



**Trees, Woodlands and Hedges Supplementary
Planning Document (SPD) - August 2023
Consultation Draft**

Contents

1. Introduction.....	5
Background.....	5
Purpose	5
Structure of This SPD	5
How to use this document	6
Legal and Policy Context	6
Other considerations.....	13
Next Steps	14
2 Background	15
Trees in County Durham.....	15
Ancient and veteran trees	15
Identifying ancient and veteran trees.....	16
Other trees of high landscape, amenity and biodiversity value	17
Woodlands in County Durham.....	19
Ancient woodlands.....	20
Identifying ancient woodland	22
Other woodlands.....	24
Recently established native woods, wood pasture and parkland	25
Hedges of high landscape, heritage, amenity or biodiversity value.....	27
3 Planning for trees woodlands and hedges in development.....	29
Pre-application advice	29
The planning application.....	29
British Standard BS 5837:2012	30
Tree Survey	31
Tree Constraints	32
Tree Constraints Plan	34
Design.....	35
Site planning	36
Arboricultural Impact Assessment (AIA)	37
Tree Protection Plan (TPP).....	38
Arboricultural Method Statement (AMS)	42
Pre-development tree works.....	42

Arboricultural supervision and monitoring.....	43
Post development management.....	43
4 Avoiding and reducing impacts on existing features	45
Ancient and veteran trees.....	45
Other non-woodland trees	46
Ancient woodland	48
Other woodland	50
Development affecting hedges	52
5 Integrating features into new development	57
Existing trees	57
Existing woodlands	58
Existing hedges	60
6 New planting.....	63
Landscaping proposals.....	63
Soils.....	64
Planting trees.....	65
Street trees	71
Tree planting in hard landscapes.....	76
Tree planting in soft landscapes	79
Tree Planting in Sustainable Drainage Systems (SuDS).....	83
Planting woodlands.....	85
Priorities for new woodland planting	87
Planting hedges	88
Establishment maintenance.....	89
Long term management.....	90
7 Tree Preservation Orders (TPO) and Trees in Conservation Areas.....	92
TPO – an overview	92
County Durham Plan Policy.....	92
Existing TPO.....	93
Making a new TPO	93
Responsibility for TPO trees.	96
Consent to carry out works to TPO trees.....	97
How we deal with Applications for Tree Works.....	98

Making decisions on Applications for Tree Works	102
Replacement trees.....	103
Woodland Management.....	104
Felling licences and TP0.....	104
Trees in Conservation Areas	105
Appendix 1: Tree Management	107
Overview.....	107
Formative Pruning	107
Crown lifting.....	107
Crown thinning.....	108
Dead-wooding or crown cleaning	109
Crown reduction.....	109
Pollarding.....	110
Topping.....	111
Monolithing	111
Coppicing.....	112
Appendix 2: Hedgerow Regulations and High Hedges	114
Hedgerow Regulations 1997	114
High hedges.....	114
Appendix 3: Felling Licences and planning	115
Appendix 4: Ash Dieback	116
Background.....	116
Site Planning.....	117
Tree Preservation Orders and trees in conservation areas	118
Glossary	123

1. Introduction

Background

- 1.1 Trees, woodlands and hedges are important features of both our countryside and urban areas. They make an enormous contribution to the character, beauty and heritage of our landscapes and townscape and are a cornerstone of their biodiversity. They store carbon in their biomass and soils and the timber they produce, create shade to reduce urban heating, intercept airborne pollutants, and help regulate the flow of water through catchments reducing flooding and the pollution of watercourses. The ecosystem services they provide make them an important part of our natural capital and contribute to the resilience of the landscape to climate change.

Purpose

- 1.2 This Supplementary Planning Document (SPD) has been developed to outline Durham County Council's (the Council) approach to trees, woodlands and hedges in relation to development.
- 1.3 This SPD provides guidance on good practice and is not a design standard. It will be a material consideration in the determination of planning applications and, therefore, will be considered by Council Officers and Elected Members as part of their assessment of planning applications. It will be considered alongside other design guidance such as the Building for Life SPD, Developer Contributions SPD, Design Code SPD and specific masterplans.
- 1.4 The purpose of this SPD is to ensure that trees, woodlands and hedges are fully considered as part of the planning process so that the many benefits they provide can be sustained and enhanced.

Structure of This SPD

- 1.5 This SPD is divided into eight sections:
- Section 1 introduces the SPD and sets it in context.
 - Section 2 provides background information on trees, woodlands and hedges.
 - Section 3 provides guidance on planning for development including consideration of trees woodlands and hedges in the design process and the survey and assessment requirements of the application process.
 - Section 4 provides guidance on avoiding and reducing impacts on existing features
 - Section 5 provides guidance on integrating existing features into new development.
 - Section 6 provides guidance on new planting.
 - Section 7 provides guidance on Tree Preservation Orders and trees in Conservation Areas.

It includes the following appendices

- Appendix 1 Tree Management
- Appendix 2 Hedgerow Regulations and High Hedges
- Appendix 3 Felling licences and planning

- Appendix 4 Ash dieback

How to use this document

- 1.6 This SPD will not set policy but will provide additional guidance to applicants on the interpretation and implementation of relevant planning policies contained within the County Durham Plan.
- 1.7 It is beyond the remit of this SPD to provide a complete, tailored guidance document – it functions to provide supplementary guidance, specific to County Durham, to established industry guidance and recommendations commonly used when considering trees, woodlands or hedges and development.
- 1.8 Prospective applicants should consider this SPD at the earliest possible point in the design stages.

Legal and Policy Context

The Town and Country Planning Act 1990 (TCPA)

- 1.9 The TCPA recognises the importance of trees to the environment, public amenity, and the planning process. Specifically, Part VIII (Special Controls) Chapter 1 - Trees places a duty on the Council, during the planning process, to consider the preservation and planting of trees with regards to development. It also sets out the legislation in relation to Tree Preservation Orders, compensating for loss or damage, consequences of tree removal and trees in conservation areas.

Natural Environment and Rural Communities Act 2006 (NERCA)

- 1.10 Section 40 of the NERCA places a duty on the Council to have regard, in the exercise of their functions, to the purpose of conserving biodiversity.

The Environment Act 2021

- 1.11 The Act seeks to provide a new framework for environmental protection in response to growing public awareness of climate and environmental issues. The Act strengthens requirements to protect and improve the environment. The Act will mandate that all development and significant infrastructure demonstrates biodiversity net gain. This represents a significant change in the planning system's approach to biodiversity and is likely to further protect existing trees, woodland and hedges and encourage the planting of new green infrastructure to drive nature recovery. Further guidance on how the Act should be interpreted is being developed by Natural England and Defra. This guidance and emerging legislation will inform future iterations of this SPD.

National Planning Policy Framework (NPPF 2021)

- 1.12 The Framework contains a number of policies which relate to trees, woodlands and hedges.

Paragraph 131 states that:

Trees make an important contribution to the character and quality of urban environments and can also help mitigate and adapt to climate change. Planning

policies and decisions should ensure that new streets are tree-lined, that opportunities are taken to incorporate trees elsewhere in developments (such as parks and community orchards), that appropriate measures are in place to secure the long-term maintenance of newly-planted trees, and that existing trees are retained wherever possible. Applicants and local planning authorities should work with highways officers and tree officers to ensure that the right trees are planted in the right places, and solutions are found that are compatible with highways standards and the needs of different users.

Paragraph 174 states that:

planning policies and decisions should contribute to and enhance the natural and local environment by recognising the wider benefits from natural capital and ecosystem services – including the economic and other benefits of woodland.

Paragraph 175 states that plans should:

take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries

Paragraph 180c states that

development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons, and a suitable compensation strategy exists.

- 1.13 This applies equally to both Ancient Semi Natural Woodland (ASNW) and Planted Ancient Woodland Sites (PAWS) and Government guidance advises that 'wood pastures identified as ancient' should be considered in the same way as other ancient woodland in making planning decisions.
- 1.14 On a broader note, trees also have potential to be relevant with regards to paragraphs 8, 20, 28, 180 and 181.

Planning Practice Guidance (PPG)

- 1.15 PPG provides more details to support the NPPF. The guidance specifically related to trees is set out in sections on the 'Natural Environment' with covers ancient woodland and ancient or veteran trees, Tree Preservation Orders and trees in conservation areas'.

National Design Code

- 1.16 The National Design Code and National Design Guide provide guidance on the production of design codes, guides, and policies to promote successful design (see also Durham Design Code SPD below). In respect of trees and other green infrastructure The National Design Guide advises that:
- *A well-designed movement network defines a clear pattern of streets that...incorporates green infrastructure, including street trees to soften the impact of car parking, help improve air quality and contribute to biodiversity (77)*

- *Well-designed streets create attractive public spaces with character, through their layout, landscape, including street trees (79)*
- *Well-designed parking... incorporates green infrastructure, including trees, to soften the visual impact of cars, help improve air quality and contribute to biodiversity (86)*
- *The siting and layout...of utilities services and infrastructure including water supply, sewerage, drainage, gas, electricity, full fibre broadband, digital infrastructure and telephones should take into account convenient maintenance while not impeding the planting of street trees (89)*
- *Natural features are integrated into well-designed development. They include natural and designed landscapes, high quality public open spaces, street trees, and other trees, grass, planting and water (90).*
- *Well-designed places...have trees and other planting within public spaces for people to enjoy, whilst also providing shading, and air quality and climate change mitigation (100)*
- *Well-designed public and open spaces incorporate planting, structures and water for comfort. They create shade and shelter for their users, improve air quality and mitigate the effects of pollution. Deciduous trees provide shade to buildings, helping to manage solar gain when needed in summer months. These landscape features also contribute to reducing the 'heat island' effect whereby the temperatures in built up areas are significantly higher than outside them (148).*

England Trees Action Plan 2021 – 2024

1.17 The England Trees Action Plan sets out the government's long-term vision for the treescape it wants to see in England by 2050 and beyond. In respect of trees in our towns and cities it states that:

Well sited tree planting, with appropriate management can make places where people live and work more climate resilient, healthy and attractive. We are committed to seeing all new streets lined with trees and have recently published a response to the recommendations of the Building Better, Building Beautiful Commission in early 2021. Developers should work with local authorities to plan, plant and manage these trees, and agree how they will be funded - including through developer contributions such as Biodiversity Net Gain. Obtaining the expert services of local tree officers is recommended to help ensure trees and woodlands are planted and managed effectively and in helping to create, implement and monitor local tree and woodland strategies. Projects such as the Green Infrastructure Standards Framework, being led by Natural England, also showcase the benefits trees can provide for health and wellbeing when delivered close to people.

It also states that Government will:

Propose new guidance through the National Model Design Code on how trees can be included in the built environment, including design parameters for the placement of street trees (para. 1.27)

In respect of trees outside of woodland it states that.

Trees outside of woodlands are among the most valuable to society. People place great value on trees and green spaces in their local communities, which also provide connections in our fragmented treescapes and vital habitat for threatened biodiversity. Yet they often slip through the gaps between funding mechanisms, contributing to their long-term neglect and decline. We need to reclaim our neglected public land, create tree-based community green spaces and encourage new trees in non-woodland settings, for people and nature.

In respect of tree management, it states that:

As part of future planning reforms we will make sure the planning system fully recognises all the benefits trees provide. We want to make sure trees in the urban environment are no longer seen as a management liability because of the costs, rather that they are seen as an important asset.

1.18 The England Trees Action Plan is published on the Government website:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/987432/england-trees-action-plan.pdf

Keepers of Time: ancient and native woodland and trees policy in England

1.19 Keepers of Time (KOT) is the Government's policy for ancient and native woodland and ancient and veteran trees in England. It includes among its strategic objectives:

- maintain and enhance the existing area of ancient woodland
- conserve and enhance the existing resource of ancient and veteran trees
- recognise the value of and protect long-established woodland
- increase the net area of native woodland
- establish new woodlands, wood pasture and parkland and future veteran trees
- provide greater connectivity for habitats and species by encouraging new woodlands near and adjacent to existing resource
- to improve and maintain the ecological condition of ancient and native woodland and ancient and veteran trees
- rare, threatened or Priority Species associated with ancient and native woodland and ancient and veteran trees should be conserved, enhanced and where appropriate, reintroduced
- to appropriately manage ancient and native woodland and ancient and veteran trees to make sure they are resilient to the threats of climate change, pests and diseases
- sustainably manage ancient and native woodlands and trees, recognise them for their natural capital value and contribution to the economy
- support ancient and native woodlands and trees to increase their contribution to our health and wellbeing
- to protect, conserve and enhance the cultural heritage of ancient woodland and ancient and veteran trees
- to recognise, protect and enhance the value of ancient woodland and ancient and veteran trees in our landscape.

1.20 This also states that Government will ‘require local planning authorities to consult the Secretary of State for Levelling Up, Housing and Communities before granting planning permission for developments affecting ancient woodland’ (para. 1.2).

1.21 The full document can be found on the Government website:

<https://www.gov.uk/government/publications/keepers-of-time-ancient-and-native-woodland-and-trees-policy-in-england/keepers-of-time-ancient-and-native-woodland-and-trees-policy-in-england#:~:text=Keepers%20of%20Time%20is%20the,and%20veteran%20trees%20in%20England.>

6th Carbon Budget Report

1.22 The 6th Carbon Budget Report (2020) published by the Climate Change Committee includes among its key recommendations:

By 2035, 460,000 hectares of new mixed woodland are planted to remove CO₂ and deliver wider environmental benefits. 260,000 hectares of farmland shifts to producing energy crops. Woodland rises from 13% of UK land today to 15% by 2035 and 18% by 2050.

County Durham Plan (CDP)

1.23 The recognises the important contribution that trees, woodlands and hedges make to the beauty, diversity and distinctiveness of our rural landscapes and the beauty and liveability of our townscapes. The CDP also understands the essential role trees, woodlands and hedges have in relation to climate change, carbon capture, reducing flood risk and providing habitats for both rare and common species. This SPD will primarily provide detailed guidance to support Policy 40 (Trees, Woodlands and Hedges) of the County Durham Plan, although it will also provide guidance relevant to other policies within the plan including:

- Policy 3 (Ayckley Heads)
- Policy 5 (Durham City’s Sustainable Urban Extensions)
- Policy 8: (Visitor Accommodation)
- Policy 13 (Equestrian Development)
- Policy 16 (Durham University Development, Purpose Built Student Accommodation and HMOs)
- Policy 26 (Green Infrastructure)
- Policy 29 (Sustainable Design)
- Policy 38 (North Pennines Area of Outstanding Natural Beauty)
- Policy 39 (Landscape)
- Policy 41 (Biodiversity and Geodiversity)
- Policy 42 (Internationally Designated Sites)
- Policy 43 (Protected Species and Nationally and Locally Protected Sites)
- Policy 58 (Preferred Areas for Future Carboniferous Limestone Extraction)

1.24 Policy 40 (Trees, Woodlands and Hedges) states:

Trees

Proposals for new development will not be permitted that would result in the loss of, or damage to, trees of high landscape, amenity or biodiversity value unless the benefits of the proposal clearly outweigh the harm. Where development would involve the loss of ancient or veteran trees it will be refused unless there are wholly exceptional reasons and a suitable compensation strategy exists.

Proposals for new development will be expected to retain existing trees where they can make a positive contribution to the locality or to the development, maintain adequate stand-off distances between them and new land-uses, including root protection areas where necessary, to avoid future conflicts, and integrate them fully into the design having regard to their future management requirements and growth potential.

Where trees are lost, suitable replacement planting, including appropriate provision for maintenance and management, will be required within the site or the locality.

Where applications are made to carry out works to trees in Conservation Areas or that are covered by a Tree Preservation Order, they will be determined in accordance with the council's Tree Management Policy Document (or any subsequent revisions)(149).

Woodlands

Proposals for new development will not be permitted that would result in the loss of, or damage to, woodland unless the benefits of the proposal clearly outweigh the impact and suitable replacement woodland planting, either within or beyond the site boundary, can be undertaken.

Proposals for new development resulting in the loss or deterioration of ancient woodlands as shown on the policies map, will be refused unless there are wholly exceptional reasons and a suitable compensation strategy exists. Proposals affecting ancient woodland (including planted ancient woodland sites) not previously identified as such, will be subject to the same considerations.

Proposals for new development will be expected to maintain adequate stand-off distances between woodland and new land-uses to avoid future conflicts, and integrate them fully into the design having regard to their future management requirements and growth potential.

Hedges

Proposals for new development will not be permitted that would result in the loss of hedges of high landscape, heritage, amenity or biodiversity value unless the benefits of the proposal clearly outweigh the harm.

Proposals for new development will be expected to retain existing hedgerows where appropriate and integrate them fully into the design having regard to their management requirements.

Where any hedges are lost, suitable replacement planting or restoration of existing hedges, will be required within the site or the locality, including appropriate provision for maintenance and management.

Neighbourhood Plans

- 1.25 A number of neighbourhood plans sit alongside the County Durham Plan (CDP), forming part of the development plan against which planning decisions must be determined. Many neighbourhood plans contain policies on design, local heritage, sustainability, local green spaces, green infrastructure and other matters to which the protection, planting and management of trees may be relevant. They are supported by local evidence documents and statements which may provide additional information on green infrastructure including trees, woodlands and hedges in the neighbourhood.

County Durham Design Code Supplementary Planning Document (SPD)

- 1.26 Durham County Council are producing a Design Code SPD which first went out for consultation in March 2023. The Design Code aims to inspire design excellence through the creation of locally inspired buildings and places which celebrate and reinforce the unique character, identity, heritage, and culture of County Durham. By providing clarity about what is meant by high quality locally distinctive design - in the context of CDP Policy 29 (Sustainable Design) and requirements set down in other policy guidance - it can aid the planning and implementation of all types and scale of new development. It is intended to support all types of development, from householder works to large scale housing and commercial proposals, although the document is housing focused. It provides commentary and guidance on open spaces and landscaping including trees and hedges.

County Durham Climate Change Strategy and Emergency Response Plan 2022-24

- 1.27 The Climate Change Strategy and Emergency Response Plan sets out the Council's response to the climate crisis. It's actions for the natural environment include:

- Create new native, broadleaved woodlands, increasing County Durham's woodland cover, whilst ensuring that trees are grown in the right place.

- 1.28 It provides information on existing and proposed woodland creation programmes and opportunities. The strategy can be found on the Council's website:

<https://www.durham.gov.uk/media/40220/Climate-Change-Strategy-and-Emergency-Response-Plan-2022-24/pdf/ClimateChangeStrategyAndEmergencyResponsePlan2022-24.pdf?m=637925305338470000>

County Durham Ecological Emergency Action Plan 2022

- 1.29 The Council declared an Ecological Emergency on 6 April 2022. An Ecological Emergency Action Plan was adopted on 14th December 2022. As part of that action plan a Local Nature Recovery Strategy is being produce by the County Durham Partnership, specifically the Ecological Emergency workstream of the Environment & Climate Change Partnership. This SPD, along with the Biodiversity SPD, forms part of the Council's response to the ecological emergency. More information can be found on the Councils website and the County Durham Partnership website.

<https://www.durham.gov.uk/article/28811/Action-plan-to-tackle-ecological-emergency#:~:text=Our%20Cabinet%20will%20be%20presented,in%20biodiversity%20in%20County%20Durham.>

<https://countydurhampartnership.co.uk/environment-climate-change-partnership/vision-and-priorities/ecological-emergency/#:~:text=The%20Ecological%20Emergency%20Workstream%20provides,and%20species%20across%20the%20county.>

County Durham Landscape Strategy (2008)

1.30 The County Durham Landscape Strategy (CDLS) is the council's adopted strategy for the landscape and is a material consideration for the council when dealing with planning applications. The Strategy maps the sensitivity of different areas to woodland creation and identifies priority areas for new planting. It contains objectives for woodlands and forestry under the following headings:

- the condition and isolation of ancient semi-natural woodlands
- conserving and managing existing woodlands
- forest design
- supply and utilisation of woodland products
- woodland expansion.

1.31 the Strategy also contains objectives for field boundaries under the following headings:

- Hedgerow removal
- Neglect and abandonment
- Hedgerow and headland management
- Hedgerow and field trees
- New hedges in the landscape

More information can be found in Section 6 below. The strategy can be found on the Council's website: <https://durhamlandscape.info/durham-landscape/woodland-and-forestry-2/>

North East Community Forest Partnership (NECFP)

1.32 The County Council is a member of the North East Community Forest Partnership (NECFP). The Community forest covers a substantial area in the north and east of the county, together with areas in neighbouring authorities to the north. The NECFP was established in 2021 with the long term goal of increasing canopy cover across the area to 30% by 2050.

Other considerations

1.33 There are also a number of regulatory documents and legal controls which help to protect our green infrastructure. These include the protection of trees through Tree Preservation Orders and in Conservation Areas, felling licences and the Hedgerow Regulations. More detail is provided on how these controls are administered within this SPD.

Next Steps

- 1.34 This document will be consulted on for a period of 6 weeks from 13 January to 24 February.
- 1.35 Following the consultation, your comments will be reviewed, and officers will prepare responses in a Consultation Statement.
- 1.36 Your responses, along with the Council's responses to the consultation, will inform the re-drafting of the SPD. The Trees, Woodlands and Hedges SPD will be taken to the respective Councils' Cabinets for approval before being consulted on for a further six weeks. The Consultation Statement will be published alongside the SPD so that you can read our responses to your comments.
- 1.37 Following the second consultation, comments will again be reviewed with appropriate amendments made to the SPD before it goes to Cabinet for adoption.
- 1.38 Once adopted, the SPD will inform planning decisions in County Durham.

2 Background

Trees in County Durham

- 2.1 The extent of tree cover in the county has been mapped using i-Tree Canopy which generates figures by ward for the area covered by tree canopy using random sampling. This gives an overall figure for the County of 22,937 hectares or 10.3% of the land area. Woodland cover in the County is estimated as being around 8.58% of the total land area based on 2019 Forestry Commission data. The difference between the two figures shows the contribution trees outside of woodlands make to overall tree cover. These include hedgerow, field, parkland and riverside trees, trees along rural highways and urban streets, and trees in urban parks, cemeteries, private gardens, and open spaces.
- 2.2 More information on trees in the County can be found on the Durham Landscapes website: <https://durhamlandscape.info/durham-landscape/trees/>

Ancient and veteran trees

- 2.3 Ancient trees are those that have passed beyond maturity and are old in comparison with other trees of the same species. Great age gives these trees considerable aesthetic and cultural value and creates complex and irreplaceable habitat for a range of species. During the later stages of life, trees are progressively colonised by fungi that change the properties of wood and large quantities of dead and dysfunctional woody tissue accumulate. As a result of wood decay and natural damage a variety of 'veteran features' develop, including trunk hollowing, branch cavities, live stubs, shattered branch ends, loose bark, sap runs and a range of rot types.



Figure 1. Ancient oak tree | Ancient Tree Inventory

- 2.4 These features provide a range of deadwood habitats many of which are specific to a range of invertebrates including saproxylic invertebrates that are dependent on the presence of dead or decaying wood. Different types of decay provide different niche habitats for these specialised and rare invertebrates, some of which are interdependent with each other and often have limited mobility. The longer these features are in place the greater the diversity of colonising species. The scale, variety, complexity and longevity of these habitats in ancient trees makes them irreplaceable. Veteran trees are trees that lack the great age of ancient trees but exhibit a similar quantity and quality of those ‘veteran features’ and associated habitats.



Figure 2. Veteran beech tree | DCC

- 2.5 More information on ancient and veteran trees can be found on the websites of the Woodland Trust and the Ancient Tree Forum: <https://www.ancienttreeforum.org.uk/>, <https://www.woodlandtrust.org.uk/trees-woods-and-wildlife/british-trees/ancient-trees/>

Identifying ancient and veteran trees

- 2.6 Ancient and veteran trees are given a high level of protection in the planning system and it is important to distinguish between these and trees that are simply old or mature. Ancient and veteran trees are defined in NPPF as:

A tree which, because of its age, size and condition, is of exceptional biodiversity, cultural or heritage value. All ancient trees are veteran trees. Not all veteran trees are old enough to be ancient but are old relative to other trees of the same species. Very few trees of any species reach the ancient life-stage (Annexe 2: Glossary).

They are described in Planning Practice Guidance (PPG) as:

Ancient trees are trees in the ancient stage of their life. Veteran trees may not be very old but exhibit decay features such as branch death or hollowing. Trees become ancient or veteran because of their age, size or condition. Not all of these

three characteristics are needed to make a tree ancient or veteran as the characteristics will vary from species to species.

- 2.7 There is some variation in those definitions and descriptions in respect of whether, to be considered veteran, trees need be old, or old for their species, or to be of a large size. For a tree to be considered veteran in the way the term is used in NPPF it needs to be irreplaceable as a habitat, and that is more likely to be the case for trees that are large and old for their species. Mature trees with only a limited range of veteran features and forms of decay that are commonplace and supporting only common invertebrate species are unlikely to qualify as veteran in this understanding of the word (but see 'biodiversity value' below).
- 2.8 The Ancient Tree Inventory (ATI) records ancient, veteran and notable trees. It is compiled from information provided by members of the public and only records a proportion of ancient or veteran trees. It can be viewed on an interactive map on the Woodland Trust website: [Ancient Tree Inventory - Woodland Trust](#). The ATI should be consulted to identify any important features that have already been recorded.
- 2.9 Tree surveys undertaken for development (see Section 3) should identify ancient and veteran trees. In some cases it may be necessary for potential veteran trees to also be surveyed by an experienced entomologist to determine whether they provide exceptional value for dead wood invertebrates.
- 2.10 Features characteristic of ancient and veteran trees include:
- a large girth for the species
 - major trunk cavities or progressive hollowing
 - naturally forming water pools
 - decay holes
 - physical damage to trunk
 - bark loss
 - large quantity of dead wood in the canopy
 - sap runs
 - crevices in the bark, under branches or on the root plate sheltered from direct rainfall
 - fungal fruiting bodies (e.g. from heart rotting species)
 - epiphytic plants
 - an 'old' look
 - high aesthetic interest

Other trees of high landscape, amenity and biodiversity value

- 2.11 Policy 40 places importance on retaining trees of high landscape, amenity or biodiversity value. Most trees make a positive contribution to the landscape or townscape, but some are of particularly high value. These include trees covered by Tree Preservation Orders, mature trees that make a notable contribution to the visual amenity of an area, rare native trees, and trees of historical or commemorative importance.



Figure 3. Mature trees | Google Street View

2.12 The landscape and amenity value of individual trees needs to be assessed on a case-by-case basis and should be determined by a range of factors similar to those used in deciding whether trees are worthy of TPO (7.12) and include:

- size and form
- future potential - including condition, life expectancy and sustainability in its location
- rarity, cultural or historic value
- contribution to, and relationship with, the landscape or townscape
- contribution to the character or appearance of a conservation area, and
- function as part of an area's green infrastructure.

2.13 Large trees are of particular value. In general terms, the larger the tree and its canopy the greater the environmental and landscape benefits.



Figure 4. Benefits of trees in relation to canopy size | DCC

- 2.14 In many of our older towns and villages, and around our listed buildings, older trees are a living component of their heritage value. Many are contemporary with the historic buildings and structures or have become a valued part of their evolved setting. The contribution of trees to the character of a conservation area may be referenced in character appraisals, some of which are available online on the council's website: <https://www.durham.gov.uk/conservationareas>
- 2.15 The biodiversity value of trees is influenced by a range of factors including:
- rarity of the tree or species associated with it
 - value as roosting / hibernating / feeding habitat for protected species
 - contribution to wider ecological networks
 - quality of associated ground flora
 - habitat value for fungi, epiphytes, lichens and dead-wood invertebrates
- 2.16 While the condition of a tree may be a factor in assessing value it should be noted that, as with veteran trees, many features that may be considered defects may contribute to the biodiversity value of a tree. There is a danger in undervaluing trees that have the potential to turn into the next generation of veterans. A distinction needs to be made between decay features, process and organisms that are a natural and sustainable part of the ageing process of a tree, and those, in many cases a response to other forms of damage or stress, that are likely to compromise the integrity of a tree in the shorter term.

Woodlands in County Durham

- 2.17 Woodland cover is relatively low in County Durham, around 8.58% compared to the average for the UK of around 13% and for England of around 10%. This is partly due to the fact that woodlands are absent from the upland moors which make up a substantial proportion of the County. Some of the County's lowland and upland fringe landscape are well wooded and closer to the national average.
- 2.18 Ancient semi-natural woods occupy around 1.3% of the County by area. Oak and Oak-birch woodlands are typical of the acidic and neutral soils that cover much of the county. Ash woodlands are found on the limestones of upland gills and ravines and coastal denes. Fragments of Juniper woodland survive in the moorland margins, including one of the largest stands of Juniper in Britain in the Moor House - Upper Teesdale National Nature Reserve. Alder woodlands occur locally on wetter ground.
- 2.19 The majority of woodlands in the county are plantations, established for timber, landscape, amenity, shelter and game. Many older woods were planted with natives or introduced broadleaves like beech and sycamore. The planting of conifers such as Scots Pine and Larch, often with local markets for pit-wood in mind, became widespread in the C19th. This continued into the C20th with the development of large Forestry Commission forest including Hamsterley Forest and The Stang in the upland fringes where Sitka Spruce is an important commercial species.

