



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

Proj. No <b>7539</b>	<b>Land at Killingdown Farm, Little Green Lane, Croxley Green, Rickmansworth, Hertfordshire, WD3 3JJ</b>		
Client:		Hill	
Date of Report:	16/04/2021	Revision:	A

# **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 buildings for residential development, comprising of two-storey houses and three-storey blocks of flats, together with car parking, landscaping, and other associated works. As a result twenty-seven individual trees, seven groups of trees, four areas of trees and nine hedges were inspected. The arboricultural related implications of the proposal are as follows:

- 1 In addition to trees which require felling irrespective of development, it is necessary to fell four individual trees, five landscape features and sections of a further six landscape features in order to achieve the proposed layout. Additionally, two trees and six landscape features require minor surgery to permit construction space or access.
- 2 Two items have been identified for removal irrespective of any development proposals. The removal of one of these items coincides with the requirements of the proposed layout.
- 3 The alignment of a proposed dwelling and garden wall nominally intrudes within the Root Protection Area of one tree to be retained. This has only minor influence on the Root Protection Area and as such it is considered appropriate to undertake linear root pruning, thus obviating the need for specialist construction techniques at this location.
- 4 The alignment of a proposed garden path and shed base encroach within the Root Protection Area of one hedge that is to be retained but given the use of modern no dig construction techniques this is not considered to be a substantial issue.
- 5 The alignment of proposed garden paths, shed bases, roadways, driveways and parking nominally intrudes within the Root Protection Areas of six items to be retained. This has only minor influence on the Root Protection Areas and as such it is considered appropriate to undertake linear root pruning, thus obviating the need for specialist no dig construction techniques at these locations.



- 6 This report recommends that specialist advice is obtained by expert practitioners in other disciplines. Such input should always be sought 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 4.4.1)
  - Civil Engineer (no dig surfacing, item 4.4.3)
- 7 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. This includes ensuring that protective fencing is erected as detailed at items 4.6 and 5.1 of this report.
- 8 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, ground protection measures, no dig surfacing, access facilitation pruning specification, phasing and an extensive 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

Client – Hill			
<b>Address</b> The Power House Gunpowder Mill Waltham Abbey Essex EN9 1BN	<b>Contact</b> Mr Laurence Kendrick	<b>Tel:</b> <b>E-mail:</b>	[REDACTED]

Local Planning Authority – Three Rivers District Council			
<b>Address</b> Three Rivers House Northway Rickmansworth Hertfordshire WD3 1RL	<b>Trees Officer</b> Mr Terance Flynne	<b>Tel:</b> <b>E-mail:</b>	[REDACTED]

Arboricultural Consultant – Hayden's Arboricultural Consultants Limited			
<b>Address</b> 5 Moseley's Farm Business Centre Fornham All Saints Bury St Edmunds Suffolk IP28 6JY	<b>Report Author:</b> Mr Stephen Holyland Mr Matthew Plane-Da'Silva	<b>Tel:</b> <b>E-mail:</b>	[REDACTED]



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# 1.0 Introduction

## 1.1 Terms of Reference

1.1.1 Hayden's Arboricultural Consultants Limited has been commissioned by Hill to prepare a Tree Survey, Arboricultural Impact Assessment, Preliminary Arboricultural Method Statement and Preliminary Tree Protection Plan for the existing trees on Land at Killingdown Farm, Little Green Lane, Croxley Green, Rickmansworth, Hertfordshire, WD3 3JJ.

1.1.2 The site survey was carried out on 28/06/2019. 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 from Mr Harry Wright on the 05<sup>th</sup> June 2019  
Definition of site boundary  
Description of requirements/deadlines  
Topographical survey/map  
Proposed site layout



## 2.0 The Site

### 2.1 Overview

2.1.1. The site is Land at Killingdown Farm, Lower Green Lane, Croxley Green, Rickmansworth, Hertfordshire, WD3 3JJ.

### 2.2 Soils

2.2.1 The soils 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 Tree Preservation Order(s)

The local planning authority Three Rivers District Council have deemed it appropriate to provide statutory protection to trees on and/or neighbouring this site through the serving of a Tree Preservation Order (TPO), Ref no TP/12/71. The effect of this on the owners, managers or any persons wishing to undertake work on preserved trees is to require them to obtain written permission from Three Rivers District Council prior to actioning any surgery or felling etc. The purpose of this process is to try to ensure that the works are appropriate, proportionate, and in keeping with the long-term aims of the TPO (as expressed in the original TPO statement) but, given that trees are living organisms, and the locality within which they are set is liable to change, it is often the case that local planning authority decisions relating to TPO applications require regular review to reflect the current situation rather than the historical perspective of the original date of protection.

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.

Owners, managers or any persons wishing to undertake work as an exemption to the written permission 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 TPO 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.

Following our enquiry, a copy of the TPO schedule and/or plan was provided by the Local Planning Authority which depicts the trees protected under the order, a copy of which is included in Appendix F.

### 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 Licence is not required in the following instances:

- To fell trees in a garden, an orchard, a churchyard, or a designated open space (Commons Act 1899).

- To carry out surgery operations such as pruning, reduction, dead wooding or pollarding.

- To fell less than 5 cubic metres in a calendar quarter. (Please note that not more than 2 cubic metres in a calendar quarter may be sold).

- To fell trees that are 8 centimetres or less in diameter when measured 1.3 metres from the ground. Trees removed for thinning may have a diameter of up to 10 centimetres and trees managed under a coppice regime may have a diameter of up to 15 centimetres.

- To fell trees previously approved for removal under a Dedication Scheme, or where Detailed Planning Permission has been granted.

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

### 2.3.3 Hedgerow Regulations and Inclosure Act

Certain hedgerows within the United Kingdom are protected under The Hedgerow Regulations 1997. The regulations apply to any hedgerow growing in, or adjacent to, any common land, protected land (local nature reserves and SSSIs), or land used for agriculture, forestry or the breeding or keeping of horses, ponies or donkeys, if it: (a) has a continuous length of, or exceeding 20m; or (b) it has a continuous length of less than 20m and, at each end, meets another hedgerow. The regulations do not apply to hedgerows within the curtilage of, or marking a boundary of the curtilage of, a dwelling house.

Anybody wishing to remove or destroy a hedge must apply to their Local Planning Authority (LPA) for consent. Substantial fines exist for not complying with the requirements The Hedgerow Regulations.

Older hedges could be protected by old Inclosure Acts. These Acts may require that hedges are retained and managed in perpetuity.

It is recommended professional legal advice be sought before removing hedgerows to determine whether the hedgerow might be protected by the Inclosure Act. Details of the Inclosures Act are held by the Local Records Office.





## 3.0 Tree Survey

- 3.1 As part of this survey a total of twenty-seven individual trees, seven groups of trees, four areas of trees and nine hedges have been identified. These have been numbered T001 – T027, G001 – G007, A001 – A004 and H001 – H009 respectively.
- 3.2 A topographical survey was provided which showed the position of the trees on site. It should be noted however 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. 7539-D-AIA Rev A.
- 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 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:

G007	Monitor annually for Ash Dieback.
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- 3.6 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 demolish the existing buildings for residential development, comprising of two-storey houses and three-storey blocks of flats, together with car parking, landscaping, and other associated works within the curtilage of the site.



## 4.2 Access

4.2.1 Site access is unencumbered by the Root Protection Areas (RPA) of any trees to be retained. Therefore, and from a purely arboricultural perspective, it will 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. Therefore, other than the provision of protective fencing, no additional specialist protection measures are required.

