Trees and Development

Supplementary Planning Document

Amended November 2009

CARLISLE CITY COUNCIL

www.carlisle.gov.uk

Carlisle LDF

This document is part of the Local Development Framework, produced by the Planning and Housing Service of Carlisle City Council. If you wouldlike this document in another format, for example large print, braille, audio tape or another language, please contact:

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Contents

This SPD replaces the Supplementary Planning Guidance "Trees on Development Sites" adopted in 1998

1 Scope

1.1 This Supplementary Planning Document has been produced to give guidance on trees and hedgerows for development control officers, developers, planning applicants, planning agents, consultants, contractors and others involved in the planning process. This SPD conforms to policies in the Carlisle City Council Adopted Local Plan 2008 and current best practice and will be re-issued where necessary as revised policy emerges.

1.2 This SPD is intended to be adopted as a Supplementary Planning Document by Carlisle City Council and is therefore subject to public participation under The Town and Country Planning (Local Development) (England) Regulations 2004

1.3 Subject to formal adoption by the Local Planning Authority this SPD will be a 'material consideration' in determining planning applications.

1.4 The document has been subject to a Sustainability Appraisal (SA) at all stages. The SA considers the implications of the SPD from social, economic and environmental perspectives by assessing options and the draft SPD against available baseline data and sustainability objectives.

2 Introduction

2.1 Trees and hedges add considerable value to our urban and rural environments, and are natural features in an ever-changing landscape. They can soften the impact of buildings and hard surfaces, contribute to the overall character of the development, help to hide unsightly views, provide shade, absorb noise and provide a screen from the wind. In addition, mature trees can give identity to an area, engendering (what does this mean) real 'pride of place' within communities. They considerably enhance our quality of life, linking us to the changing seasons and the natural world. Trees and hedges have a major part in achieving sustainable development by, amongst other things, producing oxygen, absorbing carbon dioxide, filtering pollutants from the atmosphere, reduce water run-off, and increase interception in turn reducing the risk of flooding. Trees and hedges are also of immense importance in providing habitats for a wide variety of wildlife. Ancient and Veteran trees, and hedgerows are important landscape features in terms of biodiversity, culturally and heritage.

2.2 It is important that the creation of a sustainable tree stock is a prime consideration when planning any landscaping scheme. This should ensure that the tree stock incorporates trees of all age ranges and a diversity of species that is appropriate to the location and the landscape character within the City and the wider District. Maintaining the current benefit of trees in our landscape and providing for the future benefit of the residents of Carlisle District is of the utmost importance.

3 Legal Framework

3.1 Section 197 of the Town and Country Planning Act 1990 (as amended) states that it shall be the duty of the local planning authority

(a) "To ensure whenever it is appropriate that, in granting planning permission for any development, adequate provision is made by the imposition of conditions for the preservation or planting of trees".

(b) "To make such orders (Tree Preservation Orders) under Section 198 as appear to the authority to be necessary in connection with the grant of such permission, whether for giving effect to such conditions or otherwise".

The Town and Country Planning (Trees) Regulations 1999 set out the scope of tree preservation orders and also the scope of the protection afforded to trees in Conservation Areas

3.2 The Natural Environment and Rural Communities Act 2006 places a duty on Local authorities to have regard to the conservation of biodiversity in exercising their functions.

The Act aims to clarify existing commitments with regard to biodiversity, and to make it a natural and integral part of policy and decision-making. Conserving biodiversity includes restoring and enhancing species populations and habitats, as well as protecting them.

3.3 Felling Licences: If you are felling trees above a certain size and the volume of timber exceeds a certain amount you may require a Felling Licence from the Forestry Commission..

3.4 The Wildlife & Countryside Act 1981: Provides protection for scheduled species and their habitats. Trees and hedgerows are habitat to a variety of protected species.

3.5 Countryside and Rights of Way Act 2000: The CROW Act also covers protected species and their habitat, as well as including reckless and intentional destruction/ disturbance.

3.6 The Hedgerow Regulations 1997: These Regulations provide protection for agricultural hedgerows, and set out the criteria to assess whether or not a hedgerow to which the Regulations apply can be classed as "Important"

3.7 Conservation (Natural Habitats, &c.) Regulations 1994 as amended: the Regulations provide for the designation and protection of 'European sites', the protection of 'European protected species' and requires that licences are obtained for works that might affect protected species.

4 Policy Framework

National Policy

4.1 Planning Policy Statement 1
Delivering Sustainable Development

"Planning policies should seek to protect and enhance the quality, character and amenity value of the countryside and urban areas as a whole. A high level of protection should be given to most valued townscapes and landscapes, wildlife habitats and natural resources."

"the protection of the wider countryside and the impact of development on landscape quality; the conservation and enhancement of wildlife species and habitats and the promotion of biodiversity; the need to improve the built and natural environment in and around urban areas and rural settlements, including the provision of good quality open space; the conservation of soil quality; and the preservation and enhancement of built and archaeological heritage;"

"Enhance as well as protect biodiversity, natural habitats, the historic environment and landscape and townscape character."

4.2 Planning Policy Statement 3 Housing

"Provides, or enables good access to, community and green and open amenity and recreational space (including play space) as well as private outdoor space such as residential gardens, patios and balconies."

"Provides for the retention or re-establishment of the biodiversity within residential environments."

4.3 Planning Policy Statement 7
Sustainable Development in Rural Areas

"Planning authorities should continue to ensure that the quality and character of the wider countryside is protected and, where possible, enhanced. They should have particular regard to any areas that have been statutorily designated for their landscape, wildlife or historic qualities where greater priority should be given to restraint of potentially damaging development."