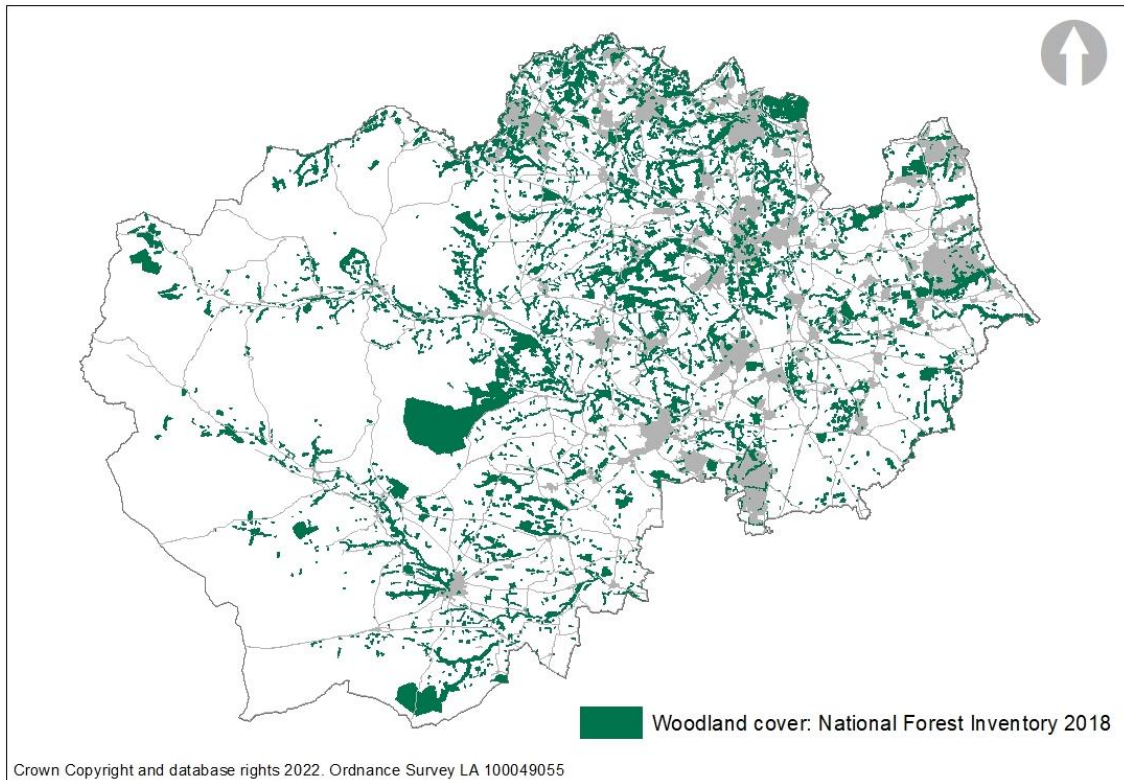


Figure 4. Woodlands in County Durham | DCC

- 2.20 Around a third of the County's woodlands are in public ownership, with the Forestry Commission owning the greater part of this. The County Council owns and manages around 1800 hectares of woodland, much of this on reclaimed former colliery land. Many new woodlands have been planted on council land in recent years as part of landscape partnerships including the Great North Forest and the Heritage Lottery funded Mineral Valleys and Land of Oak and Iron projects together with many planted in partnership with the Woodland Trust including the Jubilee Woods project. Third sector organisations including the Woodland Trust and Durham Wildlife Trust own or manage a number of woodlands including ancient woods and new native woods.
- 2.21 More information on woodlands in County Durham can be found on the Durham Landscape website: <https://durhamlandscape.info/durham-landscape/woodland-and-forestry/>

Ancient woodlands

- 2.22 Ancient woodlands are areas of woodland that have been wooded continuously since at least 1600 AD. Many will have existed for centuries before that. As a result of their relative stability as habitats they support unique and complex communities of plants, fungi, insects and other microorganisms. They are also important for their cultural, historical and landscape value, the capture and storage of carbon in their soil and biomass, their role as a bank of genetic diversity, and their contribution to recreation, health and well-being.

- 2.23 Ancient semi-natural woods (ASNW) are ancient woodlands of mostly native tree species, usually derived from natural regeneration or coppicing. They often include old-growth characteristics such as ancient and veteran trees and large diameter standing and fallen deadwood. They are dynamic ecosystems that can include many other habitat types such as species rich grassland, heathland, wetland and freshwater systems. Many will have been managed or exploited by humans in their past, and some have been modified in varying degrees by planting, felling or grazing, but natural processes have been a primary influence on their character.

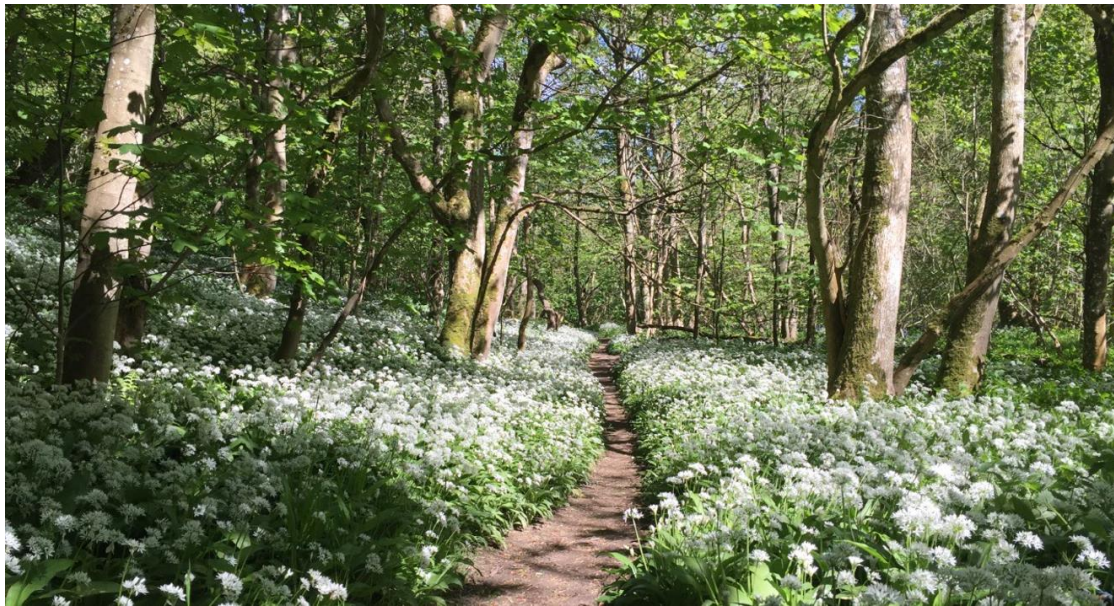


Figure 6. Ancient Woodland at Deepdale Woods | DCC

- 2.24 Not all trees in ancient woodland are ancient or old as they are continuously being replaced by natural regeneration. Although ancient woodlands are defined as having been wooded continuously this does not mean there has been continuous tree cover across the whole site. Open ground, both temporary and permanent, can be an important component of ancient woodlands.
- 2.25 Plantations on ancient woodland sites (PAWS) are ancient woodland sites that have been converted to plantations dominated by non-native tree species. These often retain some remnant features characteristic of ASNW such as undisturbed soils, ground flora, fungi and invertebrates, particularly along rides and watercourses, or pre-plantation native trees.
- 2.26 Other distinct forms of ancient woodland are Ancient Wood Pasture and Parkland (AWPP) and Infilled Ancient Wood Pasture and Parkland (IAWPP). These are derived from the traditional practice of managing trees in tandem with grazing, characteristically with at least some open grown or pollarded veteran trees or shrubs, old-growth characteristics and diverse and dynamic open and open-wooded habitats. IAWPP are woodlands where the open habitats have been infilled, either through natural regeneration or planting, resulting in closed canopy woodland. Many of these

do not appear on inventories of ancient woodland because their low tree density does not register as woodland on historic maps.



Figure 7. Historic parkland at Raby Castle | DCC

- 2.27 Ancient Woodlands make up around 20% of the County's woodlands. Most lie on land unsuitable for agriculture and are typical of steep valley sides, denes and river gorges and along the banks of rivers and streams. In the uplands of the county many native woodland types are transitional with open habitats of heath and fell and both small woodlands and ancient wood pastures in those areas are likely to be under-recorded. The county contains a large number of historic parklands including many older parks that contain ancient and veteran trees.
- 2.28 'Ancient woodland, ancient trees and veteran trees: advice for making planning decisions' is the Natural England and Forestry Commission standing advice for ancient woodland. It is a material planning consideration for local planning authorities (LPAs). This can be found on the Government website: <https://www.gov.uk/guidance/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions#ancient-woodland>
[Identifying ancient woodland](#)
- 2.29 Ancient woodlands are given a high level of protection in the planning system and it is therefore important to be able to identify them accurately. The majority of ancient woodlands in the county are identified on inventories of ancient woodland. These are not definitive and do not record small sites. Natural England publish an Ancient Woodland Inventory (AWI) which can be viewed online on the Defra Magic map system: <https://magic.defra.gov.uk/>
- 2.30 The AWI was based on an inventory drawn up by the Nature Conservancy Council (NCC) in the 1980s on paper maps and later digitised in the mid-1990s by the Forestry Commission. This did not capture sites of less than 2 hectares and in parts of the county has been found to be only around 40% accurate in predicting the presence of ancient semi-natural woodland on the ground. Since 2006, Natural England and

partners have continued to update the AWI. The updated inventory identifies more areas of ancient woodland in England and now includes woodlands smaller than 2 hectares. The Government is committed to fully updating the AIA in England. This will include mapping smaller ancient woodland sites of >0.25 hectares and introducing new categories for Ancient Wood Pasture and Parkland and Infilled Ancient Wood Pasture and Parkland.

- 2.31 The AWI was reviewed in County Durham in 2010 as part of the work of the Durham Biodiversity Action Partnership (BAP). A new County Durham Inventory of Ancient Woodland was created. This was largely based on analysis of historical maps and map-based data such as place names but when used in the field has been found to be around 98% accurate. It is this data which is shown on the County Durham Plan Policies Map to which Policy 40 refers.

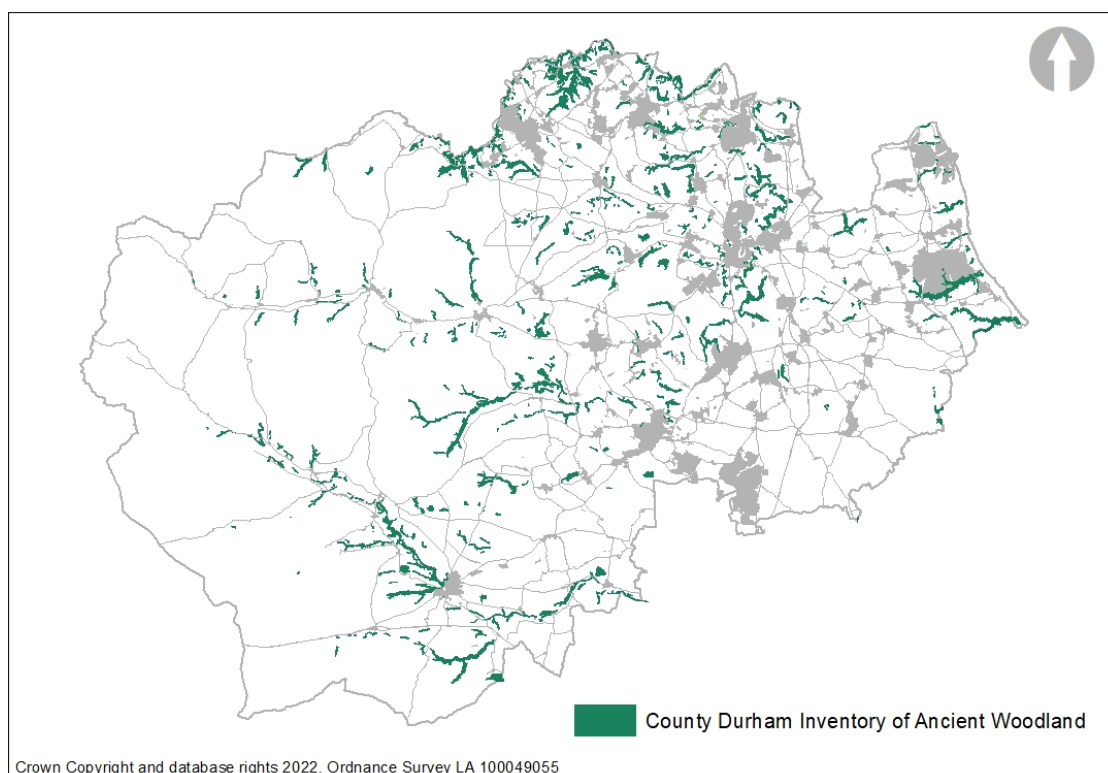


Figure 8. County Durham Ancient Woodland Inventory | DCC

- 2.32 This can be viewed as an interactive map on the Council's website: <https://maps.durham.gov.uk/localplan/default.aspx>
- 2.33 Natural England's wood pasture and parkland inventory includes some known ancient sites and can be viewed online on the Magic map system.
- 2.34 As inventories are not definitive it will often be necessary to refer to both and to survey individual woods and wood pasture on the ground to find evidence of their status. This is something best undertaken by qualified ecologists. The composition of the ground flora can help identify ancient woodlands as some species are strong indicators of a

continuity of woodland habitat. Where a number of key indicator species are found together, there is a high likelihood that the wood in which they occur is of ancient origin. Some common and easily recognisable species in County Durham include bluebell, dog's mercury, primrose, ramsons (wild garlic), wood anemone and wood avens.



Figure 9. Ancient woodland ground flora | DCC

- 2.35 While indicator species such as these are useful for identifying most ancient woodlands there are some native woodland plant communities that have a naturally species-poor ground flora. Absence of these species does not always therefore indicate that a woodland is not ancient. More information on native woodland plant communities in County Durham and how to identify ancient woodlands can be found on the Durham Landscapes website:

<http://www.durhamlandscape.info/article/10208/Native-Woodland-in-County-Durham>.

A full list of species associated with ancient woodland sites in County Durham can also be found on the Durham Landscape website: [Ancient Woodland Indicators](#).

Other woodlands

Long-established woodlands

- 2.36 In addition to ancient woodlands the county contains many long-established woodlands that have been present since at least 1893. While not ancient, these woodlands are still very important. They have had many decades to develop rich biodiversity and they often contain important old-growth features and deliver a range of ecosystem services. The Government intends to create an inventory of long-established woodland for England to help identify these woodlands to inform future protection. They will be consulting on protection mechanisms in the planning system, recognising their high ecological and societal value.

Other semi-natural woodlands

- 2.37 Other semi-natural woodlands may not be long established but may be comprised largely of native species and other semi-natural features including deadwood and native ground flora. These include woodlands that have developed on disturbed ground, particularly on former mining and industrial sites, or on grassland or heathland where grazing has been abandoned. Also included are riverside woodlands that have changed their form as the channel of the river has moved but are the product of largely natural processes and maintain many of the characteristics and species assemblages of ancient woodland.

Woodlands in historic parks and designed landscapes

- 2.38 Some woodlands were planted in the development of designed parks and gardens. The ecological value of these woodlands varies. Some may include areas of ancient woodland or wood pasture, and many are long-established. Some are more recent. Their landscape and heritage value are often significant. A map of registered historic parks and gardens can be viewed online on the Defra Magic map system: <https://magic.defra.gov.uk/>. A map of landscapes identified on the County Durham Local List of Historic Parks, Gardens and Designed Landscapes can be found on the Council's website: <https://maps.durham.gov.uk/OLBasic2/Index.aspx?appid=75>

Recently established native woods, wood pasture and parkland

- 2.39 Recently established native woodlands or wood pasture and parkland are not as valuable as ancient, long-established or other semi-natural woodland. They do, however, contribute to biodiversity and nature recovery as they can become very rich places for nature. They can develop complex mosaics with open space - providing structures, microhabitats and species that may not be as well represented in older woodlands or wood pastures and parklands. Many woodlands have been established in recent years as community woodlands and particularly in the former coalfield areas of the County. Although immature as habitats they have considerable recreational value.

Productive woodlands

- 2.40 Many of the county's woodlands are productive woodlands planted and managed for the harvesting of timber, often managed by successive phases of thinning, clear felling and restocking in compartments. These provide a range of environmental, social and economic benefits but may be less sensitive to some types of impacts from development.

Orchards

- 2.41 Orchards are often overlooked as they are typically small features. They can include habitat similar to that of wood pasture and parkland and may contain heritage varieties of fruit trees distinctive to the area.

Hedges in County Durham

- 2.42 Field boundaries in the County date from many periods and include both ancient and modern features. Many survive from the medieval landscape, and some perhaps from its earlier roots, but the landscape is dominated by hedgerows and walls established in

successive periods of enclosure between the 16th and 19th centuries. In some areas hedgerows from one period are characteristic, including areas laid out in the reclamation of opencast coal sites and colliery land in the C20th, but as often field patterns are a complex multiperiod mosaic which has developed piece-meal over the centuries. Hedges are particularly characteristic of the lowlands of the county, giving way to dry stone walls in the uplands, with both found together in the transitional landscapes of the upland fringes.



Figure 10. Early post-medieval enclosures at Cotherstone | Google

2.43 A detailed survey of hedges in the County was carried out in 2006 (Durham Hedgerow Survey) funded by Defra and Durham County Council. Key findings of that survey include:

- The estimated length of hedgerow in County Durham is 9100km.
- Thirty-five percent of hedgerows are classed as species rich (i.e. contained four or more species per 30m section): the most frequently occurring shrub species were hawthorn, ash, blackthorn and elder.
- Around half of the surveyed hedges contained isolated hedgerow trees; the most common tree species were ash, sycamore and pedunculate oak.
- Only 17% of the hedges surveyed were in 'favourable condition' and 9% were identified as 'remnant'.
- Neglect was the biggest threat to hedges with 62% showing no signs of management.
- Hedgerow trees were in decline and an estimated 580 trees a year need to be recruited to maintain the current stock.

2.44 Since the time of survey Ash Die-back has become widespread. Ash is the commonest hedgerow tree in the county accounting for around 60% of all hedgerow trees and present as a tree in >70% of all hedges. The effects of the disease are likely to be substantial.

- 2.45 More background information on hedges in the county can be found on the Durham Landscape website: <https://durhamlandscape.info/durham-landscape/hedgerows/>
- 2.46 The Report of the Durham Hedgerow Survey can be downloaded from the council's website: <https://www.durham.gov.uk/media/3704/Durham-Hedgerow-Survey-2006/pdf/DurhamHedgerowSurvey2006.pdf?m=636735641958770000>

Hedges of high landscape, heritage, amenity or biodiversity value.

- 2.47 Policy 40 places importance on retaining hedges of high landscape, heritage, amenity or biodiversity value. The value of a hedge will depend on a range of factors which need to be assessed on a case by case basis and will always entail an element of professional judgement.



Figure 11. Hedgerows in the landscape | DCC

- 2.48 There is no national standard approach to assessing the value of hedges. The Hedgerow Regulations 1997 contain a set of criteria (Schedule 2) for determining 'important' hedgerows for the purposes of the legislation. These are constrained by the requirements of its parent legislation (Section 97 of the Environment Act 1995). The criteria have some functional limitations which lead to inconsistent outcomes in practice, largely due to the reliance on variable documentary sources and prescriptions as to their use. While the use of Schedule 2 criteria can be informative as to the value of a hedge they are not definitive. Some of the factors likely to affect the value of a hedge are set out below.

Landscape

- 2.49 The landscape value of a hedge will depend in part on the contribution it makes to the character of the wider landscape and the local neighbourhood. Factors listed below for heritage, amenity and biodiversity also contribute to landscape value. Hedges of particularly high value will include those that:
- are a key characteristic of the landscape type
 - form part of relatively intact field boundary networks
 - are conspicuous or notable in views of the landscape

- contain hedgerow trees, hedge banks or ditches

More information on landscape character can be found in the County Durham Landscape Character Assessment on the Durham Landscapes website.

<https://durhamlandscape.info/>

Heritage

2.50 The heritage value of a hedge will depend in part on its age and the contribution it makes to our understanding of the history of the landscape it forms part of. Hedges of particularly high value will include those that:

- mark the boundaries of historic parishes, townships, parks, estates or manors
- are associated with historic monuments and listed buildings
- form an integral part of pre-parliamentary enclosure field systems
- follow historic roads, lanes and paths

Amenity

2.51 Hedges are likely to be of high amenity value where they are notable in views from public vantage points and particularly where they lie close to roads, public rights of way and public open space, or where they screen incongruous or unsightly features.

Biodiversity

2.52 The Biodiversity Metric includes calculations for the value of hedgerows and lines of trees assessed against a range of factors. These are not exhaustive. While the 'distinctiveness' categories used in the Metric and scores assigned for 'habitat units' can be informative as to the value of a hedge they are not definitive. Key factors in giving a hedge high biodiversity value include:

- species diversity
- the presence of hedgerow trees, banks and ditches
- the physical condition of the hedge and its ground flora
- the presence of rare, endangered, vulnerable or protected species
- a functional role in the landscape connecting other features and habitats.

3 Planning for trees woodlands and hedges in development

Pre-application advice

- 3.1 The Council encourages applicants to use its pre-application advice service to help find out whether proposals are likely to be acceptable and identify key issues. More information on the service can be found on the Council's website.
<https://www.durham.gov.uk/article/8280/Planning-advice-and-enquiries>

The planning application

- 3.2 The standard planning application form contains a section on Trees and Hedges (section 15). This asks the following questions:
- Are there trees or hedges on the proposed development site? and/or
 - Are there trees or hedges on land adjacent to the proposed development site that could influence the development or might be important as part of the local landscape character?
- 3.3 Whether trees or hedges on adjacent land could influence the development will depend partly on their location, size and species and partly on the nature of development. Further information on this is given in the sections below.
- 3.4 For householder applications the standard form asks the following questions:
- Are there trees or hedges on the property or on adjoining properties which are within falling distance of the proposed development. If yes, please mark their position on a scaled plan and state the reference number of any plans or drawings.
 - Will any trees or hedges need to be removed or pruned in order to carry out your proposals.
- 3.5 If the answer to any of these questions is "Yes" you will need to consider what the implications of the development are for these features and submit the necessary information to support the application. The council's planning validation requirements state that a tree and hedgerow assessment is required for *all development where there are mature or semi-mature trees/hedgerows within the site or on land adjacent that could influence or be affected by the development (including street trees)*.
- 3.6 The contents of a tree and hedgerow assessment will vary depending on the nature of the development and its potential affects, but it should be based on the methodology set out in the British Standard BS 5837: 2012 Trees in Relation to Design, Demolition and Construction- Recommendations.
- 3.7 For full planning applications the assessment will typically need to contain the information provided in an Arboricultural Impact Assessment (see 3.65) rather than a pre-development tree survey. If there is any uncertainty about whether a tree survey is needed, or the level of assessment required you should contact the Council for advice.

British Standard BS 5837:2012

3.8 The British Standard provides detailed guidance on the protection of trees during the development process and will be the main point of reference for the Council when determining applications. Information relating to trees that accompanies a planning application should be structured in a way that reflects the guidance and includes, where necessary, the following elements:

- Tree Survey
- Tree Constraints Plan (TCP)
- Arboricultural Impact Assessment (AIA)
- Tree Protection Plan (TPP)
- Arboricultural Method Statement (AMS)

3.9 The box below shows a summary of the process.

Summary of process

1. Carry out a **Tree Survey**. Categorise trees to identify those worthy of retention.
2. Prepare a **Tree Constraints Plan** (TCP) showing the space needed to retain those trees including Root Protection Areas and the existing and future spread of canopies.
3. Use the Tree Constraints Plan and advice from your arborist to design an initial site layout that avoids harm to those trees.
4. Consider the demolition and construction process and how the trees can be protected during those activities.
5. Identify opportunities for new or replacement tree planting.
6. Produce a finalised site layout.
7. Prepare a **Tree Protection Plan** (TPP) showing Root Protection Areas, a Construction Exclusion Zone, protective barrier fencing and ground protection.
8. Prepare an **Arboricultural Impact Assessment** (AIA) to assess the effects of the development on trees.
9. Prepare an **Arboricultural Method Statement** (AMS) to detail any special measures required to protect or manage trees.
10. Submit those documents with the Planning Application
11. Planning approval granted with tree protection conditions referring to the measures set out in the AIA TPP and AMS
12. Prior to demolition / construction erect tree protection fencing around Construction Exclusion Zone and any other identified measures.
13. Contact Tree Officer to approve tree protection measures prior to works commencing

14. Ensure good site supervision to maintain and implement all measures detailed in the TPP/AIA/AMS
15. Contact Tree Officer should any changes be required to tree protection measures
16. Implement your tree planting / landscaping scheme.

Tree Survey

- 3.10 It is important to gather information about the location, condition and value of trees and hedges in and around the site early in the development process. This will allow you to make informed decisions about if and how the site might be developed and help you optimise the retention of trees. In most cases you will need the advice of an arboricultural consultant and you should engage their services at an early stage.
- 3.11 In preparing any development proposals you will need to undertake a land survey which shows site levels and the location of features such as buildings, boundary features, hard surfaces and vegetation. Where mature or semi-mature trees/hedgerows are present within the site or on land adjacent that could influence or be affected by the development this needs to be accompanied by a detailed Tree Survey. This should be undertaken by a suitably qualified arboriculturist and should include all trees on the proposed development site and any significant trees – that is mature or semi-mature trees - located within 10m of the site boundary. Trees outside of the site may have root systems within it and may have the growth potential to affect development either now or in the future. It is therefore important that the tree survey captures information on those features. Where direct access for surveying isn't possible, these factors should be estimated.
- 3.12 The tree survey should collect the relevant information specified in BS 5837:2012. Trees should be individually numbered and plotted on a site plan, show the full extent of existing canopies and submitted with an accompanying schedule that relates to the site plan.
- 3.13 Trees should be categorised in accordance with the British Standard, ranging from trees of higher quality to those of lower quality and value, assigning categories of either A, B, C or U and clearly indicated on the accompanying drawings.
 - Category A: Trees of high quality with an estimated remaining life expectancy of at least 40 years
 - Category B: Trees of moderate quality with an estimated remaining life expectancy of at least 20 years
 - Category C: Trees 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: Trees in such a condition that they cannot be realistically retained as living trees in the context of the current land use for longer than 10 years
- 3.14 Root Protection Areas (see below) should be calculated and plotted for all trees. The presence of Tree Preservation Orders should be noted.

Tree Constraints

3.15 The constraint imposed by trees and hedges, both above and below ground, should inform the site layout and design, and these should be mapped on a Tree Constraints Plan. It is important at the outset to understand how development can affect trees in order that the constraints are fully understood and that the design can be tailored to avoid impacts.

Above ground

3.16 Large interventions in the canopy of trees, like heavy crown reductions or crown lifting, carried out either to accommodate a building or allow space for construction can be very harmful to trees. They may remove material the trees need to maintain their health or open up large wounds that invite infection and decay (see Appendix 1: Tree Management). Poor planning and protection can lead to accidental damage during construction leading to bark wounds or torn limbs.

3.17 The removal of individual trees within a group or woodland edge can result in exposure to direct sunlight and cause the scorching of foliage or the splitting of bark. In some cases, it can lead to wind-throw destabilising a wider area. Both pruning and tree removal on the edges of groups or woods can also affect their aesthetic quality and amenity value as these trees often have a fuller canopy.

Below ground

3.18 Many people envisage tree roots as being deep, reflecting the shape of the tree above ground. In reality the majority of tree roots are shallow, lying within around 600mm of the surface, and spread widely, typically extending to at least the extent of the canopy and often to a distance equal to the height of the tree or more. The majority of these roots are very fine; even close to a tree few will be thicker than a pencil.

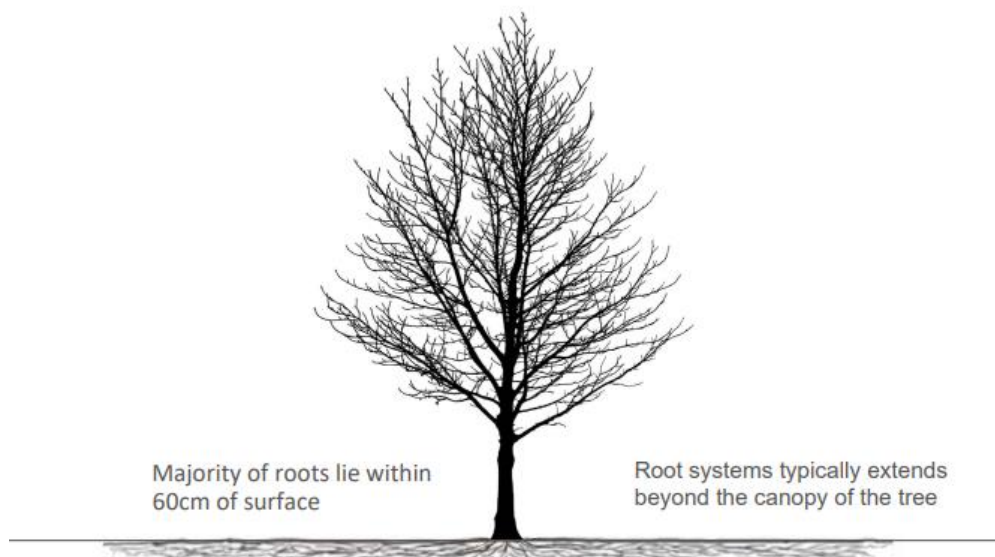


Figure 12. An indication of typical root spread | DCC

- 3.19 Root Protection Areas (RPA) are drawn in tree surveys to broadly identify the extent of the root system. These are calculated by multiplying the diameter of the tree measured at 1.5 above ground level by 12 for trees with a single stem (15 for ancient and veteran trees) and the combined diameters of stems for multi-stem trees. In open environments the root system is calculated as being circular. In more complex environments where they are interrupted by physical obstacles or have been damaged by other interventions such as underground services, they may be more complex in shape.
- 3.20 Roots occupy the volume of soil necessary to meet the tree's requirements for water, oxygen and nutrients. Many roots are very small (less than 0.5mm diameter) and they can often have close associations with soil fungi to increase their ability to forage. These fine roots and fungi are very vulnerable to accidental damage within the RPA. The root system also provides physical stability. The main 'root plate', which provides anchorage, extends to roughly 4 times the diameter of the tree.
- 3.21 Development and associated activities within the rooting environment are generally harmful and mature trees are particularly susceptible. Some of the effects can be immediate, leading to instability, death or dieback in the short term. Other effects may take years to become evident, particularly where damage has introduced decay organisms or reduced the tree's resistance to those already present.

