

Supplementary Planning Document

Biodiversity, Trees and Landscape



Part C - Trees and Development

December 2010

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1. Trees and development

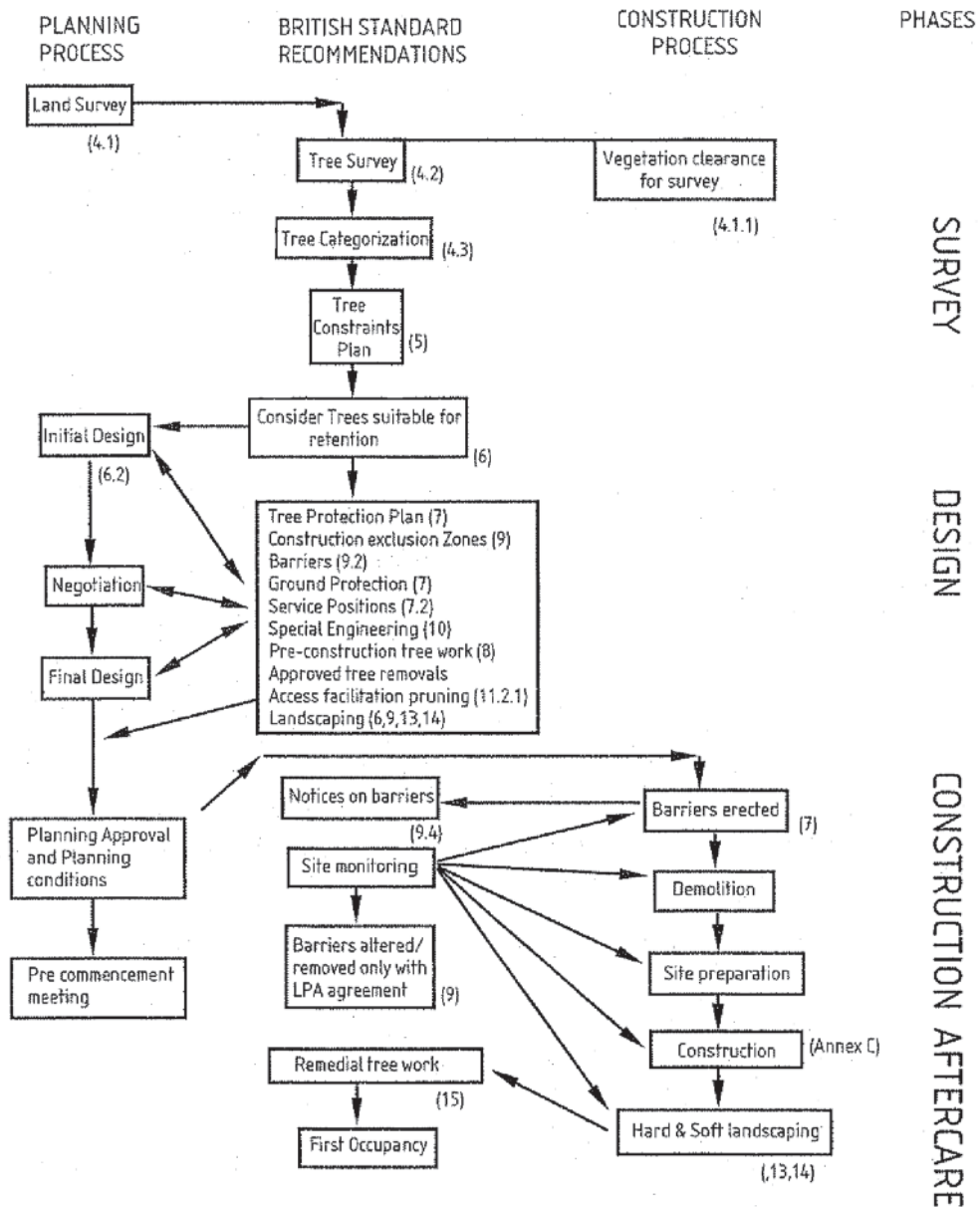
Introduction

- 1.1 This document is designed to be read in conjunction with the other parts of the series, Part A gives details on the legal and policy context for this document, Part B advises on wildlife and biodiversity issues that may overlap into the area of trees, as trees are key habitats for bats. Part D offers more detailed guidance on Protected Trees and Hedgerows, and the Council is currently writing part E, which will cover Landscaping. There are many references to “trees” throughout this document, however, it should also be considered to apply to hedgerows too, and to a certain extent large shrubs.
- 1.2 Trees can be an enhancement to any development. However, poor design and inadequate protection of trees during construction can have a negative impact. For example, the loss of their benefits, creating a need for costly management, and risk of future damage to adjacent structures.
- 1.3 The contribution that trees can make in the urban environment is well recognised. The benefits they provide include:
- Contributing to visual amenity;
 - Improving air quality;
 - Providing habitat for wildlife;
 - Providing shelter;
 - Reducing storm water run-off;
 - Reducing energy use in buildings;
 - Screening;
 - Historical and cultural values;
 - Health and wellbeing.
- 1.4 Therefore, the aim of the document is to raise the standards of design and promote sensible retention of trees so that they may continue to provide a contribution to the amenity of the landscape. Trees are considered to be a material consideration where planning permission is required, and trees exist on or adjacent to a development site (within falling distance). Trees can therefore present significant constraints upon development, often requiring expert advice to find an appropriate solution.