4.4 Planning Policy Statement 9
Biodiversity and Geological Conservation

"Ancient woodland is a valuable biodiversity resource both for its diversity of species and for its longevity as woodland. Once lost it cannot be recreated. Local planning authorities should identify any areas of ancient woodland in their areas that do not have statutory protection (e.g. as a SSSI). They should not grant planning permission for any development that would result in its loss or deterioration unless the need for, and benefits of, the development in that location outweigh the loss of the woodland habitat. Aged or 'veteran' trees found outside ancient woodland are also particularly valuable for biodiversity and their loss should be avoided.

Planning authorities should encourage the conservation of such trees as part of development proposals."

"Local authorities should aim to maintain networks by avoiding or repairing the fragmentation and isolation of natural habitats through policies in plans. Such networks should be protected from development, and, where possible, strengthened by or integrated within it. This may be done as part of a wider strategy for the protection and extension of open space and access routes such as canals and rivers, including those within urban areas."

4.5 Planning Policy Guidance 15: Planning and the Historic Environment.

"Conservation areas vary greatly, but certain aspects will almost always form the basis for a coherent assessment: the topography - for example, thoroughfares and property boundaries - and its historical development; the archaeological significance and potential; the prevalent building materials; the character and hierarchy of spaces; the quality and relationship of buildings in the area and also of trees and other green features."

4.6 British Standard BS 3998:1989 Recommendations for Tree work

4.7 British Standard BS 5837:2005 Trees in relation to construction – Recommendations .

4.8 National Joint Utilities Council Guidelines for the Planning, Installation and Maintenance of Utility Services In Proximity to Trees

Regional and Sub-Regional Policies

4.9 Countryside Character Volume 2: North West (Countryside Commission)

4.10 Northwest Regional Forestry Framework

4.11 Planning Cumbria: Technical Paper 5 Landscape Character (Joint Cumbria and Lake District Structure Plan)

4.12 Cumbria Biodiversity Action Plan.

Main Local Plan Policies

CP1 Landscape Character/Biodiversity

CP2 Biodiversity

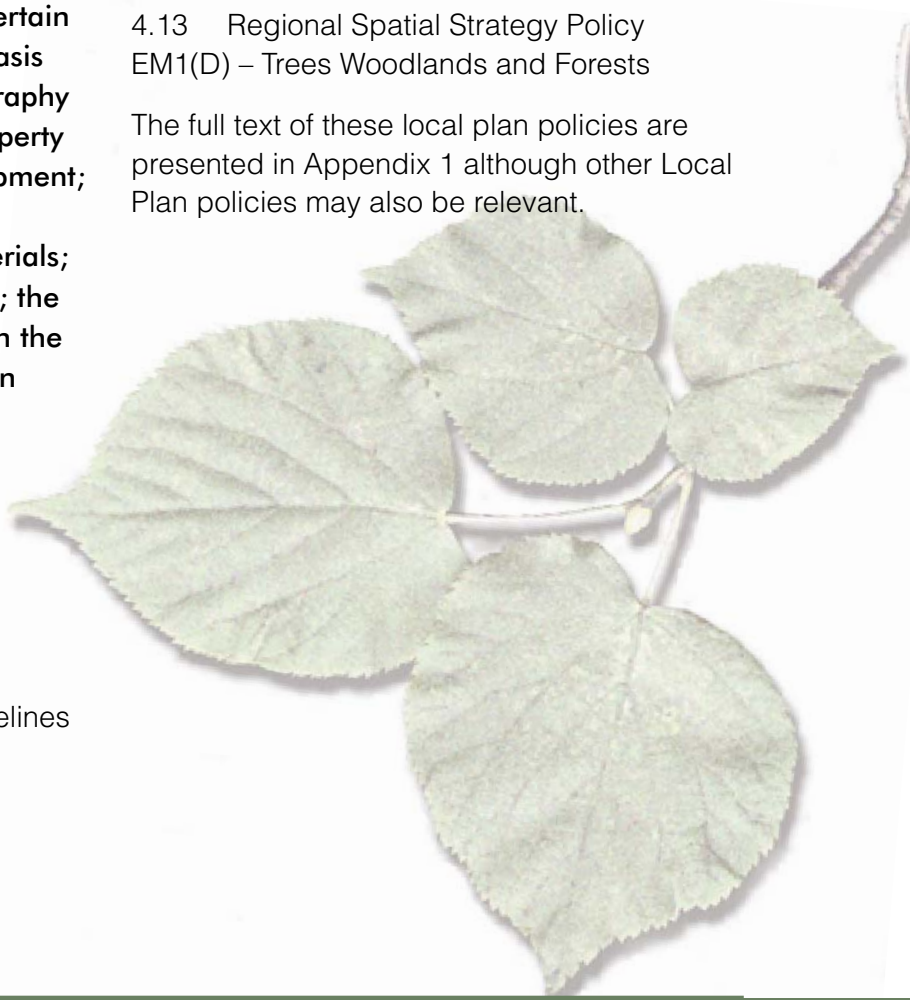
CP3 Trees & Hedges on Development Sites

CP5 Design

LE5 Other Nature Conservation Sites

4.13 Regional Spatial Strategy Policy EM1(D) – Trees Woodlands and Forests

The full text of these local plan policies are presented in Appendix 1 although other Local Plan policies may also be relevant.



5 Planning Developments with Trees

5.1 Trees, woodlands and hedgerows require space to both live and grow. Many of our native trees are large growing species. These large growing tree species are intrinsic elements in the landscape character of both rural and urban areas alike and acquire an increasing environmental value as they mature. Large trees need space in which to grow to maturity without the need for repeated human intervention. Not only should the design of a development seek to retain existing tree and hedgerow features, but sufficient space should be allocated within schemes for the planting of large growing native trees and hedgerows. To ensure integration of existing features and space for new planting it is important that these issues are considered at the very start of the planning process.

5.2 To ensure the adequate protection of trees and hedges on, and those off the site that will be affected by the development the developer should seek professional arboricultural advice at an early stage.