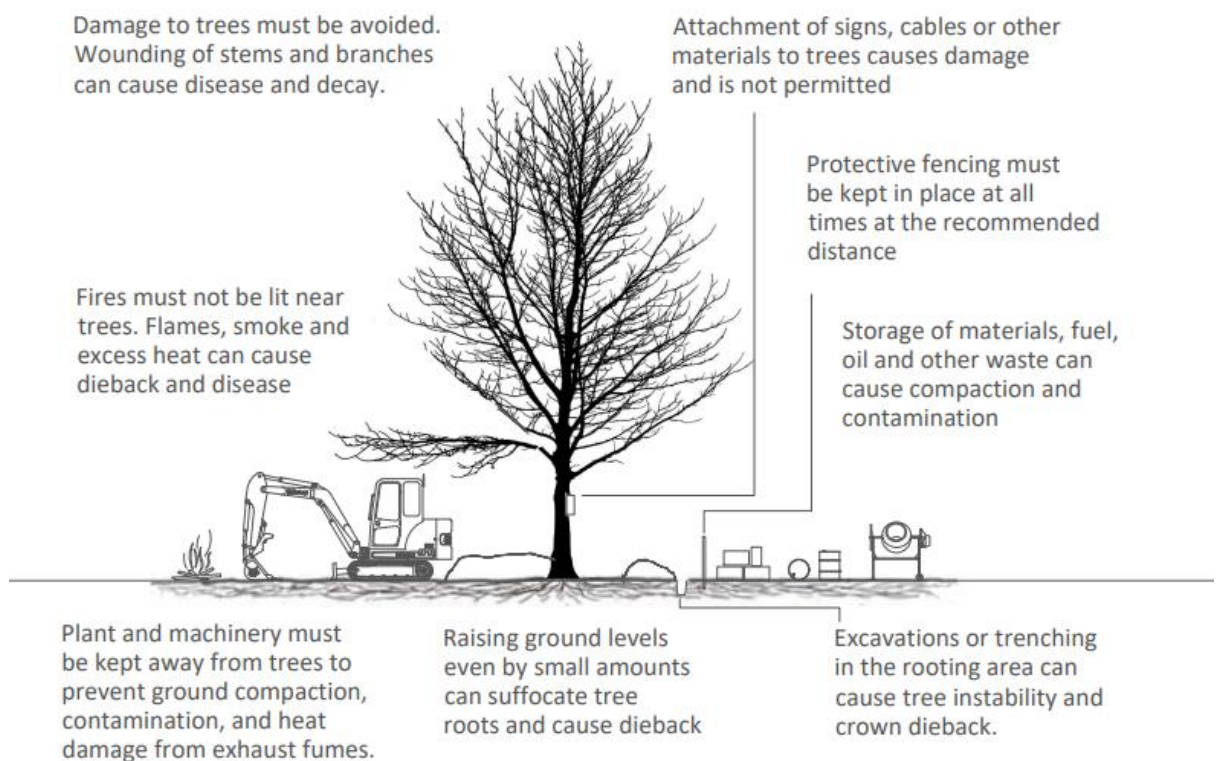


Figure 13. Damaging activities | DCC

- 3.22 The deep excavation needed for the foundations of buildings will completely sever roots and typically destroy the root system beyond that point. The excavations needed for roads and footpaths and the foundations of kerbs can also make substantial incursions onto the rooting environment at depths that will cause similar damage, as can excavation trenches for underground services.
- 3.23 Tree roots are adapted to the existing regime of soil water and gasses. Reductions in ground levels can damage, sever, or expose roots. Increases in ground levels can lead to a reduction in oxygen levels and to the anaerobic decay of organic matter or waterlogging which can both kill roots.
- 3.24 Trees need well-drained, aerated and biologically active soils within which to develop healthy roots. Compaction caused by vehicles and machinery, storage of materials or even heavy foot traffic can damage the soil structure, reducing the exchange of gasses and leading to the death of roots. Covering the ground with impermeable surfaces such as tarmac or concrete can have similar effects. Pollution of the ground from fuel or chemical spillage can be harmful to both the tree roots and soil organisms.
- 3.25 Most trees have a strong relationship with fungi, which provide minerals and water to trees in exchange for sugars. These fungi, known as mycorrhizal fungi, attach to the roots via a fine network of threads called a mycelium, which can extend the rooting system by tens of metres. These fungi are also susceptible to changes in the soil environment.
- 3.26 These factors remain the same whether a tree is free-standing, or forms part of a woodland or a hedge. More detail on the potential effects of development on woodland is given in Section 4.

Shade

- 3.27 The effects of trees on daylight and sunlight can affect the potential use of land. While shade can be a desirable characteristic, and particularly in hot summer weather, it can also adversely affect living conditions in some circumstances. Shade can itself affect trees and hedges, and particularly where tall structures (and in the case of hedges even walls and fences) are constructed to the south. More information can be found in sections 5.

Tree Constraints Plan

- 3.28 The Tree Constraints Plan (TCP) should map the existing canopy of trees and hedges and their future maximum growth potential. It should map the theoretical (circular) or site-specific modified RPAs of all features. It should identify the categories (A, B, C,) of features to inform decisions about their retention and identify those that will need to be removed (U) irrespective of development and are therefore not treated as constraints.
- 3.29 Where shade is likely to be an issue the potential direct obstruction of sunlight can be mapped by plotting a segment, with a radius from the centre of the stem equal to the existing and anticipated mature height of the tree, drawn from due north-west to due

east, indicating the shadow pattern through the main part of the day. For larger or more complex sites tree shadows can be mapped using proprietary software.

Design

- 3.30 At an early stage in the design process a distinction will need to be made between trees hedges and woodlands of high value which it is essential to retain, those that can make a positive contribution to the site which it is desirable to retain, and those of low value or poor condition that it may be impossible or undesirable to retain. These decisions are likely to be critical to how the planning application is assessed against policies and therefore whether it is ultimately successful. Section 2 provides information on how to identify features of particularly high value. Section 4 gives further information on how loss or retention are dealt with in relation to planning policy.
- 3.31 The TCP should be used as a design tool. It will assist in visualising the site constraints to help consider the best use of available space for new development and informing:
- the footprint, layout and orientation of buildings and structures
 - the locations of roads, driveways, footpaths and other surface treatments
 - construction zones required, including all access for vehicles, plant and machinery, compounds and storage areas
 - installation of utilities
 - landscaping proposals
- 3.32 As the potential interaction between many different aspects of the development and these features can be complex, the project arboriculturist should be involved in the ongoing review of layout, architectural, engineering and landscape drawings. All members of the design team should be made aware of the requirements for the successful retention of the retained trees and should make provision for these throughout the development process.
- 3.33 The default position should be that all buildings, structures and new hard surfaces are located outside of the RPA of trees and hedges that are to be retained. Within the RPA there should be no alterations to existing ground levels greater than 50mm and no impermeable surfaces installed that cover more than 20% of the RPA of an individual tree. There should also be no installation of underground services using conventional excavation methods (see below).
- 3.34 Where there is an overriding justification for construction within the RPA there may be technical solutions that avoid or reduce harm to the features. It will need to be demonstrated that the trees can remain viable, and that the loss of RPA can be compensated for in adjacent areas or mitigated by improvements to the soil environment.
- 3.35 Technical solutions for buildings might include pile and beam foundations and suspended floors instead of strip foundations. Solutions for driveways and other hard surfaces might include tree-sensitive 'no-dig' construction using cellular confinement

systems to reduce profile depth and soil loading, with pinned edging materials rather than kerbs, and permeable and/or flexible surfacing. It will need to be demonstrated that these are practical having regard to existing and proposed site levels.

- 3.36 Service runs should be planned from the outset to avoid the RPA of retained trees. Where this is not possible, less invasive techniques such as micro-tunnelling, directional drilling, pipe ramming or impact moling should be used.
- 3.37 Landscape proposals should be designed to have regard to the rooting environment of trees. There should be no deep cultivations or alterations of levels of greater than 50mm within the RPA of retained trees, and no drainage features such as ditches and swales. Introducing competition through heavy underplanting should generally be avoided.

Site planning

- 3.38 The space required to build a development and the potential impact of demolition and construction activities is often overlooked at the design stage and this can lead to unplanned and unnecessary impacts on trees. The default position should be that all demolition and construction activities are located outside of the RPA of trees and hedges that are to be retained.

Demolition

- 3.39 Demolition activities within the RPA should be avoided. Any activities that need to take place within the RPA or affecting the canopy of trees should be identified at the design stage and the impact mitigated appropriately. Consideration should be given to the access requirements and operational clearances of plant and equipment. This might require planned pruning in advance to avoid accidental damage, the use of a height restriction bar to prohibit taller vehicles or increasing the height of protective fencing. Tree-protection fencing (see below) should be erected before demolition works commence. Where this needs to be moved temporarily to accommodate demolition activities this should be planned and shown on the Tree Protection Plan (see below) together with any temporary ground protection measures required which should be detailed in an Arboricultural Method Statement (see below).

Construction

- 3.40 Construction activities within the RPA should be avoided. This includes the erection of site cabins and temporary toilets, scaffolding, crane platforms, contractor parking, trafficking by vehicles and pedestrians, the storage of materials, the mixing of concrete, mortar and plaster and the storage and use of fuels and chemicals.
- 3.41 A Construction Exclusion Zone (CEZ) should be created which is protected from these activities. This should, where practical, include the entire RPA and the area beneath tree canopies and be fenced off by protective barriers for the entire construction period.



Figure 14. Bad practice: construction activities within the CEZ | DCC

- 3.42 A realistic amount of space needs to be allocated for construction activities including access requirements and operational clearances of plant and equipment. Any operations that need to take place within the RPA or affecting the canopy of trees should be identified at the design stage and the impact mitigated appropriately – for example through the use of ground protection measures.
- 3.43 A copy of the Arboricultural Method Statement and Tree Protection Plan should be available on site at all times. For larger schemes a Construction Management Plan (CMP) will be required for the development. This provides an overview of the construction works, their potential impacts on the site and its surroundings and protection / mitigation measures. The CMP should include the tree protection measures identified in the Tree Protection Plan and Arboricultural Method Statement.
- 3.44 All people working on the site including sub-contractors and those working for utilities companies should be made aware of the general principles of tree protection and any specific elements relevant to their work. This should be reinforced with visual displays on site.

Arboricultural Impact Assessment (AIA)

- 3.45 Once the design has been finalised the project arboriculturist will prepare an AIA. This should describe, quantify and evaluate the direct and indirect effects of the development proposal and where necessary recommend or propose appropriate mitigation. It includes the Tree Survey and identifies:
- trees selected for retention, clearly identified and numbered and marked on a plan with a continuous outline

- trees to be removed, clearly identified and numbered and marked on a plan with a dashed outline or similar
- trees to be pruned, clearly identified and labelled or listed as appropriate
- areas for future planting that need to be protected from construction operations in order to prevent the soil structure being damaged
- evaluation of impact of proposed tree losses
- evaluation of tree constraints and draft Tree Protection Plan (TPP)
- issues to be addressed by an Arboricultural Method Statement (AMS), where necessary in conjunction with input from other specialists.

3.46 The AIA should distinguish between the reason for removal of trees, for example those required for arboricultural management and those removed due to conflicts with the development. It should take account of the effects of any tree loss required to implement the design and potentially damaging activities including:

- the removal of existing structures and hard surfacing
- the installation of new hard surfacing
- the installation of services
- excavations or changes in ground level

3.47 It should take into account any potential impacts during the construction phase including those arising from:

- access and parking
- operational activities
- contractor accommodation
- storage of materials, including topsoil.

During the progress of the planning application the AIA, and associated documents such as the TPP and AMS, should be revised to capture the effects and consequences of any significant design changes.

Tree Protection Plan (TPP)

3.48 A Tree Protection Plan should be superimposed on a layout plan showing all buildings, walls, structures, hard surfacing and, where appropriate, finished levels. It should clearly indicate the location of protective fences erected to form a construction exclusion zone around retained trees. It should also show the extent and type of ground protection, and any additional physical measures, such as tree protection boxes or tree-sensitive construction methods, that will need to be installed to safeguard trees or their RPAs where construction activity can't be fully or permanently excluded.

Protective barriers

3.49 The CEZ protecting the RPA of retained trees and hedges needs to be defined by fencing that is both robust and difficult to move. Barriers should be fit for the purpose of excluding construction activity and specification may vary from site to site. In most cases a rigid scaffold framework set into the ground, braced to resist impact and with

weld mesh attached to the uprights and horizontals will be appropriate as detailed in the drawing below.

- 3.50 A lower specification of weld mesh panels on rubber or concrete feet may be acceptable where the site circumstances, and associated risk of damaging incursion into the RPA, do not require that level of protection – for example to provide protection from cars and pedestrians. These need to be assembled with anti-tamper couplers fitted on the inside (tree side) of the fence and internal bracing. BS5837 provides details of acceptable standards. Other fencing specifications will not generally be acceptable.
- 3.51 Prior to development commencing you will need to contact the council's Tree Officer who will inspect and confirm that the fencing is as agreed. A pre-commencement meeting involving your arboricultural consultant and the Tree Officer will often be beneficial.
- 3.52 Once the protective barriers are in place, all weather notices should then be erected on the barrier with words such as, "Construction Exclusion Zone – Keep Out". Barriers should be maintained to ensure that they remain rigid and complete.

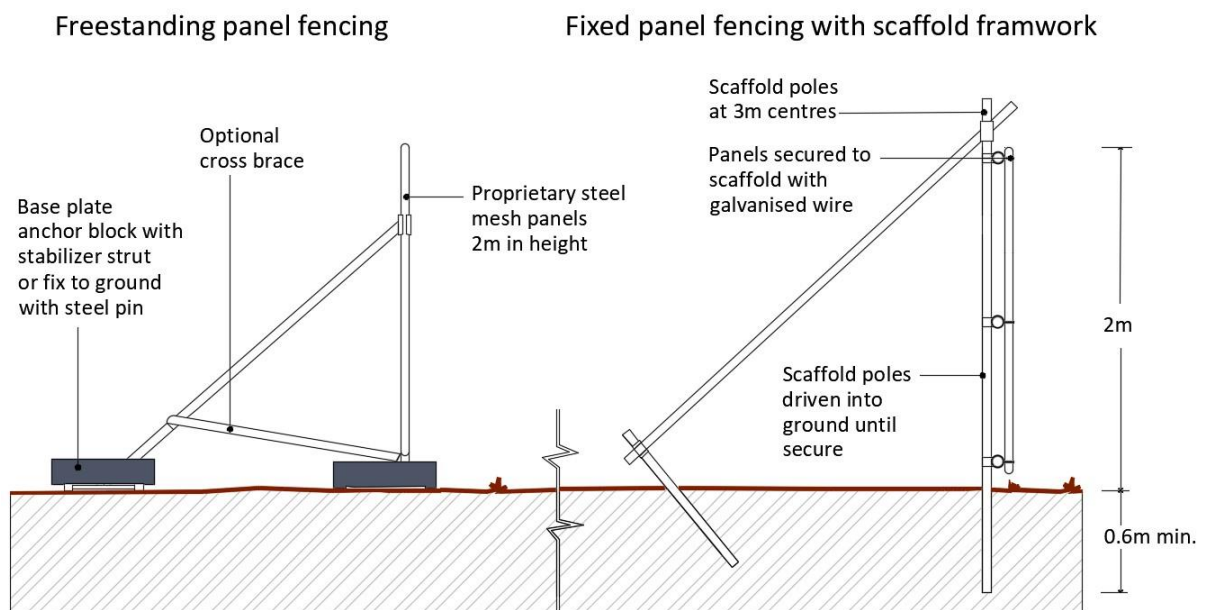


Figure 15. Typical protective fence detail | DCC

Ground protection

- 3.53 Where the site can't be developed without some activities taking place within the RPA of retained trees the incursion should be kept to a minimum and the area protected by appropriate ground protection measures – typically scaffold boards, proprietary inter-linked ground protection boards or reinforced concrete slabs over a layer of woodchip laid onto a geotextile membrane depending on loading. In all cases, the objective should be to avoid compaction of the soil, which can arise from the single passage of a

heavy vehicle, especially in wet conditions, so that tree root functions remain unimpaired. Further information can be found in BS 5837.

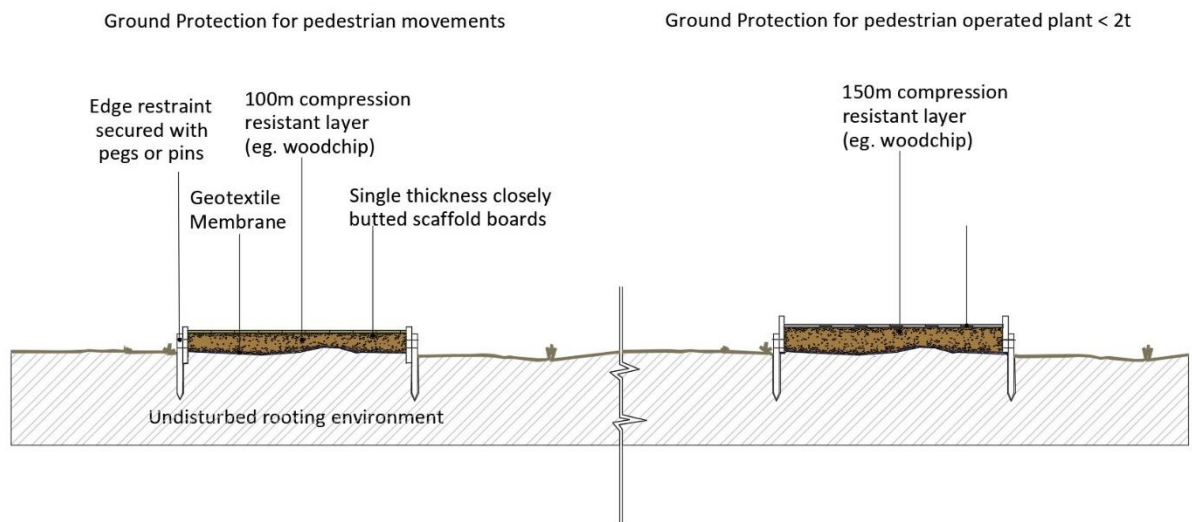


Figure 16 Typical ground protection detail | DCC

No-dig or tree-sensitive construction of hard surfaces

3.54 Where permanent hard surfacing within the RPA is considered unavoidable, site-specific arboricultural and construction design advice should be sought to determine whether it is achievable without significant adverse impact on trees to be retained.

3.55 Hard surfaces laid on sub-bases using cellular confinement systems can sometimes be used within the RPA. These are constructed without digging or the use of intrusive kerbing. Whether they can be practically installed, having regard to site levels, requires careful consideration. Whether the trees can tolerate the installation in respect of the proportion of the RPA affected or factors like salt damage requires specialist arboricultural advice.

- The design should require no excavation other than removal of turf or surface vegetation using hand tools.
- New permanent hard surfacing should not exceed 20% of any unsurfaced ground within the RPA of an individual tree.
- Hard surfaces should be set back >500mm from the stem to avoid deformation. Areas closer to the stem should be filled with granular material of flexible surfacing such as Flexipave.
- Permeable surfaces allow exchange of water and oxygen but can result in waterlogging: land drainage such as sand slitting radial to the tree may be required.
- Where permeable surfaces are used by vehicular traffic a geotextile should be incorporated to reduce contamination by pollutants.
- Where permeable surfaces are to be subject to de-icing salts an impermeable layer should be incorporated to reduce contamination by salts.

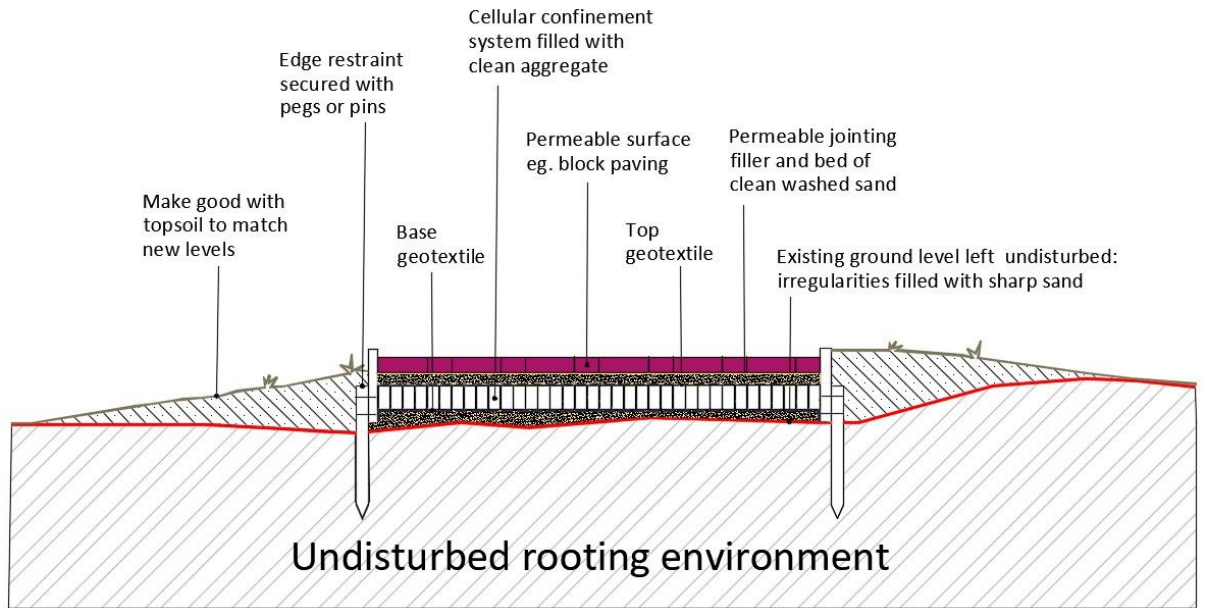


Figure 17 Typical detail of tree-sensitive paved surface | DCC

Services

3.56 Service runs should be planned from the outset to avoid the RPA of retained trees. Where this is not possible, less invasive techniques such as micro-tunnelling, directional drilling, pipe ramming or impact moling should be used where possible.

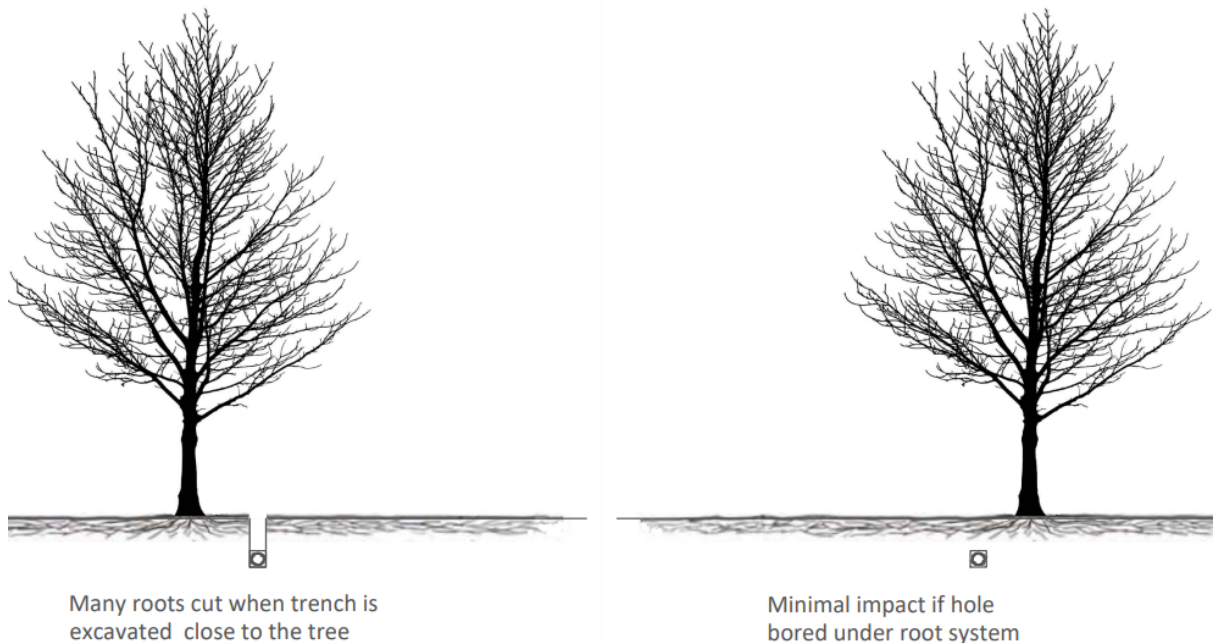


Figure 18. Effects of trenching v boring | DCC

3.57 Where open trenches are required within the rooting zone they should be excavated by hand under the supervision of an arborist. Any roots revealed should be left intact and protected against desiccation by immediate wrapping or sheeting. Excavated soils should be replaced in the order they were removed with subsoil in the base of the trench and topsoil in the upper horizons with sharp sand or soil carefully packed around roots. Damaged roots or those smaller than 25mm requiring pruning should be cleanly cut. This work should ideally be undertaken during the dormant period and not during excessively wet or hot dry weather. Further guidance can be found in NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees produced by the National Joint Utilities Group and available on their website: <http://streetworks.org.uk/wp-content/uploads/V4-Trees-Issue-2-16-11-2007.pdf>

Arboricultural Method Statement (AMS)

3.58 Where any operations are proposed within the RPA or canopy spread (whichever is the greater) of trees to be retained, the works should be described in an Arboricultural Method Statement (AMS) in order to demonstrate that they can be carried out with minimal risk of harm. The AMS should be site and task specific and is typically used to deal with activities such as the following, which may need input from other specialists such as civil engineers.

- demolition, removal of existing structures and hard surfacing
- installation of temporary ground protection
- excavation methods (including trenchless techniques) for installing services
- construction methods for installing new hard surfacing – including tree-sensitive construction profiles, materials, and levels
- specialist foundations – installation techniques for features such as piled foundations
- retaining structures to facilitate changes in ground levels
- preparatory works for new landscaping including cultivation of soils
- auditable/audited system of arboricultural site monitoring, including a schedule of specific site events requiring input or supervision.

Pre-development tree works

3.59 Once the layout of the development and demolition and construction requirements have been established the arboriculturist should prepare a schedule of tree works listing all of the trees that require works referenced (by tree number) to the original tree survey plan or a separate tree works plan. The schedule should include:

- trees to be removed to facilitate the development
- tree works required to facilitate the development, including construction access and demolition.
- tree works required for arboricultural management, including those required to establish acceptable levels of risk in the context of the proposed land use
- any pre-emptive root pruning

The schedule of works should be accompanied by a detailed specification prepared in accordance with BS 3998:2010 Tree work – Recommendations.

Improvements to the soil environment

3.60 Where the tree survey has identified pre-existing issues with ground conditions that might be affecting the health of trees, or where the development has had unavoidable effects on their roots, improvements to the soil environment may be beneficial. These may include:

- Mulching with wood chip or biochar
- Aeration / decompaction
- Removal / replacement of soils
- Irrigation / drainage
- Fertilisers / soil ameliorants.

These measures should be set out in detail in the AIA and/or AMS. Further information can be found in BS 3998:2010.

Arboricultural supervision and monitoring

3.61 The involvement of the arboriculturist should not end when planning consent is granted. It is essential that they are retained to carry out, oversee or monitor predevelopment tree works, the erection of protective fencing, the delivery of tree protection measures and the works covered by the AMS throughout the construction period. They should maintain records of any changes to works affecting trees, including unforeseen or accidental damage, as this may critically affect the health of trees after works are completed and the safety of future occupiers.

Post development management

3.62 Trees retained within a development site can, if adversely effected, decline over a period of years before they die. The likelihood of this happening will be reduced though good site planning and management. There will be some circumstances where:

- some harm has been unavoidable, and it has been decided notwithstanding this to retain the tree
- there has been accidental harm or harm due to unforeseen circumstances.

3.63 In these circumstances a programme of inspections should be drawn up by an arboriculturist to inform decisions about any future work that may become necessary. Trees retained in relatively close proximity to buildings and structures may also need a programme of maintenance – such as periodic crown reduction - to prevent physical damage. These matters can be dealt with through the use of an Arboricultural Management Plan, and this could be included in a wider Landscape Management Plan (see Section 6), Copies of the plan should be supplied to all parties with an interest in future site management.

3.64 In circumstances where there has been damage to trees due to development not in accordance with the planning permission and not covered in the AIA, the council may

require the submission of an Arboricultural Impact Report (AIR) that assesses what impacts have occurred and proposes remedial measures.

4 Avoiding and reducing impacts on existing features

Ancient and veteran trees

Additional survey requirements

- 4.1 Developers should always get advice from a qualified arboricultural consultant prior to carrying out any works to or near ancient and veteran trees. Ancient and veteran trees should be identified in the Tree Survey but may require more detailed investigation and assessment. In some cases, it may be necessary for them to be surveyed by an experienced entomologist to determine their habitat value for dead wood invertebrates.