Delivery of tree objectives through the planning system

- 1.5 It is recognised by BS 5837:2005 Trees In Relation to construction, that trees need to be assessed by those with appropriate qualifications and experience. As a result, this document is aimed at arboriculturalists and other professionals involved in the planning process. However, this guidance may also be of use to others involved in householder planning applications in certain situations described below.
- 1.6 For householder applications a separate guidance note will be produced. It will still be based on the BS5837 approach shown in the flowchart, although in most cases the data can be presented in a simpler way and often without involving an arboriculturalist. However the Council will sometimes expect an arboriculturalist to be involved and consider this document of more relevance in certain situations such as:
- Where trees on or immediately adjacent to (within 15m of) the application site are subject to a Tree Preservation Order;
 - Where trees on or immediately adjacent to (within 15m of) the application site are within a Conservation Area;
 - Where trees have any other special merit or particular local interest.

- 1.7 In exercising its statutory duties and implementing its policies, the Council will be guided by the current British Standard 5837 "Trees in relation to Construction", which provides the basis of Hertsmere Borough Council's approach to the consideration of trees on development sites. It is recommended that professionals of any discipline that are involved in compiling and implementing planning applications become familiar with this document.
- 1.8 The BS5837: development process is highlighted in the following chart. Everyone involved in the planning process is strongly advised to work in accordance with this process, as failure to do so could result in problems later on that may jeopardise the viability of a scheme.



Figures in brackets refer to Clause numbers.

Source – BS 5827:2005 Trees In Relation to Construction: Recommendations (BSI, 2005)

Further information:

- Arboricultural Association Approved Consultants (for expert advice) - www.trees.org.uk
- Recommended good practice guides and other informative publications can be found within appendix B

What if the trees on the site are not near the development?

- 1.9 While the trees may not be close to the development they are often still at risk from damage via ground compaction caused by construction vehicles moving about the site and storage of materials. Therefore, in most cases the Council will expect trees on the site to be protected in some way.
- 1.10 If it is considered that the risk to the trees on or adjacent to the site is low enough not to warrant the recommendations of this document and/or a full BS 5837 report, then it is advisable to appoint an Arboriculturalist to assess this risk and write to the Local Planning Authority to confirm that there will be no impact on trees and / or provide details of a simple tree protection scheme accordingly, rather than submit a full BS 5837 report. If in any doubt contact the Local Planning Authority for advice. It may also be prudent to limit the extent of surveying and tree protection required, for example when dealing with isolated areas of large sites.

2. Getting Started

- 2.1 Details of any trees that are on or adjacent to the site for which a planning application is being submitted must be included within the planning application form. This should be in the form of a Tree Survey, Tree Constraints Plan, and an Arboricultural Implications Assessment (AIA) as defined in BS 5837.

The Land Survey

- 2.2 The first step in the development process should be to obtain a land survey (also known as a topographical survey), which will give significant advantages such as revealing site features like wildlife habitats and other constraints on development (e.g. bats, badgers, trees) which could be very costly if not considered in advance. The Land survey should then be made available to your Arboriculturalist for the purposes of preparing the Arboricultural Implications Assessment (AIA) and other plans.

Appointing an Arboriculturalist

- 2.3 A key part of BS5837 is that it highlights the need for an arboriculturalist when dealing with trees on or immediately adjacent to a planning site. Therefore, when dealing with a site that has trees it will usually be necessary to appoint an arboricultural Consultant to offer advice and help to prepare the necessary documentation to support the application. Good advice can also save time and money by identifying all the constraints that trees pose to the proposal in advance and working out solutions that can then be incorporated into the site layout and design of structures. It will also increase the efficiency with which the Councils Tree officer can assess an application. This Council approves the use of Arboricultural Consultants that are registered with the Arboricultural Association, details of which can be found in appendix B.
- 2.4 An arboriculturalist should be appointed to produce the "Arboricultural Implications Assessment" in advance of any design considerations. It will often be necessary to supply them with a copy of the land survey, which will be used in the preparation of their report. The completion of the tree survey and Tree Constraints Plan elements of the AIA means that an informed design that is far more likely to get through the planning process can be produced. For example, without knowing the extent of root protection areas the layout of the development can not be decided without the risk of having to change it later.

Pre application advice

- 2.5 Hertsmere Borough Council has a service for providing pre-application advice for a fee. This is recommended as it is likely to speed up and simplify the planning process for everybody involved.
- 2.6 To make sure you get the most out of this service, it is essential to have completed the survey stage and obtained a tree report containing an Arboricultural Implications Assessment and Tree Constraints Plan. Failure to do so will significantly limit the advice tree officers can give, or reduce the value of advice given by other officers as the constraints may affect the viability of your initial proposal.
- 2.7 If the constraints and impact of development on trees has been assessed then the Council can advise on which solutions will or will not be acceptable.
- 2.8 If it is considered appropriate, Hertsmere's Tree Officer can arrange an on-site meeting. It is however advisable to get your Arboriculturalist to attend this meeting either with you or on your behalf.

