



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

Proj. No 4475	Wentworth Industrial Park, Maple Road, Tankersley, Barnsley, South Yorkshire, S75 3DL		
Client:		Planware Ltd	
Date of Report:	22/12/2014	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 widen the existing drive through at the existing restaurant. As a result seventeen individual trees, one hedge, one woodland and one group 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 two poor longevity individual trees and sections of two landscape features in order to achieve the proposed layout.
- 2 The alignment of the widened drive through 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 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 4.5 and 5.1 of this report.
- 4 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, phasing and an auditable monitoring schedule.



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Contents

- 1.0 Introduction**
- 2.0 The Site**
- 3.0 Tree Survey**
- 4.0 Arboricultural Impact Assessment**
- 5.0 Design Advice, Preliminary Arboricultural Method Statement & Tree Protection Plan**
- 6.0 Recommendations**
- 7.0 Limitations & Qualifications**
- 8.0 References**
- 9.0 Appendices**



1.0 Introduction

1.1 Terms of Reference

- 1.1.1 Hayden's Arboricultural Consultants Limited has been commissioned by Planware Ltd to prepare a Tree Survey, Arboricultural Impact Assessment, Preliminary Arboricultural Method Statement and Preliminary Tree Protection Plan for the existing trees at Wentworth Industrial Park, Maple Road, Tankersley, Barnsley, South Yorkshire, S75 3DL.
- 1.1.2 The site survey was carried out on the seventh of December 2014. 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.



1.2.4 Where the trees inspected stand within woodland, the frequency with which these trees/woodlands are accessed, or will be accessed, must be considered as an integral part of the recommendations given for the future management of these trees/woodlands. Priority will be given to those trees near existing and proposed footpaths, public highways and the site boundaries where it is assumed that the presence of persons and property will be more frequent and therefore of a potentially higher risk. Many of the trees surveyed within the woodland areas present little or no risk (barring exceptional circumstances) to site users and could therefore be left unmanaged. The decision regarding the frequency of use of these areas within the site, and the management decisions taken based on this frequency, must ultimately be the responsibility of the client.

1.3 Documentation

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

- Definition of site boundary – dwg ref: 5414-0584-0003a-Existing Site Plan
- Topographical survey/map – dwg ref: 5414-0584-0003a-Existing Site Plan
- Proposed site layout – dwg ref: 5414-0584-0004c -Proposed Site Plan

2.0 The Site

2.1 Overview

2.1.1. The site is Wentworth Industrial Park, Maple Road, Tankersley, Barnsley, South Yorkshire, S75 3DL.

2.2 Soils

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

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

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

2.3 Statutory Tree Protection

2.3.1 Hayden's Arboricultural Consultants Limited have been unable to ascertain whether the trees identified within this report are covered by Local Planning Authority administered statutory tree protection. In view of this, owners, managers or any persons wishing to undertake work to any trees should contact the Local Planning Authority, Barnsley Metropolitan Borough Council, to ensure no such protection measures exist.



2.3.2 Felling Licence

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

A Felling License is not required in the following instances:

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

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

2.3.3 Hedgerow Regulations and Enclosure 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 SSSI"s), 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 Enclosure 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 Enclosure Act. Details of the Enclosures Act are held by the Local Records Office.



3.0 Tree Survey

- 3.1 As part of this survey a total of seventeen individual trees, one hedge and one woodland have been identified. These have been numbered T001 – T017, G001, H001 and W001 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. 4475-D.
- 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 Several items would benefit from tree surgery or additional investigation, be it for health and safety, cultural, aesthetic, or structural reasons as detailed in the attached Schedule of Trees. Including the trees recommended for felling, the items requiring the **most urgent** intervention are as follows:

Within six months:

T003	Crown lift to 2.5 metres. Remove dead, dying and defective branches and branch stubs.
T004	Remove dead, dying and defective branches.
T007	Reduce to 4 metres and retain as habitat pole.
T008	Pollard 10 metres.
T009	Pollard at 8 metres.
T010	Fell to ground level.
T012	Crown lift to 4 metres and remove dead, dying and defective branches.
T013	Fell and replace.
T014	Remove dead, dying and defective branches.
T016	Remove dead, dying and defective branches.
T017	Fell to ground level.
W001	Remove dead, dying and defective branches from the trees located adjacent to the car park and footpath.

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

T012	Monitor annually (lack of vigour).
T014	Monitor annually (cavities in stem and lack of vigour).
W001	Monitor annually (health of trees within woodland).



- 3.7 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 In this circumstance it is intended to widen the existing drive through at the restaurant.

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 There is no demolition associated with this proposal.