Avoiding harm

- 4.2 Ancient and veteran trees are irreplaceable, and you should ensure that their loss or other negative effects are avoided, for example by selecting an alternative site for development or designing the scheme to avoid any harm. The requirement of NPPF and Policy 40 is that development entailing loss (or deterioration) should be refused unless there are wholly exceptional reasons and a suitable compensation strategy exists.
- 4.3 Natural England and Forestry Commission standing advice on planning for development affecting ancient and veteran trees can be found on the government website: <https://www.gov.uk/guidance/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions#ancient-woodland>

Mitigation

- 4.4 For ancient or veteran trees protection measures will include those general measures for trees described in Section 3 and need to be of the highest standard. Root protection areas should be at least 15 times the diameter of the tree or 5 metres from the edge of the tree's canopy whichever is greater and may need to be larger where assessment shows other impacts (such as air pollution) are likely to extend beyond that distance. The construction-free zone should be larger where practical. Harmful activities within the RPA should only take place in wholly exceptional circumstances.
- 4.5 Other mitigation measures may include:
- creating buffer zones of appropriate habitat around the tree.
 - enhanced protective fencing with barriers to protect trees from dust and pollution
 - measures to reduce noise or light pollution.

Compensation

- 4.6 Additional measures that might be introduced to compensate for unavoidable impacts or to improve the tree's management as a matter of good practice may include:
- rerouting footpaths and desire lines to reduce trampling pressure in the rooting environment
 - reducing competition from other vegetation within the rooting zone – including removing other trees (haloing) where this can be done without adverse effects.
 - removing existing structures, barriers to rooting and hard surfaces within the RPA

- improving the soil environment (see above)
- leaving the intact hulk of the tree where it is (preferably standing) to benefit invertebrates and fungi or, if that is not possible, moving it near to other ancient and veteran trees or parkland in the area.
- protecting individual trees that can become veteran or ancient trees in future
- planting young trees of the same species with space around each one to develop an open crown
- planting new trees near to the trees they're replacing
- managing nearby ancient and veteran trees (including dead and dying trees) to help prolong their life.

These measures should be set out in detail in the AIA and/or AMS.

- 4.7 As with the loss of any trees, CDP Policy 40 requires that suitable replacement planting, including appropriate provision for maintenance and management, will be required within the site or the locality. Planting new trees is not a direct replacement for loss of damage to ancient or veteran trees but planting new trees in appropriate numbers can form part of compensation alongside other measures. The level of planting that is appropriate will need to be assessed on a case-by-case basis.

Other non-woodland trees

Avoiding harm

- 4.8 Trees of high landscape, amenity or biodiversity value (see section 2) are important features, and you should ensure that their loss or other negative effects are avoided, for example by selecting an alternative site for development or designing the scheme to avoid harm. The requirement of CDP Policy 40 is that proposals for new development will not be permitted that would result in the loss of, or damage to, such trees unless the benefits of the proposal clearly outweigh the harm.
- 4.9 The removal of trees, or works to trees, may also have consequences for the visual environment, the character of landscape or townscape, for green infrastructure, biodiversity, or the setting of heritage assets. These effects will determine how the proposals are assessed against other policies in the plan and particularly Policy 26 Green Infrastructure, Policy 39 Landscape, Policy 41 Biodiversity and Geodiversity and Policy 44 Historic Environment. These should be taken into account fully when considering removal or works to trees.
- 4.10 NPPF requires that planning policies should ensure that existing trees are retained wherever and Policy 40 states that proposals for new development will be expected to retain existing trees where they can make a positive contribution to the locality or to the development.
- 4.11 Tree retention is often preferable to tree replacement. Even robust mitigation planting can take many years to match the benefits provided by existing trees. In some cases up to 60% of new trees, and particularly those in residential settings, do not survive beyond five years. Even lower value (Category C) trees – and particularly young healthy trees in that category - have potential to increase in value if retained and

appropriately managed. The default position should therefore be to retain trees wherever possible.

Mitigation

- 4.12 For trees retained within the site protection measures will include those general measures set out in Section 3. For mature trees these will need to be of a high standard as older trees are less tolerant of changes in conditions than younger trees.

Compensation

- 4.13 All methods of avoidance and on-site mitigation must be fully explored before compensation is considered. The compensation measures described above for ancient and veteran trees may also be of value for mature trees.
- 4.14 Where any trees are lost, CDP Policy 40 requires that suitable replacement planting, including appropriate provision for maintenance and management, will be required within the site or the locality. The aim of replacement planting should be to ensure that there is no overall reduction in canopy cover, or the contribution made by trees to amenity in the locality and that both should be restored within a reasonable timescale. The level and type of planting that is appropriate will need to be assessed on a case-by-case basis.
- 4.15 On larger sites the Biodiversity Net Gain Assessment will be the appropriate mechanism for establishing the amount of replacement planting required (for urban trees using the 'urban tree' habitat metric) provided that its application is informed by the requirements of Policy 40.
- 4.16 For developments involving the loss of publicly owned amenity trees the value of the trees will be established using the Capital Asset Value for Amenity Trees (CAVAT) method. This will inform the level of mitigation required. More information on CAVAT can be found on the London tree Officer's Association website:

<https://ltoa.org.uk/resources/cavat>

- 4.17 Ideally compensation should be delivered on-site and where this is not possible developers should provide an off-site location where mitigation can be delivered or use a third-party organisation to deliver on their behalf. Enhanced management of tree resources controlled by the developer but outside of the site should be considered where appropriate. The Local Planning Authority may be able to provide land for off-site delivery or accept a financial contribution towards planting elsewhere where developers are unable to undertake off site planting. Off-site compensation should be part of a considered approach to the context of the development having regard to the contribution replacement planting can make to the wider green infrastructure network.
- 4.18 Consideration should be given to the most sustainable use of timber from removed trees.

Ancient woodland

Additional survey requirements

- 4.19 Where there is ancient woodland on or adjacent to a development site it is likely that it will be necessary to carry out both a tree survey (see Section 3) and an ecological survey. You should discuss the scope of information required with the Council's Ecology team. Ecological surveys should follow best practice guidance. You can get further information from the Chartered Institute of Ecology and Environmental Management [resource hub](#) and from Natural England's [protected species standing advice](#).

Potential effects of development

- 4.20 Direct and indirect effects that can cause the loss of or deterioration of woodland include:
- damaging or destroying all or part of them (including their soils, ground flora or fungi)
 - damaging roots and understorey (all the vegetation under the taller trees)
 - damaging or compacting soil
 - damaging functional habitat connections, such as open habitats between the trees in wood pasture and parkland
 - increasing levels of air and light pollution, noise and vibration
 - changing the water table or drainage
 - damaging archaeological features or heritage assets
 - changing the woodland ecosystem by removing the woodland edge or thinning trees - causing greater wind damage and soil loss
- 4.21 Direct and indirect effects that can cause additional deterioration of the woodland as habitat include:
- breaking up or destroying working connections between woodlands, or ancient trees or veteran trees - affecting protected species, such as bats or wood-decay insects
 - reducing the amount of semi-natural habitats next to ancient woodland that provide important dispersal and feeding habitat for woodland species
 - reducing the resilience of the woodland or trees and making them more vulnerable to change
 - increasing the amount of dust, light, water, air and soil pollution
 - increasing disturbance to wildlife, such as noise from additional people and traffic
 - increasing damage to habitat, for example trampling of plants and erosion of soil by people accessing the woodland or tree root protection areas
 - increasing damaging activities like fly-tipping and the impact of domestic pets
 - increasing the risk of damage to people and property by falling branches or trees requiring tree management that could cause habitat deterioration
 - changing the landscape character of the area

Assessing effects

- 4.22 The Forestry Commission and Natural England produce an assessment guide for ancient woodland, ancient and veteran trees. This can be downloaded from the

government website: <https://www.gov.uk/guidance/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions#ancient-woodland>

The council will use the assessment guide in evaluating and recording planning applications that effect ancient woodland.

- 4.23 Where a proposal involves the loss or deterioration of ancient woodland the Council will not take account of the existing condition of the ancient woodland when assessing the merits of the development proposal. Existing condition is not a reason to give permission for development as a woodland in poor condition can be improved with good management.

Avoiding harm

- 4.24 Ancient woodlands (including ASNW, PAWS, AWPP) are irreplaceable and you should ensure that negative effects are avoided, for example by selecting an alternative site for development or designing the scheme to avoid any harm. The test in NPPF and Policy 40 is that development entailing loss or deterioration should be refused unless there are wholly exceptional reasons, and a suitable compensation strategy exists.

- 4.25 Natural England and Forestry Commission standing advice on planning for development affecting ancient woodland can be found on the government website: <https://www.gov.uk/guidance/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions#ancient-woodland>

- 4.26 Buffer zones can afford a degree of protection to ancient woodlands. The size and type of buffer zone should vary depending on the scale and type of development and its potential effects on ancient woodland, together with the character of the surrounding area. Larger buffer zones are likely to be needed if the surrounding area is less densely wooded, close to residential areas or steeply sloping. The buffer zone should be at least 15m from the boundary of the woodland to avoid root damage and may need to be larger where assessment shows other impacts (such as air pollution) are likely to extend beyond that distance (see also Section 5). The boundary of the woodland is generally taken to mean the boundary fence, where one exists, rather than the canopy edge, but all need to be determined on a site-specific basis. For ancient or veteran trees on the edge of ancient woodland see also section 6.4.

Mitigation

- 4.27 For ancient woodlands protection measures will include those general measures for trees described in Section 3 and need to be of the highest standard. Mitigation measures may also include:
- putting up screening barriers to protect from dust and pollution
 - measures to reduce noise or light
 - rerouting footpaths and managing vegetation to deflect trampling pressure away from sensitive locations
 - creating buffer zones
 - maintaining functional connections with other semi-natural habitats

Compensation

- 4.28 Compensation measures are always a last resort. These measures can only partially compensate for loss or damage. Compensation measures should be appropriate for the site and for the scale and nature of the impacts on it. A compensation strategy could include measures to:
- create new native woodland or wood pasture and allow for natural regeneration
 - improve the condition of the woodland
 - remove invasive species
 - restore or improve the management of other ancient woodland, including plantations on ancient woodland sites, wood pasture and parkland
 - improve the connectivity of existing ancient woodlands and other semi-natural habitats
 - connect woodland and ancient and veteran trees separated by development with green bridges, tunnels or hedgerows
 - produce long-term management plans for new woodland and ancient woodland - including deer management
 - improve access for management purposes
 - in the case of AWPP and IAWPP, restoring open semi-natural habitats, introducing appropriate grazing regimes, and planting field trees and scrub.
- 4.29 Planting new trees and creating new native woodland is not a direct replacement for lost or damaged ancient woodland but large-scale woodland creation can form part of compensation alongside other measures. New woodland planting is most effective in this role if it buffers, extends or links ancient woodland to other woodland or semi-natural habitats. In some cases it will be appropriate to translocate soils, tree hulks, coppice stools and saplings from lost or damaged areas of woodland to the new planting site. It should be noted that this a form of compensation rather than mitigation as translocation or new planting can never reinstate irreplaceable habitat.
- 4.30 The compensation strategy should include monitoring the ecology of the site over an agreed period and is likely to require the production of a Management Plan.

Other woodland

Additional survey requirements.

- 4.31 Where there is woodland on or adjacent to a development site it is likely that it will be necessary to carry out both a tree survey (see Section 3 above) and an ecological survey (see above) and particularly for long established and native woodlands. The latter will capture additional information about the habitat value of the woodland for assessing biodiversity net gain. You should discuss the scope of information required with the Planning Officer.

Potential effects of development

- 4.32 Potential direct and indirect effects include those described above for ancient woodland.

Avoiding harm

- 4.33 Woodlands are important part of our natural capital, and you should ensure that loss or other negative effects are avoided, for example by selecting an alternative site for development or designing the scheme to avoid harm. The requirement of CDP Policy 40 is that proposals for new development will not be permitted that would result in the loss of, or damage to, woodland unless the benefits of the proposal clearly outweigh the harm.
- 4.34 Loss of or damage to woodland may also have consequences for the visual environment, the character of landscape or townscape, for green infrastructure, biodiversity, or the setting of heritage assets. These effects will determine how the proposals are assessed against other policies in the plan and particularly Policy 26 Green Infrastructure, Policy 39 Landscape, Policy 41 Biodiversity and Geodiversity and Policy 44 Historic Environment. These should be taken into account fully when considering loss of or damage to woodland.
- 4.35 As with ancient woodland, buffer zones can afford a degree of protection as well as providing valuable woodland edge habitat (see also Section 5).
- 4.36 In some situations, development may be proposed within woodland – for example for tourist accommodation such as chalets or tree houses. Where this can be done in ways that maintain overall canopy cover this may not entail a loss of woodland. Other impacts on the woodland ecosystem can be damaging. This is less likely to be the case where development takes place in species-poor commercial plantations and particularly those currently managed through clear felling.

Mitigating against damage

- 4.37 Protection measures will include the general measures for trees described in Section 3. As with ancient woodlands, mitigation measures may also include:
- putting up screening barriers to protect from dust and pollution
 - measures to reduce noise or light
 - rerouting footpaths and managing vegetation to deflect trampling pressure away from sensitive locations
 - creating buffer zones
 - maintaining functional connections with other semi-natural habitats

Compensation

- 4.38 All methods of avoidance and on-site mitigation must be fully explored before compensation is considered. Compensation measures should be informed by the quality and sensitivity of the woodland and the nature of any impacts. A compensation strategy could include a similar range of measures as set out for ancient woodland above.
- 4.39 In the case of developments within woodlands it may include enhanced management of the remaining woodland. This could entail moving from management based on clear felling to continuous cover, thinning to improve ground flora, removing invasive species, introducing native species and restructuring rides, glades and margins to increase biodiversity.

- 4.40 Where appropriate the strategy should include monitoring the ecology of the woodland over an agreed period and a Woodland Management Plan, produced either as a free standing document or as part of a wider Landscape or Biodiversity Management Plan.
- 4.41 Where loss or damage to woodland is unavoidable and can be justified, Policy 40 requires that suitable replacement woodland planting, either within or beyond the site boundary, must be undertaken. The aim of replacement planting should be to ensure that there is no overall reduction in woodland canopy cover and that it should be restored within a reasonable timescale.
- 4.42 On larger sites the Biodiversity Net Gain Assessment should be used to inform the type and amount of replacement planting. It should be applied in a way that reflects the requirement of Policy 40 for suitable replacement planting.
- 4.43 Ideally compensation should be delivered on-site and where this is not possible developers should provide an off-site location where mitigation can be delivered or use a third-party organisation to deliver on their behalf. Enhanced management of woodland controlled by the developer but outside of the site should be considered where appropriate. The Local Planning Authority may be able to provide land for off-site delivery or accept a financial contribution where developers are unable to undertake off site planting. Off-site compensation should form part of a considered approach to the context of the development having regard to the contribution replacement planting can make to the wider green infrastructure network.
- 4.44 Consideration should be given to the most sustainable use of timber from removed trees.

Development affecting hedges

Survey requirements

- 4.45 Where there are countryside hedges on site it is likely that it will be necessary to carry out both a tree survey (see Section 3 above) and an ecological survey (see above). Hedges should be identified in tree surveys and the extent of their canopy at the time of survey should be mapped. Identifying hedges as a single line on survey drawings can be misleading as the depth of hedges is often substantial. Failing to take account of this can lead to problems with implementing the development in later stages. Ecological surveys will capture additional information about the habitat value of the hedge for assessing biodiversity net gain.

Avoiding harm

- 4.46 Hedges of high landscape, heritage, amenity or biodiversity value (see Section 2) are important features and you should ensure that their loss or other negative effects are avoided, for example by selecting an alternative site for development or designing the scheme to avoid harm. The requirement of CDP Policy 40 is that proposals for new development will not be permitted that would result in the loss of, or damage to, such hedges unless the benefits of the proposal clearly outweigh the harm.

- 4.47 Loss of, or damage to, hedges may also have consequences for the visual environment, the character of landscape or townscape, for green infrastructure, biodiversity, or the setting of heritage assets. These effects will determine how the proposals are assessed against other policies in the plan and particularly Policy 26 Green Infrastructure, Policy 39 Landscape, Policy 41 Biodiversity and Geodiversity and Policy 44 Historic Environment. These should be taken into account fully when considering loss of or damage to hedges.

Mitigation

- 4.48 Protecting hedges involves the same principles as protecting trees. The Root Protection Area (RPA) should be mapped on the Tree Constraints Plan. Where possible buffer zones larger than the RPA should be used to include a grass headland and maintain more normal drainage conditions. Protective fencing should be erected outside of the RPA / buffer zone. In some circumstances it may be beneficial to lay or coppice a hedge or carry out pruning works to trees or shrubs within the hedge prior to the erection of protective fencing. This should be set out in the schedule of pre-development tree works.
- 4.49 Due to the narrow linear nature of hedges they can be vulnerable to changes in ground water conditions and particularly where development takes place on both sides. Where this is the case, provision should be made for watering with bowsers during periods of dry weather. Where hedges are isolated by development over long periods – for example in the working of mineral sites – provision should be made for maintaining the hedge on a normal cycle to prevent it becoming leggy and overgrown.
- 4.50 In some circumstances hedges can be translocated in order to retain some of their character, ground flora and soils. Hedge translocation involves moving the entire hedge and hedge bank (if present). In some circumstances this may be only a matter of a few meters – for example to improve sightlines at a road junction – in other cases it may involve transporting the hedge to a new location some distance away, or to a temporary holding area for re-instatement in its original location. Translocation is a specialist operation and may not be appropriate in all circumstances. More information on translocating hedges can be found in the [County Durham Landscape Guidelines: Hedges](http://www.durhamlandscape.info/media/16245/Hedgerow-Landscape-Guidelines-2009/pdf/LandscapeGuidelinesHedges2009.pdf) which can be found on the Durham Landscape website: <http://www.durhamlandscape.info/media/16245/Hedgerow-Landscape-Guidelines-2009/pdf/LandscapeGuidelinesHedges2009.pdf>



Figure 19. Hedgerow translocation | DCC

Compensation

4.51 All methods of avoidance and on-site mitigation must be fully explored before compensation is considered. Additional measures that might be introduced to compensate for unavoidable impacts or to improve the management of hedgerows as a matter of good practice may include:

- laying, coppicing and/or gapping up hedges within the site or surroundings to improve their management condition
- planting or tagging hedgerow trees
- creating conservation headlands along existing hedges to improve their habitat value

These measures should be set out in detail in the AIA and/or AMS.

4.52 Where hedges are lost, CDP Policy 40 requires that suitable replacement planting or restoration of existing hedges, is carried out within the site or the locality including appropriate provision for maintenance and management. The aim of replacement planting or restoration should be to ensure that there is no overall reduction in hedgerow length and canopy in the locality.

4.53 For many sites the Biodiversity Net Gain Assessment should be used to inform the type and amount of replacement planting or restoration required for hedgerow habitat. It should be applied in a way that reflects the requirement of Policy 40 for suitable replacement planting or restoration.



Figure 20. Field boundary restoration | DCC

- 4.54 Ideally compensation should be delivered on-site and where this is not possible developers should provide an off-site location where mitigation can be delivered or use a third-party organisation to deliver on their behalf. Enhanced management of hedges controlled by the developer but outside of the site should be considered where appropriate. The Local Planning Authority may be able to provide land for off-site delivery or accept a financial contribution where developers are unable to undertake off site planting. Off-site compensation should form part of a considered approach to the context of the development having regard to the contribution enhanced management and new planting can make to the wider green infrastructure network.
- 4.55 In County Durham the Durham Hedgerow Partnership provides grants for planting and restoration works. These grants aren't available for works required by planning permission, but sums given to the Partnership can be used to carry out works through targeted grants in the appropriate area. More information on the Partnership can be found on the Council's website <https://www.durham.gov.uk/haw>



Figure 21. Laying a hedge | DCC

5 Integrating features into new development

Existing trees

- 5.1 Trees should be integrated positively into the layout of new development so that their benefits can be fully realised and they can continue to grow to their potential without giving rise to conflicts with new users of the site or to management problems. Further information can be found in the Trees & Design Action Group (TDAG) publication 'First Steps in Trees and New Developments For All Working in the Built Environment' which is available on their website: <https://www.tdag.org.uk/>
- 5.2 On housing sites the layout should be designed to accommodate those trees that are to be retained within areas of public open space rather than in private gardens where there may be conflict with future occupiers and pressure for removal. Careful consideration needs to be given to how the space is to be used and it should be designed to avoid where possible other impacts on the tree such as footpaths or desire lines crossing the RPA, street furniture or road salt bins.



Figure 22. Mature tree retained in open space | Google Street View

- 5.3 The relationship between trees and new buildings, structures and land uses need careful consideration, and particularly in terms of the potential for shading of rooms, garden and other outdoor spaces, shading of solar panels, interference with satellite reception, and seasonal nuisances such as falling leaves, bird droppings and aphid honeydew. These issues can't always be avoided, and many existing buildings and trees co-exist in close proximity without causing insurmountable problems. These matters are subjective and depend on the attitude of individuals towards trees and their willingness to tolerate some of these impacts in order to enjoy the benefits of living with trees. They are impossible to be prescriptive about, but it is nevertheless the case that the closer trees are to the people affected by them, the greater the likelihood of issues arising. This can lead to pressure in the future from users and occupiers to heavily prune or remove trees.

- 5.4 Buildings should therefore be located and designed to take account of shading effects and the need for natural light in rooms. This should include consideration of the ultimate size and density of the crown. Open spaces such as gardens and sitting areas should be designed to provide for direct sunlight for at least part of the day at the same time as exploiting the benefits of trees and hedges in providing shelter from winds and shade in hot weather. Shading effects from areas of woodland, tree groups or belts will have a greater impact than that of single specimens. Trees located to the south of a development will cause greater shading effects, and those affecting mid-day and afternoon sun are less likely to be tolerated. Where there is significant potential for shading impacts, a shading study should be carried out to identify how shade will fall at different times of day, and also throughout the year. These can help inform the development layout and minimise problems for future residents.
- 5.5 Consideration needs to be given to the potential for physical damage resulting from the future growth of canopies, stems and roots. Buildings, structures and hard standings should be located to avoid future conflicts and/or withstand the effects of the tree's growth. Formative pruning and sensitive crown raising can be used to develop a crown shape that is less likely to physically touch a building or require only modest pruning for maintenance in the future. Root growth can be controlled and directed by the use of root barriers or root deflectors. The effects of roots on paving close to the tree can be accommodated by using flexible surfacing. Foundations need to be designed to accommodate the effects of tree roots on the soil environment, particularly on shrinkable clays, and should be designed in accordance with National House Building Council (NHBC) Standards section 4.2: Building Near Trees. <https://nhbc-standards.co.uk/4-foundations/4-2-building-near-trees/>
- 5.6 Consideration needs to be given to the future access requirements for maintenance of trees and hedges, avoiding situations where they become landlocked and difficult or expensive to maintain.
- 5.7 Where mature trees are retained, and particularly where they have a relatively short life expectancy, provision should be made for succession planting of new trees to replace them in the longer term.

Existing woodlands

- 5.8 The integration of woodland into new development can be assisted by the use of buffer zones. These should be designed to both protect the woodland, provide woodland edge habitat for wildlife, and contribute to the structure of wider ecological networks. They are of most value where they consist of semi-natural habitats such as open woodland, grassland, heathland or wetland. In many cases an ecotone of transitional habitat will be appropriate.
- 5.9 Buffer zones should not include new private gardens. Sustainable drainage features such as swales or attenuation basins may be accommodated within a buffer zone provided that they do not affect root protection areas or negatively affect ground water conditions. Buffer zones can be suited to public access provided that this is designed

and managed to avoid harm to the new habitats and doesn't increase access-related pressures on sensitive woodland.

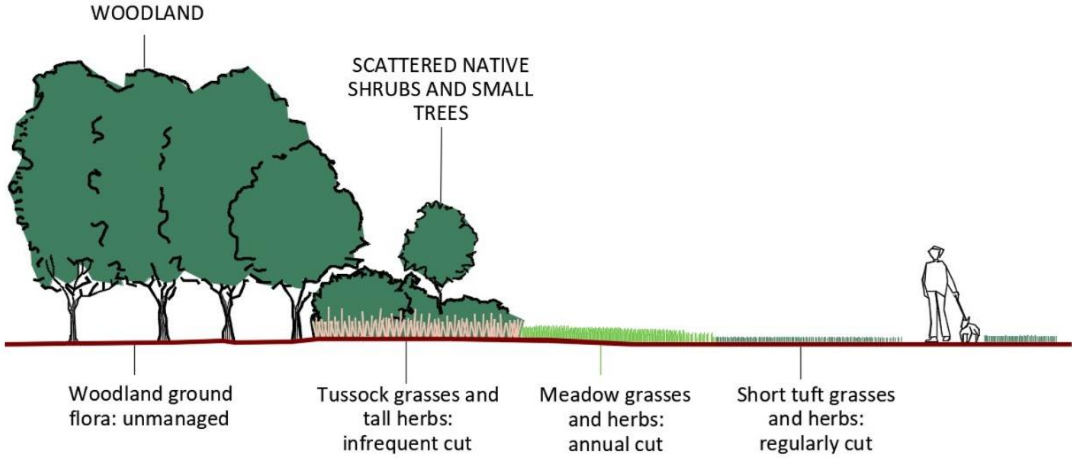


Figure 23. Woodland ecotone | DCC

Active development frontages

5.10 While in some cases development close to woodland, and particularly ancient woodland, may be designed to avoid or control public access, woodland should generally be integrated positively into the layout as part of the public realm. In housing development it is often appropriate to address the woodland with active frontages rather than rear gardens. This sets the building line back from the woodland edge, reducing conflicts with residents and the likelihood of encroachment and tipping of garden wastes. It also creates natural surveillance which reduces anti-social behaviour and helps design out crime. Similarly, the use of appropriately located footpaths and public open spaces between housing and woodland can assist with integration and surveillance.



Figure 24. Active development frontage | DCC

- 5.11 The isolation of woodlands within built development should be avoided. The site layout should be designed to deploy open spaces, habitat features and trees in a manner which connects the woodland to other woodlands, hedges, semi-natural habitats and open countryside within and beyond the site.
- 5.12 Consideration needs to be given to the future management requirements of the woodland, and particularly to maintaining or providing appropriate access for management works. Where woodlands are within the control of the developer and are to form part of the green infrastructure of the site a Woodland Management Plan will be required which clearly sets out management objectives (screening, amenity, public access, biodiversity, heritage, carbon sequestration etc) and a programme of operations. This can be specific to woodland management or form part of a more general Landscape or Biodiversity Management Plan (see section 6).

Existing hedges

- 5.13 Hedges that are of high value, and those that can make a positive contribution to the new development, should be retained and integrated fully into its design. There may be little merit in retaining poor quality or relict hedges where this compromises the layout of a development and inhibits the freedom to create a masterplan and landscape infrastructure more suited to its new use.
- 5.14 When retaining hedges particular regard needs to be had to their management requirements. To be maintained as a hedge they will need to be trimmed every two or three years and/or laid on a longer cycle and this requires physical access and single ownership or management responsibility. Hedges generally, and particularly those of higher value, are therefore best retained in the public realm where they can be managed as a single entity. This can be achieved, for example, by having active frontages facing hedges rather than retaining them to the rear of gardens where consistent management can be difficult, or by retaining them alongside, or within, areas of open space.



Figure 25. A hedge retained and integrated into new development |Google Street View

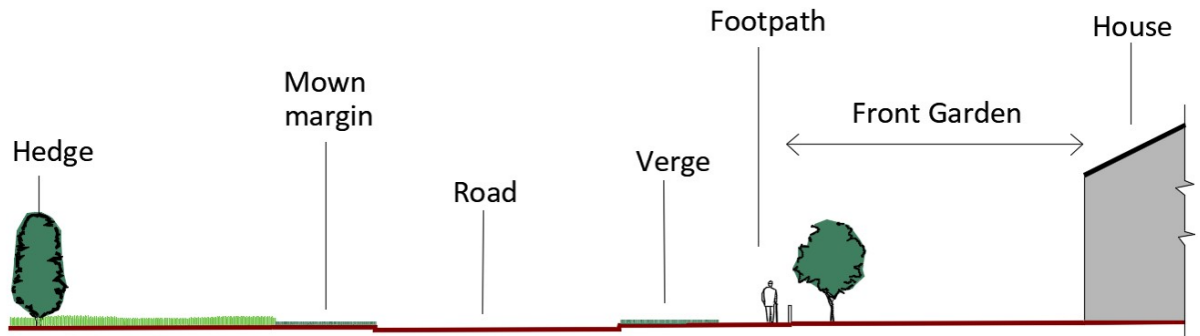


Figure 26. Indicative example of hedge retained in the public realm with active frontage | DCC

- 5.15 The long-term management of hedges forming part of the public realm should be detailed in a landscape management plan (see Section 6).
- 5.16 In some circumstances where lower value hedges are being retained it may be acceptable to retain them as a boundary between gardens or plots. In these situations, the retention of management of the hedge may vary between plots depending on the aspirations and interests of the occupier. This is likely to substantially diminish the value attached to the presence or condition of the hedge in calculating the biodiversity impacts of the development as these cannot be guaranteed.
- 5.17 Where possible retained hedges should connect with, or border onto, other habitat features (woodlands, watercourses, natural greenspace, open space, SuDS) to maximise their value and prevent them from becoming isolated. Part of the biodiversity value of hedges lies in their ground flora and their relationship with adjacent habitats. Placing buildings, structures or close boarded fencing adjacent to hedges, and particularly on the southern side, can shade out light demanding species from the base of the hedge as well as affecting the hedge itself.