3. Considerations

- 3.1 The following phases of work relate directly to the BS 5837 planning process outlined in the flow chart in section 1.

Survey Phase

Quality of Survey data

- 3.2 It is vitally important that the survey data is accurate. Poor survey data can jeopardise an application, as erroneous data can significantly affect calculations for tree protection. If for any reason survey measurements are rounded, estimated or averaged, it is best to include notes explaining why accurate measurement could not be undertaken (e.g. unsuitable access, presence of ivy).

Veteran Trees

- 3.3 There is no clear definition of a veteran tree. Therefore any tree of a good age for its species may have potential to become a veteran tree and the advice of an Arboriculturalist will be needed to identify trees that could be considered veteran.
- 3.4 Britain has a very high population of Veteran Trees compared with most of Europe and therefore great emphasis is placed on their protection. They are a special feature of the English Landscape and are more likely to contain bats roosts. They will therefore usually warrant special protection.
- 3.5 The tree survey should reveal if there are any trees worthy of veteran status that could be affected by the proposed application. If this is the case then the Borough Council will be primarily guided by the *English Nature Publication "Veteran Trees: A Good Management Guide"* with special consideration from the publications noted in the further information box below. It is advisable to become familiar with the information provided within the highlighted publications.
- 3.6 The felling of veteran trees in order to implement a planning application will not readily be considered even if replacement trees are promised. But this action is not ruled out if it can be demonstrated to the Councils satisfaction that such an action is justifiable.
- 3.7 It is advised that developers to have a pre application meeting with the Councils Tree Officer (it would be advantageous to have taken Arboricultural advice prior to this) to discuss if it is considered possible to work around veteran trees on or adjacent to a planning site. Extended Root Protection areas and planning conditions specific to the veteran trees may be required and it is a good idea to get a sense of what these may be up front.

Further information:

- Veteran Trees: A Good Management Guide – English Nature (2000) which can be downloaded from the Natural England website at: <http://www.naturalengland.org.uk>
- Ancient Tree Guides No. 1 Trees and Farming (Woodland Trust, 2004) and;
- Ancient Tree Guides No.2 Trees in Historic Parks and Landscape Gardens (Woodland Trust, 2004) which can be downloaded from the Woodland Trust website at <http://www.woodlandtrust.org.uk>

Woodlands

- 3.8 Where development proposals affect woodland, surveys of both flora and fauna will nearly always be required, including a National Vegetation Classification.
- 3.9 With regards to ancient semi natural woodland, the LPA's regional Conservancy of the Forestry Commission should be consulted on any development proposals, which affect ancient semi-natural woodland. The types of proposal where the Commission wish to be consulted are those where any part of the development site:
- 'Consists of ancient semi-natural woodland or ancient replanted woodland recorded in English Nature's Provisional Inventory of Ancient Woodlands; or is within 500 metres of an ancient semi-natural woodland or ancient replanted woodland, and where the development would involve erecting a new building or extending the footprint of an existing building' (DETR, 2000).*
- 3.10 If it is uncertain whether or not woodlands on or adjacent to the site are classed as "ancient semi-natural", an arboriculturalist and /or the Forestry Commission can offer further clarification and advice.

Subsidence and Heave

- 3.11 The British Geological Survey identifies Hertsmere as being within a region of shrinkable / expandable clay soils. To determine the actual risk of subsidence/heave the specific details of the soil on the site will need to be identified.
- 3.12 Where sites have clay soil that has high potential to expand and contract, subsidence and / or heave could become an issue, particularly if trees within influencing distance of proposed structures are proposed to be felled or planted.
- 3.13 In order to assess the risks, appropriate expert advice should be obtained and any relevant reports should be made available to the appointed arboriculturalist in order for them to make an assessment of the risks and the implications for a scheme.
- 3.14 An arboriculturalist should be able to offer advice as to whether nearby trees can influence the proposed / existing buildings. If this is a risk, it is recommended that advice from a structural engineer is sought so the information provided should allow an arboriculturalist to come up with an acceptable solution.



Use of house deck ® foundation system with anti heave void, to allow for foundations to be constructed within the tree root protection areas, and above ground level. This construction method prevents any future structural damage caused by ground heave due to the removal of trees on clay soil before or after construction. Although voids can become homes to vermin, a metal mesh net will prevent this.

Photograph supplied by Abbey Pynford Ltd.

Trees with Tree Preservation Orders (TPO's) or growing within Conservation Areas, and protected hedgerows.

- 3.15 Designs are expected to give special consideration to trees and woodlands subject to Tree Preservation Orders or within a Conservation area.
- 3.16 There is a separate application procedure for works to TPO trees or trees within a Conservation area. However, the LPA's consent is not required for cutting down or carrying out work to protected trees if the works have been determined as a part of the planning application.
- 3.17 Therefore, any tree felling or works to protected trees can and should be included (within an AIA) as part of the planning application so that the implications of the proposed scheme can be considered holistically. Making separate applications for cutting down or working on protected tree(s) relating to present or future planning applications is considered to be inappropriate. It is better to consider planning applications holistically and therefore the LPA is likely to refuse consent for applications for works to protected trees where a planning application relating to the trees is anticipated or has already been received.