4.4 Construction

- 4.4.2 Installation of new hard surfaces does not encroach within the RPA of any retained trees. Therefore, and from a purely arboricultural perspective, it will not be necessary for these items to be of specialist design.
- 4.4.3 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 Requirement for Tree Barrier Fencing

- 4.5.1 Prior to the commencement of 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 Implication 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.

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

4.8 Monitoring

- 4.8.1 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 auditable monitoring schedule to assess the progress of key site events/activities.

4.9 Cultural Implications for Retained Trees

- 4.9.1 Low. Details of specific works are listed in the attached Schedule of Works to Permit Development.

4.10 Landscape Implications

- 4.10.1 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*
H001	Conflicts with new drive through	B	Moderate
G001	Conflicts with new drive through	C	Low
T001	Conflicts with new sign	C	Moderate
T012	Conflicts with new drive through	C	High

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

4.11 Post Development Implications

- 4.11.1 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.
- 4.11.2 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 Implication Assessment & Tree Protection drawing no. 4475-D. 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 Implication Assessment & Tree Protection drawing no. 4475-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.

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 Planware Ltd 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 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, project phasing and an 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 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:



December 2014.....

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

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

DEFRA (1997). *The Hedgerow Regulations 1997 – A Guide to the Law and Good Practice*. Department of the Environment, Transport and the Regions, HMSO, London.



9.0 Appendices

Appendix	A	Species List & Tree Problems
Appendix	B	Schedule of Trees
Appendix	C	Schedule of Works - Irrespective of Development
Appendix	D	Preliminary Schedule of Works to Allow Development
Appendix	E	Explanatory Notes
Appendix	F	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 4475-D



Appendix A - Species List & Tree Problems

Species List:

Alder	<i>Alnus glutinosa</i>
Ash	<i>Fraxinus excelsior</i>
Beech	<i>Fagus sylvatica</i>
Hawthorn	<i>Crataegus monogyna</i>
Oak	<i>Quercus robur</i> .
Sycamore	<i>Acer pseudoplatanus</i>

Tree Problems:

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

Name: Deadwood	
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.

Name: Honey Fungus (<i>Armillaria mellea</i>)	
Symptoms/Damage Type:	Symptoms of the disease are toadstools which appear between July and December but commonly disappear by October with the autumn frosts. The cap is up to 15cm diameter and yellowish or tawny in colour, the stalk is usually up to 15cm high with a thick whitish to yellow cottony ring and they occur in clusters on stumps, roots, trunk bases and occasionally higher up the stem. Affected wood is initially stained, and then a soft wet brown rot develops which eventually becomes fibrous, stringy and white, often mixed with flaky white material. The rot rarely develops more than 50cm above ground level and sometimes is virtually confined to the roots. There may be dark-zone lines in the wood surrounding the most badly affected parts and often flat white sheets of fungal mycelium growth and sometimes masses of blackish-brown strands develop beneath the bark. Black, rounded bootlace like strands (rhizomorphs) can often be found among the soil around affected plants. Despite the apparently distinct symptoms, the diagnosis of Honey fungus attack is not always easy. The toadstools are only present in the autumn and do not always occur then, even on badly diseased trees. The bootlace like strands are not always easy to detect in the soil and similar bodies may be formed by other fungi.



Consequence:	This is an extremely serious pathogen recorded on almost all woody plants and several herbaceous species causing decay of the roots and lower stem and eventual death. This renders trees and shrubs liable to windthrow or breakage.
Control Measures:	Treatment of the disease is extremely difficult. Once infected a tree cannot be cured of Honey fungus and the only effective procedure to limit its spread to others is the prompt removal of the diseased individual, together with its entire root system and as much as possible of the surrounding soil. Other methods such as trenches and other barriers together with the application of preparations based on phenolic emulsions can be used, but application must be done on an annual basis and cannot be relied upon at all times in all soil types. Future planting on the site should be of trees regarded to be sufficiently resistant to succeed on infected sites, such as Ash, Beech, Box, Douglas Fir, False Acacia, Hawthorn, Holly, Larch, Laurel, Lime, Silver Firs, Tree of Heaven and Yews. Recently experiments have been undertaken with natural controls including the use of other fungi to remove potential host deadwood from the environment however results are not yet conclusive.