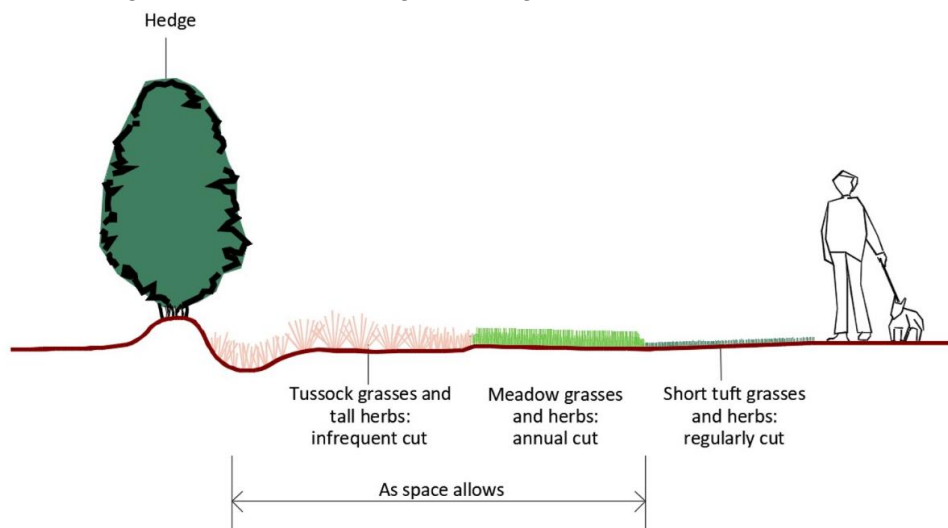


Figure 27. Hedgerow ecotone | DCC

- 5.18 Where possible hedges should be buffered by a headland of species rich grassland with a zone of either infrequently managed tussock grasses and tall herbs or annually cut meadow grasses and herbs close to the hedge to form an 'ecotone' of transitional habitat. Even quite a narrow buffer zone can be beneficial. These factors will affect how the biodiversity impacts of the development are calculated (see below).
- 5.19 Increasing the height at which hedges are cut can be a useful tool in screening development rapidly, and particularly in shallow views. The annual growth put on by established hedges that are retained in and around the development will far exceed the growth of newly planted stock. This can be used as a tool to screen development permanently, or temporarily until other structural landscaping becomes established at which point the hedge can be restored to a more typical height.



Figure 28. Before and after photographs showing the height of a hedge increased to screen development | Google Street View

6 New planting

- 6.1 New development provides an opportunity to plant new trees, woodlands and hedges that will provide multiple benefits for future generations. Adequate provision needs to be made for new trees to be planted with sufficient space and the aftercare needed to ensure that they establish successfully.
- 6.2 Development should seek to maximise tree planting, wherever feasible and appropriate to the design of the development, to optimise the site's tree canopy cover. NPPF requires that planning decisions should ensure that new streets are tree-lined and that opportunities are taken to incorporate trees elsewhere in developments (such as parks and community orchards). Opportunities include:
- Street trees
 - Trees in hard and soft landscaping of car parks, service areas and external spaces
 - Trees in structural landscaping / green infrastructure
 - Trees in parks and open spaces
 - Trees in community orchards
 - Hedges and hedgerow trees
 - Trees planted, or allowed to colonise naturally, in the creation of open habitats, scrub and woodland

Landscaping proposals

- 6.3 Tree and hedgerow planting will often take place as part of wider landscape proposals. Policy 29 (Sustainable Design) requires that landscape proposals should:
- g. respond creatively to topography and to existing features of landscape or heritage interest and wildlife habitats;
 - h. respect and where appropriate take opportunities to create attractive views of and from the site;
 - i. reflect in the detailed design any features characteristic of the locality such as boundaries, paving materials and plant species;
 - j. create opportunities for wildlife including through the use of locally native species;
 - k. make appropriate provision for maintenance and long term management; and
 - l. in the case of edge of settlement development, provide for an appropriate level of structural landscaping to screen or assimilate the development into its surroundings and provide an attractive new settlement boundary.
- 6.4 Sufficient detail must be provided at the application stage in a Landscape Masterplan or Landscape Strategy to demonstrate that the overall character of landscaping is appropriate and that the level of tree planting proposed meets the requirement of Policy 40.
- 6.5 A detailed landscape scheme can form part of the planning application, or it can be submitted at a later date determined by a planning condition. A detailed landscape scheme may include the following, depending on the nature of the development.

- Trees, hedges and shrubs scheduled for retention, including method of protection.
- Details of soft landscaping including planting species, sizes, layout, densities, numbers.
- Details of planting procedures and/or specification.
- Finished topsoil levels and depths.
- Details of temporary topsoil and subsoil storage provision.
- The timeframe for implementation of the landscaping scheme.
- The establishment maintenance regime, including the replacement of vegetation which die, fail to flourish within a period of 5 years from planting.
- A plan showing the public/structural landscaping and private/in-curtilage landscaping.
- Full details of the management, maintenance and accessibility of all areas of open space in perpetuity.

6.6 For schemes involving significant areas of landscaping, or where the delivery or performance of landscape elements are critical to the planning merits of a development, a Landscape Architect or other suitably qualified person (an arboriculturist, forester or ecologist depending on the nature of the proposals) should be engaged. Their involvement should not end with the design of the landscape scheme. They should be engaged to supervise the implementation and establishment of the proposals to ensure that it is delivered successfully. Lack of continued professional involvement is a key factor in the failure of landscape proposals. In some circumstances monitoring conditions will be imposed to ensure delivery.

Soils

6.7 The soil trees are planted in is fundamental to their health and growth. It needs to be of a quality to allow sufficient aeration and drainage and promote root growth. On development sites it may take the form of undisturbed in-situ soil, soil that has been stripped, stored and reinstated, or imported natural or manufactured soil. Poor soil quality, often resulting from poor site planning and management, is a major cause of failure and poor growth in newly planted trees. Key issues include:

- over-compacting soil through the tracking of machinery, poor soil handling or the storage of construction materials which leads to anaerobic conditions harmful to roots.
- contaminating soil as a result of accidental spillage or the use of chemicals
- reducing soil quality, for example by mixing topsoil with subsoil
- use of poor-quality manufactured soil
- use of topsoil and organic soil ameliorants at depths where anaerobic conditions occur.

6.8 Detailed advice on soil is beyond the scope of this SPD. Further information can be found in the Construction Code of Practice for the Sustainable Use of Soils on Construction Sites published by DEFRA which can be found on the Government website:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/716510/pb13298-code-of-practice-090910.pdf

Guidance on the management of soils in the reclamation of mineral and waste sites can be found in the Guide to reclaiming mineral extraction and landfill sites to agriculture (2022) which is published on the Government website:

<https://www.gov.uk/government/publications/reclaim-minerals-extraction-and-landfill-sites-to-agriculture/guide-to-reclaiming-mineral-extraction-and-landfill-sites-to-agriculture>

Guidance is also provided in British Standard BS 4428: 1989 -Code of Practice for general landscape operations (excluding hard surfaces).

In-situ soils

- 6.9 It is important to protect the soils already on site from damage and particularly from compaction from site traffic and contamination. Areas of land allocated for tree planting should be protected where possible from construction activities using protective fencing and this should be shown on the TPP.

Stripping storing and reinstating soils

- 6.10 The management of soils should follow the 'Construction Code of Practice'. Key elements of good practice include:
- handling soil in driest conditions possible
 - using tracked equipment to avoid compaction
 - stripping and storing topsoil and subsoil separately
 - keeping storage times as short as possible
 - keeping topsoil mounds low to maximise aeration
 - protecting stockpiles by seeding or covering them
 - de-compacting subsoil before placing topsoil
 - spreading topsoil only to depths at which it remains aerobic (<300-400mm depending on type)
 - Loose tipping topsoil
 - aerating anaerobic topsoil before planting
 - ensuring that the physical condition of the entire soil profile (topsoil and subsoil) will promote sufficient aeration, drainage and root growth.

Imported soils

- 6.11 Subsoil should meet the requirements of BS 8601:2013 - Specification for subsoil and requirements for use. Topsoil should meet the requirements of 'BS 3882: 2015 - Specification for topsoil'. In some circumstances it may be appropriate so use specialist manufactured soils such as Amsterdam Tree Sand or structural soils such as Stockholm Tree Soil.

Planting trees

- 6.12 General guidance on tree planting can be found on the 'County Durham Landscape Guidelines – Trees' available on the Durham Landscapes website. This includes technical guidance on planting together with information on trees which are locally native to County Durham and some of the more commonly encountered not-native species. <https://durhamlandscape.info/wp-content/uploads/2021/10/LandscapeGuidelinesTrees2009.pdf>

Species selection

- 6.13 It is important to get ‘the right tree in the right place’ if they are to reach their full potential. The species and varieties chosen need to be suitable for the site conditions and be suited to the intended purpose of the planting scheme. Consideration needs to be given to both their long-term growth potential and their management requirements.
- 6.14 In many situations locally native trees have the greatest landscape and ecological value and there will often be a native tree suited to the site in terms of its size, growth habit and soil requirements. This is particularly true of planting in rural situations, the countryside on the edge of towns and villages, and in semi-natural habitats and wildlife corridors within urban areas. The use of locally native or locally characteristic species can help create a sense of place linking townscape to the character of the wider landscape, reinforcing local distinctiveness (see Appendix 5).
- 6.15 Non-native trees and ornamental cultivars are often appropriate within the urban landscape where they are chosen for their aesthetic qualities as specimen trees or have growth characteristics and adaptations making them more suited to urban environments; for example compact form or tolerance to dry or wet conditions, shallow soils etc. Use of non-native trees increases species diversity within the urban tree population which enhances biosecurity and resilience to climate change impacts.
- 6.16 Use of single species ‘monocultures’ is undesirable due to the potential impact from harmful, often introduced pests and diseases, therefore species diversity is encouraged to enhance the future resilience and sustainability of new tree planting schemes.
- 6.17 Different tree species have different preferred growing conditions and natural adaptations and tolerances to certain environmental conditions therefore selection of suitable tree species should take account of physical and environmental factors such as local soil conditions, exposure, surface treatments, site drainage and water requirements, pollution tolerance, light conditions etc.
- 6.18 It is important to consider the ultimate size, spread and growth characteristics of the tree species in relation to the available space where they are to be planted. Large tree species should not be planted in situations where their size will become an issue. Opportunities should nevertheless be created wherever possible to plant large-canopied tree species as they are likely to deliver the greatest benefits over time. In some cases, finding space for a small number of large trees will be a better design option than planting large numbers of small trees.
- 6.19 Other factors such as tree form (upright, weeping, compact, spreading etc), water demand and rooting habit should be taken account of, as should potentially problematic characteristics of the species such as fruit or heavy pollen production, sap or twig shedding, heavy shade etc.
- 6.20 More information on tree species for urban tree planting can be found in the ‘Tree Species Selection for Green Infrastructure: A Guide for Specifiers’ written by Trees

and Design Action Group which can be found on the TDAG website: [Tree Species Selection for Green Infrastructure - Trees and Design Action Group \(tdag.org.uk\)](https://tdag.org.uk)

Origins / provenance

- 6.21 When planting native species, it is important to consider the genetic origins and provenance of the planting stock. Plants of UK native origin are likely to be better adapted to local conditions than plants of the same species sourced more widely, for example from continental Europe. Plants grown from trees of local provenance are likely to be well particularly well adapted to local conditions. Whether this matters will depend on the species, with UK native origins and local provenance being more important for less common species with small wild populations, and when planting close to ancient woodlands or other semi-natural habitats. Information on origins and provenance for individual species is given in County Durham Landscape Guidelines - Trees available on the Durham Landscapes website: <https://durhamlandscape.info/wp-content/uploads/2021/10/LandscapeGuidelinesTrees2009.pdf>

Climate resilience

- 6.22 As noted above planting non-native species can in some circumstances help make planting schemes more resilient to climate change. It should be noted that climate change is unpredictable, and it can't be assumed that trees suited to warmer or drier climates will necessarily be more robust. Many of the common and more widespread native species in the UK are tolerant of a broad range of climatic conditions and are as likely to prove robust in future. Planting those species will also contribute to the resilience of populations of the wide range of other species that depend upon them. When using native species varying the Forestry Commission seed zone from which plants are sourced can help build climate resilience.

Location in relation to buildings and structures

- 6.23 The requirement for natural daylight in buildings and the benefits and disbenefits of shading in terms of light levels and solar gain should be considered when positioning trees near buildings. The size, species and growth habit of the tree should all be taken into account.
- 6.24 The growth potential of trees needs to be considered if future physical damage to structures from branches, or the need for regular pruning, is to be avoided. Allowance should be made for the swaying of stems and branches during stormy weather. Trees planted close to buildings can develop asymmetrical crowns which will affect their stability and longevity. This is influenced by the size and growth habit of the tree. Small trees or trees of a compact, columnar or fastigiate form will be more appropriate close to buildings than those with spreading crowns.
- 6.25 Direct damage to strong or heavy structures like buildings from the growth of stems and roots only occurs when they are very close and diminishes rapidly with distance. Damage to lighter structures, such as low walls and paths is more common. BS 5837:2012 recommends minimum distances for tree planting in relation to a range of structures and surfaces.

- 6.26 Indirect damage from trees can occur on shrinkable clays where the volume of soils may in response to a tree's water demand. Foundations need to be of an appropriate specification and the relationship between foundation design and distance from trees should be informed by National House Building Council guidance.
- 6.27 Trees do not 'seek out' water in water mains, drains and sewers but leaking water can encourage root growth and the entry of roots through existing defects. The risk of this can be minimised by adhering to the recommended distances above, by ensuring that pipes are correctly installed and joints are watertight, and by the use of flexible materials or joints to accommodate movement. Root barriers can be used where necessary to reduce the risk further.
- 6.28 Mains sewers and water mains located outside of public highways are usually protected by legal agreements or 'easements'. Northumbrian Water Limited (NWL) does not have specific set-back distances for high pressure water mains and main sewers within easements. Typical parameters are given in Table 1. These parameters only apply to mains apparatus in easements and not those within the public highway or to domestic apparatus where the separation distances given in BS5837 (above) are advised.

Planting type	Distance
Hedge plants (blackthorn hawthorn, elder, privet, hazel) planted directly across apparatus where forming a hedge that is needed for screening purposes or to indicate a field boundary; shallow rooted ground cover shrubs.	< 3m
Dwarf root-stock fruit trees; conifers planted as x-mas trees if harvested at intervals not exceeding seven years.	3m – 6m
Large trees (ash, beech, elm, horse chestnut, lime, oak, sycamore, fruit trees and most conifers) when planted as individual specimens or a single row.	6m – 10m
Woodland: poplars and willows	>10m

Table 1: Typical planting restrictions within main water supply / main sewer easements

- 6.29 Trees should not be planted where they might obstruct overhead power lines or cables or require regular pruning as a result. More information on planting near high voltage overhead power lines can be found in [NSP/004/011 - Guidance on Overhead Line Clearances](#) produced by Northern Powergrid and available on their website: <https://www.northernpowergrid.com/sites/default/files/2022-05/2012.pdf>
- 6.30 Proposed planting sites must be fully service checked in advance to ensure all new planting is located sufficiently far away from any services. Utility asset maps can be obtained from individual utility providers or through the online search services – Linesearch before U dig via <https://lsbud.co.uk/>

- 6.31 Operational staff are also advised to manually CATSCAN before any tree pit excavation work is undertaken and undertake adequate level of risk management in accordance with health and safety requirements.
- 6.32 Where new trees are planted close to, or within, the adopted highway, consideration needs to be given to the impact of future growth on sightlines, lighting and CCTV and the potential physical effects of roots on kerbs, highway drains and surfaces. Root directors or root barriers alongside the roadway/footway will be required where trees are planted within 2 meters of an adopted road or path whether in the public realm or in private gardens.



Figure 29. Root director | GreenBlue Urban

- 6.33 Root barriers along the base or sides of tree pits can significantly limit root development and should not be used unless sufficient soil volume is accessible to the tree (see Planting in hard landscapes below). They should be deployed along the edges of the structures they are installed to protect rather than around individual trees.

Choice of planting stock

- 6.34 The size of planting stock should be determined by design objectives. Sizes and description of nursery stock are given below.

Size	Girth (at 1m)	Height	Root ball size
Transplant	-	20-90cm	-
Whip	-	100-125cm	-
Feathered tree	-	125-250cm	-

Light Standard	6-8cm	200-250cm	30-40cm
Standard	8-10cm	250-300cm	40cm
Select Standard	10-12cm	300-350cm	50cm
Heavy Standard	12-14cm	300-350cm	60cm
Extra Heavy Standard	14-16cm	350-400cm	60cm
Advanced Heavy Standard	16-18cm	400-450cm	70cm
Semi-mature	18-20cm	450-500cm	70-80cm
Semi-mature	20-25cm	450-550cm	80-90cm
Semi-mature	25-30cm	500-600cm	90-100cm

Table 2: Sizes of nursery stock

- 6.35 Generally speaking, smaller plants, if well maintained, will establish quicker with less stress than larger plants and will often out-perform them in the medium to long term. Transplants and small cell-grown plants are particularly appropriate for establishing woodland and structural landscaping.
- 6.36 Standard trees can create earlier impact but are heavily dependent on good establishment maintenance and will often achieve smaller growth increments in the early years. When planted in the public domain, light standards and standard trees can be vulnerable to vandalism. In those situations, extra heavy standards in girths of 10-12cm and 16-18cm, which are more robust and difficult to damage, are more appropriate.
- 6.37 The quality of tree stock is critical to the success of any planting scheme. Trees supplied should be quality checked to ensure the following:
- The species or cultivar is true to name/description.
 - For maiden trees there is a straight single central leaders and a balanced branch framework typical of the species.
 - The crown is proportionate relative to tree height and has been formatively pruned or trained as required.
 - There is a clearly defined stem taper (height/ diameter ratio) and the stem is ripe and self-supporting without canes.
 - The tree is free from structural defects or weakness, signs of physical damage, poor bud or graft unions.
 - The tree is free from pests, diseases, and physiological disorders such as branch die back, epicormic/basal shoots, elongations/lesions, discoloration etc.
 - The root ball diameter/container size is proportionate to the girth of the stem and the root ball is intact and does not move independently of the stem.
 - Bare-root trees have a healthy fibrous root systems with good lateral root development.
 - Root collar/root flare must be evident at the correct depth, at the top of the root ball, with no signs of root circling/girdling or other defects, including evidence of delayed or poor transplanting methods.

6.38 Trees should be handled carefully at all stages from collection, storage, transporting to planting site to prevent any direct damage, impacts, exposure to frosts, desiccation etc. They should be handled and planted in accordance with good practice as set out in 'BS8545:2014 Trees: from nursery to independence in the landscape – recommendations'.

Biosecurity

6.39 Biosecurity refers to measures that aim to prevent the introduction and/or spread of harmful organisms to plants and animals. When designing a planting scheme, it is important to ensure that suppliers of all trees and plants are able to demonstrate that adequate biosecurity control measures are being implemented and that all planting stock is pest and disease free. All planting stock should have Plant Passports. These provide details of nursery production, origin/import, pest and disease control programmes and an audit trail for all stock supplied. Further guidance is available from the Forestry Commission and FERA: www.forestry.gov.uk/biosecurity , www.fera.defra.gov.uk

6.40 The only exception to the requirement for Plant Passports should be where stock coming directly from the EU is going direct to the site it is planted on in which case it will only require a phytosanitary certificate issued by the EU.

6.41 Designers should take care not to specify plants that breach legal restrictions such as importing or moving certain species that are known to have pest and disease issues or currently subject to a Plant Health Notice under the Forestry Act 1967 as is the current situation with Ash (*Fraxinus excelsior*).

6.42 It is good practice to avoid specifying disproportionately large numbers from one plant family, genus or variety within a planting scheme to reduce the possible impact of a harmful pest or disease outbreak.

Street trees

6.43 NPPF requires (131) that planning policies and decisions should ensure that new streets are tree-lined. Street trees bring many benefits including:

- enhancing the visual quality and local distinctiveness of streets
- reducing air pollution
- cooling urban environments in summer
- creating habitats for wildlife
- promoting health and well-being
- intercepting rainfall and reducing run-off

6.44 The siting and specification of street trees needs to be coordinated with other aspects of highway design and, in the case of adopted roads, with the agreement of the Council as highway authority. NPPF states (131) that applicants and local planning authorities should work with highways officers and tree officers to ensure that the right trees are planted in the right places, and solutions are found that are compatible with highways standards and the needs of different users. Factors that need to be taken

into account, giving due consideration to future growth potential and periodic maintenance requirements include:

- street lighting
- sight line requirements,
- CCTV coverage
- underground and overhead services
- potential for physical obstruction or damage
- SuDS and other drainage features

6.45 'Streets for a Healthy Life: a companion guide to Building for a Healthy Life'(SFHL) published by Homes England advises that street trees should typically feature in all levels of the street hierarchy. SFHL refers to a number of common street typologies:

- Principal / Main Streets
- Secondary Streets
- Tertiary Streets
- Edge Lanes / Private Driveways

This is not a rigid typology but is followed in this SPD to illustrate how trees can be accommodated in different types of streets.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1089852/Streets-for-a-Healthy-Life.pdf

6.46 While street trees can be a feature of all levels of the street hierarchy, the level, scale and type of tree provision that is appropriate will vary according to the function of the streets and wider design objectives.

Principal / Main streets

6.47 Principal / main streets are the strategic vehicular and cycle routes through larger developments. They are typically designed to accommodate buses and higher vehicle numbers. They have a clear distinction between vehicular, cycle and pedestrian space and vary in their design according to their specific context and function. Not all developments will have a principal / main street as described in SFHL . The majority of small and medium sized developments in County Durham are accessed from existing main streets via new secondary or tertiary streets.

6.48 Street trees are an important feature of principal streets, making an attractive contribution to the overall street scene and reducing the dominance of the large spaces between buildings required for movement. Street trees should be provided within the public realm on one or both sides of the road depending on context, and typically in verges of soft landscaping or hard surfaces forming part of on-street parking areas between the highway and footpaths or cycleways. Street lighting is always present on principal streets and trees need to be positioned not to conflict with it. The scale of principal streets may allow for the planting of larger tree species and verges should be broad enough to accommodate them.



Figure 30. Principal / Main Street: Saddler Drive, Sedgefield | Google Street View

Secondary streets

- 6.49 Secondary streets are quieter residential streets although some non-residential uses may be present. They are not usually bus routes. As many of those using the street aren't its immediate residents but people travelling through to reach other residential streets, they typically have a clear distinction between vehicular and pedestrian space, with a defined kerb and footways although some level surface sections may be incorporated. Where traffic volumes are low cycling within the carriageway is normally acceptable. They can vary in width and character according to adjacent land uses.
- 6.50 Street trees are an important feature of secondary streets making an attractive contribution to the overall street scene and assisting with legibility and wayfinding. Street trees should typically be provided within the public realm in soft or hard verges (depending on the character of the area) between the highway and footpaths or within street parking bays. Trees do not need to be in continuous linear features such as avenues unless called for by the design, but can vary along the street, being deployed on different sides and combining with trees in incidental open spaces to create a varied streetscape responding to wider design objectives. Street lighting is typically present on secondary streets and trees need to be positioned not to conflict with it. Being narrower than principal streets, trees of a medium size or those of a compact form and habit are more appropriate to the scale of the space. Trees of a larger size may be more appropriate where the street passes areas of public open space. Trees in private gardens can contribute to the overall tree cover of the street but can't be relied on as permanent features of the streetscape as they are not within the public realm, and particularly where gardens are small and only suitable for small trees species.



6.51

Figure 31. Secondary Street: Winterton Avenue, Sedgefield | Google Street View



Figure 32. Secondary Street: Enterprise Way, Spennymoor | Google Street View

Tertiary streets

- 6.52 Tertiary Streets are quieter residential streets including mews and streets designed to home-zone principles. They are residential in character and well enclosed, with buildings usually situated on both sides of the street. Traffic volumes are low.
- 6.53 Trees can make an important contribution to the quality of tertiary streets helping to create a positive and safe environment for pedestrians. As they are of a smaller scale and finer grain than secondary streets regular linear solutions to the provision of street trees are rarely appropriate, although they can be successful. Opportunities should be taken to create space for trees, integrating them into areas of incidental open space

and hard or soft landscaping within the public realm. Street lighting may be present, and trees need to be positioned not to conflict with it. Being narrower and more intimate in scale than principal and secondary streets, trees of a small size and/or of a compact form and habit are more appropriate to the scale of the space. Trees of a medium or larger size may be appropriate where areas of public open space allow. As with secondary streets trees in private gardens can contribute to overall tree cover. While they can't be relied on as permanent features of the streetscape, and particularly where gardens are small, they are often appropriate to the domestic scale and character of the street.



Figure 33. Tertiary Street: Highgate, Durham | Google Street View

Edge Lane / Private Driveway

- 6.54 Edge lanes and private driveways are typically single-sided streets which form active frontages on outward looking settlement edges and often incorporate existing landscape features or border onto areas of open space or structural landscaping. Traffic levels are very low. Surfaces are often shared. They are often not through routes for motor vehicles.
- 6.55 Because of their location, there are often opportunities for street trees on the open side of edge lanes and private drives. The scale of trees appropriate and their planting pattern will vary depending on context. New planting can often usefully augment existing features – for example by introducing trees into or alongside existing hedges and woodland edges.



Figure 34. Private drive: Temperley Way, Sacriston | Google Street View

Species

- 6.56 The species selected for street trees need to be attractive, tough and pollution tolerant with an upright habit and a clear stem. They also need to have a degree of winter hardiness suited to the climate of northern England. Although species choice is restricted, planting monocultures should be avoided to ensure robustness to disease or changing conditions. The species selected for garden trees can be more varied. Attractive and distinctive species and cultivars of an appropriate size and habit are more likely to be valued and retained by householders. You should take advice on species selection from a Landscape Architect or Arboricultural Consultant.

Tree planting in hard landscapes

- 6.57 Planting trees in hard landscapes and particularly in high density urban environments can be a complex exercise requiring the input of a range of specialists. Detailed guidance is provided by TDAG in their publications *Trees in the Townscape* and *Trees in Hard Landscapes: A Guide for Delivery* which are available on their website: <https://www.tdag.org.uk/>

Trees planted in hard surfaces need to have:

- access to a sufficient volume of appropriate rooting medium to support their future growth,
 - permeable surfacing or ventilation systems that allow for exchange of gases and penetration of rainwater,
 - sufficient water (through natural or artificial irrigation) to support their future growth
 - adequate drainage to prevent waterlogging
 - flexible surfacing or grille systems around the base that allow for growth
 - above or below ground support
 - support for surrounding paving
- 6.58 In most circumstances this will involve the use of proprietary tree pit or root cell systems. In some situations these can form part of a SuDS system. Tree pits may be

individual per tree, or an interconnected or continuous trench shared between a number of trees. They can also be different shapes, extended or asymmetrical in order to optimise the available soil volumes for trees and the fit of the pit with the surface detailing.

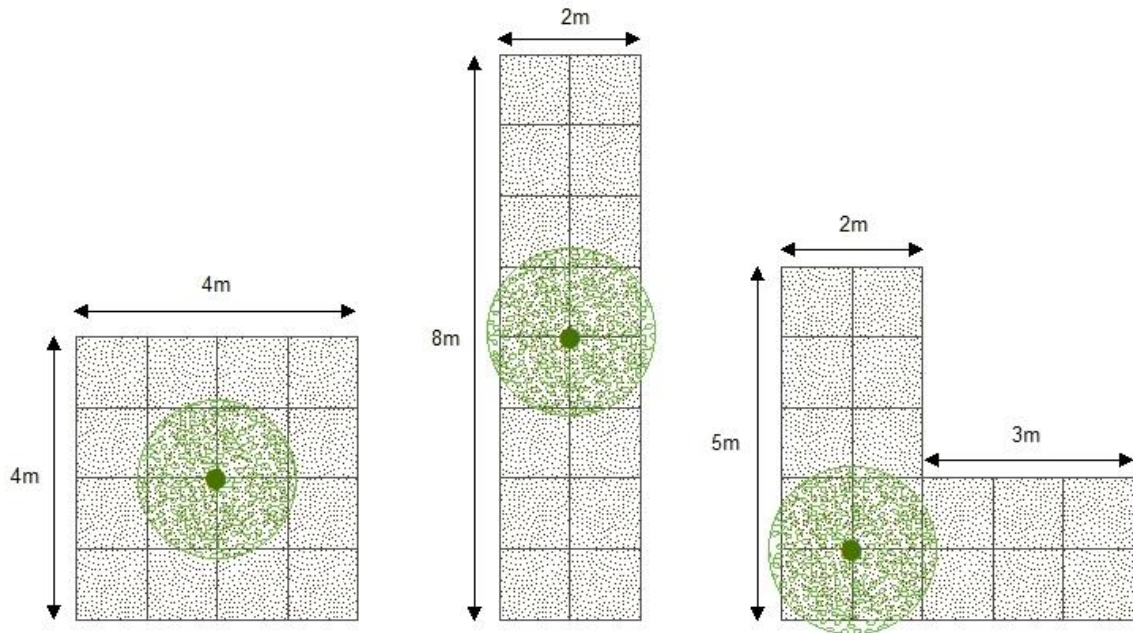


Figure 35. Typical tree pit arrangements for medium sized trees | DCC

6.59 The optimum soil volumes for tree pits / root cell systems are given in the table below. A detailed Tree Species Soil Volume Guide has been produced by GreenBlue Urban and is available from their website: <https://greenblue.com/gb/>

Tree size	Target soil volume	Species examples
Small species Canopy 3 - 5m diameter	5-9 m ³ (Typical pit dimensions 3m x 3m x 1m)	Amelanchier arborea Malus hupehensis Prunus 'Pandora'
Medium species Canopy 5 - 8m diameter	12-16 m ³ (Typical pit dimensions 4m x 4m x 1m)	Pyrus calleryana Sorbus intermedia Betula ermanii
Large species Canopy > 8m diameter	25-30 m ³ (Typical pit dimensions 5m x 5m x 1m)	Acer platanoides Quercus palustris Tilia cordata

Table 3: Soil volume requirements

- 6.60 Where soil volumes are shared the required rooting volume for each tree can then be reduced by up to 25%.