5.3 The process of planning developments with trees is set out in the flow diagram Figure 1 in BS 5837:2005 . A copy of Figure 1 – Flow diagram, summarising planning for trees on development sites is attached at Appendix 3

Land Survey

5.4 An accurately measured Land survey should be undertaken. The survey should be made available as scale drawings or in a mutually agreed digital format before submission of any planning application. Clearance of vegetation where necessary to facilitate the survey process should be undertaken using hand held machinery, or in open areas mechanised flails, not by bulldozing or soil stripping.

Tree Survey

5.5 When developments are likely to affect existing trees the Council will require the developer to submit a detailed tree survey in accordance with B.S. 5837:2005 or by any subsequent updates to this standard. A tree survey should be undertaken by a suitably qualified arboriculturalist with experience of trees on development sites. The tree survey must show the location of all trees over 75mm diameter at 1.5m above ground level, and be accurate to within 1m. A schedule to the survey should list all the trees and groups of trees and should contain the following information.

- Tree reference number
- Species
- Height (m)
- Diameter of the stem (mm) measured at 1.5m above ground.
- Canopy spread (m) of each tree for all four compass points.
- Height of crown clearance (m)
- Age class (e.g. young, semi mature, mature, over mature, veteran, senescent)
- Physiological condition
- Structural condition
- Preliminary management recommendations
- Estimated remaining contribution in years
- Category grading. British Standard status - colour coded system identifying suitability for retention.

Further ecological surveys to identify protected species should be undertaken where the following are identified by the Tree Survey and are likely to be affected by the proposals; woodland, or field hedgerows and/or lines of trees with obvious connectivity to woodland or water bodies, ancient and veteran trees, trees with obvious holes, cracks or cavities, trees with a girth greater than 1m at 1.3m above natural ground level.

Hedgerow Survey

5.6 Where developments are likely to affect a hedgerow a hedgerow survey must be carried out as. The minimum standard that survey should be carried to is the standard to ascertain whether or not the hedgerow would be classed as important under the 1997 Hedgerow Regulations. A survey to this standard should be carried out even if the hedgerow is a non-agricultural hedge, or other hedge excluded from the Regulations. Important hedges are National Biodiversity Action Plan priority habitats and the presumption is in favour of their retention. Hedges that meet the criteria as Important under the 1997 Regulations should be retained and included within the design of the development. Those hedges that do not meet the Important criteria may still be important for biodiversity and wildlife, for example as nesting sites, migration corridors, or foraging routes for bats. Consideration should, where practical be given to the retention of these hedges, but where this is not practical mitigation on a like for like basis should form part of the landscaping scheme.

5.7 Where trees are growing as groups or woodlands, it will often be appropriate to treat these groups as single entities when deciding what should be retained. In such cases, it will generally be acceptable to record them as a group. However, it may be appropriate to record the trees along the edge of the group or woodland as individuals.

Tree Constraints Plan

5.8 The tree and hedge constraints plan should show the influences that trees on and adjacent to the development site will have on the on the site layout. This is a design tool that should show the below ground constraints represented by the root protection area and the above ground constraints the trees and hedges pose by virtue of their size and location, and should show the following information

Root Protection Area

To avoid damage to retained trees and hedges and their rooting environment, the Root Protection Area should be plotted around each hedge and category of tree. Ground levels within the Root Protection Area must not be raised or lowered and it is preferable for these areas to be left unpaved, however consideration will be given where the use of suitable “non-dig” design is used that avoid root loss and prevent future compaction. Further guidance is contained within the British Standard. The Root Protection Area should be calculated using table 2-Calculating the Root Protection Area in BS 5837: 2005.

Above Ground Constraints

Where the trees and hedges have the potential or would cause unreasonable loss of daylight or sunlight due to their size this should be shown on the Tree Constraints Plan. In the case of residential dwellings development will not be permitted where a habitable room window would be overshadowed by a tree or hedge, or where any part of a tree or hedge would be sited within 5 metres of a habitable room window. This distance may be greater should it be necessary to prevent damage to the tree or hedge itself. To allow for useable

garden space no more than 50% of a new garden area should be dominated by the tree canopy of mature trees. Account also needs to be made for the growth of developing trees on the site. Access to daylight and sunlight helps to make a building more pleasant to live in and also more energy efficient; good natural daylight will reduce the need for electric light, while winter gain can meet some of the heating requirements. Recommendations on interior daylight requirements are set out in British Standard BS8206: Part 2: 1992 Code of Practice for Day lighting. (Other Useful References, section 16) Don't forget that shade patterns will change as a tree matures and grows and at different times of day and year.

Other Construction Issues to be Considered

5.9 It is essential to avoid disturbance of the Root Protection Area to make allowances for and plan all construction operations in the vicinity of the Root Protection Area, in particular.

- Site construction access
- Contractors and visitors car parking
- Space needed for foundation excavations and building works including scaffolding and the location of cranes, storage of materials and site cabins.
- Location of utility services provision of common service trenches may help to minimise potential conflicts with trees and hedges. Service trenches should not pass through the Root Protection Area. If services must be located within this area the planning of utility services (above or below ground) near trees and hedges should be carried out in accordance with the recommendations of the National Joint Utilities Group publication number 10; Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees (1995).
- Streetlights, CCTV Cameras, Signage When drawing up schemes for the siting and design of streetlights and security cameras the tree canopy or hedge should not impair operation. On retail developments it is often desirable to erect display signs on the road frontage. This should be designed to prevent future conflict and the need to prune nearby trees or hedges. See also Designing Out Crime SPD

Examples of a land survey and tree schedule are attached at appendix 3

6 Arboricultural Implication Assessment and Design

6.1 An Arboricultural Implication Assessment is a type of survey that considers how a proposed development and its associated trees and hedges will co-exist and interact in the present and future. An Arboricultural Implication Assessment is a document that the Council will request as part of a planning application where they need to satisfy themselves that factors such as root protection, changes in levels, installation of services, material storage, etc have been duly considered during the development layout and that these items will not prove detrimental to the retained trees and hedges. It also needs to address the future issues, such as the long term effects of changing a surface level or the future need to prune or remove trees and hedges because they cast excessive shade or encroach upon property. The Arboricultural Implication Assessment should be carried out by a suitably qualified arboriculturalist with experience of trees on development sites.