Appendix B

Schedule of Trees

SCHEDULE OF TREES (AIA) Wentworth Industrial Park, Maple Road, Tankersley, Barnsley, South Yorkshire

Wentworth Industrial Park, Maple Road, Tankersley, Barnsley, South
Yorkshire

Surveyed By: Nick Hayden Date: 06/12/2014

Managed By:

TreeNo	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
		Min Dist	Crown Base	Lowest Branch	Age	Water Demand						
On site		RPA (m²)	Aspect	Aspect	SULE	Ground Cover						
G001	Hawthorn and Oak	150	4.5		Low	As depicted on the plan	Small group of young Hawthorn and self set Oak saplings. No significant visual defects observed.	C2	No work required.	4	Fell section of group.	0
		1.8	0-2m		Y	High						
Yes		10.2			20+ years	Woodland floor, bramble						
H001	Beech Sp	100	1		Moderate	N0.5, E0.5, S0.5, W0.5	Good condition. No indicators of disease, decay or structural defects.	B2	No work required.	4	Fell section of hedge.	0
		1.2	0-2m		SM	Moderate						
Yes		4.5			20+ years	Bare earth						
T001	Sycamore	310	7		Moderate	N2.5, E2.5, S2.5, W2.5	Woodland edge tree. Multi stemmed form (DBH 100,110,120,120,140,170mm). Tree features minor defects. Evidence of poor tree surgery. Branch stubs. Service hatch within root zone. Underground services within root zone. Adjacent footpath. Adjacent highway. Adjacent to lamp column. An unremarkable tree of limited merit.	C2	No work required.	4	Fell	0
		3.72	0-2m		SM	Moderate						
Yes		43.5			20+ years	Grass, Woodland floor						
T002	Sycamore	260	5.5		Moderate	N2.0, E2.0, S2.0, W2.0	Multi stemmed form (DBH 80,80,90,100,100,110,120mm). Restricted access as dense undergrowth. No indicators of disease, decay or structural defects. Old coppice. Evidence of poor tree surgery. Adjacent footpath. An unremarkable tree of limited merit.	C2	Fell stem fused with wooden fence.	3		
		3.12	0-2m		SM	Moderate						
Yes		30.6			20+ years	Woodland floor, bramble						
T003	Oak Sp	550	14.5		High	N3.0, E4.0, S7.0, W7.0	Woodland edge tree. Tree features minor defects. Debris piles within root zone. Evidence of poor tree surgery. Asymmetric crown. Storm damaged leader. Cavities in canopy. Major deadwood. Adjacent to footpath and highway. Overhanging footpath. A tree of moderate quality.	B2	Crown lift to 2.5 metres. Remove dead, dying and defective branches and branch stubs.	2		
		6.6	0-2m		EM	High						
Yes		136.8			20+ years	Woodland floor, Other (Bramble)						

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						
T004	Oak Sp	550	15.5		High	N3.0, E4.0, S7.0, W4.0	Woodland edge tree. Restricted access as dense undergrowth. Tree features minor defects. Debris piles within root zone. Minor level changes within root zone. Leaning stem. Twin stemmed form. Stem consuming foreign object. Asymmetric crown. Major deadwood. Adjacent to footpath and highway. Overhanging footpath. A tree of moderate quality	B2	Remove dead, dying and defective branches.	2		
		6.6	2.1-4m		EM	High						
Yes		136.8			20+ years	Woodland floor						
T005	Sycamore	570	16.5		High	N4.0, E6.5, S7.0, W4.0	Woodland edge tree. Tree features minor defects. Minor level changes within root zone. Minor cavities in main stem. Branch wounds / cavities. Asymmetric crown. Minor deadwood. Reduced vigour. Adjacent to footpath, and highway. Overhanging footpaths. A tree of moderate quality.	B2	No work required.	4		
		6.84	2.1-4m		EM	Moderate						
Yes		147			20+ years	Woodland floor, bramble						
T006	Sycamore	490	17		Moderate	N3.0, E6.5, S5.0, W5.0	Woodland tree. Tree features minor defects. Minor cavities in main stem. Minor branch wounds / cavities. Minor deadwood. Lack of vigour. Adjacent footpath. Overhanging footpath.	C2	No work required.	4		
		5.88	0-2m		EM	Moderate						
Yes		108.6			20+ years	Woodland floor, bramble						
T007	Sycamore	400	14		Moderate	N3.0, E3.0, S3.0, W3.0	Woodland tree. Tree in significant and irreversible decline. Potential for bats to roost.	U	Reduce to 4 metres and retain as habitat pole.	2		
		4.8	2.1-4m		M	Moderate						
Yes		72.4			<10 Years	Woodland floor, bramble						
T008	Ash Sp	670	17		Moderate	N12.0, E8.5, S4.0, W4.0	Woodland tree. Tree features significant defects. Poor condition. Evidence of fungal fruiting bodies around base of main stem (Armillaria). No defined leader. Asymmetric crown. Minor cavities in scaffold limbs. Over extended limbs. Adventitious growth. Major deadwood. Storm damage. Large tear out wound on eastern aspect. Adjacent footpath. Overhanging footpath. Potential for bats to roost.	C2	Pollard at 10 metres.	2		
		8.04	2.1-4m		M	Moderate						
Yes		203.1			10 + years	Woodland floor, bramble						