Registered Historic Parks and Gardens

- 3.18 The Garden History Society will be consulted on Planning Applications affecting a registered park or garden regardless of grade. (Circular 9/95). Particular attention will be given to trees, and therefore a full BS 5837 report submitted with the application is advised.

Assessing the extent of the root system

- 3.19 If it is anticipated that construction within a RPA will be necessary, bearing in mind that this should be avoided where possible, then it may be necessary / possible to find out for sure the actual root spread of trees. If it can be demonstrated that no significant roots are found in the area that you intend to develop, then there will be a greater chance of obtaining planning permission.

Air spades:

Excavation with an Air Spade allows trenches to be opened without damaging or severing tree roots. Allowing proper assessment of the true extent of tree root systems. Root identification services can be provided by specialist laboratories, if necessary.

When carrying out such works, collect a lot of photographs, to submit with your planning application, and consider inviting the Local Planning Authority's Senior Tree and Landscape Officer to witness these works.

The photograph to the right shows a trench being excavated along the footprint of a proposed extension. All roots within the trench were plotted, allowing the foundation of pile and above ground beam foundation to be.



Excavating around tree roots using an air spade to avoid damage.

Source: Arborecology

Design Phase

3.20 There are many points to consider through the design phase. But some general considerations are as follows:

- The necessary assessments should be based on the ultimate likely size of a tree, rather than its current size.
- The Root Protection Areas as given by BS 5837 are a minimum area for retention, and in some cases, the Council will require the Root Protection Areas to be extended.
- Layouts should be designed so that trees have space to reach maturity without the need for regular tree surgery, do not dominate buildings, cause unreasonable reduction in light to habitable buildings, or completely block direct sunlight to gardens.
- As well as ensuring adequate distances between trees and structures, consideration should be given to the space that will be required for construction of the development. As a general rule, if tree surgery is required to allow construction of a (habitable) building, then you are probably building too close to the trees.
- Care should be taken to avoid conflicts between highways and trees in order to maintain highway safety. For example, layouts should be designed to ensure that trees do not block sight lines.
- In addition to trees, other significant landscape features, such as important hedgerows and ponds, should be incorporated into the layout.
- Soakaways and leakup drains attract tree roots and should not be sited where they are liable to become blocked by tree roots.
- Changes in levels around trees should be avoided, if necessary, by the construction of retaining walls around the periphery of exclusion zones (allowing for future root growth in the case of young trees). The level within an area requiring tree protection (e.g. by fencing or ground protection) should remain unaltered.
- Solutions for avoiding root damage when construction takes place within a Root protection Area should only be considered when there is no viable alternative.

Services

3.21 Most tree roots are very shallow – being found only 60 cms deep, which is shown clearly in the photograph below, so it is important to give early consideration to the layout of underground and overhead services as their installation can have the biggest impact on trees during construction. The simple act of digging a half metre deep trench could sever enough trees roots to cause it to die. It will generally be unacceptable for underground services to be routed through exclusion zones, or for overhead services to be routed where they will interfere with the growth of trees to be retained or planted.

Further advice:

- Where trenching is used within Root Protection Areas it can cause trees to die and become unstable.
- Over ground services need to be designed to avoid the need for pruning.
- It should not be assumed that this would be permitted on the basis that a method statement is provided.
- Arboricultural Method Statements in accordance with National Joint Utilities Group publication No. 10 (also known as NJUG 10) should be used. This document can be downloaded from the National Joint Utilities Group Website at: <http://www.njug.org.uk/>



A section of drainage pipeline installed under tree roots following excavation using an air spade.

Source: Arborecology

Development within Root Protection Area's (RPA's)

3.22 In some circumstances development may impinge on Root Protection Area's (RPA), and this may be acceptable in certain situations. In order to show that it is acceptable, it should be able demonstrated that:

- There was no practical alternative to working within an RPA;
- The works will not have a detrimental effect on the trees root system;
- You have considered the implications of building closer to trees (e.g. shade and dominance of the proposed structures).




Using a hand auger to ensure proposed locations for piles do not conflict with tree roots within the root protection area of a veteran sweet chestnut tree. Note the BS 5837:2005 specification fencing in the background. The area was then covered with ground protection to allow a lightweight piling rig to work without damage to the underlying tree roots.

Photograph supplied by Abbey Pynford Ltd.

Special Engineering (including special hard surfaces)

3.23 Special engineering solutions are considered to be a last resort and should be avoided where possible. Therefore, other options such as changing the layout or design of structures should be explored first. Special Engineering should not be used to justify building in close proximity to trees. Where it is not possible to avoid this and construction activity must take place within Root Protection Areas (i.e. an area surrounding a tree that contains sufficient rooting volume to ensure the trees survival) then the following information should be submitted in conjunction with the application and may make up part of the AIA:

- Arboriculturalist's Performance Specifications;
- Engineers Designs;
- Arboricultural Method Statements (AMS) relating to their installation.