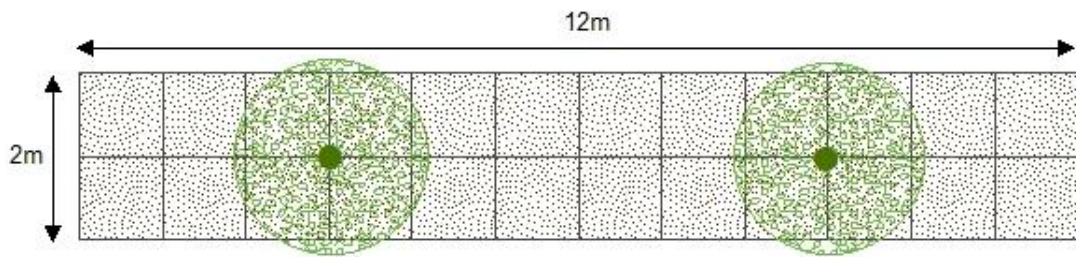


Figure 36. Typical tree pit for medium sized trees with shared rooting space | DCC

- 6.61 Trees planted in a lower volume of soil than the above will not reach their full growth potential and have a shorter life span. A lower soil volume will not be accepted unless there is an overriding justification or special circumstances.
- 6.62 As with trees in soft landscaping a good quality soil is essential for successful establishment and longevity. Soils used in tree pits can be good quality natural topsoil/subsoil selected from on-site soils or imported natural soils where these are free draining loams. In many cases in Durham where heavy soils predominate it will be more appropriate to use proprietary tree soils as they have the characteristics needed for these conditions.
- 6.63 It is important that subsoil with minimal organic content, rather than topsoil, is used at depths below that of the natural topsoil (typically around 300mm depending on soil texture) to prevent anaerobic conditions developing.
- 6.64 There are a number of different manufactures who provide tree pit / root cell systems. They should be installed in accordance with the manufacturer's instructions. It is important to match proprietary systems to the size of tree being planted and particularly the root ball. Planting trees with larger root balls than the system is designed to accommodate can lead to the tree being planted too deeply or structural issues arising with the paving.
- 6.65 Irrigation systems are essential for trees in hard surfaces and should be installed in accordance with the manufacturer's instructions.
- 6.66 Where underground anchor systems are used, they should be installed in accordance with the manufacturer's instructions. Underground anchor systems only work effectively on larger root balls (>150L) and above ground support with tree stakes will be needed for smaller trees. Backfilled soils must be worked well around the root ball to ensure good root to soil contact and minimise settlement and movement of the root ball after planting.

- 6.67 The area immediately around the stem of the tree can be reconciled with the surrounding paving through a variety of details including proprietary tree grilles, pre-formed tree surrounds or flexible materials such as Flexipave. It is essential that they are specified appropriately to accommodate the size of tree planted and have an appropriate expansion gap around the root collar to allow for future growth of the stem.



Figure 37. Planting pit in hard landscaping | GreenBlue Urban

- 6.68 Aftercare for trees in hard landscaped areas needs to be of a high standard too ensure that they thrive in a challenging environment. It should include watering, formative pruning and maintenance of furniture such as grilles and guards. For example, where a tree grille is installed, sections will need to be removed as the tree stem increases in size. The opening surrounding the stem should be infilled with a suitable loose material such as bark mulch or horticultural sand and regularly topped up and/or litter removed as required. Similarly, where a tree guard is installed this should be removed once the tree is well established and before it begins to constrain the trees natural form and growth. Maintenance for trees in hard landscaping should be detailed in a Management Plan (see below).

Tree planting in soft landscapes.

Planting pits

- 6.69 Trees planted in soft landscapes need to have a good rooting environment. This is readily achieved on undisturbed soils but on many development sites soils are stripped and reinstated, or imported soils are used, and particular care needs to be taken to get conditions right (see 6.6-6.11 above). As with trees planted in hard landscapes trees in soft landscapes need access to sufficient soil volumes to support healthy growth (see 6.53-6.55 above). Planting in small, isolated patches of ground confined by hard surfaces such as roads, paths and drives that don't meet the trees long term

requirements is a common cause of failure. It should be avoided unless the rooting environment can be extended under those surfaces with proprietary root cell systems. When planted into soft landscapes which also form a drainage function such as swales, filter strips and rain gardens the selection of soils is particularly important.

- 6.70 Planting pits should be of an appropriate size to accommodate the size of planting stock. For most standard trees a pit of around 1m x 1m x 0.5m will be appropriate – the depth being greater if necessary to accommodate the root ball. Topsoil and subsoil should be removed and set aside separately. The base of the planting pit should be broken up. Soils should be replaced in the order removed. Root barriers should not be used around planting pits as this will leave insufficient soil volumes to sustain growth (see also 6.33).
- 6.71 Where backfilled with imported soils, subsoils should be used below depths of around 300mm (depending on soil texture). No organic material such as compost should be incorporated below that depth to avoid anaerobic decay damaging roots. Topsoil should be mixed thoroughly with planting compost (at around 50l per pit) before being backfilled.

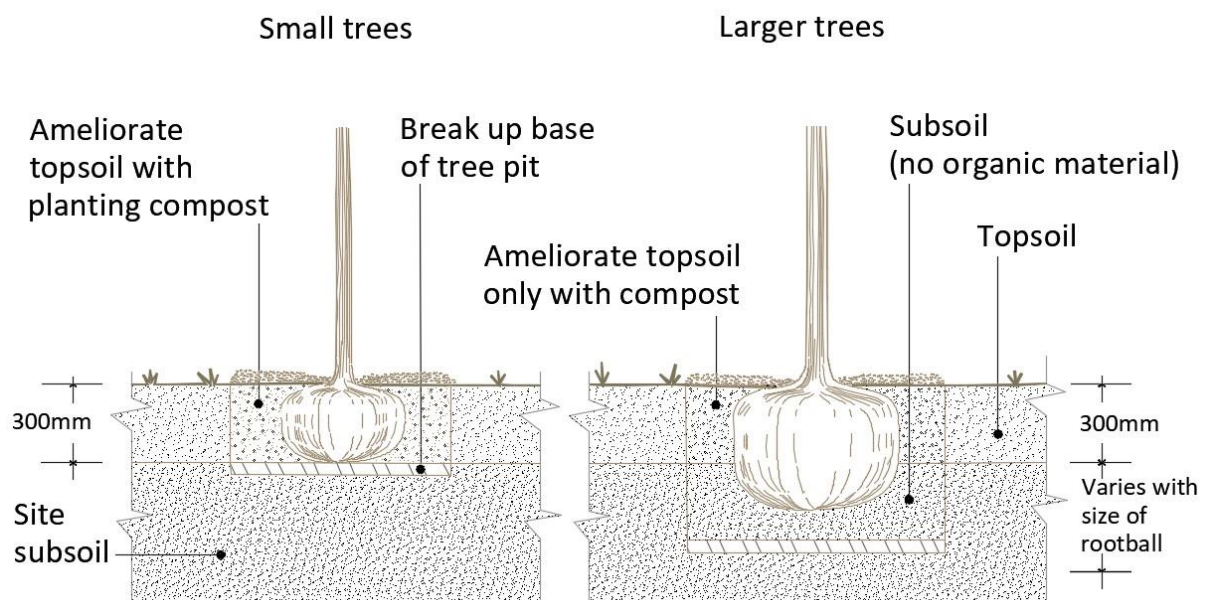


Figure 38. Typical tree pit details in soft landscaping | DCC.

Planting

- 6.72 Prior to planting all tied up branches should be released, any supporting canes removed, and any remedial pruning to weak or damaged branches carried out before positioning the tree.
- 6.73 Trees must be planted vertically at the correct depth to ensure the root collar at the base of the stem is at the same level it was in the nursery: check the planting depth is correct using a straight stick, level or tree stake. It is important not to plant trees too

deep as this can initiate root circling or girdling which can lead to premature tree failure. On wet sites trees can be planted slightly higher, for example with the root collar 25mm above the surrounding ground level.

- 6.74 The edges of containerised root balls should be 'shaved' lightly, e.g. with spade to stimulate fibrous root development into surrounding soil. Once the tree is placed in the tree pit correctly and tree stakes placed in the correct position, soil can be backfilled. This should be worked well around the root ball to ensure good root to soil contact and to minimise post planting settlement. Soil should be backfilled just below the top of the root ball but no higher, allowing for the addition of mulch.

Tree Stakes and Ties

- 6.75 Tree stakes should be installed without damaging roots. For root-balled trees this means that stakes should be positioned just outside of the root-ball. Stakes should be driven in firmly once aligned, evenly spaced and upright. These must remain secure with no 'play' once ties and guards have been attached.
- 6.76 Tree stakes should extend up to approximately 1/3 tree height to ensure adequate support of the tree during the establishment phase while allowing the stem to flex naturally above that point. Standard tree ties or belts (min 25mm size) should be used to secure tree to each stake at the required height – no blocks, wires, boards should be used as these may cause damage to the tree as its girth increases.

Tree guards

- 6.77 On many sites, and particularly those in public open space and urban areas, it will be appropriate to use tree guards to protect young trees from damage – either deliberate vandalism or accidental damage from grass cutting machinery. Proprietary tree guards should be installed in accordance with the manufacturer's instructions. The top height of the cage should aim to protect tree stems or branches from being snapped or broken (typically between 1.6m and 1.8m in height).
- 6.78 Mesh cages should be installed with a gap at ground level to allow mulch to be spread evenly and litter removed. When planting standard trees on its own land the Council uses mesh guards combined with three timber stakes as shown in the detail in Figure 39 below.

Mulches

- 6.79 Mulching around trees with bark or wood chip helps to control weeds, conserve moisture, increase water permeability, reduce run off and moderate soil temperatures. It also serves to protect the plant stem from mechanical damage by strimmers and mowers by creating a stand-off distance from their operation. Mulch should be placed around the base of each tree to a uniform depth of approximately 75mm deep and 1m diameter. Heaping of mulch ('volcano mulching') should be avoided. Mulch must not directly cover the base of the tree stem above the root collar but should leave a small gap around the stem (100 -150mm). Mulch should also extend outside guards /mesh cage to the appropriate distance: this can help reduce damage to guards / cages from mowers.

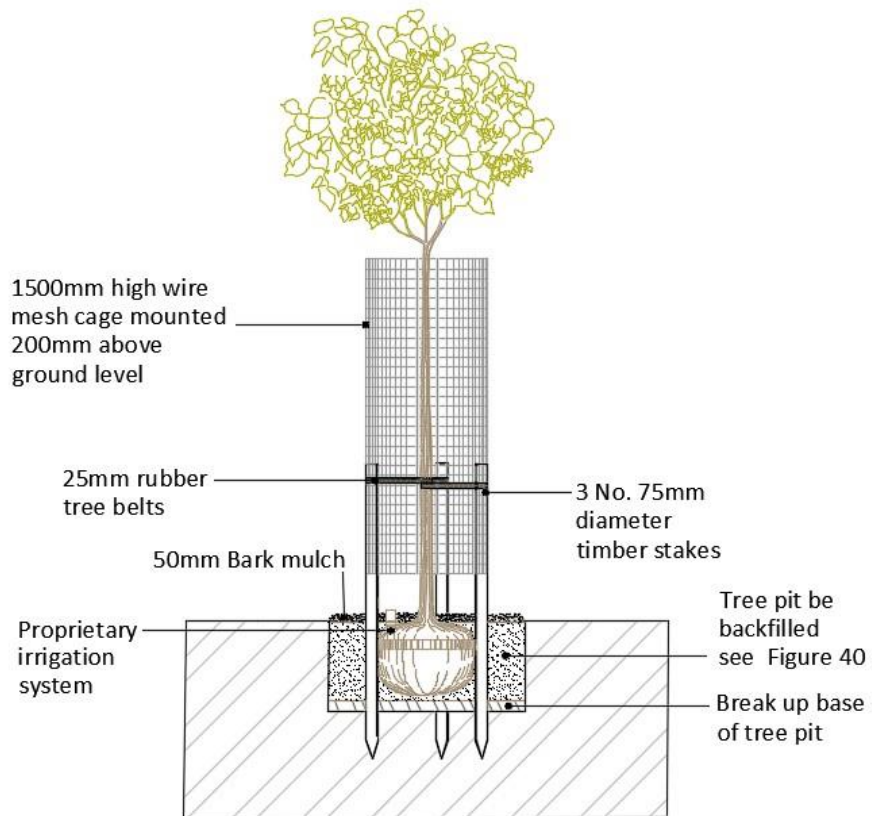


Figure 39. Typical planting detail for standard trees in public open space | DCC



Figure 40. Typical planting detail for trees in public open space | DCC

Watering

6.80 Tree root-balls should be soaked prior to planting to ensure adequate moisture is present, and tree should be watered immediately after being planted to ensure the soil backfill is fully soaked and settled around the root-ball. Watering is critical to the survival and establishment of trees in the early years. Irrigation systems should be installed in accordance with manufacturer's instructions. Watering should be carried out whenever necessary and this will depend on the season.

Tree Planting in Sustainable Drainage Systems (SuDS)

6.81 Tree planting can form part an important part of sustainable drainage systems. Trees contribute to surface water management by intercepting rainfall in their canopies, slowing and reducing the amount of surface water entering the system, while providing an infiltration medium in their rooting environment that stores water and slows run-off. Some of that water is absorbed by the roots and evaporated through the leaves in transpiration. Trees can be successfully incorporated into a range of SuDS features but it is important to design those features with trees in mind, creating conditions in which trees can thrive whilst meeting their functional drainage requirements.

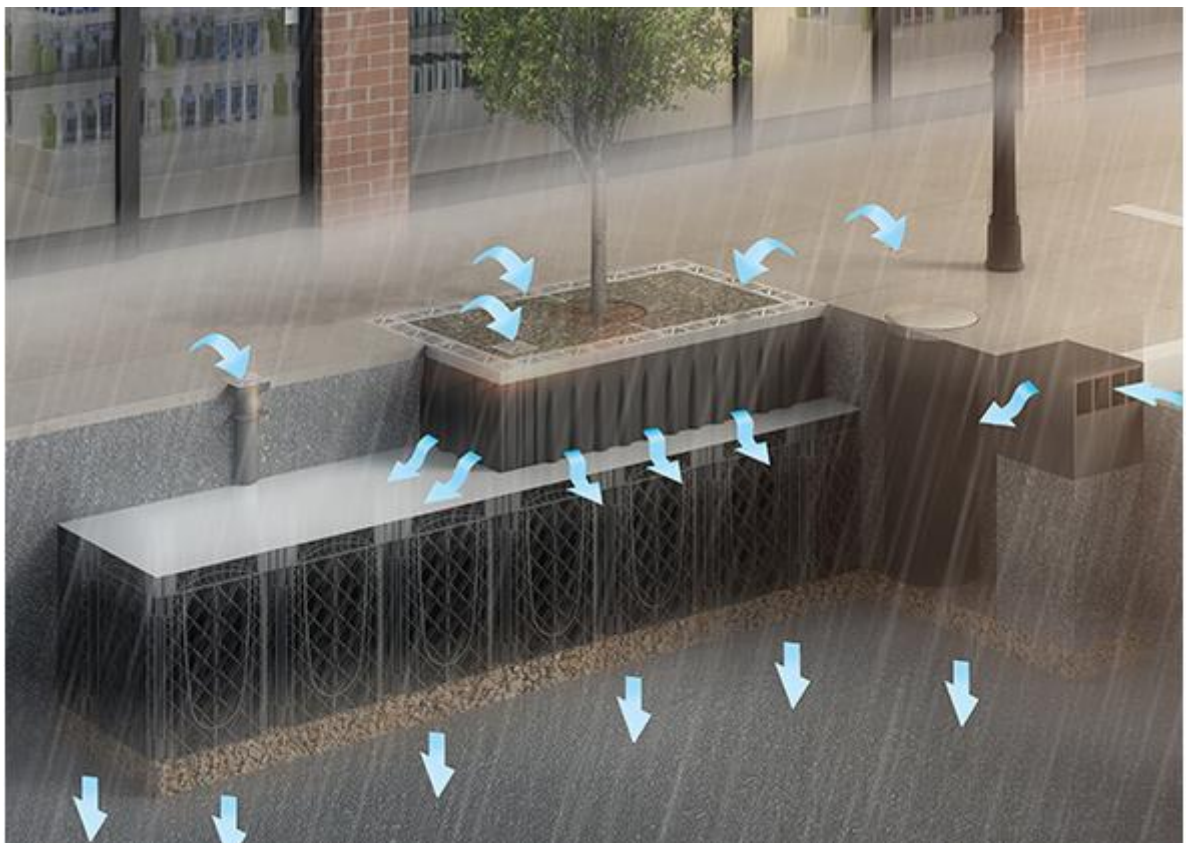


Figure 41. Use of tree pits in SuDS | Green Blue Urban

SuDS trees in hard landscapes

6.82 Tree pits in hard landscapes can be designed to collect, store and treat surface water runoff. This involves the use of proprietary tree pit or root cell systems which are integrated with the wider drainage system either as individual tree pits or as continuous underground trenches serving a line or group of trees. Tree pits and trenches must have:

- an appropriate catchment area to support growth without prolonged waterlogging
- adequate bearing for anticipated loads
- an adequate volume of good quality engineered soils with an open structure
- appropriately designed water inlets that are regularly maintained where necessary
- adequate drainage to remove excess water
- adequate aeration to maintain soil and root health

Trees planted in SuDS tree pits or trenches need to be tolerant of both drought and waterlogging and be able to adapt to sudden changes between those conditions. As street trees they also need to have the general characteristics of winter hardiness, toughness, pollution resistance and an upright habit.

Rain gardens and bioretention areas

6.83 Rain gardens and bioretention areas vary in character. Some are designed to hold water and may incorporate wet or damp ground. Others will be dry and free draining, designed for only short periods of retention. A wider range of small trees, multi-stemmed trees and shrubs including some native species may be suitable for planting in rain gardens, underplanted with suitable perennial groundcover. Species selection should be site specific and suited to the hydrological conditions and other factors such as size, function, formality, available sunlight, exposure and the presence of salt or other pollutants.

Swales

6.84 Swales can include linear rain gardens in hard landscapes or simpler 'soft' features in open spaces or highway verges. Most swales will be relatively free draining with brief periods of waterlogging. The physical environment for trees can be less exacting and suited to a wider range of species, including some natives. Species selection should be site specific. When planting in the highway verge the general characteristics of street trees - winter hardiness, toughness, pollution resistance and an upright habit – remain important. It is essential that any root barriers installed to protect adjacent hard surfaces or perforated drains are positioned so as to allow the tree access to sufficient soil volume.

Attenuation basins

6.85 Trees can be planted in and around larger attenuation basins either as individual specimens, as wet woodland on the floor or margins of the basin, or as a mosaic of woodland, scrub and open habitats. Trees planted within the basin should be selected of their tolerance of episodes of waterlogging and should include species characteristic of wet woodlands in the County such as common alder, downy birch, goat willow and grey willow.

Maintenance and adoption

- 6.86 SuDS features should be regularly inspected and the maintenance monitored by a competent professional. They will require a maintenance / management plan which may be included in a wider landscape or biodiversity management plan (see below). For SuDS trees in the adopted highway or public open spaces which are to be managed by the Council, the construction, function, planting and maintenance requirements should be agreed with the Council as part of the planning and design process.
- 6.87 More information can be found in the SuDS Manual published by the Construction Industry Research and Information Association (CIRIA) and available to download from their website:
<https://www.ciria.org/ItemDetail?iProductCode=C753F&Category=FREEPUBS>

Planting woodlands

Structure planting

- 6.88 New woodlands may be planted as part of the landscape infrastructure of a development or to help screen or assimilate it in wider views. Woodlands planted as part of the landscaping proposals for development should generally be comprised of species native to, and/or characteristic of, the locality in order to strengthen local character, identity and distinctiveness and create opportunities for wildlife (see Appendix 5). Guidance on woodland planting and landscape character can be found on the Durham Landscape website: <https://durhamlandscape.info/durham-landscape/woodland-and-forestry/>

This includes :

- general guidance on site selection, planting design and species selection: <https://durhamlandscape.info/durham-landscape/woodland-planting/>
 - advice on planting sites and planting design in different County Character Areas: <https://durhamlandscape.info/durham-landscape/character-areas-overview/>
 - advice on planting within different Broad Landscape Types: <https://durhamlandscape.info/durham-landscape/broad-landscape-types-guidelines/>
- 6.89 Woodlands planted for screening should be:
- designed for that purpose, with planting mixtures that will achieve the required parameters in terms of height, visual densities and growth rates
 - sufficiently robust to screen effectively all year round where this is required
 - sufficiently wide to be capable of being managed as woodland in the longer term and particularly if combined with other features such as SuDS and footpaths
 - comprised of species native to, or characteristic of, the area.
- 6.90 In most cases transplants, whips or cell-grown stock planted at typical forestry spacings (around 2m centres) will give the best results and will out-perform schemes using standards in the medium and longer term. Higher planting densities may give

quicker impact in the very short term but this will soon be outweighed by the need to thin very early and are not generally recommended. Young trees should be protected from trampling, grazing and mammal damage.

- 6.91 Planting mixtures with a high proportion of native shrubs are likely to be easier to keep visually dense in the longer term than mixtures with a high proportion of tree species. The latter tend to compete with each other creating a high canopy which is more open at lower levels and require more regular thinning.
- 6.92 Structure planting can be combined with SuDS attenuation basins (see above). This can be valuable where space is either limited or where planting would help assimilate otherwise heavily engineered features into the landscape in wider views.
- 6.93 Woodlands and other woody habitats such as scrub, wood pasture and parkland created for wider objectives such as biodiversity and flood control, should be designed to meet those objectives. The guidance referenced in 6.87 above contains useful information on creating native woodland habitats. Natural England's advice on the six principles of 'Right Tree Right Place' for woodland creation is given in the box below.

Six principles of 'Right Tree Right Place' for woodland habitat creation

1. Check for existing interest and restoration potential - ensure that existing environmental assets (priority habitats, peat, protected sites, priority species (especially breeding waders) are not compromised by tree planting and opportunities for restoring non-wooded habitat are considered when assessing the suitability of a site for tree planting. Please refer to relevant guidance on woodland creation as listed below.

2. Go native and diverse – native woodland has co-evolved with our native wildlife and is proven to support a greater range of priority species than conifer plantations, in which only 18 of the 257 priority species are primarily found. Native communities also tend to be more resilient to climate change and environmental stressors, as they are better adapted to local geology, soils and conditions and are generally more diverse in age and vertical structure, occupying a greater range of niches than plantations.

3. Get better connected – creation of native woody habitats should enhance functional connectivity between existing wooded habitat patches within the landscape, in particular to buffer and join up with any existing Ancient Woodland and Wood Pasture protected sites. This increases permeability of the landscape for both woodland and non-woodland species.

4. Go large – larger woodlands are likely to host a greater range of species, pertinently woodland specialist species. However, trees outside of woodland are also critical for providing wooded habitat corridors and connecting presently fragmented woodlands.

5. Be edgy – incorporation of structural heterogeneity i.e. open space in the form of glades and rides and edge ecotones whereby woodland grades into scrub and avoiding straight edges can maximise opportunities for nature recovery. Promoting natural colonisation, where there is a viable seed source and nature conservation objectives, will support the development of a diverse age and vertical structure.

6. Get wet – restore hydrology and other natural processes i.e. natural interactions between trees and water through riparian woodland creation, which can also address issues of nutrient and sediment transfer from farmland

6.94 In developments where larger new woody habitats are created, natural colonisation from a nearby native seed source may be practical either instead of, or in combination with, planting. Natural colonisation ensures that seed is of local provenance and therefore site adapted and thus more likely to successfully establish in the first instance. Local provenance seed of native species also tends to be of higher genetic diversity than that available through nurseries, which fosters resilience to environmental stressors. The phenology of trees of local provenance is also more compatible with local fauna & flora. The process of natural colonisation ensures vertical and age structure diversity and in turn creates niche diversity.

Community Orchards

6.95 Community orchards are excellent places for people to come together to plant and cultivate fruit trees, often local or unusual varieties, and to use the space as the focal point for community activities. Advice on community orchards can be found on the website of The Orchard Project <https://www.theorchardproject.org.uk> and on the government website: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/11466/1973262.pdf

Priorities for new woodland planting

6.96 The County Durham Landscape Strategy maps the sensitivity of different areas to new woodland creation and sets out the priorities for new planting. These can be found on the Councils website: <https://durhamlandscape.info/durham-landscape/woodland-and-forestry-2/>

6.97 Priorities for new woodland creation in the Strategy include:

- Native Woodland Priority Areas are areas close to (<500m) existing native woodlands where new planting may buffer or extend the woodland habitat.
- Riparian Woodland Priority Areas are areas close to rivers and streams (<100m from major watercourses, <50m from minor watercourses) where new planting may control erosion and improve the quality of the river and river corridor habitat.
- Community Woodland Priority Areas are areas close to where people live (<1000m from larger settlements, <500m from smaller settlements) where new planting may create opportunities for access and recreation.

- Landscape Improvement Priority Areas are areas where the landscape is in poor condition (local landscapes with strategies of *Enhance* or *Restore and Enhance*) and where new woodland planting would enhance the character of the landscape.

6.98 These can inform decisions about the creation of new woodlands as part of a development, or those planted in mitigation for woodland loss. Some weight will be given in the planning balance to woodland creation that aligns with priorities in the CDLS as the Council's adopted strategy. Similarly, weight will be given to woodland creation that aligns with emerging Nature Recovery Strategies, the North Pennines AONB Management Plan, the objectives of landscape partnerships and initiatives such as the NECF, or meets other established environmental objectives such as flood prevention / attenuation at a wider landscape scale.

Planting hedges

6.99 Planting new hedges within or bordering a development can help integrate new buildings, define public and private spaces, ameliorate air quality and provide habitats for wildlife. Detailed guidance on planting hedges can be found on the Durham landscape website: <https://durhamlandscape.info/durham-landscape/hedgerows/> and on the Durham Hedgerow Partnership page of the Council's website: <https://www.durham.gov.uk/haw>

Native hedges

6.100 The use of locally native species can help conserve local distinctiveness and is likely to be of value to the widest range of species. The species mixes given in Appendix 5 are recommended for different parts of the county by the County Durham Hedgerow Partnership. When planted at around 5 plants per metre these mixes will create stock proof but species rich hedges characteristic of those areas. Hedges are generally planted either in single lines with 20cm between plants or in offset rows 40cm apart with 15cm between rows. For interplanting between coppiced sections, 4 plants per metre is usually sufficient.

6.101 Where possible new hedges should connect to existing features such as other hedges, woodlands and wetlands. Sufficient space should be allowed for in the layout to accommodate the width of a mature native hedge, which can be up to 2m or more. The biodiversity value of new hedges can be enhanced by planting on a hedge bank, or alongside a ditch, or by buffering with a headland of species rich grassland (tussock or meadow grasses) to form an 'ecotone' of transitional habitat.

Hedgerow trees

6.102 The majority of hedgerow trees in the County are Ash, Oak and Sycamore. Ash is currently widely affected by Ash Dieback and is not recommended for general planting. Sycamore is not a good hedgerow tree as it casts heavy shade and honeydew which can suppress the hedge plants under its canopy. The advice at the time of publication is to use oak (Common Oak in the lowlands and Sessile Oak in the uplands and upland fringes) as the principle large hedgerow tree, with small numbers of other species (Rowan, Bird Cherry, Field Maple) as smaller hedgerow trees. Hedgerow trees are typically planted at irregular intervals at spacings of >20m.

Ornamental hedges

6.103 Ornamental hedges can be a useful way of defining garden spaces, breaking up parking areas and screening parked low level visual clutter. Evergreen native species such as Yew and Holly are particularly useful in providing all-year screening, as are Beech and Hornbeam which hold onto their leaves over winter. Hornbeam tends to perform better than Beech in County Durham on heavier soils.

Establishment maintenance

6.104 A high standard of maintenance is needed during the period in which new trees and hedges become established. A full 5-year maintenance programme will need to be submitted as part of the detailed landscape scheme. This should include details of:

- weed control
- mulching
- watering
- formative pruning
- maintenance and ultimate removal of stakes, ties and guards
- addressing damage or disease
- replacement of any plants that die or fail to flourish on an annual basis

Weed control

6.105 Weed control is essential to prevent competition from grasses and other vegetation. This can have a significant impact on the survival and growth of trees in the early years. For standard trees and other trees in ornamental soft landscaping this is best accomplished with mulches, sometimes combined with weed control fabrics. For transplants planted at a field scale in the creation of woodlands and structural landscaping this may not be practical and chemical weed control may be necessary. For most trees a weed-free zone of around 1m in diameter should be maintained throughout the establishment period. A variety of sheet and organic mulches can be used for hedgerows. Organic mulches have the advantage of being cheap and are less unsightly when disturbed. Their use avoids the introduction of plastics into the environment.