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						
T009	Ash Sp	450	16		Moderate	N3.0, E2.0, S3.0, W4.0	Woodland tree. Poor condition. Lack of vigour. Dieback of canopy. Major deadwood. Storm damage.	C/U2	Pollard at 8 metres.	2		
		5.4	2.1-4m		M	Moderate						
Yes		91.6			<10 Years	Woodland floor, bramble						
T010	Sycamore	130	13		Low	N0.5, E1.5, S0.5, W0.5	Woodland tree. Dead.	U	Fell to ground level.	2		
		1.56	0-2m		Y	Moderate						
Yes		7.6			<10 Years	Woodland floor, bramble						
T011	Sycamore	220	8		Low	N1.0, E0.5, S3.0, W3.5	Woodland tree. Poor condition. Bark wounds on main stem. Suppressed crown. Asymmetric crown. Squirrel damage. Adjacent footpath. An unremarkable tree of limited merit.	C2	No work required.	4		
		2.64	0-2m		SM	Moderate						
Yes		21.9			10 + years	Woodland floor, bramble						
T012	Ash Sp	770	21		High	N7.0, E5.0, S8.0, W7.0	Woodland edge tree. Tree features defects. Exposed surface roots. Minor cavities in main stem. Low limbs. Branch wounds and cavities. Storm damage. Cavities in canopy. Dieback of canopy. Reduced vigour. Deadwood. Adjacent building.	C2	Crown lift to 4 metres and remove dead, dying and defective branches (Priority 2). Monitor annually - Lack of vigour (Priority 3).	2	Fell	0
		9.24	0-2m		M	Moderate						
Yes		268.2			10 + years	Woodland floor, light undergrowth						
T013	Alder Sp	270	7		Moderate	N2.5, E2.0, S2.5, W2.0	Poor condition. Stem and branch wounds. Snapped and hanging limbs. Lack of vigour. Dieback of canopy. Adjacent car park. An unremarkable tree of limited merit.	U	Fell and replace.	2		
		3.24	0-2m		SM							
Yes		33			<10 Years	Shrub bed and growing within Beech hedge.						
T014	Sycamore	370	11		Moderate	N3.0, E3.0, S4.5, W5.0	Woodland tree. Poor condition. Exposed surface roots. Minor cavities in main stem. Branch wounds and cavities. Poor wound occlusion. Storm damaged leader. Cavities in canopy. Deadwood.	C2	Remove dead, dying and defective branches (Priority 2). Monitor annually - cavities in stem and lack of vigour. (Priority 3)	2		
		4.44	0-2m		EM	Moderate						
Yes		61.9			10 + years	Woodland floor						
T015	Hawthorn	200	5.5		Low	N2.0, E2.0, S2.0, W2.0	Woodland tree. No indicators of disease or decay.	C2	No work required.	4		
		2.4	0-2m		SM							
Yes		18.1			20+ years	Woodland floor						

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						
T016	Sycamore	370	15		Moderate	N4.0, E3.0, S3.0, W4.5	Woodland tree. Tree features minor defects. Leaning stem. Localised bark necrosis on main stem. Minor cavities in main stem. Minor deadwood. Squirrel damage. Adjacent footpath.	C2	Remove dead, dying and defective branches.	2		
		4.44	0-2m		EM	Moderate						
Yes		61.9			10 + years	Woodland floor						
T017	Sycamore	340	15		Moderate	N2.5, E2.5, S2.5, W3.5	Woodland tree. Poor condition. Tree features significant defects. Tree infected with Armillaria.	U	Fell to ground level.	2		
		4.08	0-2m		EM	Moderate						
Yes		52.3			<10 Years	Woodland floor						
W001	Ash, Beech, Oak and Sycamore.	840	18		High	As depicted on the plan.	This woodland extends further northwards and it is located to the east of the industrial estate. The woodland features many ageing trees, all of which have deadwood. There is also evidence of habitat poles throughout the extended woodland. Some trees within this particular section of woodland have suffered from storm damage and the all have deadwood and display various minor defects. Consideration should be given to creating a woodland management plan to ensure continuity of tree cover in future years. This woodland should be monitored annually, or following any major weather events. All deadwood should be removed from those trees that overhang the car park to the west and the footpath to the east.	B2	Remove dead, dying and defective branches from the trees located adjacent to the car park and footpath (Priority 2). Monitor annually (Priority 3).	2		
		10.08	0-2m		M	High						
Yes		319.2			20+ years	Woodland floor						

Appendix C

Schedule of Works - Irrespective of Development

SCHEDULE OF WORK IRRESPECTIVE OF DEVELOPMENT

Wentworth Industrial Park, Maple Road, Tankersley, Barnsley, South
Yorkshire

Surveyed By: Nick Hayden

Surveyed: 06/12/2014

Managed By:

Tree No.	Species	Work required	Priority
T003	Oak Sp	Crown lift to 2.5 metres. Remove dead, dying and defective branches and branch stubs.	2
T004	Oak Sp	Remove dead, dying and defective branches.	2
T007	Sycamore	Reduce to 4 metres and retain as habitat pole.	2
T008	Ash Sp	Pollard at 10 metres.	2
T009	Ash Sp	Pollard at 8 metres.	2
T010	Sycamore	Fell to ground level.	2
T012	Ash Sp	Crown lift to 4 metres and remove dead, dying and defective branches (Priority 2).	2
T013	Alder Sp	Fell and replace.	2
T014	Sycamore	Remove dead, dying and defective branches (Priority 2).	2
T016	Sycamore	Remove dead, dying and defective branches.	2
T017	Sycamore	Fell to ground level.	2
W001	Ash, Beech, Oak and Sycamore.	Remove dead, dying and defective branches from the trees located adjacent to the car park and footpath (Priority 2).	2
T002	Sycamore	Fell stem fused with wooden fence.	3

Schedule of Enhanced Monitoring

Wentworth Industrial Park, Maple Road, Tankersley, Barnsley, South
Yorkshire

Surveyed By: Nick Hayden

Surveyed: 06/12/2014

Managed By:

Tree No.	Species	Work required	Priority
T012	Ash Sp	Monitor annually - Lack of vigour (Priority 3).	2
T014	Sycamore	Monitor annually - cavities in stem and lack of vigour. (Priority 3)	2
W001	Ash, Beech, Oak and Sycamore.	Monitor annually (Priority 3).	2

Appendix D

Preliminary Schedule of Works to Allow Development

SCHEDULE OF WORKS (AIA)

Wentworth Industrial Park, Maple Road, Tankersley, Barnsley, South
Yorkshire

Surveyed By: Nick Hayden
Surveyed: 06/12/2014
Managed By:

Tree No.	Species	Work required	Priority
G001	Hawthorn and Oak	Fell section of group.	0
H001	Beech Sp	Fell section of hedge.	0
T001	Sycamore	Fell	0
T012	Ash Sp	Fell	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 40 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.