<p>Special engineering:</p> <p>Modern materials / systems used in Special Engineering can include:</p> <ul style="list-style-type: none"> • Resin Bonded Gravel. • Structural Soils (e.g. Amsterdam Tree Sand). • Cellular Confinement Systems. • Mini Pile and Beam Foundations. • Raft foundation system. 	 <p><i>Use of a Cellular Confinement System to allow access for construction traffic through retained trees.</i></p> <p>Source: Geosynthetics Ltd.</p>
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Offsetting the location of tree protective fencing

- 3.24 BS 5837 allows for the offsetting the location of Tree Protective Fencing (fencing installed to protect tree roots from damage by ground compaction etc) by up to 20%. The LPA would like to reinforce that this is not to be assumed that this will not always be accepted. This offsetting will not usually be permitted where:
- The trees in question are not open grown;
 - Structures will then be built so close to buildings that they do not have room to mature without excessive tree surgery;
 - The tree will excessively shade and / or dominate habitable buildings;
 - The species to be protected are known to have relatively wider root spread (e.g. oak) in which case the LPA may wish a larger area than the standard recommendation BS 5837;
 - The total area of the RPA is not reduced.
- 3.25 In addition to this and in line with BS5837 a larger Root Protection Area may be required, particularly for important / veteran trees.

Replacing Trees

- 3.26 In accordance with BS 5837, a scheme should seek to retain trees by incorporating them into the design. Where this is not possible or, for some reason trees need to be felled regardless of the proposed scheme, then it is considered that these should be adequately replaced. Where space allows, two trees for every one lost will be required. Where space is limited, replacement of only the felled trees will be acceptable. However, it may be expected that a proportion of a replacement trees to be of a larger size than those felled. Where the planting of larger trees is not possible, possible solutions include planting smaller trees, or planting trees on other sites, which will usually be part of a legal agreement (Section 106). Other law and policy can have a significant bearing on planting schemes, please refer to part A of this SPD series for more information on Hertsmere's policies.
- 3.27 There are a number of firms that can supply mature trees (which can be over 8 metres high) but there are many considerations that need to be addressed such as access. An arboriculturalist's advice should be sought in order to ensure that it is practical to plant large trees. Information regarding how the tree will be maintained and cared for until established will be required. It should also be noted that it is common

practice to apply conditions requiring a replacement for any new trees that die within 5 years. Replacing a large tree will be very costly so good aftercare is essential. Some firms will supply, plant and guarantee trees for a period of time as well as undertake maintenance.

Landscaping

- 3.28 Separate guidance for landscaping issues, incorporating tree planting will be produced. Within the context of development, the following information will be more relevant:
- 3.29 In designing soft and hard landscaping around existing trees and tree planting areas, particular care and consideration should be given to preserving soil structure in Root Protection Area's. Soft landscaping, which does not involve soil cultivation, is preferable but, depending on the circumstances, appropriate hard landscaping treatments may be acceptable where these will not impair the functioning of tree roots. Trees chosen for retention and planting should be in keeping with the character of the area.
- 3.30 When choosing species, consider what is already growing nearby, as well as other policies and guidance in part A, such as Watling Chase Supplementary Planning Guidance, and what is in keeping with the character of the local landscape.
- 3.31 New tree planting and other landscaping should be given consideration during the detailed planning stages, rather than being treated as an afterthought. The choice of species in relation to the site and soil conditions requires very careful consideration. Particular attention should be paid to avoiding possible conflicts with services, buildings and highways. It should be ensured that the advice of the tree report does not conflict with Landscaping Plans by providing a copy of the Arboricultural Assessments to the person designing the Landscaping. This can occur where a Landscaping Firm / Landscape Architect is being used that is working for a different company to an appointed Arboriculturalist
- 3.32 In some circumstances, where mature trees are to be planted that require machinery to facilitate planting (e.g. when access to rear gardens by machinery will not be possible once the construction reaches a certain stage), it may be necessary to carry out tree planting prior to construction commencing in areas that can subsequently be protected. BS 5837 also makes provision for protection of areas of the site that are to have trees planted, in order to prevent soil compaction that can severely reduce the success rate of tree establishment.

Construction Phase

- 3.33 Developers, applicants and agents are advised to familiarise themselves with the planning conditions and agreed tree protection measures to ensure that their implications are filtered down to the people responsible for carrying out the work. It may be wise to appoint people to be responsible for ensuring compliance with the Tree Protection Plan, such as the Site Manager.

Clearing planning conditions

- 3.34 It is vitally important that all conditions relating to prior submission of information are cleared. No demolition or construction should take place whatsoever until then, nor should any materials or equipment be brought onto site.
- 3.35 Trees can literally be destroyed within minutes of works commencing. The Council's Tree / enforcement Officers may be forced to take immediate enforcement action without warning if works commence prior to relevant conditions being discharged. See part A, section 3 for further details.

Implementing approved Tree Protection Plans & Arboricultural Method Statements.