## 4.4 Construction

4.4.1 Construction of foundations or structural supports for a proposed dwelling and garden wall marginally encroach within the calculated RPA of the following tree to be retained – T001. Given the minor extent of the intrusion at this location it is considered appropriate to undertake linear root pruning as part of the access facilitation pruning (AFP) works. This operation will obviate the need for arboriculturally imperative specialised foundation construction methods in this situation. 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 for driveways, parking, roadways, garden paths and shed bases encroach within a small portion of the RPA of the following items to be retained – A001, A002, G003, H008, H009 and T025. Given the minor extent of the intrusion at these locations it is considered appropriate to undertake linear root pruning as part of the access facilitation pruning (AFP) works. This operation will obviate the need for no dig construction methods in this situation.

4.4.3 Installation of new hard surfaces for a proposed garden path, shed base and footpath encroach within the RPA of the following items to be retained – A001, T012 and H009. Provided that these work with finished levels and required load bearings without cutting into the ground, the surfaces should be attended to by the use of no dig construction methods. In the detailed Arboricultural Method Statement & Tree Protection Plan, Hayden's Arboricultural Consultants will supply a sample design of no dig surfacing. However, the exact specification (adhering to the principles of the sample design) must be designed by a Civil Engineer who can confirm that the finished levels and load bearings are achievable with this type of design without cutting into the ground. In order to protect the RPA of the affected trees, the protective fencing should be sited at the edge of the RPA of these trees and the no dig construction completed as a final phase of development.

4.4.4 Excavation and soil re-modeling is not shown to encroach within the RPA of any retained trees. Therefore, no adverse arboricultural implications are expected.

## 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 or construction and immediately after the completion of the necessary tree surgery and felling work, protective fencing will be erected on site. This must be fit for purpose (including any ground protection if necessary) in full accordance with the requirements of BS 5837:2012 and positioned as shown on the attached Preliminary Arboricultural Impact Assessment & Tree Protection drawing. 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 – access, movement of materials and the installation of services). For this reason, the project must be carefully phased to ensure the highest level of protection for retained trees at all times. As part of the detailed Arboricultural Method Statement & Tree Protection Plan, Hayden's Arboricultural Consultants will produce an in-depth phasing recommendation to cover the major operations on site as they affect retained trees.

#### **4.9 Monitoring**

4.9.1 In accordance with item 6.3 of BS 5837:2012, 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 extensive auditable monitoring schedule to assess the progress of key site events/activities.

#### **4.10 Cultural Implications for Retained Trees**

4.10.1 Cultural implications for retained trees are low. Details of specific works are listed in the attached Schedule of Works to Permit Development.



## 4.11 Landscape Implications

4.11.1 In addition to trees and landscape features necessitating removal for health and safety, cultural or quality of life reasons, (as detailed in the attached Schedule of Works - Irrespective of Development) 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*
A001 (section only)	To enable construction of two dwellings, roadway, footpath links and for landscape purposes.	C	Moderate
A002 (section only)	To enable construction of roadway and driveway.	B	Moderate
A003	To enable construction of dwellings and roadway.	C	Low
A004	To enable construction of dwellings and roadway.	C	Moderate
G003 (section only)	To enable construction of dwelling.	B	Moderate
G005	To enable construction of dwellings and roadway.	C	Low
H001	To enable construction of garden space.	C	Low
H002 (section only)	To enable construction of dwelling and garden space.	C	Low
H004(Majority)	To enable construction of dwellings.	C	Low
H007 (section only)	To enable construction of dwellings and roadway access.	C	Moderate
H008 (section only)	To enable construction of footpath link, parking spaces and for landscaping purposes.	C	Moderate
T002	To enable construction of dwelling.	C	Low
T011	To enable construction of garden space.	C	Low
T018	To enable construction of dwelling.	U	Moderate
T024	For landscape purposes.	C	Low

\* 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. 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 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. 7539-D-AIA Rev A. This fencing will be in accordance with the requirements of BS 5837:2012 including any necessary ground protection.

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 Local Planning Authority.

5.1.3 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.

5.1.4 Where fencing is impractical, consideration must be given to other forms of effective above ground tree structure protection. An example of this would be a combination of Barksavers to secure the stems and a temporary load bearing surface to shield the ground.

### **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. 7539-D-AIA Rev A. 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 G-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.



## 5.9 Reporting and Monitoring Procedures

- 5.9.1 In accordance with item 6.3 of BS 5837:2012, 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 Local Planning Authority and appropriate action taken only with the prior permission of Hill and the Local Planning Authority.

## 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.
- 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, ground protection measures, no dig surfacing, access facilitation pruning specification, project phasing and an extensive auditable monitoring schedule.
- 6.3 Tree surgery should be completed as detailed in the Schedule of Trees. Where this has been identified for reasons other than to permit development, this work should be completed within the advised timescales irrespective of any development proposals.
- 6.4 The tree surgery works 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 Local Planning Authority, 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 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.

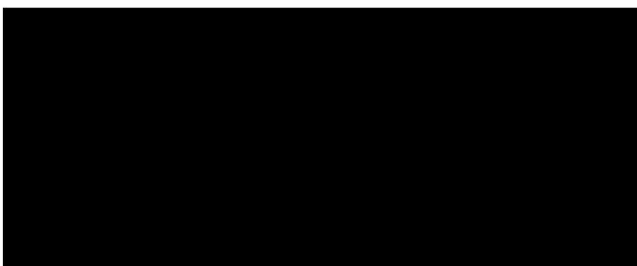
If alterations to the property or soil levels are carried out, or tree work undertaken, it is strongly recommended that a new tree inspection be carried out.

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 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:**



**April 2021.....**  
**For and on Behalf of Hayden's Arboricultural Consultants Limited**



## 8.0 References

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## 9.0 Appendices

Appendix	<b>A</b>	Species List & Tree Problems
Appendix	<b>B</b>	Schedule of Trees
Appendix	<b>C</b>	Schedule of Works - Irrespective of Development
Appendix	<b>D</b>	Preliminary Schedule of Works to Allow Development
Appendix	<b>E</b>	Explanatory Notes
Appendix	<b>F</b>	Tree Preservation Order Enquiry/Response
Appendix	<b>G</b>	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
Appendix	<b>H</b>	Drawing No 7539-D-AIA Rev A



## Appendix A - Species List & Tree Problems

### Species List:

Apple	<i>Malus sp</i>
Ash	<i>Fraxinus excelsior</i>
Beech	<i>Fagus sylvatica</i>
Blackthorn	<i>Prunus spinosa</i>
Cherry Plum	<i>Prunus cerasifera</i>
Crab Apple	<i>Malus sylvestris</i>
Elder	<i>Sambucus nigra</i>
Elm	<i>Ulmus sp</i>
English Oak	<i>Quercus robur</i>
European Lime	<i>Tilia x europaea</i>
Goat Willow	<i>Salix caprea</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellana</i>
Holly	<i>Ilex aquifolium</i>
Leyland Cypress	<i>X Cuprocyparis leylandii</i>
Scots Pine	<i>Pinus sylvestris</i>
Sycamore	<i>Acer pseudoplatanus</i>
Walnut	<i>Juglans regia</i>
Wild Cherry	<i>Prunus avium</i>

### Tree Problems:

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

<b>Name: Canker</b>	
Symptoms/Damage Type:	This is a clearly defined patch of dead and sunken, or malformed bark which can be caused by either bacterial or fungal agents.
Consequence:	Depending upon the affecting organism can cause death of limbs or in extreme cases death of whole tree.
Control Measures:	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.