7 Arboricultural Method Statement and Tree Protection Plan

7.1 On sites where trees and hedges are likely to be particularly vulnerable to damage the submission and approval of a detailed method statement for works near trees and hedges will be required. In the arboricultural industry, such a statement is commonly used to describe how construction works can be carried out close to trees and hedges. It should include details on how the works will be managed and how the trees and hedges will be adequately protected during such a process. The method statement contains a timetable indicating when and how specific works adjacent to trees and hedges should be carried out. This will cover items such as the installation of protective fencing, hand excavation within Root Protection Area, surface changes etc. Engineering specification sheets should be included for items such as the design of protective fencing, special surfaces, methods of trenching etc. Site supervision by an arboriculturalist may be stipulated for some or all of the operations associated with trees and hedges. Items to include within a method statement

Tree Protection Plan

7.2 The Tree Protection Plan should be drawn once the layout proposals have been finalised. The Tree Protection Plan should clearly show the trees and hedges that are to be removed and those to be retained, the Root Protection Area of trees and hedges to be retained and the location of the tree and hedge protection barriers. The tree and hedge protection barriers must be fit for purpose so their design will vary dependent on the nature of the threat posed to the trees and hedges. All parties should be aware of the areas in which access and works may not take place. Suitable examples of tree and hedge protection barriers for varying conditions and tree warning site notices are contained in Appendix 5

Building close to trees

7.3 On certain sites the constraints mean that some construction near trees and hedges is unavoidable. Services, driveways or even garages may be positioned near trees and hedges when absolutely necessary, and when it can be demonstrated that all other reasonable alternatives have been discounted. In these instances submitted details should include methods of working and construction techniques. Construction techniques should be designed to minimise direct damage and to prevent indirect damage. The applicant should seek the advice of an Arboricultural Consultant from an early stage in the application process. Paths, lightly trafficked areas and driveways near trees and hedges should be constructed by no dig methods as outlined in B.S. 5837 Trees in relation to construction – Recommendations. Foundations should be piles or radial strip footings or similar and located to avoid major roots. Beams, slabs and suspended floors should be laid at or above the natural ground level. Trenches for services must be dug by hand to prevent damage to roots or installed using trenchless techniques.

8 New Planting and Landscaping

8.1 Although this Document does not specifically advise on landscaping developments due to the nature of planning consents often having conditions relating to landscaping some basic advice has been included.

8.2 Damage to trees and hedges often occurs during landscape operations within the Root Protection Area. Use of machinery such as rotovators or mini-diggers and the movement of contractors vehicles can lead to extensive root damage and ground compaction. Landscape operations within the Root Protection Area of any retained tree or hedge shall not commence until the supervising Tree Officer has been on site to determine if the proposed work can be carried out without damaging the trees or hedges concerned.

8.3 Areas designated for planting are at risk of soil damage, particularly compaction and contamination during the development phase. Protection barriers similar to those for the root protection of trees and hedges should be used to protect future landscape sites within and for the duration of the development

9 Useful Contacts

Development Control
dc@carlisle.gov.uk.gov.uk
Tel: 01228 817178

Local Plans and Conservation
lpc@carlisle.gov.uk

Local Plans Tel: 01228 817193

Conservation and Listed Buildings Tel: 01228 817195

Tree and Hedgerow Protection
Contact: Landscape Architect/ Tree Officer
lpc@carlisle.gov.uk
Tel: 01228 817535

Building Regulations
Contact: Building Control
bc@carlisle.gov.uk
Tel: 01228 817184

Highways
Cumbria County Council
Tel: 01228 606060

Contaminated Land
Contact: Environmental Protection Services
Tel: 01228 817330

Department for Communities and Local Government
www.communities.gov.uk

Arboricultural Association
Tel: 01794 368717
www.trees.org.uk

Forestry Commission
North West England Conservancy
Peil Wyke
Bassenthwaite Lake
Cockermouth
CA13 9YG
Tel: 017687 76616
Fax: 017687 76557
fc.nweng.cons@forestry.gsi.gov.uk

10 Useful References

British Standard BS3998: 1989 Recommendations for Tree Work (as amended).

British Standard BS5837: 1991 Trees in Relation to Construction (as amended).

British Standard BS8206: Part 2: 1992 Code of Practice for Daylighting. Building Research Establishment (1998).

Site Layout Planning for Daylight and Sunlight; A Guide to Good Practice.
Department of the Environment (1984).

Arboriculture Research Note 84/90/ARB – The Ultimate Size and Spread of Trees Commonly Grown in Towns.
Department of the Environment, Transport and the Regions (2000).

Tree Preservation Orders – A Guide to the Law and Good Practice.
Department of the Environment, Transport And The Regions (2000).

Trees and Development – A Technical Guide to the Preservation of Trees During Land Development.
Nelda Matheny and James R. Clark

National House Building Council Standards Chapter 4.2 (2003). Building Near Trees.

National Joint Utilities Group Publication Number 10 (1995).
Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees.

The Tree Advice Trust (AAIS). Arboricultural Practice Note (APN) 1 – Driveways Close to Trees.

The Tree Advice Trust (AAIS). Arboricultural Practice Note (APN) 5 – Shaded by Trees.