3.36 The site manager or other designated person(s) should ensure that:

- A site meeting is held with the arboriculturalist to clarify any areas of ambiguity;
- The approved plans are carried out in the right order. The timing and phasing of operations often forms part of a Tree Protection Plan;
- Tree Protection measures are installed correctly and are of the agreed specification;
- Everyone who works on the site is made aware of the tree protection issues;
- Where appropriate staff and contractors have access to and have read the Arboricultural Method Statements;
- Specialist / arboricultural supervision of the works is carried out as agreed (if applicable);
- The Tree Officer or planning case officer is notified in the event of any problems.



Ground protection used effectively to allow for construction within a tree root protection area, and the tree stem appropriately protected from any collision with construction vehicles.

Photograph supplied by Abbey Pynford Ltd.

Arboricultural supervision

3.37 Tree works are expected to be supervised by an arboriculturalist according to an agreed plan, which will sometimes be required by a planning condition, in some circumstances, including:

- When recommended by an arboriculturalist;
- Where retained trees are covered by a TPO or Conservation Area, or have special merit;
- All major applications (10 units or more).

Aftercare

3.38 The Protection of trees does not end when construction is complete. Landscaping schemes often require a different approach to tree protection, as landscaping works will often be required within Root Protection Area's.

3.39 People coming in to do Landscaping works will need to be familiarised with relevant Tree Protection measures and Method statements, which may differ from those used during the construction phase.

4. Submission Requirements

- 4.1 The amount of information required to assess an application will vary from application to application. Here are some basic guidelines for all applications. The statutory “1-app” forms for planning applications state the minimum level of information required for the Local Planning Authority to determine an application of that scale. Where a BS 5837 report is required, applicants / agents are expected to submit enough information to allow the Councils Officers to determine the application. The minimum amount of information required is the same for outline and full planning permission. Where a BS 5837 report is required, it is essential to submit the following elements, ideally with the application forms:
- Arboricultural Implications Assessment (AIA) (refer to the section on terms and definitions at the front of this document);
 - If the AIA or other documents submitted with an application such as a Tree Protection Plan do not incorporate the elements of a Tree Constraints Plan then this must also be provided too. So that the Council can see how the Tree Protection Plan was formulated;
 - Services plans (where new structures are being created and there is no existing connection, or where existing connections are to be replaced).
- 4.2 Ideally all documents relating to Tree Protection and Landscaping will be provided up front. This prevents a number of questions arising such as “what do they intend to plant, and will it be suitable”. The more information provided the better.

Plans

- 4.3 BS 5837 offers advice on preparing plans. In addition to this, plans relating to trees should ideally be consistent in the size and scale in which they are presented so that they can be compared and assessed easily, and of a size and scale large enough to avoid any ambiguity. Tree Protection Plans must be suitable for setting out tree protection measures on site. A4 size plans are generally too small, so it is suggested that all plans relating to trees should be at least A3 size. A plan should clearly state at what size it can be scaled (e.g. 1:200@ A1 size), and be presented at that size. Sketch plans and plans that are not to scale are not acceptable. As use of colour is a part of a BS 5837 Tree Survey, failure to submit BS 5837 plans in colour can make assessment difficult.

Other Requirements

- 4.4 It is not considered appropriate to leave technical matters relating to trees to conditions where the viability of a scheme may depend on the resolution of it. The following list shows other documents that may be needed to assess your application. Failure to include relevant information from this list up front may increase the likelihood of a refusal or a request to withdraw the application.
- Tree Protection Plan (TPP);
 - Arboricultural Method Statements (AMS);
 - Performance specifications for special engineering (see below for more details);
 - Planting Scheme;
 - Tree Establishment Plan;
 - Tree Management Plan;
 - Management plan for Veteran Trees;
 - Diagrams;
 - Photographs;
 - Anything considered relevant by your Arboriculturalist.

4.5 These elements are considered to be compulsory for all applications for full planning permission where trees are present on or immediately adjacent (e.g. within 15 metres) to the application site.

Special engineering

4.6 In preparing designs for special engineering, the role of the arboriculturalist should stop at provided a detailed performance specification to the engineer, who will according to this, design a solution that preserves soil structure (allowing for water and gaseous exchange or roots). Reference or descriptive specifications for example, that dictate materials (e.g. APN1) as a specification for a surface are not considered to be suitable.

4.7 The services of a suitably qualified and experienced engineer should be engaged to design a structure to the arboriculturalists performance specification. A Performance Specification for special engineering / surfaces should:

- Be provided by an Arboriculturalist;
- Not include any reference to other specifications (e.g. APN1);
- Not include a description of the procedures that must be followed (e.g. a descriptive specification);
- Describe the desired qualities, in measurable terms if necessary, leaving design and materials up to the engineer and contractor;
- Aim to prevent damage to tree roots from lack of water, exclusion of oxygen, excessive resistance to penetration, and chemical toxicity;
- Be enforceable by testing (Measuring might include penetrometer readings, infiltration / soakaway rates, steel rod tests for soil oxygen content);
- Incorporate no-dig construction principles (the shallow surface layer of soils organic matter can be removed only to get rid of leaf litter etc.).



