mail:**	0208 960 8676 anthi@retrouvius.com

Local Planning Authority – London Borough of Camden Council			
Address 5 Pancras Square London N1C 4AG	**Trees Officer** Mathias Genet	**Tel:** **E-mail:**	0207 974 5616 mathias.genet@camden.gov.uk

Arboricultural Consultant – Hayden's Arboricultural Consultants Limited			
Address 5 Moseley's Farm Business Centre Fornham All Saints Bury St Edmunds Suffolk IP28 6JY	**Principal** Stephen Hayden	**Tel:** **E-mail:**	01284 765391 info@treesurveys.co.uk

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1.0 Introduction

1.1 Terms of Reference

1.1.1 Hayden's Arboricultural Consultants Limited has been commissioned by Retrouvius to prepare a Tree Survey, Arboricultural Impact Assessment, Preliminary Arboricultural Method Statement and Preliminary Tree Protection Plan for the existing trees at 26 Thurlow Road, Hampstead, London, NW3 5PP.

1.1.2 The site survey was carried out on 16/06/2016. The relevant qualitative tree data was recorded in order 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 Anthi Grapsa on the 9th June 2016
- Site boundary
- Proposed site layout

2.0 The Site

2.1 Overview

2.1.1. The site is 26 Thurlow Road, Hampstead, London NW3 5PP.

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 approx. 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 Conservation Area

The site is located within a locality specifically identified by London Borough of Camden Council 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 London Borough of Camden Council. 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.

3.0 Tree Survey

3.1 As part of this survey a total of nine individual trees and one group of trees have been identified. These have been numbered T001 – T009 and G001 respectively.

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. 5787-D 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. 5787-D 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 *BS 5837:2012 "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 BS 5837:2012, 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 convert two self-contained flats into a single family dwelling and enlarge the existing light well to the rear of the property.

4.2 Demolition

4.2.1 Demolition of the existing wooden raised decking does not impact on the RPA of any retained trees. Therefore, no adverse arboricultural implications are expected.

4.3 **Construction**

4.3.1 Construction of the retaining wall's foundations do not encroach within the Root Protection Area (RPA) of any trees to be retained. Therefore, from an arboricultural perspective, no specialized construction or foundation techniques will be required. However, dependent on the soil type, species and topography, trees may have an influence on the soil beyond their calculated RPA. It is therefore recommended that a Structural Engineer is consulted to assess the implications of the tree retention on the required foundation depth.

4.3.2 Installation of new hard surfaces do not encroach within the RPA of any retained trees. Therefore it will not be necessary for these items to be of specialist design.

4.3.3 Excavation and soil re-modeling is not shown to encroach within the RPA of any retained trees. No adverse arboricultural implications are therefore expected.

4.4 **Requirement for Tree Barrier Fencing**

4.4.1 In this instance the erection of protective fencing and/or installation of ground protection is not considered to be necessary. As can be seen on the attached Preliminary Arboricultural Impact Assessment & Tree Protection drawing, ref: 5487-D, the proposed excavations are minor and at a sufficient distance from any notable tree within the rear garden to ensure they would not be adversely affected.

4.5 **Compound**

4.6.1 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.

4.7 **Phasing**

4.7.1 Given the minor nature of this proposal and that it will not have an adverse impact on any of the retained trees, an in depth phasing recommendation of works is not considered necessary.

4.8 **Monitoring**

4.8.1 As with item 4.7.1, an auditable monitoring schedule is also not considered necessary in this instance.

4.9 **Cultural Implications for Retained Trees**

4.9.1 It is not necessary to undertake access facilitation pruning (AFP) for any retained trees or landscape features to meet the needs of this proposal (e.g. crown lifting, reducing, reshaping or root pruning).

4.10 **Landscape Implications**

4.10.1 The items listed in the table below require felling to permit the proposed development to proceed:-

Feature No	Reason for Removal	BS Category*	Visual Amenity Assessment*
T001	To facilitate construction of the enlarged light well.	C	Low
Wisteria	To facilitate construction of the enlarged light well.	n/a	n/a

* 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.