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

<b>Name: Dutch Elm Disease (<i>Ophiostoma ulmi</i>)</b>	
Symptoms/Damage Type:	The first symptom is the yellowing of the leaves from July onwards. It spreads rapidly often causing death in the same season - it is very rare for a tree to survive once the fungus has occurred. Dark brown streaks are evident when the bark and outer wood are peeled from the infected branches. Brown blotches may also be seen on infected branches if they are cut cleanly in a transverse section. The tree is infected by the Elm Bark Beetle which carries the disease. Once active in the tree, the fungus produces yeast like cells in the wood which are transported within the trees water conducting tissues. These cause blockages of the tissue and hence both the wilting of the leaves and the brown staining of the infected wood mentioned above.
Consequence:	This is the most serious disease in Elm trees and is still common in Britain. Infected trees decline and die rapidly.
Control Measures:	Control by fungicidal injections has been successful in specimen trees of high value however the cost of this recurrent procedure usually outweighs the value of the affected tree.

<b>Name: Ivy (<i>Hedera helix</i>)</b>	
Symptoms/Damage Type:	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.
Control Measures:	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 whilst relieving the pressure on the tree.



## Appendix B

### Schedule of Trees

# SCHEDULE OF TREES (AIA)

Killingdown Farm, Little Green Lane, Croxley Green, Rickmansworth, Hertfordshire

Surveyed By: Steve Holyland Date: 28/06/2019

Managed By: Steve Holyland

Tree No	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
			On site	RPA (m²)	Aspect	Aspect							SULE
A001	Hawthorn, Holly, Elder, Hazel, Elm Species, Ash	350	9		Moderate	N3, E3, S3, W3	Overgrown unmanaged boundary hedge consisting of multiple species of little merit individuality however make up a significant landscape feature around site.	C2	No work required.	4	Fell sections to ground level. Undertake linear root pruning. Install no dig surfacing.	0	
		4.2	0		EM	High							
Yes		55.4			20+ years	Dense undergrowth							
A002	Sycamore, Hawthorn, Holly, Hazel, European Lime, Elder	250	12		Moderate	N4.5, E4.5, S4.5, W4.5	Area which creates a linear feature, acting as a boundary between site and highway. The trees are heavily covered with Ivy, which has hindered a full detailed inspection. Tree do appear to be in a fair overall condition displaying good vigour throughout the crowns.	B2	No work required.	4	Fell section to ground level. Reduce crown to clear driveway and garage by up to 2m.	0	
		3	1.5		SM	High							
Yes		28.3			20+ years	Dense undergrowth							
A003	Cherry Plum, Walnut, Ash, Elder, Hazel	150	8.5		Low	N4, E4, S4, W4	A densely overgrown area of likely self set specimens. No signs of significant defects or disease.	C2	No work required.	4	Fell to ground level.	0	
		1.8	0		EM	Moderate							
Yes		10.2			10+ years	Dense undergrowth							
A004	Wild Cherry, Apple Species	420	8		Moderate	N6, E6, S6, W6	An area which is a mature disused orchard featuring Cherry and Apple trees. The trees are mostly unsuitable for retention within a residential environment, as the majority of trees feature structural defects making them unsound such as a combination of historic wounds, canker, decay pockets and deadwood. This is likely due to their age and lack of management.	C2	No work required.	4	Fell to ground level.	0	
		5.04	0.5		M	Moderate							
Yes		79.8			10+ years	Light undergrowth							
G001	Holly	200	9		Low	N1, E1, S1, W1	Trees are in a fair overall condition with signs of dieback in the upper section of the canopy.	C2	No work required.	4	Undertake linear root pruning to enable construction of roadway.	0	
		2.4	0		SM	Low							
Yes		18.1			10+ years	Dense undergrowth							
G002	Elder, Ash	120	6		Low	N3, E2.5, S1.5, W3	A small cluster of an Elder and an Ash growing against the boundary wall. The Elder is becoming suppressed by the Ash. Overall no signs of significant defects or disease.	C2	No work required.	4			
		1.44	1		EM	Moderate							
Yes		6.5			10+ years	Light undergrowth							

Tree No	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
			Min Dist	Crown Base								
On site		RPA (m²)	Aspect	Aspect	SULE	Ground Cover						
G003	Sycamore x3, Goat Willow x1	450	14		Moderate	N6, E6, S6, W6	A group of three multi-stemmed Sycamore and one Goat Willow within an area of dense undergrowth. Dense undergrowth prevents access to trees and a full inspection. Dimensions estimated due to dense undergrowth. Dense Ivy clads at least two of the trees into the inner crown. The crowns of the trees appear in good condition however the Goat Willow is suppressed due to its location in the middle of the Sycamore.	B2	Remove Ivy and dense undergrowth and reinspect.	3	Fell section to ground level. Undertake linear root pruning.	0
		5.4	3.5		EM	High						
Yes		91.6			20+ years	Dense undergrowth						
G004	Holly, Elm Species	180	8.5		Low	N2.5, E2.5, S2.5, W2.5	A line of mainly Holly with one Elm situated within. Group is likely a lapsed hedge which has now become overgrown and overhangs a farm outbuilding. No signs of significant defects or disease.	C2	No work required.	4		
		2.16	0		EM	High						
Yes		14.7			10+ years	Light undergrowth						
G005	Leyland Cypress	300	9		Low	N3, E3, S3, W3	A line of Leylandii, possibly a lapsed hedgerow. No signs of significant defects or disease.	C2	No work required.	4	Fell to ground level.	0
		3.6	1		EM	High						
Yes		40.7			10+ years	Dense undergrowth						
G006	Scots Pine	450	18		Moderate	N4.5, E4.5, S4.5, W4.5	A group of two Scots Pine located just off-site. One specimen has Ivy cladding the lower stem. One specimen divides at approximately 3 metres but union is obscured by Ivy. The crowns appear in good condition.	B2	Remove all Ivy and reinspect.	3		
		5.4	3		EM	Moderate						
No		91.6			20+ years	Off-site/ no access						
G007	Ash, Hawthorn, Sycamore, Holly	350	14		Moderate	N6.5, E6.5, S6.5, W6.5	A group of off-site trees running along a neighbouring property opposite a footpath. Some of the Ash may have the onset of Ash Dieback with the tips of some shoots being dead. Overall no signs of significant defects.	B2	Monitor annually for Ash Dieback.	3		
		4.2	2		EM	High						
No		55.4			20+ years	Off-site/ no access						
H001	Hawthorn	100	2.5		Low	N0.5, E0.5, S0.5, W0.5	Small linear feature. Low value.	C2	No work required.	4	Fell to ground level.	0
		1.2	0		SM	High						
Yes		4.5			10+ years	Grass						
H002	Hawthorn, Elder, Hazel	100	5		Low	N1, E1, S1, W1	Small linear unmanaged hedgerow.	C2	No work required.	4	Fell section to ground level.	0
		1.2	0		EM	High						
Yes		4.5			10+ years	Dense undergrowth						