Installing a special surface to allow for heavy plant access through sensitive woodland during construction.

Photograph supplied by Arborecology.

- 4.8 The performance specification should be used to guide an appropriately qualified and experienced engineer when designing special engineering measures. The engineer may need to liaise with the arboriculturalist during this process.
- 4.9 Once there is a suitable design based on the performance specification an appointed arboriculturalist again may need to provide an Arboricultural Method Statement (AMS) for installation purposes (e.g. when using a piling rig within a Root Protection Area). The arboriculturalist may need to liaise with the engineer in writing this document to clarify the type of equipment that will be needed.
- 4.10 When submitting an application, please include both the arboriculturalist's Performance Specification, engineers special engineering designs and relevant Arboricultural Method Statements.

Scheme of arboricultural supervision

- 4.11 An arboriculturalist (Arboricultural Association Registered Consultant (AARC) must carry out arboricultural supervision. Ideally, the arboriculturalist that advised on the tree protection measures will be used. A scheme of supervision should be designed to prevent any breach of planning controls, and promote effective enforcement should any breach occur. It is expected that a scheme will include the following elements as appropriate to the scale.
- Induction and personnel awareness of arboricultural matters;
 - Identification of individual responsibilities and key personnel;
 - Statement of delegated powers;
 - Timing and methods of site visiting and record keeping, including updates;
 - Procedures for reporting and dealing with variations and incidents.

5. Section 106 Agreements

- 5.1 At the time of writing, the Local Planning Authority is producing updated guidance for Section 106 agreements, which will include specific guidance on trees and woodlands.

Suitability

- 5.2 Section 106 agreements shall not be accepted as compensation for loss of trees where it is satisfied that an on-site solution is viable, or in other circumstances where a suitable site cannot be found within close proximity to the development site.

- 5.3 The following uses are typical of Section 106 Agreements:

- The developer transferring ownership of an area of woodland to a LPA with suitable fees to cover future maintenance;
- Restricting the development of an area of land or permit for specified operations to be carried out on it in the future (e.g. amenity use);
- The developer to plant a specified number of trees and maintain them for a number of years;
- The developer to create a nature reserve, or other landscape features (please see part B of this series).

Considerations

- 5.4 If considering entering into a section 106 agreement involving tree planting or other landscaping off the application site, the owner of the land must first be approached and be in agreement.
- 5.5 When trees are planted on land belonging to a third party (e.g. the Borough Council or County Council) the landowner will assume ownership of, and therefore liability for the trees. Therefore it is important in these situations to ensure that enough money is offered to cover not just the planting of the trees etc. but also their aftercare and ongoing maintenance.

Further information:

- Hertsmere Borough Councils S106 procedural note, part A and B.

6. Enforcement

6.1 Damage to trees can occur very quickly on a development site. Particularly when planning permission is breached, conditions are not discharged, and Tree Protection Plans have not been implemented correctly. In situations such as these the Council must try to ensure that retained trees do not suffer irreparable damage, and to achieve this swift action is often needed. This will usually mean that the Council will serve a temporary stop notice without warning. But the Council does not rule out using any of the other options described below:

Enforcement options

6.2 Enforcement Officers have several options for enforcement, namely:

- Enforcement Notices;
- Breach of Condition Notices;
- Stop Notices;
- Temporary Stop Notices;
- Injunctions

6.3 An Enforcement Notice may be served to remedy a breach of planning control, or any detrimental effect on amenity caused by such a breach. The notice will specify either the steps that the Borough Council requires to be undertaken or the activities it requires to cease. Failure to comply with an enforcement notice may result in a fine of up to £20,000, or imprisonment.

6.4 A Breach of Condition Notice will specify the steps that need to be taken in order to comply with the condition in question. A time limit of not less than 28 days will be given. Failure to comply within this period may result, on summary conviction, in a fine of up to £400. There is no right of appeal against a Breach of Condition Notice.

6.5 Stop Notices requiring cessation of activities may be served in addition to an Enforcement Notice. These have a special role in enforcing tree-related planning conditions because of the irreversible damage that construction operations can cause to trees. A Stop Notice may come into effect on the day of issue. Failure to comply may result in a fine of up to £20,000, or imprisonment.

6.6 In addition to the above, the Borough Council may, in certain cases, apply to the High Court or the County Court for an injunction to restrain a breach of planning control. There is no right of appeal against an injunction per se although representations can be made to the court that the injunction is not necessary. An injunction takes immediate effect and failure to comply constitutes a Contempt of Court and can be subject to an unlimited fine or two years imprisonment.

7. Tree Preservation Orders

- 7.1 It may be considered necessary to issue a Tree Preservation Order to protect trees on or adjacent to construction / application sites if there is any reason to believe that the trees are under threat. This may include when applications are received that do not consider trees in accordance with BS5837.
- 7.2 These TPO's will include a section 201 Notice meaning that the Order has immediate effect once served. Typically they are area orders that will be reviewed once the perceived threat is mitigated.
- 7.3 Perceived threats could include:
- The information relating to trees is either insufficient, poor quality, misleading or erroneous.
 - Work has commenced prior to conditions being discharged on an application being decided.
 - It is suspected that work will commence prior to a decision being made or conditions being discharged.
 - A planning permission has been refused or intends to be refused for reasons including impact on trees. In order to prevent loss of trees prior to submission of another planning application.