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. Because of this it is recommended that all trees on or adjacent to the site be inspected on an annual basis.

4.12.3 As stated in BS 5837:2012, 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. Therefore, the designer of the new landscaping should, 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 In this instance the erection of protective fencing and/or installation of ground protection is not considered to be necessary. As shown on the attached Preliminary Arboricultural Impact Assessment & Tree Protection drawing, ref: 5487-D, the proposed excavations are minor and at a sufficient distance from any notable tree within the rear garden to ensure they would not be adversely affected by the proposed works.

5.1.2 Where footpaths, access drives, or parking bays are constructed within the RPA of retained trees, careful attention will be paid to the type of surface treatment used in these areas, details of which are given in item 5.8, below. If possible, these should be installed as a final phase of the project, thereby protecting the RPA throughout the major construction phase of the proposed development.

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 Local Planning Authority 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 Local Planning Authority.

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. 5787-D-D. Any encroachment within this protected area will only be with the prior agreement of the Local Planning Authority.

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 pipe-work 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 Local Planning Authority, will be carried out prior to any other site works. Once completed, the proposed protective fencing will be erected along the lines indicated above. 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 F-1).

5.5 Tree Surgery

5.5.1 All tree work will be agreed with the Local Planning Authority and will be carried out in line with BS 3998:2010 (Recommendations for Tree Works). An arboricultural contractor approved by the Local Planning Authority will carry out the work. Any alterations to the proposed schedule of works will be agreed with the Local Planning Authority 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, Type 2 road-stone. 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 routes for overhead services will aim to avoid the trees. Where this is not possible, any tree work will be agreed prior to commencement with the Local Planning Authority.

5.7.4 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.

5.7.5 All service runs/trenches where they encroach within the RPA of retained trees will be agreed with the Local Planning Authority prior to commencement of works.

5.8 Hard Surface Types & Construction within the Root Protection Area

5.8.1 Where it is necessary to construct footpaths, driveways, non adoptable roads, and other hard surfaces within the RPA as calculated in accordance with BS 5837:2012 (item 4.6.1), it is proposed that the design will comply with the 'no-dig' principles of the Arboricultural Advisory Information Services (AAIS) Practice Note 12 "*Through the Trees to Development*" - the only difference being that instead of a geo-grid, a geo-textile base is provided, and the no-fines road stone is incorporated in and retained by a geo-web cellular confinement system. Given the individual requirements of each site, it is essential that a specialist engineer is consulted to specify the construction detail. Where it is necessary to remove any existing hard surface, or lower the ground level within the RPA, this may expose roots. This operation must be undertaken using hand tools or an air spade. Any roots found should be treated with the greatest care and surrounded by sharp sand to provide a level base. Please note that 'no-dig' surfaces are not always considered acceptable for adoption.

5.8.2 Where it is shown that the construction of a boundary wall or dwelling encroaches within the RPA of a retained tree, the foundations of the wall or dwelling will be designed in such a manner so as to minimise the detrimental effect of the construction on the tree's roots. In these situations any excavations within the RPA of an affected tree will only be undertaken following exploration of the existing root system with an air spade (or by hand digging if soil conditions preclude) and the necessary root pruning undertaken to allow excavation without unnecessary pulling and tearing of the roots to be retained. This will ensure minimal damage to tree roots where pad and beam or cantilever foundations are considered appropriate. Should a piling rig be required to create piles, any access facilitation pruning or felling necessary to allow access must be undertaken before the commencement of works and only with prior consent of the Local Planning Authority.

5.8.3 If boundary fencing is to be erected within the RPA of retained trees, it is proposed that the fence posts will be secured by the use of "Met-Posts" or similar design in order to keep the disturbance and damage of the roots of the trees to a minimum.