Mulching

6.106 Mulch must be topped up to specified depth/radius annually (typically 75mm deep x 1m diameter). The base of trees must be cleared of weeds by cultivating prior to adding mulch.

Watering

6.107 Trees must be watered at suitable frequency during growing season from April to September as conditions dictate, especially during prolonged dry periods. This may require weekly watering during hot dry spells. Root balls must be thoroughly soaked on each occasion using a fine rose or sprinkler (or via irrigation pipe where fitted) until the full depth of topsoil is saturated. Arrangements for watering schedule must be specified in advance detailing watering frequency, methods, quantities and monitoring procedures.

Formative pruning

6.108 Trees should be subject to formative pruning where necessary during the maintenance period. This may include pruning of damaged/dead or poorly formed branches and minor crown lifting.

Stakes, ties and guards

6.109 All tree stakes, ties and guards, shelters or cages should be checked regularly and tended to as required, including firming or replacing loose stakes, retying loose or missing ties, fixing or replacing loose or missing shelters and guards, and making safe or replacing damaged guards. Leaning trees must be correctly repositioned. If the root ball has rotated it must be carefully replanted upright into the correct position and not forced straight with tree ties.

Addressing damage or disease

6.110 All trees should be checked on a regular basis for mammal, human and other external damage and for pests and diseases. Remedial action should be taken promptly on discovery, where necessary.

Replacement

6.111 Any trees that have failed due to natural causes or poor stock quality must be replaced using the same size and species of tree and planted to original specification. Trees that have been vandalised will either require remedial pruning if they can be retained or removal and replacement depending on the severity of damage. This must be undertaken on an annual basis.

6.112 Where planting is to be transferred to the ownership of, or management by, the Council, a Council Officer will inspect all new planting and specify any replacements and other remedial treatments that need to be implemented before approval is given.

Long term management

6.113 For schemes that involve the planting of trees, woodlands and hedges in areas of public open space, and public realm or structural landscaping, a long-term Management Plan will be required that provides for their retention and maintenance. This may take the form of a Landscape Management Plan, a Woodland Management Plan or a Biodiversity Management Plan depending on the site.

6.114 Where planting forms part of the requirements of Biodiversity Net Gain calculations the management plan should be in place for a minimum of 30 years. Where it is proposed to maintain public open space other than through transfer to the Local Authority the scheme must provide for details of an agreed maintenance schedule in perpetuity.

6.115 Management operations for trees, woodlands and hedges should include the following:

Trees

- Irrigation where required
- Formative and remedial pruning as required

- Maintenance or removal of stakes, guards etc
- Checks for health / damage and remedial measures
- Replacement of dead or diseased plants to maintain specified stocking levels

Woodlands

- Removal of guards / shelters
- Checks for health / damage and remedial measures
- Replacement of dead or diseased plants to maintain specified stocking levels
- Thinning / selective felling operations
- Removal of litter
- Management of rides and open spaces
- Maintenance of fences, stiles, seats and other structures

Hedges

- Removal of guards / shelters
- Checks for health / damage and remedial measures
- Replacement of dead or diseased plants to maintain specified stocking levels
- Trimming regimes
- Cyclical laying
- Tagging or protection of hedgerow trees

7 Tree Preservation Orders (TPO) and Trees in Conservation Areas

TPO – an overview

- 7.1 In England, Local Planning Authorities have the power to protect trees by making a Tree Preservation Order (TPO) if they consider it to be expedient in the interest of amenity. They also have a duty to ensure, whenever it is appropriate, that in granting permission for development, adequate provision is made for the preservation of trees, and a duty to make TPOs as they consider necessary in connection with the grant of planning permissions. Trees are also protected if they are in a conservation area (see below).
- 7.2 A TPO is a legal document made, administered and enforced by us as the local planning authority. It protects specified trees and woodlands, and prevents cutting down, uprooting, topping, lopping, wilful damage or destruction of trees (including cutting roots) without our permission.
- 7.3 A TPO can protect anything from a single tree to all trees within a defined group or woodland. There are currently around 700 TPOs in County Durham. As many of these are woodlands or groups, the number of trees protected by them is much greater.
- 7.4 More information on Tree Preservation Orders and trees in conservation areas can be found on the Government website: [Tree Preservation Orders and trees in conservation areas - GOV.UK \(www.gov.uk\)](http://www.gov.uk). The law on Tree Preservation Orders is in [Part VIII of the Town and Country Planning Act 1990](#) as amended and in the [Town and Country Planning \(Tree Preservation\) \(England\) Regulations 2012](#) which came into force on 6 April 2012. [Section 192 of the Planning Act 2008](#) made further amendments to the 1990 Act which allowed for the transfer of provisions from within existing Tree Preservation Orders to regulations. [Part 6 of the Localism Act 2011 amended section 210 of the Town and Country Planning Act 1990](#) concerning time limits for proceedings in regard to non-compliance with Tree Preservation Order regulations.

County Durham Plan Policy

- 7.5 Policy 40 states that:

Proposals for new development will not be permitted that would result in the loss of, or damage to, trees of high landscape, amenity or biodiversity value unless the benefits of the proposal clearly outweigh the harm.

The explanatory text advises that trees covered by a TPO are included under that term.

Policy 40 also states that

Where applications are made to carry out works to trees in Conservation Areas or that are covered by a Tree Preservation Order, they will be determined in accordance with the council's Tree Management Policy Document (or any subsequent revisions).

Existing TPO

- 7.6 There are currently around 700 TPO in County Durham. These include many group and woodland TPO and therefore the TPO cover several thousand trees. Some TPO are very long standing, the oldest dating back to the Town and Country Planning Act 1947. You can view an interactive map of TPO on the council's website: <https://www.durham.gov.uk/article/3914/Protected-trees>

Reviewing TPOs

- 7.7 The Council keeps its TPOs under review and particularly those where there have been significant changes in land use that might affect their merits. This can be resource intensive and particularly for some of the older and larger TPO and is undertaken as resources permit.
- 7.8 In reviewing TPOs the council can revoke an Order, revoke and make a new Order or Orders to replace it, vary an Order, or make an additional Order to add trees or resolve ambiguities in mapping. This is influenced by a number of factors including where:
- land has been developed
 - trees standing when the Order was made have been removed (lawfully or otherwise)
 - replacement trees have been planted
 - trees, for whatever reason, no longer merit protection by an Order
 - new trees meriting protection by an Order have been planted
 - the map included in the original Order is now unreliable
 - the Order includes classifications (such as 'area') that no longer provide appropriate or effective tree protection; or
 - errors in the Order's Schedule or map have come to light.
- 7.9 When varying or revoking Orders the council will notify people interested in the land as required by the Regulations. When revoking Orders that might engage wider public interest, the Council will consider notifying local people, groups and other organisations. The power to vary or revoke Orders has been delegated to Principal Planning Officers and Planning Team Leaders through the Council's Scheme of Delegation. In doing so they will have regard to the advice of Tree Officers and the representations of people interested in the land and other parties.

Making a new TPO

- 7.10 The Council makes TPO as and when they are required and typically:
- Where there is a potential threat to a tree or trees
 - In response to requests from members of the public
 - As part of the Council's review of existing TPO
 - Where it appears necessary in connection with a grant of permission

7.11 It is rarely necessary to protect trees owned or managed by the Council other than in cases where there is a tangible threat from another party. TPOs will usually therefore only be considered on privately owned land or where land owned by the Council is being sold. When deciding whether an order is appropriate the Council will take into account the amenity value of the tree or trees and the expediency of making an order.

Amenity value

7.12 In making judgements about the amenity value of trees the Council will consider whether their removal would have a significant negative impact on the local environment and its enjoyment by the public. Factors influencing this will include the degree of visibility from public vantage points and the particular importance of a tree, group of trees or woodland in respect of their individual, collective or wider impact which will be influenced by characteristics including:

- size and form
- future potential - including condition, life expectancy and sustainability in its location
- rarity, cultural or historic value
- contribution to, and relationship with, the landscape or townscape, and
- contribution to the character or appearance of a conservation area.

7.13 The council will also take into account factors such as the biodiversity value of particular trees or their importance to our response to climate change, either because of their individual characteristics or context. This might include, for example, their contribution to a wider ecological network. The value of trees in general to those matters will not on its own warrant making an Order.

Expediency

7.14 In making judgements about expediency the Council will consider whether there is a risk of trees being felled, pruned or damaged in ways which would have a significant impact on the amenity of the area. It will not generally make Orders in respect of trees which are under good arboricultural or silvicultural management in the absence of a tangible threat. It may make Orders where it believes that trees are at risk based on development pressure, visible harm to trees, the known intentions of a landowner or potential changes in ownership.

7.15 In some cases, the Council will make Orders on trees on a potential development site as a precautionary measure to ensure that they are given due consideration in the planning process, and then choose to either confirm, not confirm, modify or revoke the Order if permission is granted.

7.16 The Council will not generally make Orders for small tree species in domestic gardens as they do not make a significant impact on amenity. It will not make orders for trees in unsustainable locations.

Process

7.17 The power to make Orders has been delegated to Principal Planning Officers and Planning Team Leaders through the Council's Scheme of Delegation. They receive

advice on the amenity value of trees and the expediency of an Order by Senior Tree Officers.

- 7.18 In gathering evidence, a Tree Officer will visit the site. If they need to enter land to gather evidence, they have the right of entry to do so, having been duly authorised in writing by the Council to enter land for the purpose of surveying in connection with making or confirming an Order if there are reasonable grounds for entering for that purpose.
- 7.19 Orders can be made on trees and woodlands in four categories: individual, area, group and woodland. The area category is a way of protecting individual trees dispersed over an area and may cover all trees in the mapped area or only those species which it is expedient to protect. It is intended for short-term protection in an emergency and may not be capable of providing appropriate long-term protection. The Council will only use this category as a temporary measure until we can fully assess and reclassify the trees in the area.
- 7.20 Orders are typically made without prior notification or discussion as this can provide an opportunity for trees to be felled or works carried out before the Order is in place.
- 7.21 When the Council makes an Order, it will serve notice on the people with an interest in the land, as required by the Regulations, inviting representations about any of the trees covered by the Order. A copy of the Order will also be made available for public inspection. An Order [comes into effect](#) on the day the Council makes it. This provisional effect lasts for 6 months, unless the Council first either confirms the Order to provide long-term protection or decides not to confirm it.

Commenting on newly made TPOs

- 7.22 All notified parties have at least 28 days from the date of the notice to submit their representations. Comments on a new TPO can be made by anybody and objections can be made on any grounds. Before deciding whether to confirm an Order, the Council will take into account all objections and representations if:
- They are made in writing and:
 - delivered to, or could reasonably be expected to be delivered to, the authority not later than the date specified in the [notice](#);
 - specify the particular trees, groups of trees or woodlands in question;
 - in the case of an objection, state the reasons for the objection;
 - In a particular case, the authority is satisfied that compliance with the above requirements could not reasonably have been expected.
- 7.23 The legislation provides no right of appeal to the Secretary of State against an authority either making or confirming an Order. There is, however, a [right of appeal](#) to the Secretary of State following an application to carry out work on trees protected by an Order that is refused, granted subject to conditions, or not determined.
- 7.24 [The validity of an Order](#) cannot be challenged in any legal proceedings except by way of application to the High Court on a point of law. The [Town and Country Planning Act](#)

[1990](#) and the [Civil Procedure Rules 1998](#) set out the application process. Anyone considering challenging the validity of an Order in the High Court is advised to seek legal advice.

Confirming TPOs

- 7.25 The power to confirm TPOs has been delegated to Principal Planning Officers and Planning Team Leaders through the Council's Scheme of Delegation. They will have regard to both the advice of Tree Officers and the representations made by other parties.
- 7.26 An Order can be confirmed either with or without modification, or not confirmed, which will stop its effect. The Council can only confirm an Order within 6 months from the date on which it was made. If it still considers protection is warranted beyond that point it will need to make a new Order.

Responsibility for TPO trees

- 7.27 The responsibility for trees lies normally with the landowner and this remains true for trees covered by a TPO. The owners of trees covered by Orders may be liable for damage or injury caused by the failure of the tree. The Council recognises that this may represent a burden to the owner which is balanced against the expediency of making the Order. The Council recommends that any trees that could cause damage or harm to or on 3rd party land are inspected periodically and preferably by a qualified arborist.
- 7.28 The making of a TPO does not entitle landowners to any financial assistance. The cost of both expert advice and works to a TPO tree will normally be borne by the owner of the tree or a person applying to do the works by agreement. County Council Tree Officers can give some limited arboricultural advice to help inform tree owners of their responsibilities and options and the scope of works that might be considered appropriate, but the responsibility for inspection of the tree/trees and the detail of any management works proposed remains with the owner and their agents.

Managing TPO trees.

- 7.29 There is a common perception that trees need to be managed actively and particularly through pruning. In reality trees are generally 'self-optimising', responding to their environment in a manner that maintains a balanced and healthy structure. Trees do not become dangerous simply because they grow large. In many cases the best way to manage a tree is through minimal intervention. Poorly considered operations like topping and heavy pruning can make trees more dangerous, removing material the tree needs to maintain its health and opening up large wounds that invite infection and decay. In some species they can stimulate a flush of undesirable growth which can make problems such as shading worse or create an unstable crown with new stems growing from decaying anchor points.
- 7.30 Trees are nevertheless living organisms subject to change and there are situations where they need to be managed to remove dead or diseased branches or to avoid or

redress impacts on people and property. In extreme cases trees may need to be removed. Regular inspection of trees can help identify issues before they need major works.

7.31 Tree works should be carried out by a qualified arborist working to the British Standard: BS3998:2010 Tree Work – Recommendations. The main forms of management works to trees are described in Appendix 1: Tree Management.

Consent to carry out works to TPO trees

7.32 If you intend to carry out any work to protected trees, you must apply for consent from us first. If you do not own the tree you must also obtain the owner's permission before carrying out the work.

Exceptions

7.33 Consent is not required:

- to remove dead branches from a tree, or to prune fruit trees in accordance with good horticultural practice.
- where the tree is dead (but we should be given five working days' notice before any works are carried out).
- where works are urgently necessary to remove an immediate risk of serious harm (in this case you should notify us as soon as practicable after the works become necessary).
- carry out works to hedges.

7.34 Consent is not required for carrying out the minimum work on a tree that is necessary to prevent or abate an actionable nuisance. Consideration should be given to whether steps other than tree work might be taken.

7.35 Consent is not required for carrying out works to trees covered by a TPO that are necessary to implement a full planning permission. The planning permission must have commenced within the relevant time limit (i.e. not have expired) and the works must be 'necessary' to implement the permission. This usually means that the works are explicitly provided for in the application or demonstrably required to implement approved plans. Where outline planning permission is granted, this does not override the TPO unless the removal forms part of a specific matter (such as access) which has been approved in detail as part of the outline permission.

7.36 More information on exceptions can be found on the Government website: Tree

Making an Application for Tree Works

7.37 Before you apply you can discuss your proposals with the Council's Tree Officers who will be able to advise you on the proposed works and the application process. Their advice will be given in good faith and without prejudice to the outcome of any application.

- 7.38 Applications should be made using the standard 'Tree Works' application form. Information on how to do so can be found on the council's website: [Protected trees - Durham County Council](#)
- 7.39 Your application must be accompanied by a plan which clearly identifies the tree or trees on which work is proposed. You should describe the works in as much detail as necessary, using photographs where appropriate. Reasons must be given for works to TPO trees and you will need to demonstrate that the proposal is a proportionate solution to your concerns and meets the requirements of sound arboricultural practice. For trees in conservation areas (see below) giving reasons for work is helpful but not mandatory.
- 7.40 If the reason for your application relates to the condition of the tree - for example the presence of pests, diseases or fungi, or structural defects affecting its safety, written evidence from an arboriculturist will be required. The [Arboricultural Association](#) has a list of professionals who can undertake such work.
- 7.41 If the reason for your application relates to suspected structural damage caused by the tree, you will need to submit a report from an appropriately qualified structural engineer and/or chartered surveyor, supported by technical analysis from other experts on matters such as soil and root analysis. More detail on the content of such reports can be found in the guidance note for the standard application form: https://ecab.planningportal.co.uk/uploads/1app/guidance/guidance_note-works_to_trees.pdf
- 7.42 Before making an application, you should read Appendix 1: Tree Management (below) for information on what works may or may not be considered acceptable.

How we deal with Applications for Tree Works

- 7.43 On receiving an application we will:
- determine whether the proposed work is exempt from the requirement to obtain consent
 - visit the site if we have not done so already
 - assess the amenity value of the tree or woodland and the likely impact of the proposal on the amenity of the area
 - consider, in the light of this assessment, whether or not the proposal is justified, having regard to the reasons and additional information put forward in support of it
 - consider whether any loss or damage is likely to arise if consent is refused or granted subject to conditions
 - consider whether any requirements apply in regard to protected species
 - consider other material considerations, including County Durham Plan policies, and
 - ensure that the decision is informed by specialist arboricultural advice.

As noted above Policy 40 of the CDP states that:

- Where applications are made to carry out works to trees in Conservation Areas or that are covered by a Tree Preservation Order, they will be determined in

accordance with the council's Tree Management Policy Document (or any subsequent revisions).

- 7.44 The Tree Management Policy (July 2020) can be downloaded from the Council's website: [Tree management - Durham County Council](#)

It states that:

Once an application has been submitted, we may either grant or withhold consent for works on a tree with a TPO or we may give a conditional consent. In determining whether to grant consent the Council will have regard to the amenity value of the tree and the considerations set out in sections 9 and 10 above (14.1.7).

Sections 9 and 10 of the Tree Management Policy deal with Tree Care and Damage and Tree Roots in respect of trees owned by the Council. They are influenced in some cases and to some degree by a consideration of the Council's resources as well as by the principles of good arboricultural practice and Common Law. The principles as they apply to TPO trees are set out below.

Obstruction

- 7.45 Tree branches can cause obstructions to roads, footways, public rights of ways, signs, streetlights and open spaces. Appropriate pruning to remove branches causing an obstruction will normally be supported provided that it is in accordance with good arboricultural practice (see Appendix 1: Tree Management). Works to maintain a minimum 5 metres clearance over roads, 2.5 metres over footpaths / public rights of way and 3 metres over railway paths will normally be considered acceptable as would the removal of epicormic growth from the base of trees.
- 7.46 Works to stop trees overhanging neighbouring properties will not normally be acceptable unless the trees are dangerous or causing an actionable nuisance by creating a risk of damage to the neighbour's property (e.g. touching the walls, roofs, windows, gutters, garage etc.).

Light and shade

- 7.47 Tree works to improve light levels will not normally be supported unless they are otherwise in accordance with good arboricultural practice (see Appendix 1: Tree Management) and preserve the health, longevity and amenity value of the tree. Where it can be established that the presence or form of a tree is detrimental to the health of residents, and particularly the elderly, infirm or disabled who spend a significant amount of time within their home, careful consideration will be given to the benefits of tree works taking into account the quality and importance of the tree as well as its value to the wider community.
- 7.48 If natural light is being blocked by the growth of a high hedge covered by an area or woodland TPO any action required under the Anti-social Behaviour Act 2003 (see High Hedges) would normally be considered acceptable.

Views and visibility

- 7.49 Tree works to improve or restore private views will not be supported unless they are otherwise in accordance with good arboricultural practice (see Appendix 1: Tree Management) and preserve the health, longevity and amenity value of the tree.
- 7.50 Tree works to improve or restore public views will only be considered when necessary to retain important public viewpoints or there is potential to bring about significant public benefit and/or enhance the local landscape or townscape.
- 7.51 Tree works for highway sight-line requirements will be dealt with on a case-by-case basis.

Television / satellite reception / solar panels

- 7.52 Tree works to improve television or satellite reception will not be supported unless they are otherwise in accordance with good arboricultural practice (see Appendix 1: Tree Management) and preserve the health, longevity and amenity value of the tree. Pruning in the short term may help improve television or satellite reception. However in the long term the flush of quick, extra growth associated with pruning can exacerbate the problem. In most cases the problem can be resolved by relocating the aerial or satellite dish, or alternatively using a Booster. Residents are advised to contact their satellite or TV provider for specialist advice.
- 7.53 Tree works to improve natural light to a solar panel will not be supported unless they are otherwise in accordance with good arboricultural practice (see Appendix 1: Tree Management) and preserve the health, longevity and amenity value of the tree. Whilst we recognise the need for renewable energy sources, trees are also important in tackling climate change.

Overhead services

- 7.54 Utility companies have certain legal rights to carry out works to public or privately owned trees to address health and safety problems and to maintain a clearance between trees and their apparatus to ensure continuity of supply. This may sometimes involve the loss of trees but more often entails pruning. Where works to trees are necessary as a result of proximity or conflict, we will encourage utility operators to adopt the most appropriate long term solution, giving consideration to the quality and importance of the tree as well as the benefits to the wider community, and to undertake any pruning works in accordance with good arboricultural practice.

General / minor nuisance

- 7.55 Tree works to alleviate problems caused by natural and/or seasonal phenomena will not be supported unless they are otherwise in accordance with good arboricultural practice (see Appendix 1: Tree Management) and preserve the health, longevity and amenity value of the tree. There are a variety of potential nuisances associated with trees, most of which are minor or seasonal and considered to be normal and acceptable consequences of living near trees. Examples of such problems are:

- falling leaves, twigs, sap, blossom, fruit, nuts, bird and insect droppings
- insects associated with trees (spiders, wasps, flies etc)
- reduction or increase of moisture to gardens
- suckers or germinating seedlings in gardens
- leaves falling into gutters, drains or onto flat roofs
- the build-up of algae on fences, paths or other structures

7.56 Clearing of leaves from gutters and pathways and weeding of set seeds are considered to be normal routine seasonal maintenance which property owners are expected to carry out. Falling leaves, sap, blossom, fruit, nuts, bird and insect droppings are not readily controllable by pruning and cleaning of affected surfaces can be considered to be routine maintenance.

Poisonous fruit /foliage

7.57 Proposals to fell trees because they bear fruit / foliage (such as laburnum or yew) which is poisonous to humans or animals will not normally be supported. Where it is known that unsupervised young children are likely to be exposed to berries or foliage that will make them ill if eaten, we will consider applications on a case-by-case basis.

Size

7.58 Proposals to fell or reduce the height of trees that are considered to be 'too big' or 'too tall' for its surroundings will not be supported. The height of a tree does not in itself make it dangerous. In assessing risks posed by trees the council will have regard to their height and relationship with buildings, but in many cases the most important factors will be their health and condition. Reducing the height of a tree by a substantial amount is rarely practical as it will generally introduce decay into the canopy and make it less stable, increasing rather than reducing risks in the longer term (see Appendix 1: Tree Management).

Personal Medical Complaint

7.59 Proposals to fell or prune trees because of a personal medical complaint will be supported where the works are otherwise in accordance with good arboricultural practice (see Appendix 1: Tree Management). Where it can be established through supporting information that the presence of a tree is causing a detriment to the health of residents, careful consideration will be given to the benefits of the proposed works taking into account the value of the tree/s and its benefits to the wider community.

Tree roots in gardens

7.60 Landowners have a common law right to cut roots back to their boundary, providing that this would not lead to the death or instability of the tree. However in the case of trees covered by a TPO or in a conservation areas permission is required. Proposals to fell or prune trees because of the presence of tree roots in gardens will not normally be supported unless they are causing an actionable nuisance such as structural damage.

Damage to walls and fences

7.61 It is often possible to rebuild or repair walls and fences to take account of adjacent trees. This can be achieved in a number of ways - for example installing a section of

railing or bridging foundations around the base of a tree or using ground anchors to strengthen a retaining wall. Proposals to fell or prune trees to alleviate damage to walls or fences will normally only be considered acceptable if the structure is irreplaceable and of exceptional importance (for example a retaining wall or wall of historical interest) or if there is a risk to public health in leaving the tree, and the damage or risk could not otherwise be mitigated.

- 7.62 In the case of trees and structures of historical interest, mature trees are often an important component of the heritage interest of the site, or the setting of a heritage asset and a balanced view needs to be taken having regard to the relative importance of the structure, the effect of any mitigation works, and the contribution the tree / trees make to the heritage and amenity value of the site.

Damage to paths

- 7.63 It is often possible to repair paths to take account of adjacent trees and tree roots. Where roots protrude they can be root pruned, or the path re-laid around the tree with flexible materials such as asphalt or flexi-pave to provide a smooth surface. Proposals to fell trees that are considered to be damaging paths will not be supported unless it can be demonstrated that there is a clear risk to public safety that cannot otherwise be mitigated.

Damage to drains or water pipes

- 7.64 Proposals to fell trees that are considered to be damaging drains or water pipes will not normally be supported. Trees are rarely the cause of damage to drains or water pipes as their roots will only find water where a drain or pipe is already damaged. The appropriate course of action is usually to replace, repair or line the defective drain or pipe.

Subsidence

- 7.65 Proposals to fell or prune trees because they are causing damage to a structure through subsidence or other mechanisms will not be supported unless there is clear evidence of damage and an unambiguous correlation between the damage and the effects of the trees. Tree removal will not normally be supported unless it is shown that the trees in question are a significant contributory factor in the reported damage and that their removal is essential to enable effective repairs to be carried out and there are no practical alternatives. The level of evidence required can be found in the guidance note for the standard application form:

https://ecab.planningportal.co.uk/uploads/1app/guidance/guidance_note-works_to_trees.pdf

Making decisions on Applications for Tree Works

- 7.66 Once an application has been submitted, we may either grant consent unconditionally, grant consent subject to conditions or refuse consent.
- 7.67 The power to make decisions has been delegated to Principal Planning Officers and Planning Team Leaders through the Council's Scheme of Delegation. They receive

advice on the application from Senior Tree Officers. Councillors may ask for the decision to be taken by the relevant planning committee.

- 7.68 The Council must make a decision based on the application before it and will not issue a decision that substantively alters the work applied for. We will, however, grant consent for less work than applied for.
- 7.69 We will set out in our decision notice what is being authorised. When granted subject to conditions those condition may:
- relate to the planting of replacement trees
 - require further approvals to be obtained from the person giving the consent
 - regulate the standard of the authorised work
 - allow repeated operations to be carried out (works may be carried out only once unless a condition specifies otherwise); and/or
 - impose a time limit on the duration of consent other than the default 2 year period
- 7.70 Permission to fell a protected tree usually carries a condition to plant a replacement tree. Where an authority grants consent for work in woodland that does not require a felling licence (see below) it may impose a condition to replant the land.
- 7.71 Where consent is granted, the consent is valid for two years unless a different time limit is set under a condition.
- 7.72 Where consent is refused, and where it is granted subject to conditions, we will set out in the decision notice what the decision is and the reasons for it. These will specifically address each of the applicant's reasons for making the application. In addition, we will:
- give our reasons for each condition imposed;
 - explain the applicant's right of appeal to the Secretary of State against the decision and give the contact details of the Planning Inspectorate;
 - explain the applicant's right to compensation for loss or damage as a result of the authority's decision, and how a claim should be made; and
 - provide advice, where appropriate, on how to carry out works including replacement planting in accordance with good practice, how to protect wildlife and biodiversity, and where to get independent specialist advice
- 7.73 Applicants can appeal against the Council's decision either in whole or in part to the Secretary of State. More information on the appeals process can be found on the Government website: <https://www.planningportal.co.uk/planning/appeals/types-of-appeal/tree-preservation-order-appeals>

Replacement trees

- 7.74 Where a tree has been felled in contravention of the regulations, the owner of the land has a duty under section 206 of the Town and Country Planning Act 1990 to plant another tree of an appropriate size and species at the same place as soon as they reasonably can. In respect of trees in woodland the duty extends to planting the same number of trees as removed, uprooted or destroyed on or near the land involved, or on other land that might be agreed with the Council. The Council can enforce that duty by

serving a tree replacement notice. In these circumstances the replacement tree is covered by the original Order.

- 7.75 Replacement trees required under a condition when consent is granted to fell a TPO tree are not automatically protected by the original Order. The Council will consider varying the Order where, for example, replacement trees are of a different species to that referred to in the Order.

Woodland Management

- 7.76 Proposals to carry out works within woodlands covered by a TPO must be consented under the Regulations, provided that they accord with the practice of good forestry, unless the Council is satisfied that the granting of consent would fail to secure the maintenance of the special character of the woodland or the wooded character of the area. Woodlands covered by TPO in County Durham are very diverse and include some particularly ancient or other native woodlands and those of ornamental parklands, where maintaining relatively continuous tree cover would be expected. Others are plantations designed to be periodically thinned or clear felled and restocked by compartment. The Council recognises the importance of proper woodland management and does not consider the purpose of a woodland TPO to be to inhibit it. It would not, however, support forms of management or other works that would be inappropriate to a particular woodland and would undermine the purposes of the TPO.
- 7.77 Some of the County's oldest TPO predate the Forestry Act (1967) which now regulates most forestry practice. In many cases the scale of woodland management works will be such that a felling licence is required from the Forestry Commission (FC), and where a felling licence is in place there is no need to make an application for tree works to the Council.

Felling licences and TPO

- 7.78 Under the Forestry Act 1967 (FA) felling licences are required to fell trees other than in the case of certain exceptions, which include felling up to 5 cubic meters on your property as long as less than 2 cubic meters is sold. More information including the full list of exceptions can be found in the Forestry Commission publication [Tree felling: getting Permission](#) which can be downloaded from the government website.
- 7.79 A FL is rarely required for an individual tree but may be required when more than one tree is felled or when felling forms part of a larger woodland management scheme. Where the proposed tree felling is of sufficient volume to require a felling licence and no other exceptions to the need for a felling licence apply, a felling licence is the only route to legally fell the trees. This includes tree subject to TPO.
- 7.80 Local authorities are not allowed to consider any application made to it to fell trees subject to a TPO if a felling licence, under the FA, is required. The only time a local authority can authorise the felling of TPO trees is when a FL is not required, or when the FC refers a felling licence application to the local authority for them to process.