The Cumbria Biodiversity Evidence Base http://www.lakelandwildlife.co.uk/

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Appendix 1

Local Plan Policies relevant to this SPD (Please note that other Local Plan Policies will be relevant to development proposals)

CP1 Landscape Character

Proposals for development in the rural area must seek to conserve and enhance the special features and diversity of the different landscape character areas. Development will be considered appropriate to the character of the landscape provided the proposal has regard to and conserves:

- the landform and natural patterns of drainage;
- the pattern of trees and woodland;
- the habitats of species of importance for wildlife;
- the pattern and composition of field boundaries;
- the pattern of historic landscape features;
- the pattern and distribution of settlements.

CP2 Biodiversity

Proposals in both the rural and urban area should not harm the integrity of the biodiversity resource as judged by key nature conservation principles, and proposals should seek to conserve and enhance the biodiversity value of the areas which they affect.

In areas where species protected under national and European legislation are most likely to occur, special accounts will be given to their presence in the consideration of development proposals.

CP3 Trees and Hedges on Development Sites

Proposals for new development should provide for the protection and integration of existing trees and hedges. Where trees and hedges are present, a survey will be required showing the following:"

1. the location of existing trees and hedges;
2. the species, age, height and crown spread of each tree;
3. an assessment of the condition of each tree;
4. the location and crown spread of trees on adjacent land which may be affected by the development;
5. existing and proposed changes in ground level.

In order to protect and integrate existing trees and hedges within new development, the City Council will resist proposals which cause unacceptable tree loss, and which do not allow for the successful integration of existing trees identified in the tree survey. Layouts will be required to provide adequate spacing between existing trees and buildings, taking into account the existing and future size of the trees, and their impact both above and below ground. The City Council will protect existing trees and woodlands where appropriate, by tree preservation orders, and by the use of planning conditions requiring protective fencing around trees to be retained to prevent site works within their crown spread.

CP5 Design

All new development proposals will be assessed against the following design principles. Proposals should:

1. Respond to the local context and the form of surrounding buildings in relation to height, scale and massing, and by making use of appropriate materials and detailing;
2. Take into consideration any important landscape or topographical features and respect local landscape character;
3. Reinforce local architectural features, where appropriate, promoting and respecting local distinctiveness;
4. Ensure all components of the proposal, such as buildings, car parking, access routes, open space and landscaping, are well related to one another to ensure a well integrated, successful and attractive development;
5. Ensure there is no adverse effect on the residential amenity of existing areas, or adjacent land uses, or result in unacceptable standards for future users and occupiers of the development;
6. Ensure the retention and enhancement of existing trees, shrubs, hedges and other wildlife habitats where possible. Where environmental features are lost as a result of the proposal, appropriate mitigation measures should be put in place and on-site replacement of those features will be sought;
7. Include landscaping schemes (both hard and soft) to assist the integration of new development into existing areas and ensure that development on the edge of settlements is fully integrated into its surroundings;
8. Ensure that the necessary services and infrastructure can be incorporated without causing unacceptable harm to retained features;
9. Ensure that the layout and design incorporates adequate space for waste and recycling bin storage and collection.