6.0 Recommendations

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

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, but will become invalid if any building works are carried out upon the property, soil levels altered in any way close to the property, or tree work undertaken. It must also be appreciated that recommendations proposed within this report may be superseded by extreme weather, or any other unreasonably foreseeable events.

If alterations to the property or soil levels are carried out, or tree work undertaken, it is strongly recommended that a new tree inspection be carried out.

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 reasonable 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:

June 2016……
For and on Behalf of Hayden's Arboricultural Consultants Limited

8.0 References

British Standards Institute. (2010). *Recommendations for Tree Work BS 3998:2010* BSI, London.

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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.

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9.0 Appendices

Appendix **A** Species List

Appendix **B** Schedule of Trees

Appendix **C** Preliminary Schedule of Works to Allow Development

Appendix **D** Explanatory Notes

Appendix **E** Tree Preservation Order Enquiry/Response

Appendix **F** Advisory Information & Sample Specifications

1. BS 5837:2012 Figure 1 - Flow Chart – Design and Construction & Tree Care
2. European Protected Species and Woodland Operations Decision Key to aid planning of woodland operations and protecting EPS (v.1)
3. BS 5837:2012 Figure 2 - Default specification for protective barrier
4. BS 5837:2012 Figure 3 - Examples of above-ground stabilizing systems

Appendix **G** Drawing No 5787-D

Appendix A - Species List

Species List:

Beech	*Fagus*
Cherry Plum	*Prunus cerasifera*
Cypress	*Cupressus*
Fig	*Ficus*
Japanese Maple	*Acer palmatum*
Magnolia	*Magnolia*

Appendix B

Schedule of Trees

SCHEDULE OF TREES (AIA) 26 Thurlow Road, Hampstead,

Surveyed By: Nick Hayden Date: 16/06/2016
Managed By: Nick Hayden

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						
G001	x4 Common Beech	310	14		Moderate	N4.5, E4.5, S4.5, W4.5	Four Beech stems located adjacent to the site's southern boundary that form a small, cohesive group. Largest DBH and height provided. No obvious indicators of disease or decay. Plotted for reference - not affected by proposal.	C2	No work required.	4		
		3.72	0-2m		SM	Moderate						
Yes		43.5			10 + years	Bare earth, Shrub bed						
T001	Cypress	130	3		Low	N1.0, E1.0, S1.0, W1.0	Twin-stemmed specimen. DBH of stems is 60 and 120mm. Swept stems. Historically reduced at circa. 2m above ground level. No obvious indicators of disease or decay. At current dimensions tree is considered to pose little risk.	C2	No work required.	4	Fell to permit development.	0
		1.56	0-2m		Y	High						
Yes		7.6			10 + years	Shrub bed						
T002	Japanese Maple	150	1.5		Low	N1.5, E1.5, S1.5, W1.5	Small, ornamental tree. At current dimensions tree is considered to pose little risk.	C2	No work required.	4		
		1.8	0-2m		SM	Moderate						
Yes		10.2			10 + years	Shrub bed						
T003	Cypress	110	2.5		Low	N1.0, E1.0, S2.0, W1.0	Twin-stemmed specimen (DBH: 40, 100). No obvious indicators of disease or decay. At current dimensions tree is considered to pose little risk.	C2	No work required	4		
		1.32	0-2m		SM	High						
Yes		5.5			10 + years	Shrub bed						
T004	Cherry Plum	220	8.5		Low	N4.0, E3.0, S3.5, W4.0	Located adjacent to the shared boundary. At current dimensions tree is considered to pose little risk. Plotted for reference - not affected by proposal.	C2	No work required.	4		
		2.64	2.1-4m		EM	Moderate						
Yes		21.9			10 + years	Flower / Shrub bed						
T005	Fig	160	8		Low	N3.0, E3.0, S3.0, W3.0	Located adjacent to the shared boundary. At current dimensions tree is considered to pose little risk. Plotted for reference - not affected by proposal.	C2	No work required.	4		
		1.92	0-2m		EM	Moderate						
Yes		11.6			10 + years	Flower / Shrub bed						
T006	Cypress	160	6.5		Low	N1.5, E1.5, S1.5, W1.5	At current dimensions tree is considered to pose little risk. Plotted for reference - not affected by proposal.	C2	No work required.	4		
		1.92	0-2m		SM	High						
Yes		11.6			10 + years	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 (m²)	Aspect	Aspect	SULE	Ground Cover						
T007	Cypress	90	4		Low	N1.5, E1.5, S0.5, W0.5	Suppressed specimen. At current dimensions tree is considered to pose little risk. Plotted for reference - not affected by proposal.	C2	No work required.	4		
		1.08	0-2m		Y	High						
Yes		3.7			10 + years	Bare earth						
T008	Magnolia	250	6		Low	N4.0, E4.0, S4.5, W3.5	Twin-stemmed specimen. DBH of stem is 140 and 210mm. No obvious indicators of disease or decay. At current dimensions tree is considered to pose little risk. Plotted for reference - not affected by proposal.	C2	No work required.	4		
		3	0-2m		EM	Low						
Yes		28.3			10 + years	Flower bed						
T009	Cypress	220	15		Moderate	N2.0, E2.0, S2.0, W2.0	Restricted rooting environment. Historically topped - multi-stemmed from circa. 8m above ground level.	C2	No work required.	4		
		2.64	4.1-6m		SM	High						
Yes		21.9			10 + years	Bare earth						