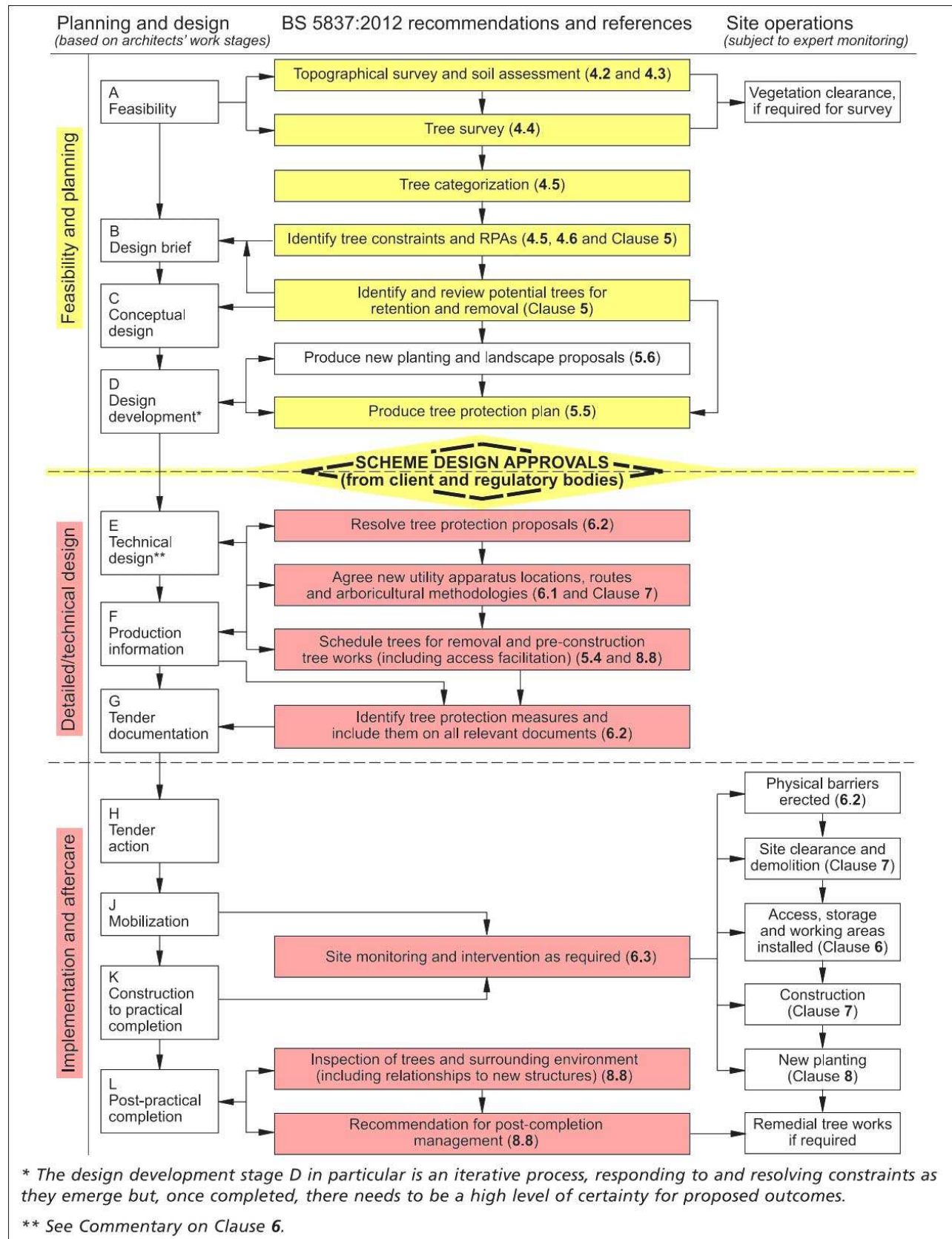
BS 5837:2012 Terms and Definitions

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. <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>
Construction	Site-based operations with the potential to affect existing trees.
Construction Exclusion Zone	Area based on the root protection area from which access is prohibited for the duration of a project.
Root Protection Area (RPA)	Layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.
Service	Any above or below ground structure or apparatus required for utility provision. NOTE - examples include drainage, gas supplies, ground source heat pumps, CCTV and satellite communications.
Stem	Principal above ground structural component(s) of a tree that supports its branches.
Structure	Manufactured object, such as a building, carriageway, path, wall, service run, and built or excavated earthwork.
Tree Protection Plan	Scale drawing, informed by descriptive text where necessary, based upon the finalized proposals, showing trees for retention and illustrating the tree and landscape protection measures.
Veteran Tree	Tree that, by recognized criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned. NOTE - these characteristics might typically include a large girth, signs of crown retrenchment and hollowing of the stem.

Appendix F

Advisory Information & Sample Specifications

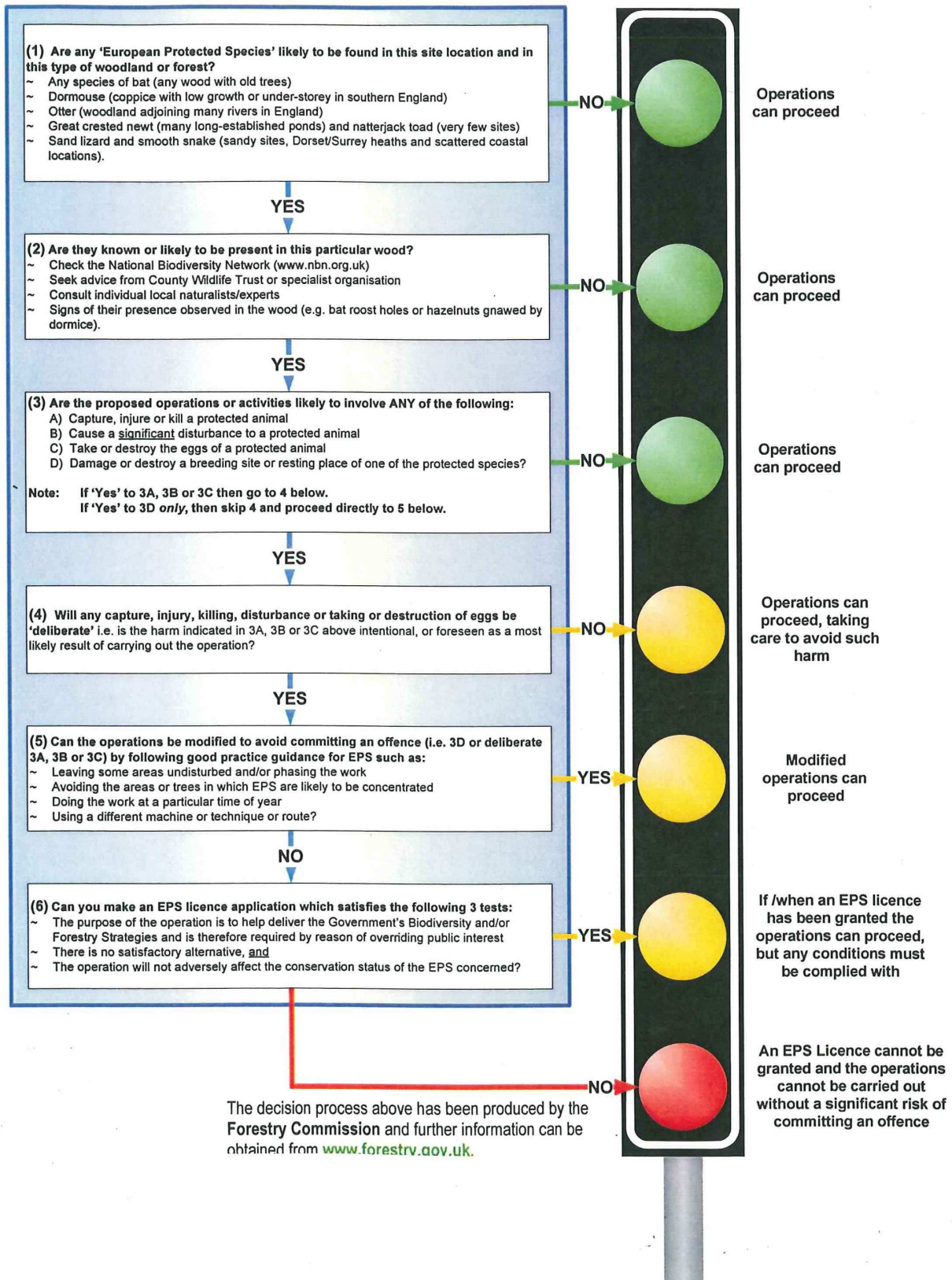
1. BS 5837:2012 Figure 1 - Flow Chart – Design and Construction & Tree Care