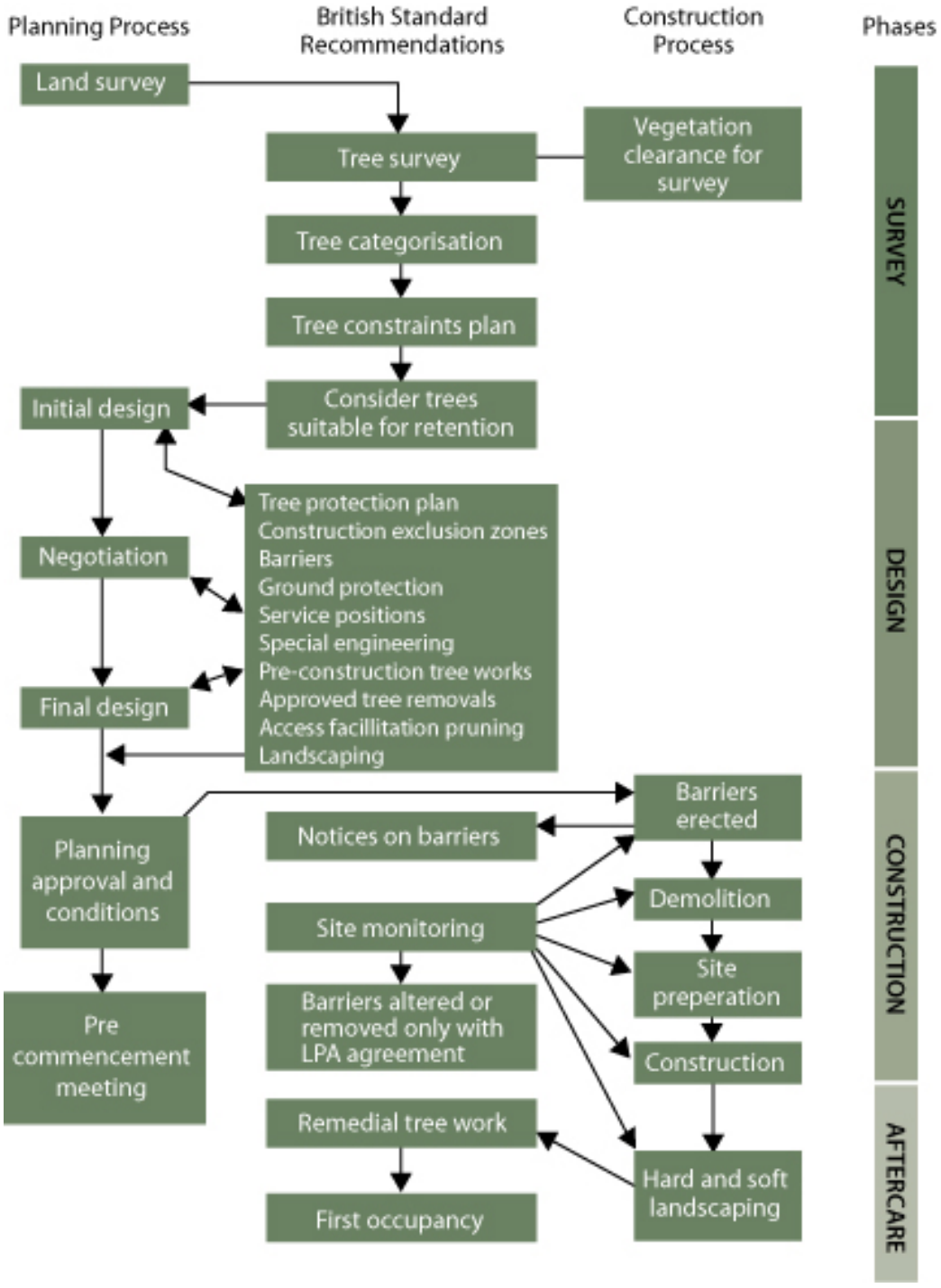
LE3 Other Nature Conservation Sites

Development which would have a detrimental effect on Regionally Important Geological/ Geomorphological Sites (RIGGS), County Wildlife Sites and other sites of nature conservation significance, Local Nature Reserves and Ancient Woodlands will not be permitted unless:

1. The harm caused to the value of those interests is clearly outweighed by the need for the development in that location and
2. Where practical, any environmental feature lost is replaced with an equivalent feature.

Appendix 2

BS 5837:2005
Figure 1 – Flow diagram, summarising planning for trees on development sites



Client: Houses for U
Site: Any Town
Date of Survey; 28 Feb
Surveyor: Gean Green

Tree ref	Species (m)	Height (m)	Stem diameter (mm)	Branch spread (m)		Height of crown clearance (m)	Age class	Physiological condition
T1	Lime	15	975	N6	E7	3	Mature	Fair
				S5	W8			
T2	Sycamore	18	1030	N8	E7	3.5	Mature	Good
				S7	W8			
T3	Horse Chestnut	9	450	N3	E9	3	Mature	Fair
				S5	W8			
T4	Hawthorn	3	310	N2	E2	2	Over mature	Poor
				S2	W1			
T5	Oak	14	410	N5	E7	2.5	Middle aged	Good
				S2	W8			
T6	Oak	7	210	N3	E5	2	Young	Fair
				S4	W4			
T7	Ash	12	550	N4	E5	3.5	Young	Poor
				S3	W6			
T8	Oak	26	1280	N9	E10	3.5	Mature	Good
				S12	W11			
T9	Scots pine	18	790	N5	E5	19	Mature	Poor
				S4	W5			
T10	Ash	21	980	N11	E10	4	Mature	Good
				S12	W10			
T11	Beech	9	985	N3	E5	5	Over mature	Poor
				S4	W6			
G1	8 Goat Willow	6	50-175	N	E	1	Mature	Fair
				S	W			