Appendix C

Schedule of Works to Allow Development

SCHEDULE OF WORKS (AIA)

26 Thurlow Road, Hampstead,

Surveyed By: Nick Hayden
Surveyed: 16/06/2016
Managed By: Nick Hayden

Tree No.	Species	Work required	Priority
T001	Cypress	Fell to permit development.	**0**

Appendix D

Explanatory Notes

Explanatory Notes

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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.

V Veteran. An over-mature specimen, usually of high value due to either its age, size and/or ecological significance

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 E

Tree Preservation Order Response/Enquiry

Environment

Planning and built environment

Conservation and listed buildings

Conservation areas

Bloomsbury doors project

Find a conservation area

Conservation Area Map

To view conservation area information click in the map or enter a full street name or postcode

Address Search enter a full postcode or street Find

26 Thurlow Road London NW3 5PP

Rachel Edwards

From: Gabrielle Justesen
Sent: 21 June 2016 12:10
To: 'mathias.genet@camden.gov.uk'
Subject: 5487 - TPO Enquiry, 26 Thurlow Road, Hampstead, London NW3 5PP
Attachments: Site Map.pdf

Dear Mr Genet,

Could you please advise if the above mentioned site is covered by TPO or is located within a Conservation Area?

I have attached a map for your use.

I look forward to hearing from you.