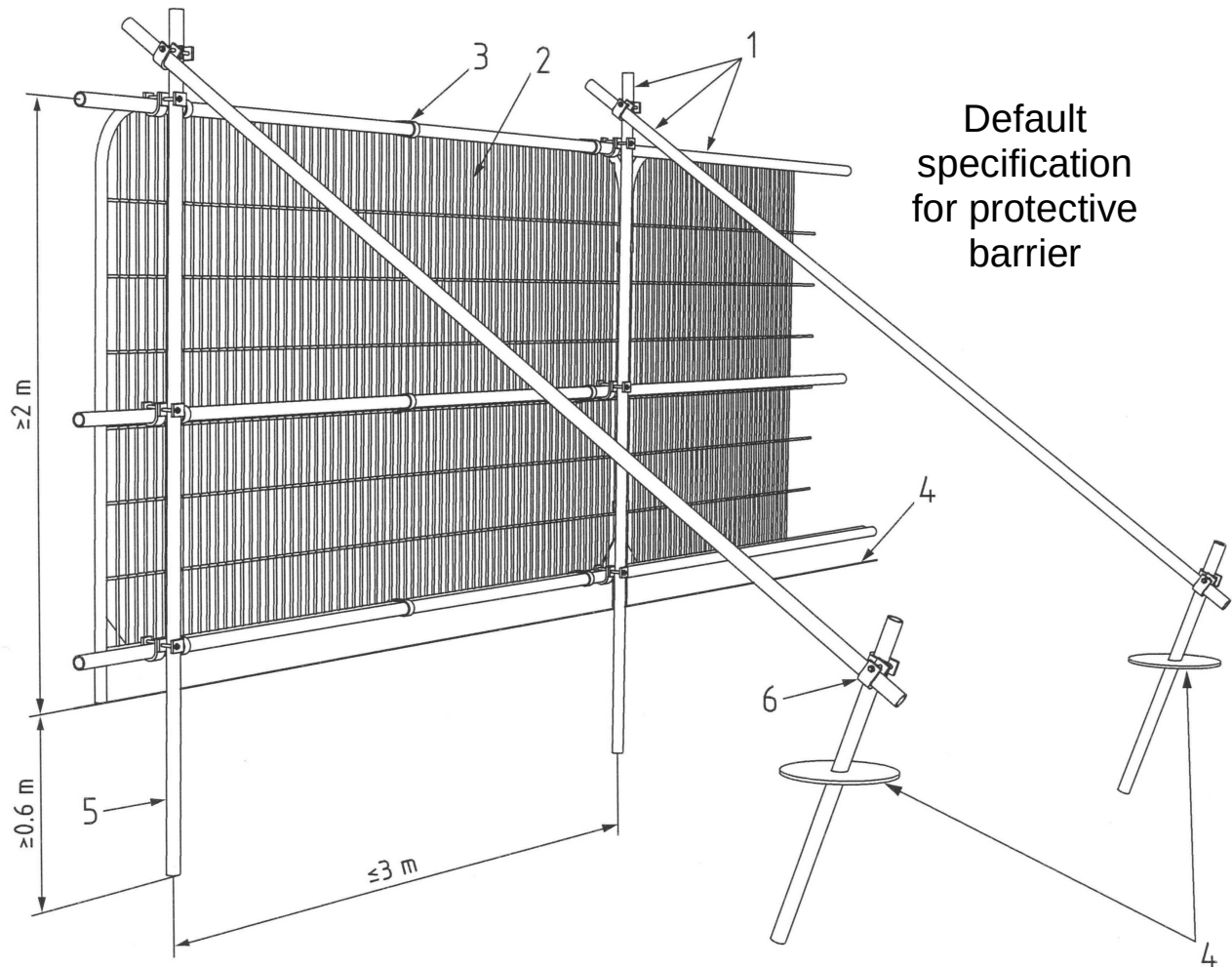
European Protected Species and woodland operations

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.