Tree No	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
			RPA (m²)	Aspect									Aspect	SULE	Ground Cover
H003	Holly, Hawthorn	50	1.8		Low	N0.5, E0.5, S0.5, W0.5	Small linear managed hedgerow.	C2	No work required.	4					
		0.6	0		SM	High									
Yes		1.1			10+ years	Light undergrowth									
H004	Hawthorn, Elder, Holly	50	1.8		Low	N0.5, E0.5, S0.5, W0.5	Hedge predominantly comprised of brambles and nettles, however the listed species were observed with hedgerow.	C2	No work required.	4	Fell to ground level.	0			
		0.6	0		Y	High									
Yes		1.1			10+ years	Dense undergrowth									
H005	Hawthorn, Holly	50	2		Low	N0.5, E0.5, S0.5, W0.5	Linear feature acting as a boundary between site and adjacent property.	C2	No work required.	4					
		0.6	0		SM	High									
Yes		1.1			10+ years	Light undergrowth									
H006	Lawson Cypress	120	2.5		Low	N0.5, E0.5, S0.5, W0.5	Boundary hedge to farm house garden. Hedge has been maintained but some dead and dieback has occurred.	C2	No work required.	4					
		1.44	0		EM	Moderate									
Yes		6.5			10+ years	Light undergrowth									
H007	Elm Species, Sycamore, Hawthorn, Blackthorn, Holly	200	9		Moderate	N3, E3, S3, W3	A dense boundary hedge with mixed specimens. Largely unmanaged in form, with Ivy in most places. Some of the Elm have succumbed to Dutch Elm Disease and are now dead, but do not pose a hazard.	C2	Remove dead Elm.	3	Fell section to ground level. Reduce crown by up to 1.5m to clear footpath and visibility splays.	0			
		2.4	0		EM	High									
Yes		18.1			10+ years	Light undergrowth									
H008	Hawthorn, Blackthorn, Cherry Plum, Elm Species	100	4.5		Moderate	N2.5, E2.5, S2.5, W2.5	Mixed boundary hedge of fair condition. Some Ivy encroachment in places. Unmanaged in form. No signs of significant defects or disease.	C2	No work required.	4	Fell majority to ground level. Reduce crown by up to 1.5m. Undertake linear root pruning.	0			
		1.2	0		EM	High									
Yes		4.5			10+ years	Light undergrowth									
H009	Leyland Cypress	500	16		Moderate	N5, E5, S5, W5	A tall mature boundary hedge which runs around the farm yard. The hedge is unmanaged in form and becoming very large. Some minor dieback has occurred in places but overall no signs of significant defects or disease.	C2	No work required.	4	Reduce crown back to the boundary line. Undertake linear root pruning. Install no dig surfacing.	0			
		6	1		M	High									
Yes		113.1			10+ years	Light undergrowth, Dense undergrowth									
H010	Mixed Species	200	2		Moderate	N1, E1, S1, W1	Formal boundary hedge at front of farm.	C2	No work required.	4	Fell to ground level.	0			
		2.4	0		EM	High									
		18.1			10+ years	Grass									
T001	English Oak	450	11.3		Low	N4.3, E5, S5, W5.4	Tree is in good overall condition displaying good vigour throughout the crown. No significant defects at time of inspection	B1	No work required.	4	Undertake overall crown reduction by up to 1.5m. Undertake linear root pruning.	0			
		5.4	0.5		SM	High									
Yes		91.6			20+ years	Light undergrowth									

Tree No	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
			RPA (m²)	Aspect									Aspect	SULE	Ground Cover
T002	Hazel	120	6		Low	N1, E1, S1, W1	Tree of little merit.	C1	No work required.	4	Fell to ground level.	0			
		1.44	1		Y	Low									
Yes		6.5			10+ years	Dense undergrowth									
T003	Ash	400	13		Moderate	N6, E5, S5, W5	Unable to carry out a detailed inspection due to dense undergrowth. Tree is heavily covered with ivy which extends from ground level into the main canopy masking possible defects.	C1	Remove Ivy to facilitate future inspection.	4					
		4.8	0		M	Moderate									
Yes		72.4			10+ years	Dense undergrowth									
T004	Lime Species	220	11		Moderate	N2, E2, S2, W2	Unable to carry out a detailed inspection due to dense undergrowth.	C1	No work required.	4					
		2.64	1		SM	Moderate									
Yes		21.9			10+ years	Dense undergrowth									
T005	Sycamore	250	11.5		Moderate	N4, E5, S2, W4	Tree bifurcates at approximately 1.5 metres, unable to carry out a detailed inspection due to dense undergrowth. Tree is heavily covered with ivy which extends from ground level into the main canopy masking possible defects.	C1	No work required.	4					
		3	0		SM	Moderate									
Yes		28.3			10+ years	Dense undergrowth									
T006	Sycamore	250	11.5		Moderate	N3, E5.5, S3, W4.5	Unable to carry out a detailed inspection due to dense undergrowth. Tree is heavily covered with ivy which extends from ground level into the main canopy masking possible defects.	C1	No work required.	4					
		3	0		EM	Moderate									
Yes		28.3			10+ years	Dense undergrowth									
T007	Crab Apple - Native	220	5.5		Low	N3, E3, S2.5, W5	Tree located off-site. No significant defects at time of inspection.	C1	No work required.	4					
		2.64	1		EM	Moderate									
No		21.9			10+ years	Grass									
T008	Crab Apple - Native	440	8		Low	N4, E3, S6, W3	Tree located off-site. Unable to access.	C1	No work required.	4					
		5.28	1		M	Moderate									
No		87.6			10+ years	Grass									
T009	Field Maple	350	10.5		Low	N3, E3, S3.5, W5	Tree situated in dense area which has restricted access to the main stem therefore a full detailed inspection could not be undertaken. There is dieback in the top section on the canopy.	C1	No work required.	4					
		4.2	2		M	Moderate									
No		55.4			10+ years	Dense undergrowth									
T010	Field Maple	450	11.5		Low	N3, E4, S5.5, W5	Tree located off-site. Unable to access.	C1	No work required.	4					
		5.4	2		M	Moderate									
No		91.6			10+ years	Light undergrowth									

Tree No	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
			RPA (m²)	Aspect									Aspect	SULE	Ground Cover
T011	Wild Cherry	120	10		Low	N1.5, E0.5, S0.5, W1	Tree heavily suppressed by neighbouring tree. Low value and little merit.	C1	No work required.	4	Fell to ground level.	0			
		1.44	1.5		SM	Moderate									
Yes		6.5			10+ years	Dense undergrowth									
T012	English Oak	1000	16.5		Moderate	N11.7, E10, S12, W12.2	Excellent example of species. Large open canopy that displays good vigour throughout the crown. Deadwood is present within the canopy however this is typical to species and considered low risk. No significant defects at time of inspection.	A1	No work required.	4					
		12	2.5		M	High									
Yes		452.4			40+ years	Grass									
T013	English Oak	250	12		Low	N1.5, E1.5, S1.5, W1.5	Young tree, no significant defects at time of inspection.	C1	No work required.	4					
		3	2		Y	High									
Yes		28.3			20+ years	Dense undergrowth									
T014	English Oak	320	12		Moderate	N6, E5.5, S6, W5.5	Tree located off-site. No significant defects at time of inspection however was restricted by heavy presence of Ivy, extending from ground level into the main canopy and restricted access on to neighbouring property.	B1	No work required.	4					
		3.84	2		SM	High									
No		46.3			20+ years	Dense undergrowth									
T015	Holly	180	12		Low	N1.5, E1.5, S1.5, W1.5	Tree is suppressed by neighbouring tree. Unremarkable tree of little merit.	C1	No work required.	4					
		2.16	0		SM	Low									
No		14.7			10+ years	Dense undergrowth									
T016	Holly	280	12		Low	N3, E4, S2.5, W4	Tree located off-site. No significant defects at time of inspection however had restricted access on to neighbouring property.	B1	No work required.	4					
		3.36	2		SM	Low									
Yes		35.5			20+ years	Grass									
T017	English Oak	700	14		Low	N8, E8, S8, W8	Tree located off-site. Restricted access on to neighbouring property. All dimensions are estimated.	B1	No work required.	4					
		8.4	2		M	High									
Yes		221.7			20+ years	Light undergrowth									
T018	Ash	1200	23.5		Moderate	N8, E6, S10, W9	DBH has been estimated due to lack of access to the main stem. Significant dieback in upper crown. There is a large cavity present at a main union point which show little signs of compartmentalisation, significant decay seemingly present. Tree could be retained in the current surroundings with no target area. If the target is increased removal should be undertaken.	U	No work required.	4	Fell to ground level.	0			
		14.4	2		OM	Moderate									
Yes		651.4			<10 years	Dense undergrowth									