Gabby Justesen
Office Manager – South West Office

Office: 01722 657423

HAYDEN'S Arboricultural Consultants

info@treesurveys.co.uk

www.treesurveys.co.uk

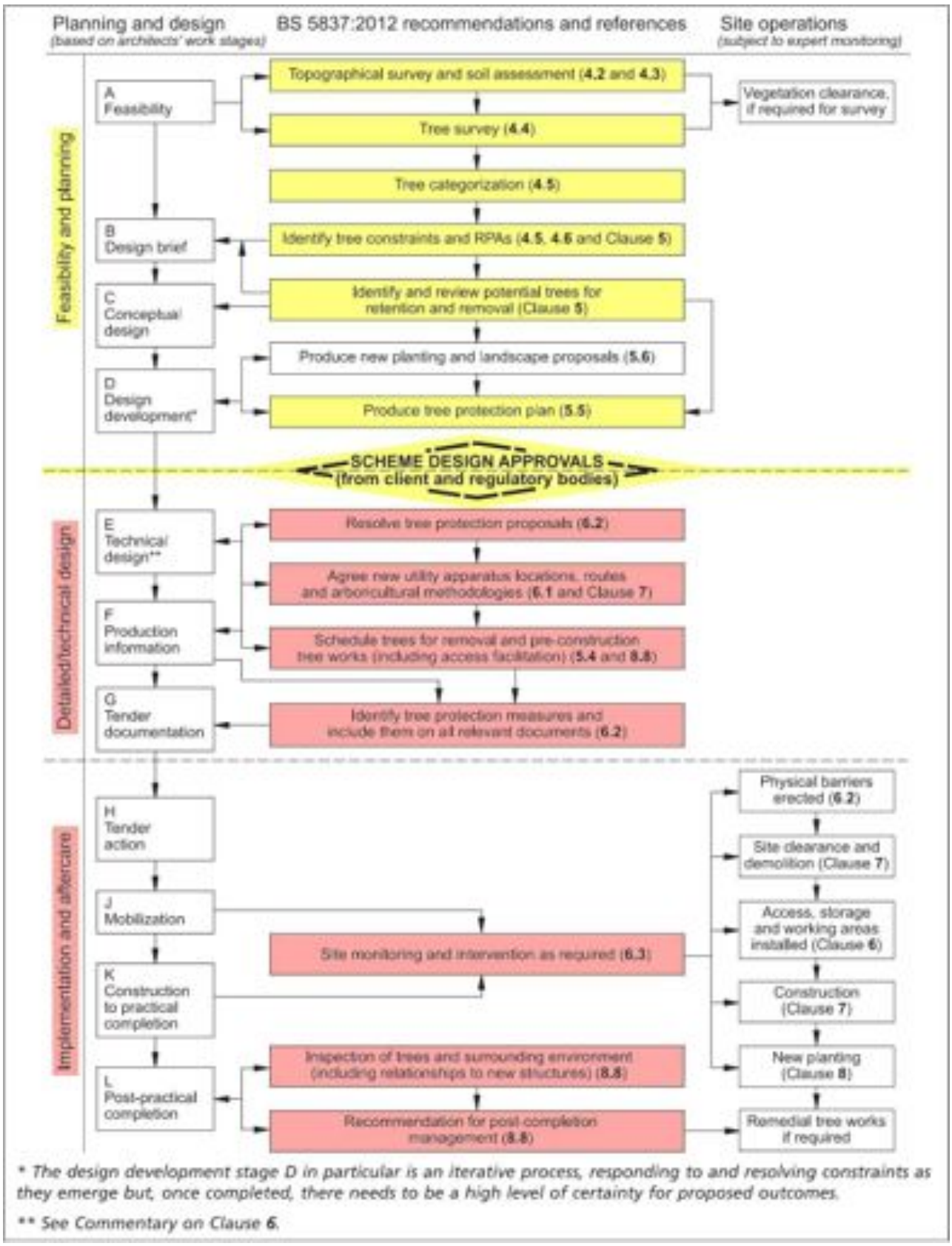
Head Office: 5 Moseley's Farm Business Centre, Fornham All Saints, Bury St. Edmunds, Suffolk, IP28 6JY

South West Office: Unit 7, Enterprise House, Cherry Orchard Lane, Salisbury, Wiltshire, SP2 7LD