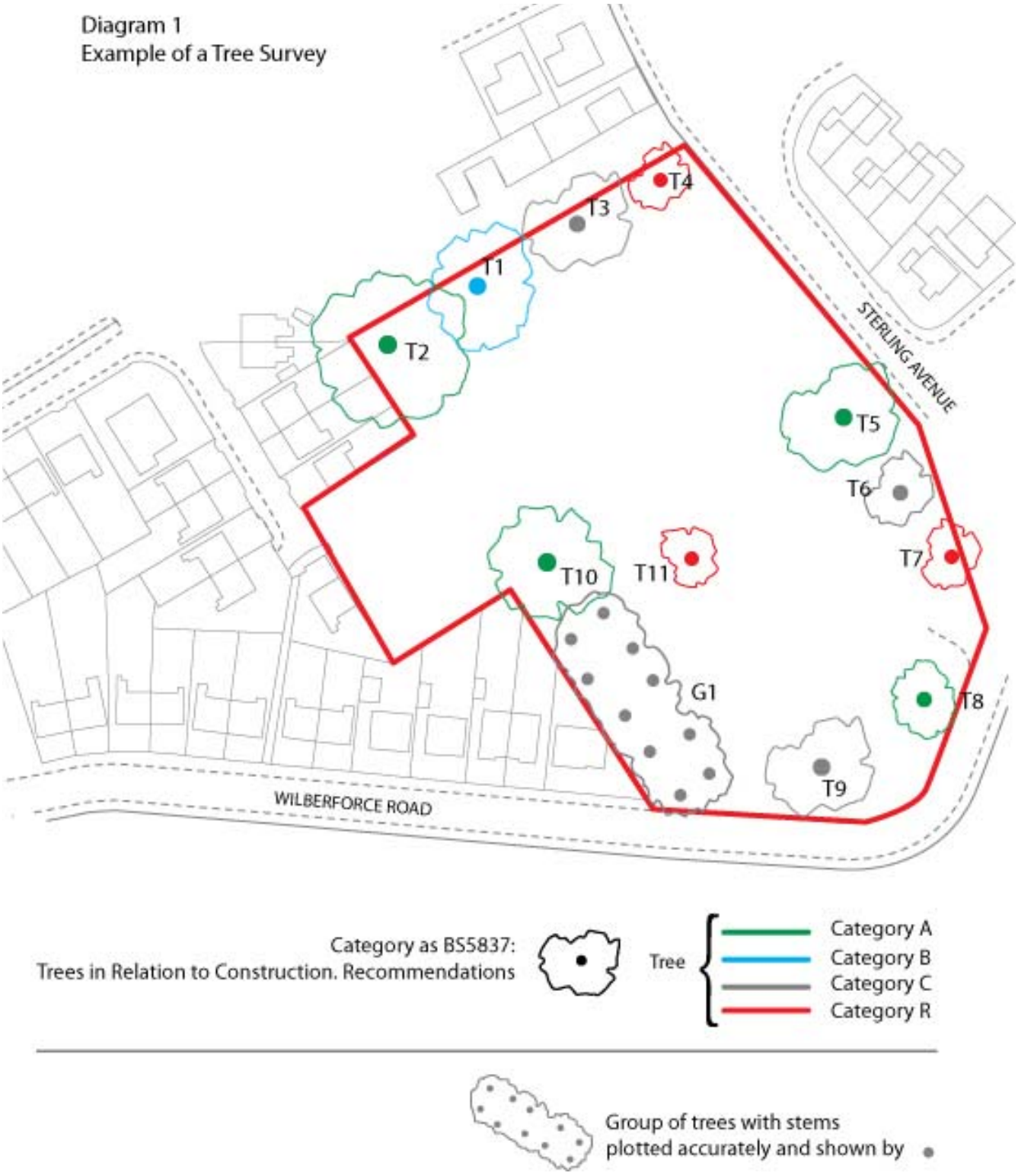
Appendix 3

Example of a Tree Schedule and Survey

Structural condition	Preliminary management recommendations	Estimated remaining contribution in years	Category grading
Dead wood in crown consistent with age and species	Remove dead wood	20 - 40	B
Excellent condition with no visible defects	None	40+	A
Included fork at 3m and some minor dead wood	Crown thin 15% and remove dead wood	20-40	C
Significant die back in crown. Tree moribund	Fell	<10	R
Excellent condition with no visible defects	None	40+	A
Suppressed by neighbouring trees resulting in poor form with some minor dead wood in crown	Remove dead wood	40+	C
Self seeded tree damaged by fire	Fell	<10	R
Some dead wood consistent with age and species	Remove dead wood	40+	A
Some dead wood consistent with age and species. Two snapped and hung up limbs in upper crown. Cavity at old pruning wound 6m up northern side of trunk	Remove dead wood and hung up branches. Carry out climbing inspection to ascertain extent of cavity and structural integrity of tree	20 - 40	C
Excellent condition and form with no defects visible at time of survey	None	40+	A
Significant die back in crown, numerous Kretzschmaria deusta brackets on trunk	Fell	<10	R
Some minor die back and snapped and broken branches	Fell	<10	C

Appendix 3

Diagram 1
Example of a Tree Survey

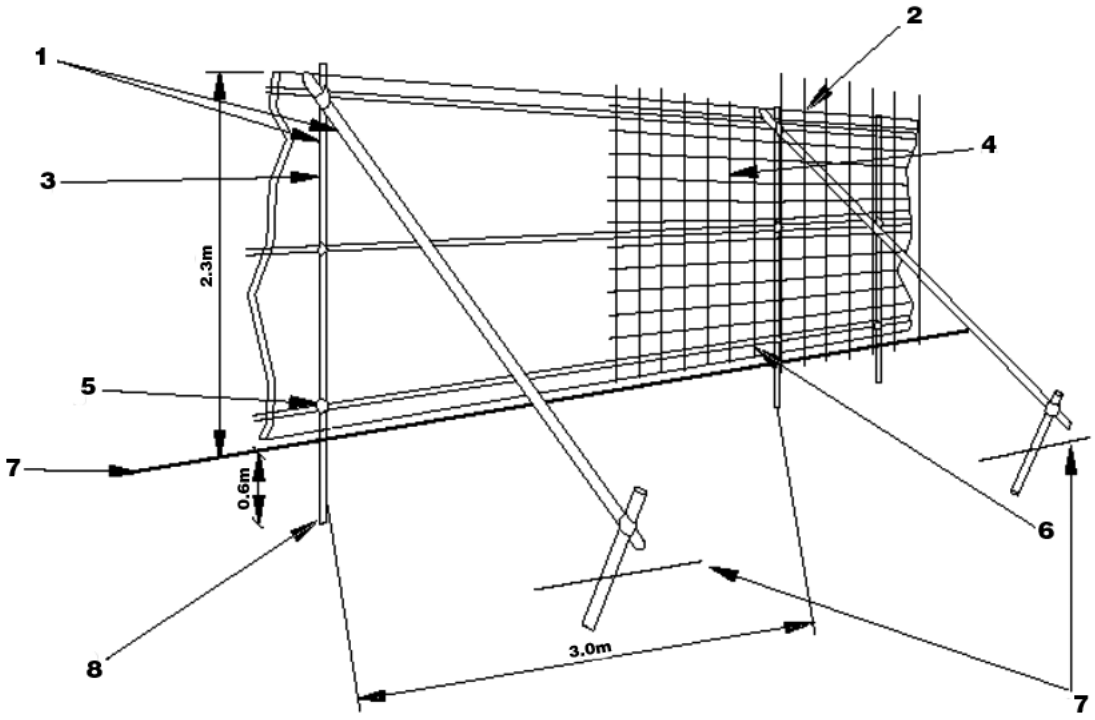


Appendix 3

Diagram 2
Example of a Tree Constraints Plan

Appendix 4

Examples of tree protection barriers and specifications, and tree protection signs and posters



1 Standard scaffold poles

2 Upright to be driven into the ground

3 Panels secured to uprights with wire ties and where necessary standard scaffold clamps

4 Weldmesh wired to the uprights and horizontals

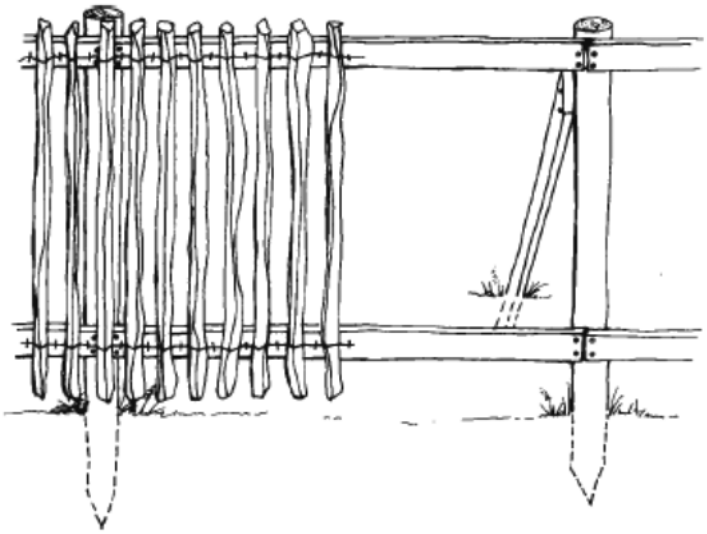
5 Standard clamps

6 Wire twisted and secured on inside face of fencing to avoid easy dismantling

7 Ground level

8 Appox 0.6m driven into the ground

▲ © British Standards. 5837. 2005. www.bsi-global.com



◀ © Macclesfield Borough Council. 2008.