Tree No	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
			RPA (m²)	Aspect									Aspect	SULE	Ground Cover
T019	Ash	400	17		Moderate	N7, E8, S8.5, W6	Tree located off-site. Restricted access on to neighbouring property. DBH is estimated. Tree appears to be in a fair overall condition. Major deadwood is present on the eastern aspect over the surveyed site.	C1	No work required.	4					
		4.8	1.5		M	Moderate									
Yes		72.4			10+ years	Off-site/no access									
T020	Ash	120	6.5		Low	N1.5, E1.5, S1.5, W1.5	Unremarkable tree of little merit.	C1	No work required.	4					
		1.44	0.5		Y	Moderate									
Yes		6.5			10+ years	Off-site/no access									
T021	Sycamore	250	9.5		Moderate	N4, E4.5, S3, W4	A Sycamore within the boundary hedgerow. Main stem is densely clad in Ivy preventing full assessment. Dimensions estimated due to hedge and Ivy. The crown is in visibly good condition.	C1	Remove all Ivy and reinspect.	3	Reduce crown on eastern aspect by up to 2m to clear footpath.	0			
		3	2		EM	Moderate									
Yes		28.3			10+ years	Hedge									
T022	Elder	150	5		Low	N3, E2.5, S1, W2.5	Specimen of Elder growing against the boundary wall. Some dieback is occurring but overall no signs of significant defects or disease.	C1	No work required.	4					
		1.8	1		EM	Moderate									
Yes		10.2			10+ years	Light undergrowth									
T023	Elder	150	5.5		Low	N3, E3, S1.5, W3	Specimen of Elder growing against the boundary wall. Some dieback is occurring and encroachment of Ivy but overall no signs of significant defects or disease.	C1	No work required.	4					
		1.8	1		EM	Moderate									
Yes		10.2			10+ years	Light undergrowth									
T024	Goat Willow	500	9		Low	N11, E6, S11, W11	A mature Goat Willow which is overextended and squat in form. Tree may be semi collapsed in places being braced up by old disused farm equipment. A full inspection cannot be undertaken due to disused farm equipment and undergrowth.	C1	Move disused farm equipment and clear undergrowth to undertake full inspection.	3	Fell to ground level.	0			
		6	0		M	High									
Yes		113.1			10+ years	Dense undergrowth									
T025	English Oak	450	12		Low	N6, E6.5, S6.5, W6	Specimen is located within dense undergrowth preventing a full inspection. Tree is a low squat specimen with good form. Tree does have some dieback occurring in the apex of the crown, maybe the onset of retrenchment.	B1	Clear away dense undergrowth and reinspect.	3	Crown lift to 2.5m from ground level. Undertake linear root pruning.	0			
		5.4	1		M	High									
Yes		91.6			20+ years	Dense undergrowth									
T026	Wild Cherry	430	9		Low	N5.5, E5.5, S5, W5	A single mature Cherry on the edge of the field. Tree features bad decay from the main union which has spread to both the main scaffold limbs and the main stem. Canker also appears to be present. This decay will limit the trees longevity. The crown appears in fair condition.	C1	No work required.	4					
		5.16	1		M	Moderate									
Yes		83.6			10+ years	Grass									

Tree No	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
			Min Dist	Crown Base								
		RPA (m²)	Aspect	Aspect	SULE	Ground Cover						
T027	Beech	800	20		Moderate	N5, E6, S10, W10	A large specimen of mature Beech which has had historic limb failures in the past leaving an open and distorted crown. Ivy clads lower main stem and no access to base as field gates locked. Barbed wire over top of gate. Main stem has a lean to the north. Crown appears to have suffered some dieback but remaining foliage is good. Of note three red kites took off from the crown as approaching for inspection. Woodpeckers were also present but no holes can be seen from track.	B3	Reinspect with full access.	3		
		9.6	2.5		M	Moderate						
No		289.5			20+ years	Light undergrowth						
T028	Oak	970	18		Moderate	N9, E9, S9, W9	No signs of significant issues.	B2	Remove deadwood.	3		
		11.64	2		M	High						
No		425.7			20+ years	Light undergrowth						
T029	Beech	1260	20		Moderate	N9, E9, S9, W9	This is an over mature tree with extensive decay at the base and is , in my opinion, a high risk specimen likely to fail in the not to distant future. The base of the tree is riddled with fungus and likely to fail and therefore a danger to those using the lane.	U	Fell to ground level.	2		
		15	2		OM	Moderate						
No		706.9			Less than 10 years	Light undergrowth						
T030	Sycamore	750	16		Moderate	N7, E7, S7, W7	Crown has been reduced and no signs of significant issues.	B2	No works required.	4		
		9	2		M	Moderate						
No		254.5			20+ years	Unknown						
T031	Holm Oak	950	16		Moderate	N7, E7, S7, W7	Crown has been reduced and signs of decay in main stem	B2	No works required.	4		
		11.4	2		M	High						
No		408.3			20+ years	Unknown						

## Appendix C

Schedule of Works - Irrespective of Development

## SCHEDULE OF WORK IRRESPECTIVE OF DEVELOPMENT

Killingdown Farm, Little Green Lane, Croxley Green, Rickmansworth,  
Hertfordshire

Surveyed By: Steve Holyland

Surveyed: 28/06/2019

Managed By: Steve Holyland

Tree No.	Species	Work required	Priority
G003	Sycamore x3, Goat Willow x1	Remove Ivy and dense undergrowth and reinspect.	3
G006	Scots Pine	Remove all Ivy and reinspect.	3
H007	Elm Species, Sycamore, Hawthorn, Blackthorn, Holly	Remove dead Elm.	3
T021	Sycamore	Remove all Ivy and reinspect.	3
T024	Goat Willow	Move disused farm equipment and clear undergrowth to undertake full inspection.	3
T025	English Oak	Clear away dense undergrowth and reinspect.	3
T027	Beech	Reinspect with full access.	3
T028	Oak	Remove deadwood.	3
T029	Beech	Fell to ground level.	2

## Schedule of Enhanced Monitoring

Killingdown Farm, Little Green Lane, Croxley Green, Rickmansworth,  
Hertfordshire

Surveyed By: Steve Holyland

Surveyed: 28/06/2019

Managed By: Steve Holyland

Tree No.	Species	Work required	Priority
<b>G007</b>	Ash, Hawthorn, Sycamore, Holly	Monitor annually for Ash Dieback.	<b>3</b>

---



## **Appendix D**

Preliminary Schedule of Works to Allow Development

## SCHEDULE OF WORKS (AIA)

Killingdown Farm, Little Green Lane, Croxley Green, Rickmansworth,  
Hertfordshire

Surveyed By: Steve Holyland

Surveyed: 28/06/2019

Managed By: Steve Holyland

Tree No.	Species	Work required	Priority
A001	Hawthorn, Holly, Elder, Hazel, Elm Species, Ash	Fell sections to ground level. Undertake linear root pruning. Install no dig surfacing.	0
A002	Sycamore, Hawthorn, Holly, Hazel, European Lime, Elder	Fell section to ground level. Reduce crown to clear driveway and garage by up to 2m.	0
A003	Cherry Plum, Walnut, Ash, Elder, Hazel	Fell to ground level.	0
A004	Wild Cherry, Apple Species	Fell to ground level.	0
G001	Holly	Undertake linear root pruning to enable construction of roadway.	0
G003	Sycamore x3, Goat Willow x1	Fell section to ground level. Undertake linear root pruning.	0
G005	Leyland Cypress	Fell to ground level.	0
H001	Hawthorn	Fell to ground level.	0
H002	Hawthorn, Elder, Hazel	Fell section to ground level.	0
H004	Hawthorn, Elder, Holly	Fell to ground level.	0
H007	Elm Species, Sycamore, Hawthorn, Blackthorn, Holly	Fell section to ground level. Reduce crown by up to 1.5m to clear footpath and visibility splays.	0
H008	Hawthorn, Blackthorn, Cherry Plum, Elm Species	Fell majority to ground level. Reduce crown by up to 1.5m. Undertake linear root pruning.	0
H009	Leyland Cypress	Reduce crown back to the boundary line. Undertake linear root pruning. Install no dig surfacing.	0
H010	Mixed Species	Fell to ground level.	0
T001	English Oak	Undertake overall crown reduction by up to 1.5m. Undertake linear root pruning.	0
T002	Hazel	Fell to ground level.	0
T011	Wild Cherry	Fell to ground level.	0
T018	Ash	Fell to ground level.	0
T021	Sycamore	Reduce crown on eastern aspect by up to 2m to clear footpath.	0
T024	Goat Willow	Fell to ground level.	0
T025	English Oak	Crown lift to 2.5m from ground level. Undertake linear root pruning.	0