Appendix F

Advisory Information & Sample Specifications

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



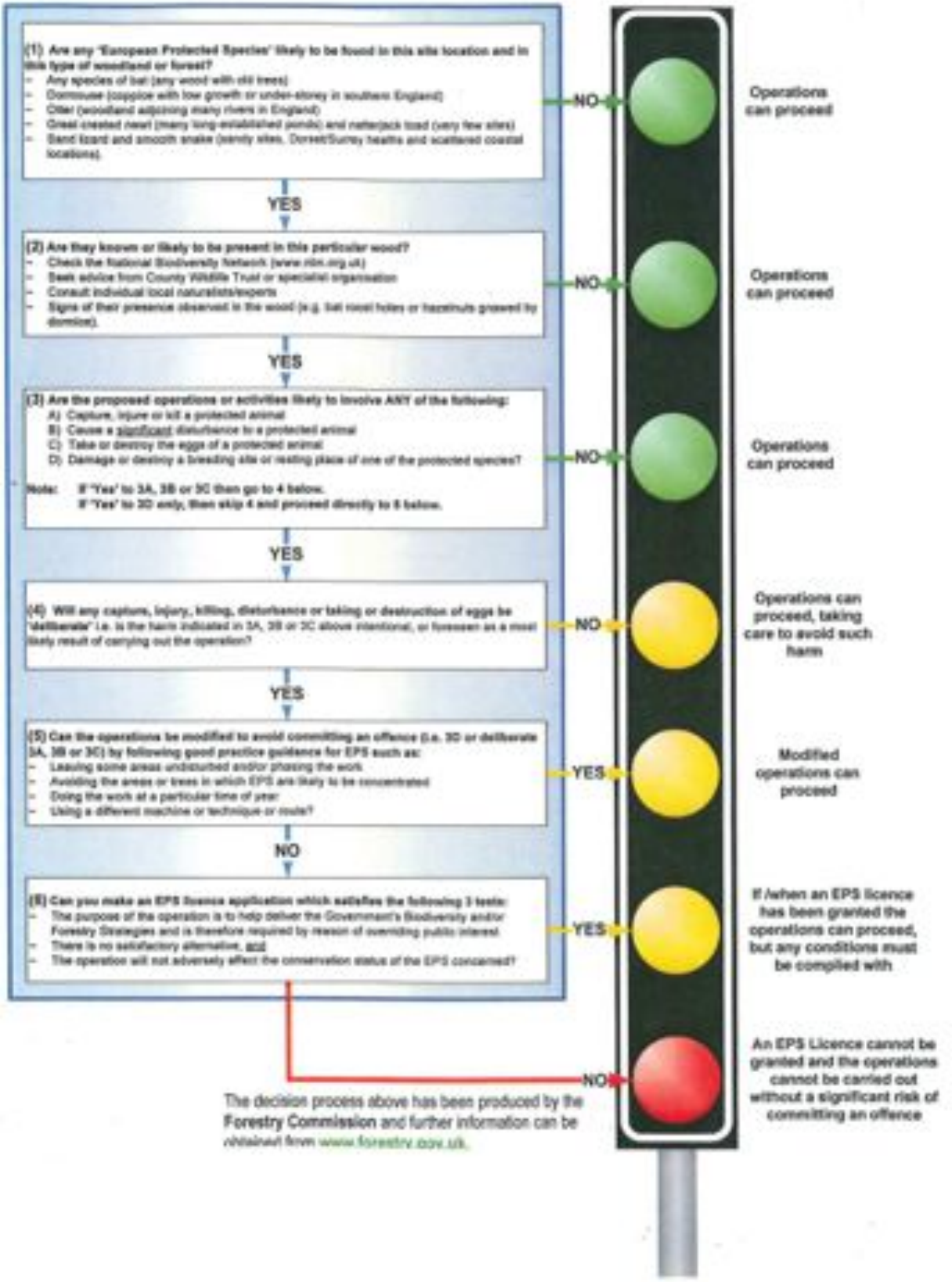
** The design development stage D in particular is an iterative process, responding to and resolving constraints as they emerge but, once completed, there needs to be a high level of certainty for proposed outcomes.*