http://www.macclesfield.gov.uk/

Key:

Posts: 75-100mm round top fence posts, 1.8m high at 2m spacings, securely driven in by 0,6m.

Top & Bottom Rails: 50mm x 75mm softwood, nailed to uprights

Support Struts: 50mm x 75mm softwood, securely nailed to uprights at every third post, and at each corner or change of direction.

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Construction and Trees

Why Is Fencing Erected Around Trees?

1. The major cause of damage to trees on construction sites is due to **soil compaction**.

2. Roots use the spaces between soil particles to obtain Oxygen, Water and Nutrients.

3. Heavy plant and machinery compresses (compacts) the soil, squashing out the air spaces and preventing root function.

4. A compacted soil structure will stay compacted.

5. Consequently the tree suffers and will show signs of branch die-back.

6. Symptoms such as die-back may take several years to appear.

7. Soil compaction over roots can be prevented by maintaining a fenced exclusion zone over the tree roots.

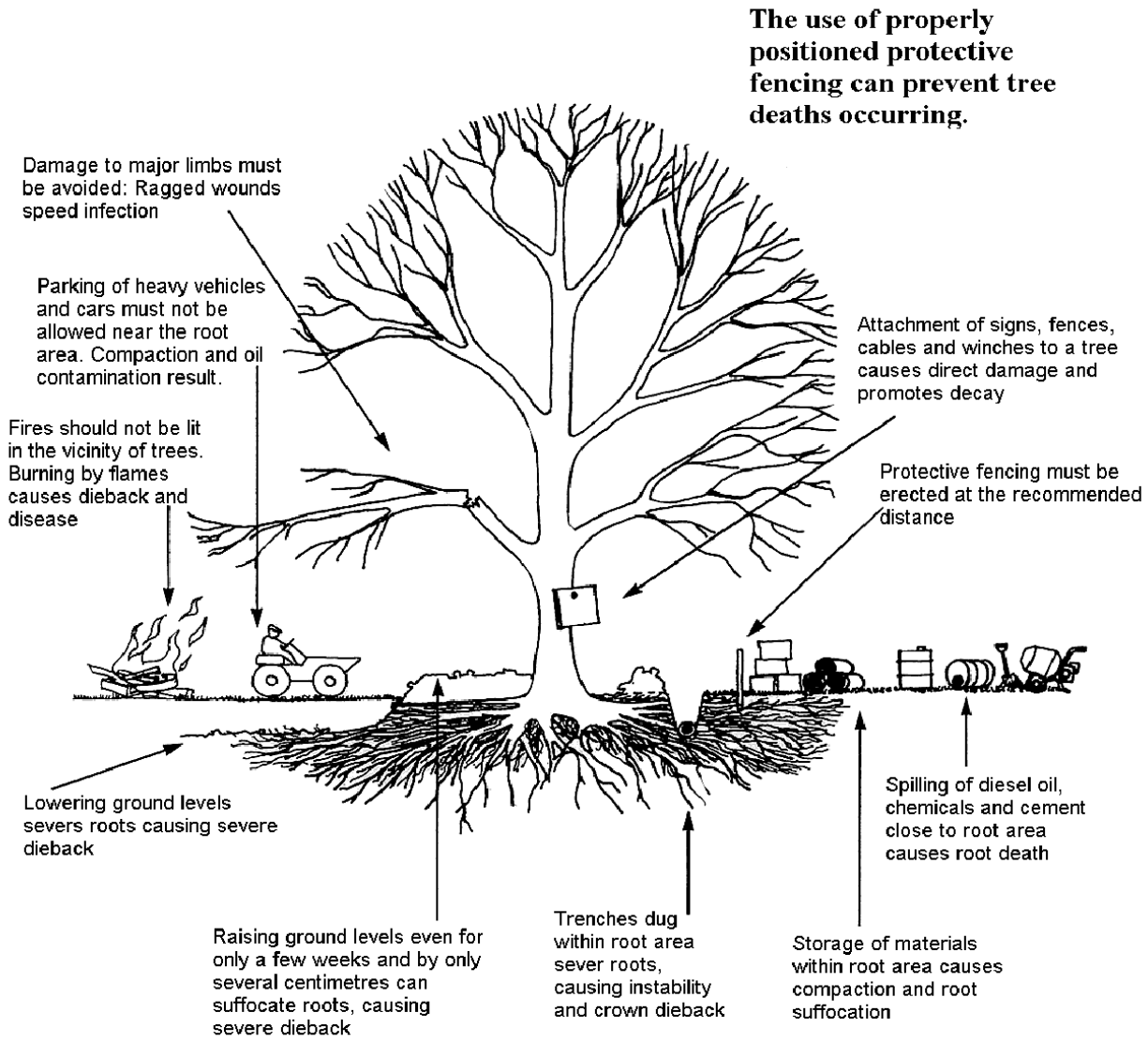
8. The exclusion zone distance is calculated using British Standard 5837.

9. Protective Fencing is installed at the calculated distance.

10. Protective Fencing is a condition of planning approval, if it is removed or repositioned the construction firm is in breach of a condition and may be subjected to legal action.

Appendix 5

Common causes of tree death



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