## **Appendix E**

Explanatory Notes

# Explanatory Notes



## 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.

<b>Height</b>	Recorded in metres, measured from the base of the tree.
<b>Crown Base</b>	Recorded in metres, the distance from ground and aspect of the lowest branch material.
<b>Lowest Branch</b>	Recorded in metres, the distance from ground and aspect of the emergence point of the lowest significant branch.
<b>Life Expectancy</b>	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.
<b>Crown Spread</b>	Indicates the radius of the crown from the base of the tree in each of the northern, eastern, southern and western aspects.
<b>Minimum Distance</b>	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).
<b>RPA</b>	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.
<b>Water Demand</b>	This gives the water demand of the species of tree when mature, as given in the NHBC Standards Chapter 4.2 “Building Near Trees”.
<b>Visual Amenity</b>	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.
<b>Problems/ Comments</b>	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.
<b>Work Required (TS)</b>	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

<b>Access Facilitation Pruning</b>	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.
<b>Arboricultural Method Statement</b>	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.
<b>Arboriculturist</b>	Person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction.
<b>Competent Person</b>	Person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached. <i>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.</i>
<b>Construction</b>	Site-based operations with the potential to affect existing trees.
<b>Construction Exclusion Zone</b>	Area based on the root protection area from which access is prohibited for the duration of a project.
<b>Root Protection Area (RPA)</b>	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.
<b>Service</b>	Any above or below ground structure or apparatus required for utility provision. <b>NOTE</b> - examples include drainage, gas supplies, ground source heat pumps, CCTV and satellite communications.
<b>Stem</b>	Principal above ground structural component(s) of a tree that supports its branches.
<b>Structure</b>	Manufactured object, such as a building, carriageway, path, wall, service run, and built or excavated earthwork.
<b>Tree Protection Plan</b>	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.
<b>Veteran Tree</b>	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. <b>NOTE</b> - these characteristics might typically include a large girth, signs of crown retrenchment and hollowing of the stem.



## **Appendix F**

Tree Preservation Order Enquiry/Response





**RICKMANSWORTH (KILLINGDOWN FARM.1.) TREE PRESERVATION ORDER .1971.**

Date: Sept .1971.  
 Scale :1:2500.  
 Drawing No: TP/12/71.

J.G. Brown . C.Eng . M.I.C.E . F.I.Mun.E.  
 Engineer & Surveyor  
 Rickmansworth Urban District Council .

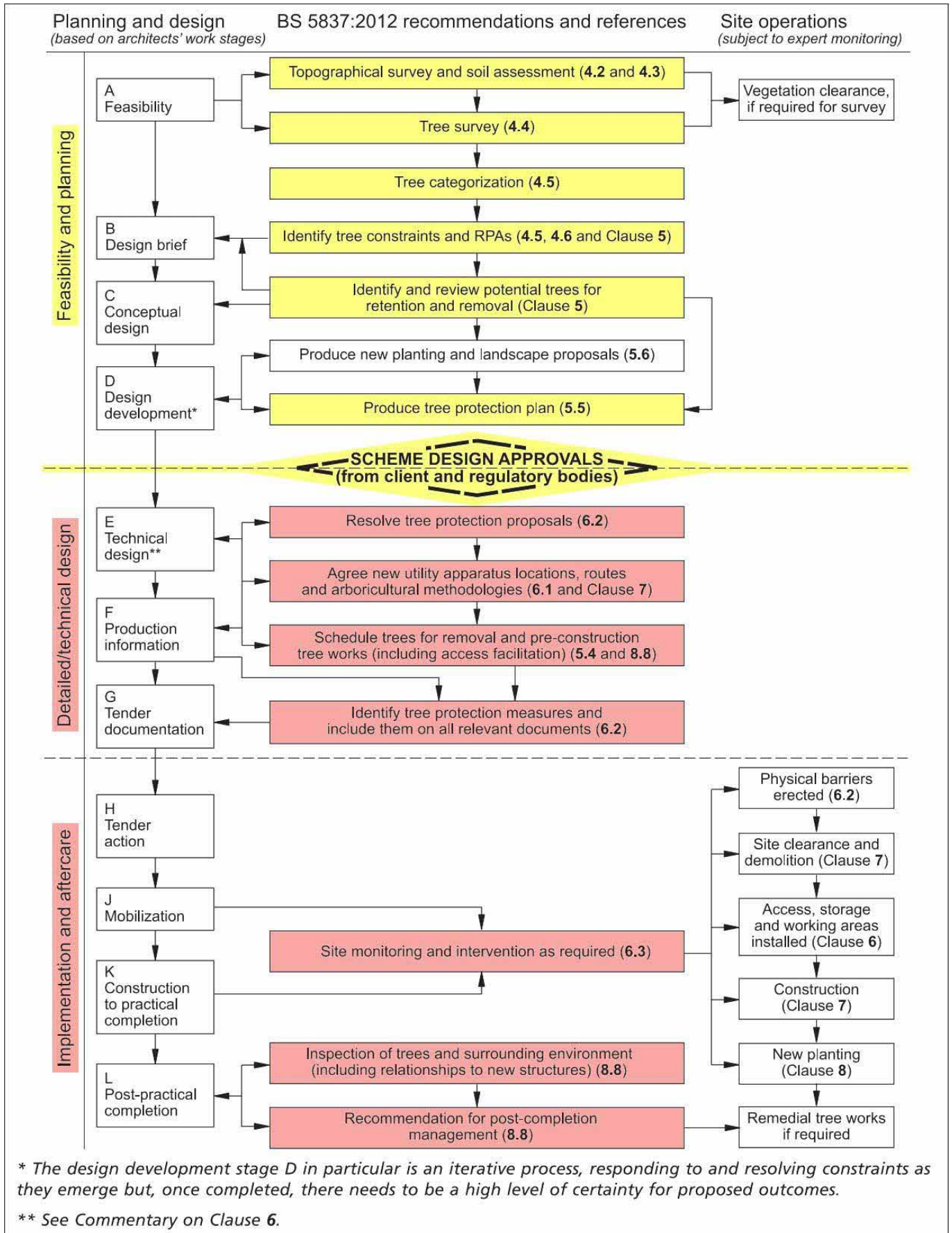
**LIST OF CONSERVATION AREAS AND ARTICLE 4 DIRECTIONS  
UPDATED August 2012**