*** See Commentary on Clause 6.*

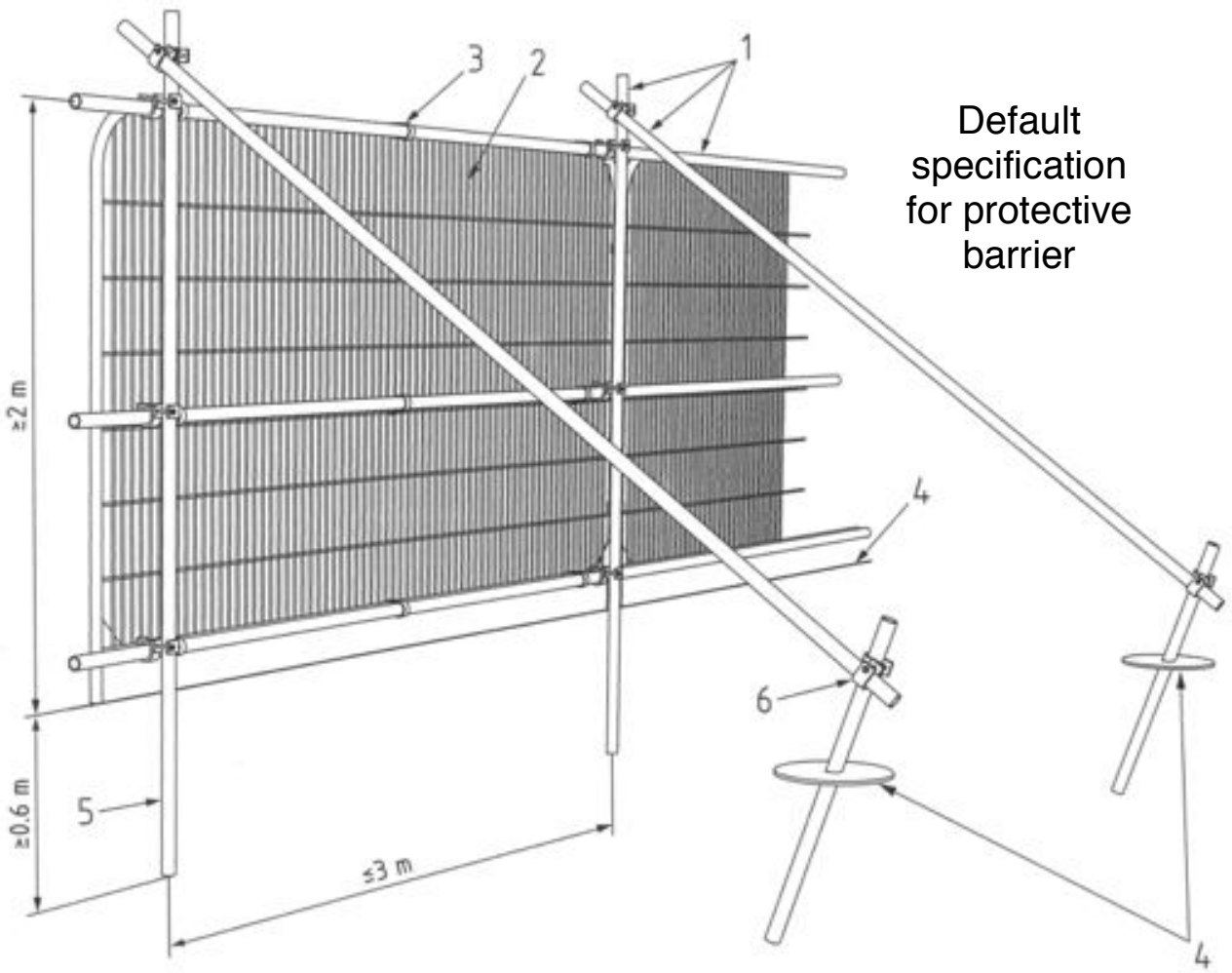
2.

European Protected Species and woodland operations
Decision tree to aid planning of woodland operations and protecting EPS (v.1)

The diagram below illustrates the questions that woodland managers and operators should consider when deciding whether they need to apply for an EPS licence. It should be noted that the diagram presents a simplified overview of the decision-making process.