The maximum fine for offences relating to trees subject to TPO legislation is £20,000 per tree.

Appendices

Appendix A: Publications & references

British Standards

- BS 5837:2005 Guide for Trees in Relation to Construction. Milton Keynes.
- BS 3998:1989 Recommendations for Tree Work. Milton Keynes.
- BS 1192:1984 Recommendations for Landscape Drawings, Part 4. Milton Keynes.
- BS 4428:1989 Code of Practice for General Landscape Operations (Excluding Hard Surfaces). Milton Keynes.
- BS 4043:1989 Recommendations for Transplanting Root-Balled Trees. Milton Keynes.
- BS 3936:1992 Nursery Stock, Part 1: Specification for Trees and Shrubs. Milton Keynes.
- BS 8103:1986 Code of Practice for Stability, Site Investigations, Foundations and Ground Floor Slabs for Housing. Milton Keynes.
- BS 8004: 1986 Code of Practice for Foundations. Milton Keynes.

Books

- Diagnosis of Ill Health in Trees – Research for Amenity trees No.2, R.G. Strouts & T.G. Winter, Department for Environment, Transport and the Regions, 1994, HMSO.
- The Body Language of Trees, A handbook for failure analysis, Research for Amenity Trees No.4, Claus Mattheck & Helge Breloer, Department for Environment, Transport and the Regions, 1994, The Stationary Office.
- Principles of Tree Hazard Assessment and Management, Research for Amenity Trees No. 7, David Lonsdale, Department for Communities and Local Government, 1999, The Stationary Office.
- Tree Roots in the Built Environment, Research for Amenity Trees No.8, John Roberts, Nick Jackson & Mark Smith, Department for Communities and Local Government, 2006, The Stationary Office
- Modern Arboriculture, A Shigo, 1991, Shigo & Trees Associates.
- Manual of Wood Decay in trees – K Weber & C Mattheck, 2003, Arboricultural Association.
- Tree Preservation Orders, A Guide to the Law & Good Practice, Department of the Environment, Transport and the Regions, 2000, HMSO.
- Hedgerow Survey Handbook, a standard for local surveys in the UK, Department for the Environment, Food and Rural Affairs, 2002, Countryside Council for Wales.
- The Law of Trees, Forests and Hedgerows, Charles Mynors, 2002, Sweet & Maxwell, London.

Other Publications

- Hodge, S. J. & White, J. E. J. (1990) The Ultimate Spread of Trees Grown in Towns. Arboriculture Research and Information Note 84/90/ARB. Arboricultural Advisory and Information Service.
- Littlefair, P.J. (1991) Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice. Building Research Establishment Report BR209. Construction Research Communications Ltd, London.
- Metheny, N. & Clark, J. R. (1998) Trees and Development: A Technical Guide to Preservation of Trees during Land Development. International Society of Arboriculture, Champaign.

National House Building Council (1992) Standards, Chapter 4.2: Buildings near Trees. NHBC, Amersham.

Patch, D. (1998) Trees, Shelter and Energy Conservation. Arboriculture Research and Information Note 145/ARB/98. Arboricultural Advisory and Information Service.

Appendix B: Further Advice

To seek further advice on any aspect of this document please contact the Hertsmere Borough Council's Tree Officer.

To locate Arboricultural Consultants approved by Hertsmere Borough Council visit the Arboricultural Association Website at www.trees.org.uk. The Arboricultural Association are able to give contact details of arboriculturalist in private practices, who are able to advise on tree-related aspects of development schemes.

The Institute of Chartered Foresters publishes a directory of members in private practice.

The Arboricultural Information & Advisory Service has a premium rate telephone helpline: 09065 161147.

<p>Arboricultural Advisory and Information Service Forest Research Station Alice Holt Lodge Wrecclesham Farnham. Surrey GU10 4LH Tel: 01420 22022 Fax: 01420 22000</p>	<p>Arboricultural Association Ampfield House Ampfield Nr. Romsey. Hants. S051 9PA Tel: 01794 368717 Fax: 01794 368978</p>
<p>Forestry Commission Southeast England Conservancy Alice Holt Wrecclesham Farnham. Surrey GU10 4LH Tel: 01420 23337 Fax: 01420 22988</p>	<p>Institute of Chartered Foresters 7A St Colme's Street Edinburgh EH3 6AA Tel: 0131 225 2705 Fax: 0131 220 6128</p>
<p>National House Building Council Buildmark House Chiltern Avenue Amersham. Bucks. HP6 5AP Tel: 01494 434477 Fax: 01494 728521</p>	<p>International Society of Arboriculture ISA European Office Troy House Suite C & D Elm Grove Road Harrow. Middlesex HA1 2QQ Tel: 0208 861 6852 Fax: 0208 861 6858</p>