Conservation Area	Map No.	Designation	Designated	Conservation Area Article 4 Direction	Conservation Area Appraisal
Abbots Langley	1	Historic core and commercial area	1969	No	Yes - historic core and commercial area (1994)
Batchworth Heath	2	Historic heath and surrounding buildings	1994	No	No
Cedars Avenue	3	Area of Victorian houses close to town centre	2006	No	Yes (2007)
Chorleywood Common	4	Ancient common, surrounding buildings and area north of the station	1976	Yes – windows, roofs, boundary treatments	Yes (2010)
Chorleywood Station Estate	5	Metroland area SW of station	1990	Yes - Part 1 Classes A,C, D, E, F & H and alts/erection/demolition of chimney where fronts a highway, Part 2 Class A & C where fronts relevant location, Part 31 Class B where fronts a relevant location	Yes (2005)
Coppermill Lock	6	19th century canal side buildings	1980	No	No
Croxley Green	7	The Green and surrounding buildings	1980	No	Yes (1996)
Dickinson Square	8	Close knit group of planned 19 century cottages and a garden square	1994	Yes - extensions, alterations and minor operations	No
Grove Mill Lane	9	Historic mill and nearby canalside buildings	1973	No	Yes (2012)
Heronsgate	10	1846 planned Chartist settlement	1993	No	Yes (2012)
Hunton Bridge	11	Canalside buildings and canal bridge	1984	No	Yes (2008)
Loudwater Estate	12	Residential estate of particular character centred on Loudwater House/Chess Valley	1998	Yes - removal/replacement thatched roof/windows/chimneys on specific houses, increased areas of hard surfacing facing a road frontage on specific houses, enclosures exceeding 1m on specific houses.	No
Outer Loudwater Estate	13	The defined area forms the attractive and distinctive setting for Loudwater based on the well-wooded valley bordering the River Chess and incorporating low density residential development	2006	Yes - removal/replacement thatched roof/windows/chimneys on specific houses, increased areas of hard surfacing facing a road frontage on specific houses, enclosures exceeding 1m on specific houses. July 2007. Approved by Secretary of State 11.12.07	Yes (2007)
Oxhey Hall	14	1930s "Metroland" architecture	2006	No	Yes (2007)
Moor Park	15	Metroland planned estate	1995	Yes - Part 1 Class C in terms of roof lights to front or side elevation, hard surfacing to road frontages, front enclosures exceeding 1m in height on specific houses	Yes (2006)
Nightingale Road	16	Area of Victorian houses close to Town Centre	1998	Yes - Part 1 Class A, C, D, F where fronts a relevant location, alts/erection/demolition of chimney	Yes (2007)
Upper Nightingale Road	17	Area of Victorian houses close to Town Centre	2005	Yes - confirmed <b>(31/07/06)</b> Part 1 Classes A,C, D, E, F & H and alts/erection/demolition of chimney where fronts a highway, Part 2 Class A & C where fronts relevant location, Part 31 Class B where fronts a relevant location	Yes (2007)
Rickmansworth Town Centre	18	Historic and commercial core	Amended boundary 1996 (1973)	No	Yes (1993)
Sarratt (The Green)	19	Sarratt Green and surrounding buildings	Pre 1974 (Around 1968)	No	Yes (1994)
Sarratt (Church End)	20	Sarratt Church and nearby buildings	1980	No	Yes (1994)
Stockers Lock and Farm	21	Canal lock and nearby farm buildings and land	1993	No	No
Frith Wood	22	Part of original Eastbury Estate – containing three Grade II Listed Buildings in land between Watford Road and Sandy Lane, Northwood.	2007	No	Yes (2008)

## **Appendix G**

Advisory Information & Sample Specifications

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



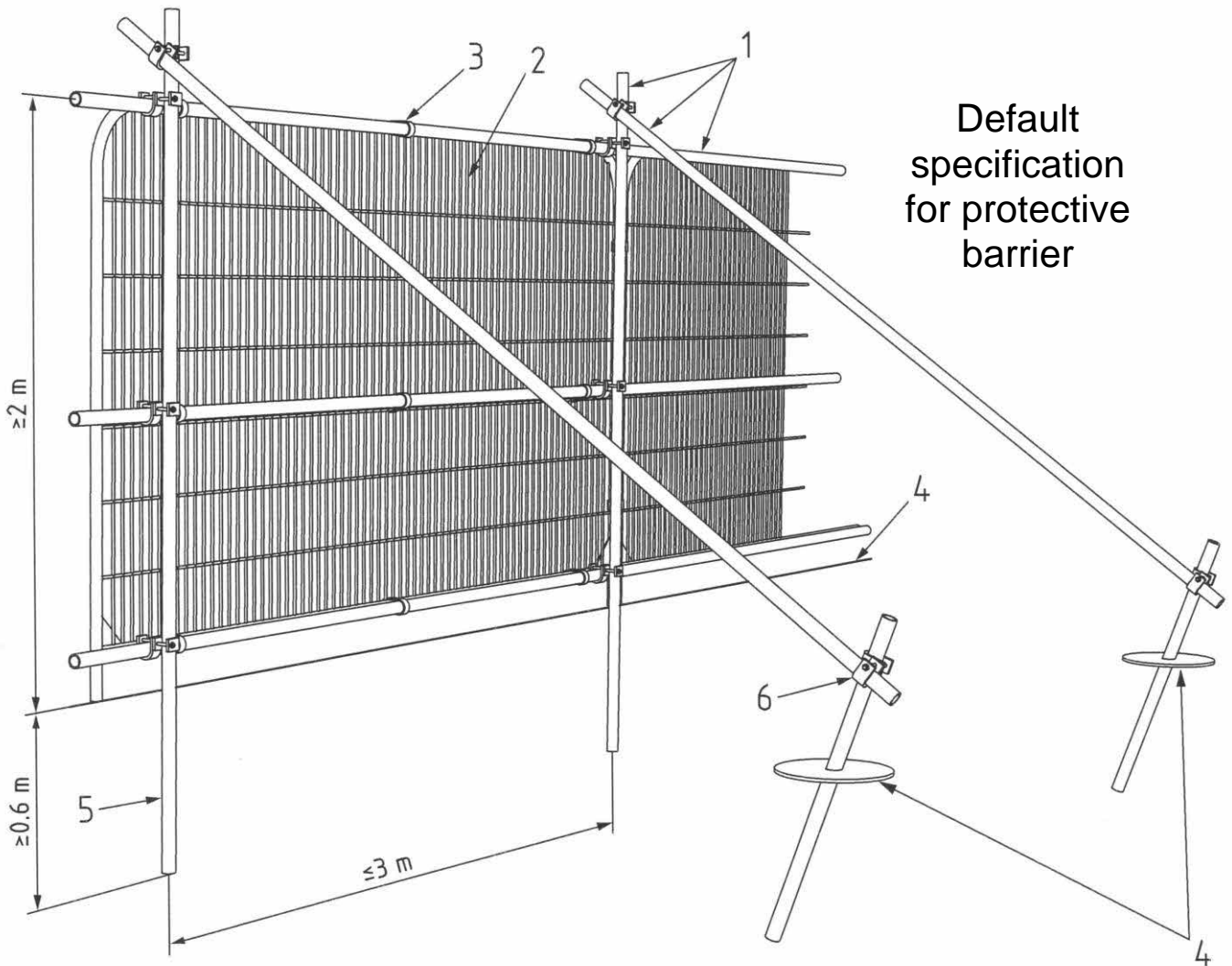


2.