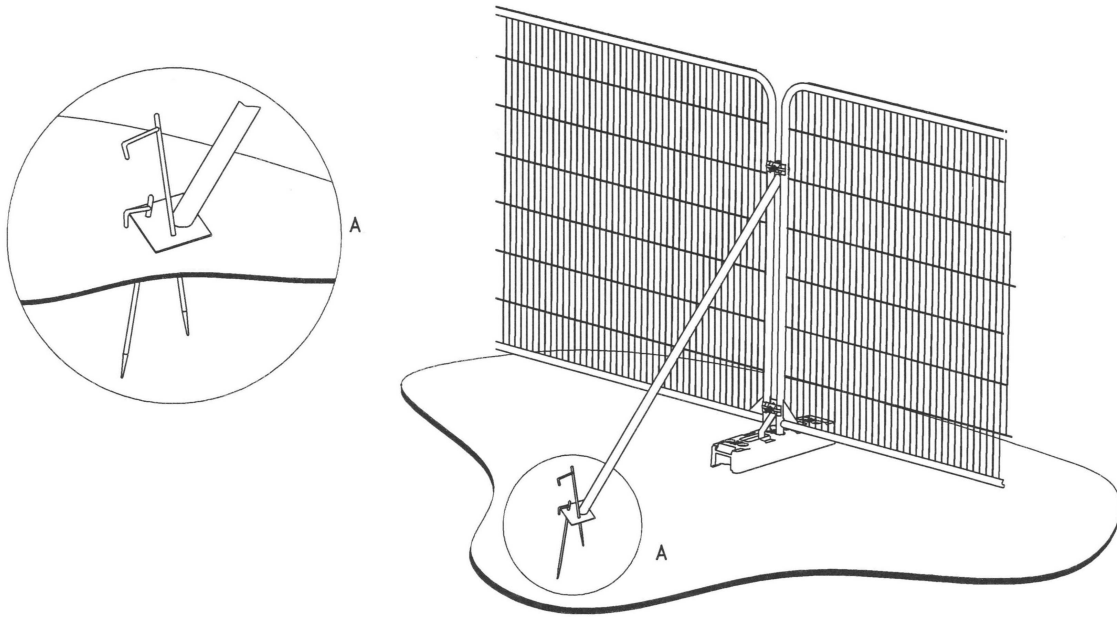
3. BS 5837:2012 Figure 2: Default specification for protective barrier



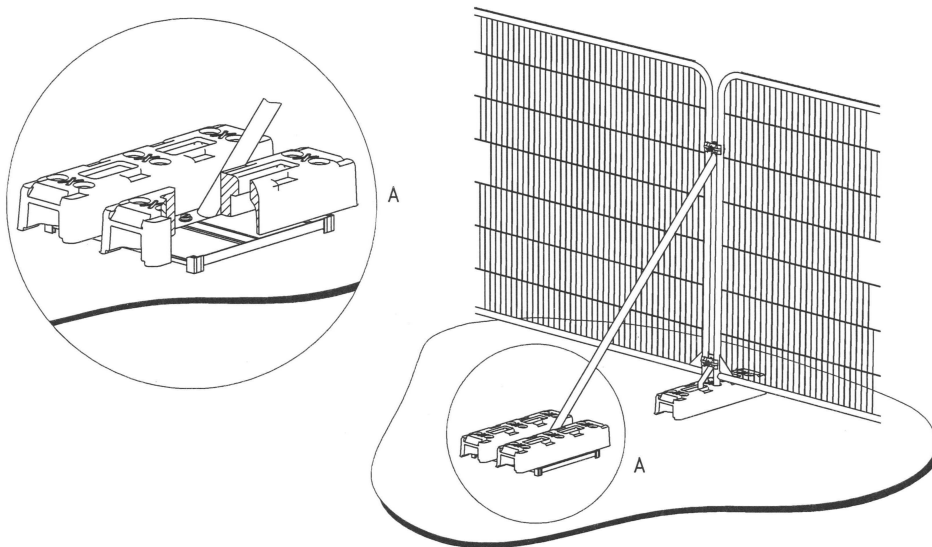
Key

- 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 ●



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