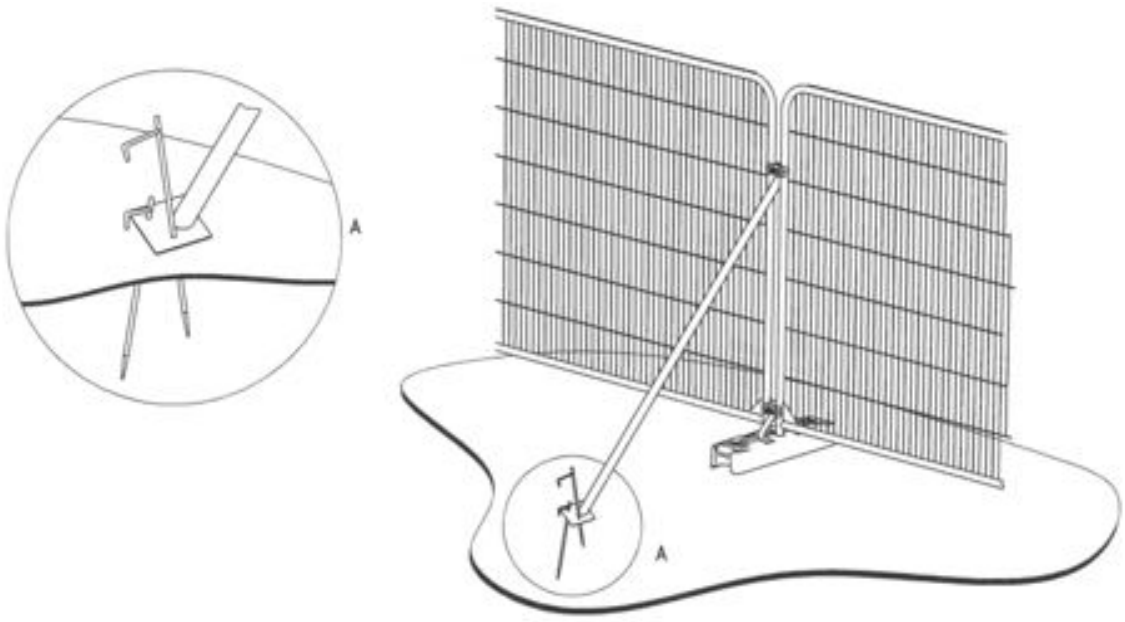
3. BS 5837:2012 Figure 2: Default specification for protective barrier



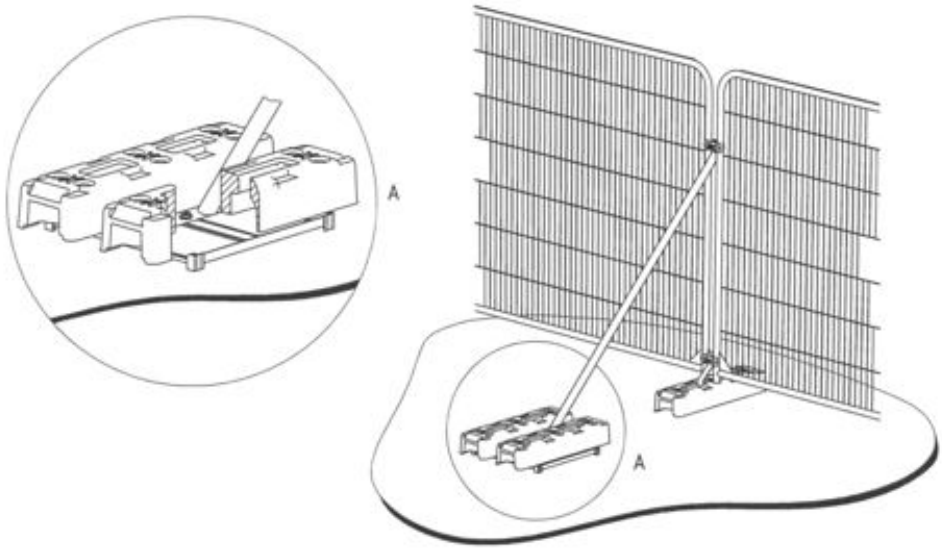
Key

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