**European Protected Species and woodland operations. (V4)**  
Complete all sections of the Checklist

Checklist		Details												
<b>1</b>	<p>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 -</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Dormice</li> <li><input type="checkbox"/> Otters</li> <li><input type="checkbox"/> Great crested newts</li> <li><input type="checkbox"/> Sand lizards</li> <li><input type="checkbox"/> Smooth snakes</li> </ul>	<p>Name of Wood:</p> <hr/> <p>Grid Reference:</p> <table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table> <p>Area: (ha)</p> <table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table> <p>Date of Assessment:</p> <table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table> <p>Name of Assessor:</p> <hr/>												
<b>2</b>	<p>Does your wood contain any of the following habitats? Tick any that apply.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Old trees with holes and crevices which might be used bats</li> <li><input type="checkbox"/> Species rich scrub/coppice, early growth stage plantations and forest interfaces</li> <li><input type="checkbox"/> Rivers on which otters might be found</li> <li><input type="checkbox"/> Ponds which might be occupied by great crested newts</li> <li><input type="checkbox"/> Open areas on heathy soils</li> </ul>	<p>YES</p> <p>NO</p>												
<b>3</b>	<p>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:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> National Biodiversity Network (<a href="http://www.nbn.org.uk">www.nbn.org.uk</a>)</li> <li><input type="checkbox"/> Local Biological Records Centre</li> <li><input type="checkbox"/> Local Wildlife Trust</li> <li><input type="checkbox"/> Other</li> </ul> <p>Specify Other:</p>	<p>YES</p> <p>NO</p>												
<b>4</b>	<p>Have your inspections or any expert surveys found any of the following signs or evidence? Tick any that apply.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Signs (e.g. otter spraint, nuts gnawed by dormice, leaves folded by newts)</li> <li><input type="checkbox"/> Sightings (or echo-location)</li> <li><input type="checkbox"/> Potential breeding or roosting sites (e.g. veteran trees, old trees with crevices, riverside hollow trees, ponds, timber stacks, large fallen deadwood)</li> <li><input type="checkbox"/> Confirmed breeding or roosting sites (i.e. evidence of sites actually being used)</li> </ul> <p>Details:</p>	<p>YES</p> <p>NO</p>												
<b>CHECK POINT</b>	<p>If you have answered NO to ALL of the above then only bats need to be considered in your operations.</p> <p>If you have answered YES to any of the above then the species concerned must be considered as well as bats.</p>													
<b>5</b>	<p>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? <i>Details: Use reverse of form to expand as required:</i></p>	<p>YES</p> <p>NO</p>												
<b>6</b>	<p><u>Whether or not a licence is required...</u> Has the information been communicated to operators (including the location of breeding sites and sensitive areas)? Tick any that apply.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Included in documentation (e.g. contract, letter of instruction, site assessment or other management plan)</li> <li><input type="checkbox"/> Shown to operators and/or their supervisor</li> <li><input type="checkbox"/> Marked with paint or hazard tape</li> <li><input type="checkbox"/> Shown on the site plan</li> </ul> <p>Other means:</p>	<p>YES</p> <p>NO</p>												
<b>7</b>	<p>Have arrangements for supervision been made to ensure Good Practice guidance is complied with during the operations? <i>Details:</i></p>	<p>YES</p> <p>NO</p>												
		<b>Notes</b>												
		<p>A licence is not required but continue to sections 6 and 7 below</p> <p>You will need to obtain a licence BEFORE carrying out the work (see EPS Licence Application Forms and Notes)</p>												
		<p>You may commit an offence if you do not tell your operators about the protected species in your wood.</p>												
		<p>You may commit an offence if you do not take steps to ensure that your operators comply with the Good Practice guidance.</p>												

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

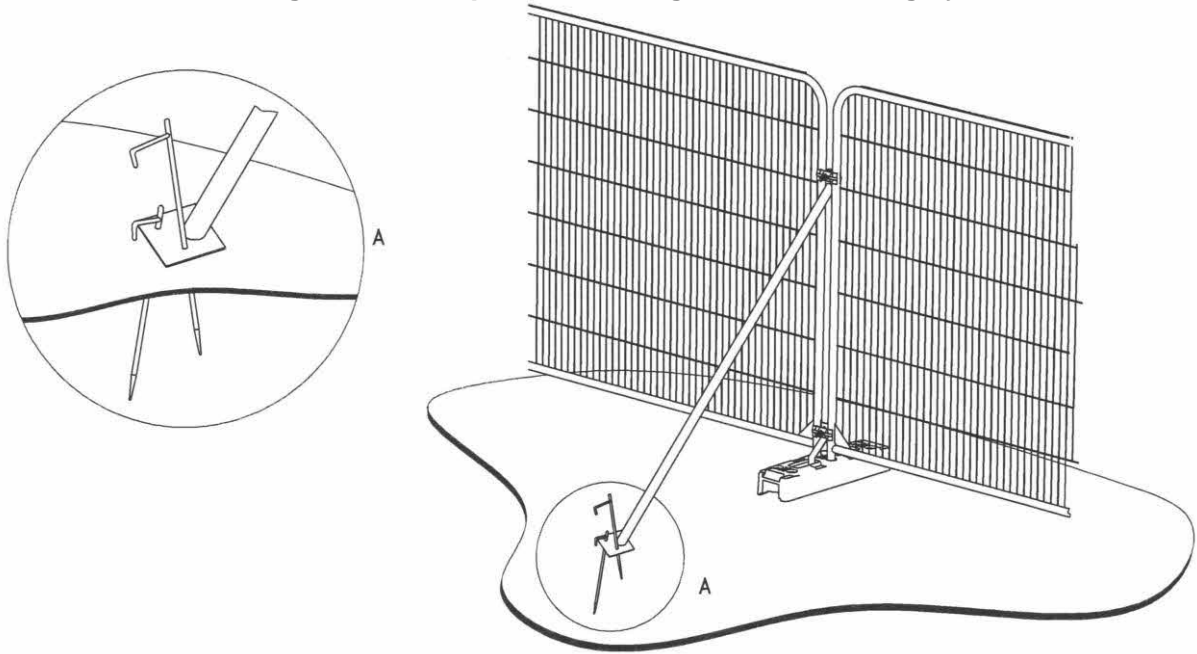


Default  
specification  
for protective  
barrier

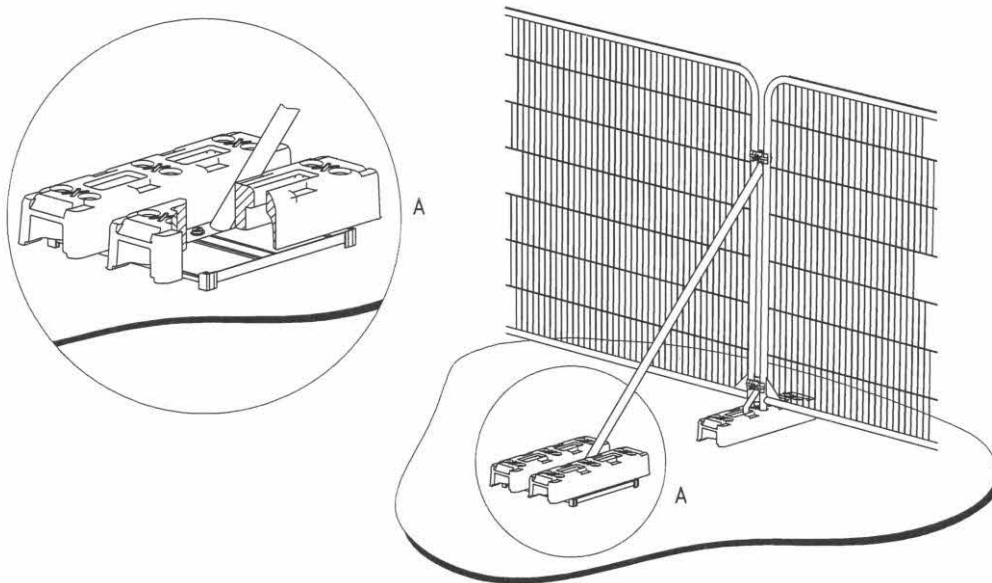
Key

- 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 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**



Telephone  
01284 765391  
Email  
[info@treesurveys.co.uk](mailto:info@treesurveys.co.uk)  
Website  
[www.treesurveys.co.uk](http://www.treesurveys.co.uk)

5 Moseley's Farm  
Business Centre  
Fornham All Saints  
Bury St Edmunds  
Suffolk  
IP28 6JY