- 7.81 When processing a felling licence application containing trees subject to a TPO, and where the FC proposes to grant that licence itself, it will 'give notice' to the Council. If the Council does not object to the felling proposals within 1 month, the FC will approve the felling licence. If the Council does object (and that objection is not withdrawn), the case is referred to the Minister and dealt with under the T&CPA as if it were an application under the tree preservation regulations.
- 7.82 When the FC 'gives notice' to the council, officers consider whether the proposals would be harmful to the interest of amenity in the neighbourhood. The decision is made by Principal Planning Officers or Planning Team Leaders who have powers to make decisions in relation to TPO delegated to them through the Council's Scheme of Delegation. They receive advice on the notice from Tree or Landscape Officers. As noted above (Woodland Management) felling as part of normal woodland / forestry management is generally supported by the council.
- 7.83 Alternatively, rather than 'give notice' to the Council that the FC proposes to grant a licence, it has the power to refer the felling licence application to the local authority, which may then grant permission as if it were an application under the tree preservation regulations. This entirely removes the FC from the decision-making process.
- 7.84 When the FC consult the Council on FL affecting trees in Conservation Areas the Council will need to decide whether it is in the interests of amenity to raise a TPO on all or some of the trees affected. Local authorities are advised by the FC not to create TPOs during the period in which the FC is processing a felling licence application, as there is a risk that the FC will not be made aware of the local authority doing so. Where the Council considers the proposals to be harmful it will discuss its concerns with the FC and where appropriate seek alterations to the scheme that would make it acceptable. In the unusual circumstances that the Council would consider it appropriate to raise a TPO it would do so after the FL was in place. Again decisions are taken by Principal Planning Officers or Planning Team Leaders taking advice from Tree or Landscape Officers.
- 7.85 Further information can be found in FC Operations note 52: Felling licences and Tree Preservation Orders :<https://www.gov.uk/government/publications/felling-licences-and-tree-preservation-orders-operations-note-52/felling-licences-and-tree-preservation-orders-operations-note-52#:~:text=Felling%20trees%20subject%20to%20a,or%20both%20of%20these%20offences>.

Trees in Conservation Areas

- 7.86 There are currently 93 conservation areas within towns and villages in County Durham. These are areas of special architectural or historic interest, and trees often make an important contribution to their character. Conservation areas are subject to review and new areas can be created or boundaries revised. You can find out whether a tree is in a conservation area in County Durham by viewing an interactive map on the council's website: [Conservation Areas \(durham.gov.uk\)](https://www.durham.gov.uk/conservation-areas)

- 7.87 If a tree within a conservation area has a stem diameter greater than 75mm (3") measured 1.5m from the ground level, you are required to give us six weeks' notice of any tree works that you are proposing. This enables us to assess the proposed works and if necessary, serve a TPO. You will need to notify us by using the standard 'Tree Works' application form. Information on how to do so can be found on the council's website: [Protected trees - Durham County Council](#)
- 7.88 You should describe the works in as much detail as necessary, using photographs where possible. You do not need to provide detailed evidence or justification for the works but any information you can provide may help the progress of your application.
- 7.89 The council's decision is limited to whether or not to serve a TPO on all or some of the trees affected by the works and will follow the approach set out above (Making New TPO). In coming to its decision the Council must pay special attention to the desirability of preserving or enhancing the character or appearance of that area. You may be contacted by the Planning Officer or Tree Officer who may wish to discuss changes to your application that might make it more likely not to result in a TPO on all or some of the trees in question. If no decision is received within six weeks, then consent is gained by default.
- 7.90 Information on exceptions to the need to notify can be found on the Government website: [Tree Preservation Orders and trees in conservation areas - GOV.UK \(www.gov.uk\)](#)

Appendix 1: Tree Management

Overview

1. There is a common perception that trees need to be managed actively and particularly through pruning. In reality trees are generally 'self-optimising', responding to their environment in a manner that maintains a balanced and healthy structure. Trees do not become dangerous simply because they grow large. In many cases the best way to manage a tree is through minimal intervention.
2. Poorly considered operations like topping and heavy pruning can make trees more dangerous, removing material the tree needs to maintain its health and opening up large wounds that invite infection and decay. In some species they can stimulate a flush of dense re-growth which can make problems such as shading worse or create an unstable crown with new stems growing from decaying anchor points.
3. Trees are nevertheless living organisms subject to change and there are situations where they need to be managed to accommodate their immediate surroundings or to maintain their health and condition, for example by pruning to remove dead or diseased branches or provide clearances. In extreme cases trees may need to be removed that are in poor condition or unsuitably located. Regular inspection of trees can help identify any management issues and enable appropriate maintenance to be undertaken in advance of problems arising.
4. Tree works should be carried out by a qualified arborist working to the British Standard: BS3998:2010 Tree Work – Recommendations. The main forms of management works to trees are described below. The main forms of tree management works are described in the British Standard and can be summarised as below.

Formative Pruning

5. Formative pruning is carried out to improve the form of young trees and encourage the formation of good stem and branch structure. It involves the removal of dead, diseased, potentially weak or damaged branches, together with undesirable low branches and epicormic growth at the base of the main stem. Formative pruning can reduce the need for pruning later in the life of the tree by encouraging good branch structure at the early stages of a tree's development. It is generally carried out on young and semi-mature trees to produce a tree which at maturity will be free from any major physical weakness and will be compatible with future site management objectives. Pruning normally involves removal of small diameter branches and stems using hand tools such as secateurs, loppers and pull saws or bowsaws.

Crown lifting

6. Crown lifting involves the removal of the lowest branches of a tree to achieve a desired height clearance above ground level. This operation may be undertaken for a number of reasons, such as to allow access under a tree, enhance clearances from nearby structures or to allow more light under the canopy. Excessive pruning should be avoided

as this can be damaging to the tree's form and structure by creating an unbalanced crown or by making the tree top heavy. Ideally it should not exceed 15% of the original crown volume or 1/3 of the tree's top height. Pruning should be limited to small diameter, secondary branches where possible and not include the removal of larger structural branches back to the main stem. This will reduce the risk of stem decay that can be caused by leaving large pruning wounds and will help to retain a balanced and attractive crown structure. An image of an example of crown lifting is shown in Figure A1.1 below.



Figure A1.1. Crown lifting: before and after | DCC

Crown thinning



Figure A1.2. Crown thinning: before and after | DCC

7. Crown thinning involves the removal of a proportion of branch material from the interior of the crown without affecting the shape of the tree. This operation is usually undertaken to reduce crown density, to form an evenly spaced and balanced branch structure by removing dead, diseased, weak or damaged branches, and to allow more light through

the canopy. The percentage of leaf bearing twig structure to be removed in crown thinning should be kept to a minimum and normally be limited to between 10 and 25% crown volume. Material should also be removed systematically from throughout the tree, rather from the inner crown only, to prevent 'lion-tailing' of branches. Many tree species evolve a canopy density for adaptive reasons to cope with varying degrees of light and exposure and uneven thinning or over-thinning can increase the likelihood of branch failures due to increased exposure and turbulence within the tree. If the objective is to reduce wind loading this should normally be achieved by crown reduction to reduce overall leverage. An image of an example of crown thinning is shown in Figure A1.2 above.

Dead-wooding or crown cleaning

8. This operation is similar to a crown thin except that only dead, diseased, weak or damaged branches are removed to improve the health and appearance of the tree and reduce the risk of harm from any falling material. The dieback and shedding of branches are natural processes within the development and aging of trees and deadwood provides valuable habitat for a wide range of species of flora and fauna. Removal of deadwood is normally only recommended where it presents an unacceptable risk of harm or where it is otherwise appropriate to maintain the health and condition of the tree. Removal of deadwood should be done carefully to avoid injury to living bark or sapwood as this can result in the ingress of decay or disease into otherwise sound tissues. Crown cleaning may include removal of deadwood but will also include removal of deleterious material such as invasive climbing plants, inappropriate objects such as wires, clamps or other fixings.

Crown reduction and reshaping

9. Crown reduction involves reducing the size of a tree's crown area in proportion to its original shape. This normally involves pruning back the outermost branches and leaders back to subordinate lateral branches that are large enough to assume a terminal role (at least one third the diameter of the cut stem). It is often undertaken to allow retention of a tree in a confined space; maintain clearances from buildings or other structures, or to balance an asymmetrical crown. It can be specified on the whole tree or limited to parts of the crown or selected branches as required. The aim should be to maintain or create a balanced structure by carefully pruning back to suitable branch junctions. It should also limit the volume of leaf area to be removed to within an acceptable limit considering the species of tree, its age and vitality and its ability to withstand the treatment. It should not normally be combined with other pruning operations due to the potentially negative effects of excessive leaf loss and branch wounding.
10. Specifications for crown reduction are often given as a percentage, however this should also be clarified with reference to length, height or spread in metres to avoid ambiguity. For example a 30% reduction of a tree with a 10m crown height and spread is equivalent to a 1.2m branch reduction all round. Crown reduction up to a maximum of 30% may be acceptable to semi-mature trees however pruning volume should be reduced in older mature trees to 15-20% as it can have an increased negative impact on their health and condition. Crown reduction pruning should only involve the shortening or removal of

smaller diameter branches not exceeding 75mm diameter, not main structural branches or older mature wood over this size.

11. Inappropriate or excessive pruning should also be avoided as this can permanently disfigure a tree and adversely affect its health and long term viability. Excessive pruning can also result in a proliferation of dense re-growth which can be counterproductive and increase the need for future ongoing maintenance. An image of an example of crown reduction is shown in Figure A1.3 below.



Figure A1.3. Crown reduction: before and after | DCC

Pollarding

12. Pollarding is an ancient way of maintaining trees, typically in pasture where the timber of the tree was harvested in a cyclical fashion above the height where livestock could browse. It has been adapted as a specialised form of management for some urban trees where it is used to contain height and spread while maximising leaf cover. It is done by cutting back a young tree to create a branch framework that supports a dense head of branches and foliage, which is then cut back to the original pruning positions on a regular cycle. The regenerating shoots are typically cut back on a cycle of between one and five years depending on the extent of regrowth and other site management objectives.
13. There are very few traditional pollards in County Durham and only certain species will tolerate this type of pruning. It is a specialised and labour intensive form of management that requires regular repeated pruning of a specific trained form of tree. It is generally not an appropriate form of management for trees which have not been grown and managed as pollards, however it can sometimes be undertaken as a last resort to management option to deal with trees in an advanced state of decline that have suffered major branch dieback. An image of an example of pollarding is shown in Figure A1.4 below.



Figure A1.4. Pollarding: before and after | DCC

Topping

14. Topping' involves the heavy cutting back of a tree to reduce its height and to remove most or all of the major branches. Topping is not considered good arboricultural practice as it severely affects the health and amenity of the tree, and often leads to a much reduced lifespan or death of the tree. As with other inappropriate or excessive pruning it creates large pruning wounds, which can introduce decay and disease into the tree and generate a flush of weakly attached new shoot growth which is increasingly prone to failure as it increases in size.
15. Where height reduction is considered necessary or desirable, an appropriate amount of crown reduction pruning (see above) is preferred. Where a tree has previously been topped it may be necessary and therefore acceptable to prune it back to the previous pruning points to reduce the risk of branch failures. Where a tree is in poor health and structural condition and may pose a risk of harm but its retention is desirable for biodiversity, it may be possible to undertake monolithing as an alternative to felling the tree (see below).

Monolithing

16. A monolith tree is created when the entire crown is removed back to the main stem or short stubs of limbs. This is carried out only where trees are in very poor condition and would otherwise be felled. It retains the main stem of the tree as habitat, and particularly for species depending on decaying wood and cavities. Monolith trees need periodic inspection to ensure that they remain safe. An image of an example of pollarding is shown in Figure A1.5 below.

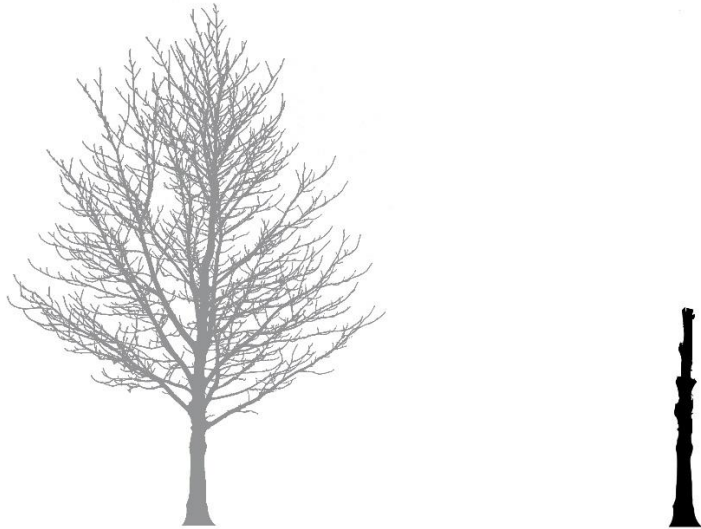


Figure A1.5. Monolithing: before and after | DCC

Coppicing

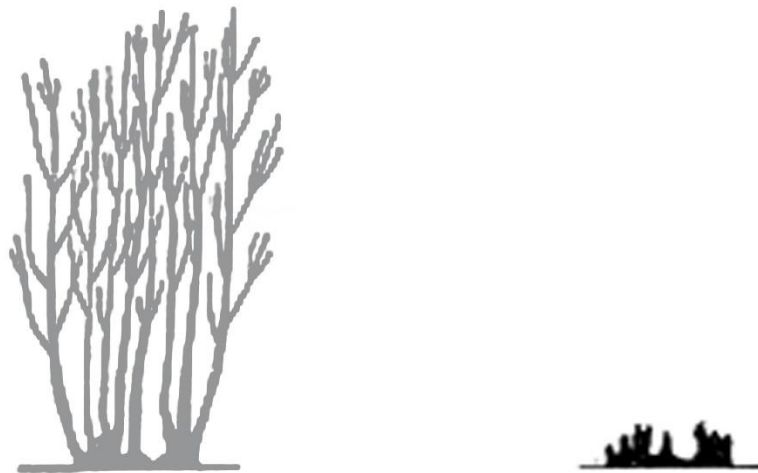


Figure A1.6. Coppicing: before and after | DCC

17. Coppicing is a traditional method of managing trees to produce small roundwood timber. It involves initially cutting back a maiden stem to just above ground level, and subsequently cutting back arising stems to just above the height of the last cut on a regular cycle (typically 5 – 7 years). Coppicing is normally only undertaken to maintain an established coppice tree but may also be used to regenerate hedges that have become tall and leggy.

Dealing with tree stumps

18. Where a tree is to be felled an appropriate stump management option should be chosen, taking account of the future use of the site and the advantages or disadvantages of each option. This may include for example the potential for trip hazards, pest and disease management, aesthetics, or making space for a replacement tree or new landscaping. Stumps can either be ground out to below ground level using a machine, dug out by hand or by mechanical means, winched out, chemically treated or left in situ.
19. Most broadleaved tree species and a few other coniferous species will produce new shoots when stumps are retained after felling. Such regrowth might be desirable in some situations, however if left unchecked the shoots will have potential to develop into mature trees of similar proportions as the original trees.
20. The chosen method will also be influenced by access constraints, level or risk or site disturbance involved. Chemical treatment should normally be applied directly to the stump surface as soon as possible after felling. All herbicides should be applied in strict accordance with the manufacturers recommendations and with extreme caution where there is a risk of other plants being affected or possible exposure to humans, pets or livestock.
21. Stump grinding is preferable to digging out or winching as it is less disruptive, however any hole or void left should be filled with soil or other material in consideration of future site usage and to avoid leaving a trip hazard.
22. Stumps can also be retained in some situations to provide habitat or a carved or sculpted feature.

Appendix 2: Hedgerow Regulations and High Hedges

Hedgerow Regulations 1997

23. Under the Hedgerow Regulations, it is against the law to remove most countryside hedgerows without the permission of the local planning authority. These Regulations do not apply to garden hedges and do not apply to works required for carrying out development for which planning permission has been granted.
24. To get permission to remove a countryside hedgerow, you must write to your local authority planning department. The way in which the Regulations apply to individual hedges can be quite complex. It is therefore advisable to speak to planning officers before you formally seek permission to remove a hedge. On receipt of a notice to remove a hedge the authority will assess it against criteria set out in the Regulations to discover whether it qualifies as an 'important' hedge.
25. To qualify as 'important', the hedgerow must be at least 30 years old and at least 20m long (although shorter hedges can be included if linked to other hedgerows) and meet at least one of eight criteria relating to the hedgerow's archaeological, historical, wildlife or landscape value. If the authority decides to prohibit the removal of an 'important' hedgerow, it must let you know within 6 weeks. If you remove a hedgerow without permission, irrespective of whether it would be considered to be an important hedge, you may face an unlimited fine. You may also have to replace the hedgerow.
26. The removal of a hedgerow is permitted for carrying out development for which planning permission has been granted through a full planning permission. The planning permission must have commenced within the relevant time limit (i.e. not have expired) and the works must be required to implement the permission. This usually means that the hedgerow removal is explicitly provided for in the application or demonstrably necessary to implement approved plans. Where outline planning permission is granted, this does not override the need for notification unless the removal forms part of a specific matter (such as access) which has been approved in detail as part of the outline permission.
27. The Regulations can be found on the government website: [The Hedgerows Regulations 1997 \(legislation.gov.uk\)](https://www.legislation.gov.uk/ukpga/1997/10)

High hedges

28. High hedges are not the subject of planning legislation but by The Anti-social Behaviour Act 2003. They are not therefore covered in this SPD. More information can be found on the council's website: [High hedges - Durham County Council](#)

Appendix 3: Felling Licences and planning

29. In the UK but the felling of trees is a legally controlled activity under the [Forestry Act 1967 \(as amended\)](#). A felling licence from the Forestry Commission is normally required before growing trees can be felled and there is a presumption against loss of woodland cover.
30. A felling licence is not required where the removal of trees is immediately required for the purpose of carrying out a development authorised by a full planning permission. The planning permission must have commenced within the relevant time limit (i.e. not have expired) and the works must be required to implement the permission. This usually means that the felling is explicitly provided for in the application or demonstrably necessary to implement approved plans.
31. Where outline planning permission is granted, this does not override the need for a felling licence unless the removal forms part of a specific matter (such as access) which has been approved in detail as part of the outline permission.

Appendix 4: Ash Dieback

Background

32. Ash Dieback (*Hymenosyphus fraxineus*) is a fungal pathogen affecting ash trees. It interrupts the transport of water and nutrients causing leaf loss and lesions in the bark or woody tissue which ultimately leads to the decline of the tree canopy. Symptoms include blackened or shrivelled branch tips, wilted black leaves, brown veins on the leaves, diamond shaped lesions on the stem and dieback of the canopy.
33. It is common and widespread throughout the UK, including all parts of County Durham. Young trees, especially those in dense groups or plantations, are more susceptible to the disease and tend to die quickly once they are infected. Older trees are often more robust and can survive longer with low levels of infection. They can nevertheless be weakened or killed over time by a yearly cycle of infection, and by secondary infections from aggressive wood decay fungi.
34. There is good evidence that a small percentage of Ash trees have a genetic resistance to the disease and it is also possible that some trees with lower infection rates can recover to good health.
35. The presence of Ash Dieback, and particularly in its early stages, does not mean that a tree poses an immediate risk of harm or that it should be pruned or felled. Each situation needs to be assessed on its merits, taking account of the condition, position, and importance of the tree/s in question.
36. Forestry Commission advice is that with the exceptions of felling for public safety or timber production there should be a general presumption against felling living ash trees. Ash is a widespread species with high landscape and biodiversity value and it is therefore important to retain trees where possible. This allows individuals which survive exposure to the fungus to form the basis of a more disease - tolerant population in the future. It reduces the impacts of the disease on other species that depend on ash, and particularly dead-wood invertebrates. It also helps to slow down the pace of landscape change within the county, allowing for the planting and establishment of replacement trees.
37. Further information can be found on the websites of the Forestry Commission and Arboricultural Association: <https://www.forestresearch.gov.uk/tools-and-resources/fthr/pest-and-disease-resources/ash-dieback-hymenoscyphus-fraxineus/>, <https://www.trees.org.uk/Trees.org.uk/media/Trees.org.uk/Documents/eBooks/AshDieback-GuidanceNote-web.pdf>
Guidance on managing ash dieback can be found on the Government website: <https://www.gov.uk/guidance/managing-ash-dieback-in-england>

38. The progress of the disease is often described by reference to the following stages.

- Class 1: 75% -100% of live crown remains
- Class 2: 51% - 75% of live crown remains
- Class 3: 26% - 50% of live crown remains
- Class 4: 0% - 25% of live crown remains

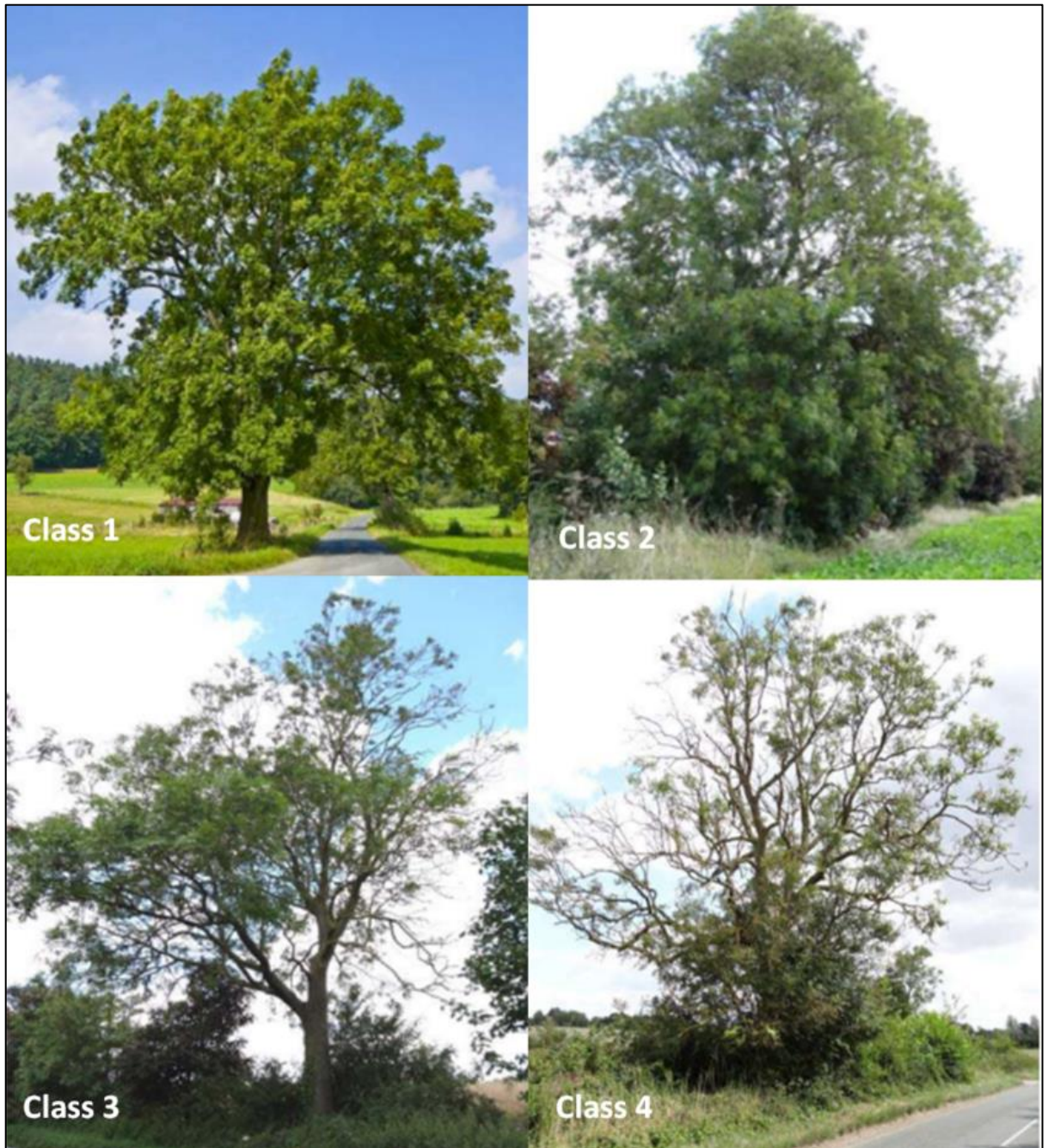


Figure A4.1. The 4 stages of Ash dieback | photos Suffolk County Council

Site Planning

39. The presence of ash trees, and trees showing symptoms of ash dieback, on a development site can create dilemmas as to whether they should be retained or not. In general the principles outlined above should be followed.

- Healthy ash trees should be retained and integrated into the development wherever it would be otherwise appropriate to do so.
- Young and young-mature ash trees with symptoms of ash dieback should not be treated as constraints but can be retained unless they are likely to pose an unacceptable risk of harm to people or damage to property or would prevent the development of a more appropriate or robust landscape infrastructure.
- Mature ash trees with symptoms of ash dieback should be retained where possible for their biodiversity value and managed appropriately unless they are likely to pose an unacceptable risk of harm to people or damage to property.
- Ancient and veteran trees showing symptoms of ash dieback should be retained and the proposals designed to accommodate them.
- The potential for decline or mortality of ash trees should be taken into account in site design – both in maintaining access for management and in making assumptions about the screening value of existing features.

Tree Preservation Orders and trees in conservation areas

40. The presence of ash dieback is not in itself justification to fell a tree covered by a TPO. As with trees in the general population, other than when felling for safety or timber production the general presumption should be against felling living ash trees. Applications and notices seeking consent or advising of intent to prune or fell infected or uninfected ash trees will be judged on their merits, assessing the impact of the proposal on the amenity of the area and whether the proposal is justified. In situations where safety is an issue, felling may be supported in the later stages of ash dieback when it is clear that the tree will become unsafe and is unlikely to recover from the disease and associated decline.

41. The potential for a tree to become infected with ash dieback will not be a material consideration when determining applications and notices to prune or fell protected ash trees.

42. The presence of ash trees or the presence of ash dieback either in individual trees or trees within a woodland or group will not preclude the creation of a new TPO for the same reasons although individual trees in the later stages of ash dieback would be unlikely to qualify for protection under the expediency test.

Appendix 5. Species native to County Durham

Trees

The following common trees and shrubs are native to County Durham.

Common name	Scientific name
Almond Willow	<i>Salix triandra</i>
Ash	<i>Fraxinus excelsior</i>
Aspen	<i>Populus tremula</i>
Bay Willow	<i>Salix pentandra</i>
Bird Cherry	<i>Prunus padus</i>
Black Poplar	<i>Populus nigra</i> var. <i>betulifolia</i>
Blackberry	<i>Rubus fruticosus</i>
Blackthorn	<i>Prunus spinosa</i>
Broom	<i>Cytisus scoparius</i>
Burnet Rose	<i>Rosa pimpinellifolia</i>
Common Alder	<i>Alnus glutinosa</i>
Common Oak	<i>Quercus robur</i>
Crab Apple	<i>Malus sylvestris</i>
Crack Willow	<i>Salix fragilis</i>
Creeping Willow	<i>Salix repens</i>
Dog Rose	<i>Rosa canina</i>
Dogwood	<i>Cornus sanguinea</i>
Downy Birch	<i>Betula pubescens</i>
Downy Rose, Soft Downy Rose	<i>Rosa mollis</i>
Eared Sallow, Eared Willow	<i>Salix aurita</i>
Elder	<i>Sambucus nigra</i>
Field Maple	<i>Acer campestre</i>
Field Rose	<i>Rosa arvensis</i>
Goat Willow	<i>Salix caprea</i>
Gooseberry	<i>Ribes uva-crispa</i>
Gorse	<i>Ulex europaeus</i>
Grey Willow, Common Sallow	<i>Salix cineria</i>
Guelder Rose	<i>Viburnum opulus</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellana</i>
Holly	<i>Ilex aquifolium</i>
Honeysuckle	<i>Lonicera periclymenum</i>
Ivy	<i>Hedera helix</i>
Juniper	<i>Juniperis communis</i>
Osier	<i>Salix viminalis</i>
Purple Willow, Purple Osier	<i>Salix purpurea</i>
Raspberry	<i>Rubus idaeus</i>
Rowan	<i>Sorbus aucuparia</i>

Sessile Oak	Quercus petraea
Silver Birch	Betula pendula
Small-leaved Lime	Tilia cordata
Spindle	Euonymus europaeus
Spurge Laurel	Daphne laureola
Sweet Briar, Eglantine	Rosa rubiginosa
White Willow	Salix alba
Wild Cherry (Gean)	Prunus avium
Wild Privet	Ligustrum vulgare
Wych Elm	Ulmus glabra
Yew	Taxus baccata

See also:

[Trees and Shrubs Native to County Durham \(durhamlandscape.info\)](http://durhamlandscape.info)

[Trees and Shrubs not Native to County Durham \(durhamlandscape.info\)](http://durhamlandscape.info)

Woodlands

Native woodland plant communities found in County Durham

Description	National Vegetation Classification (NVC) community	Principle woody species
Bay Willow Woodland	W3: Salix pentandra - Carex rostrata woodland	Bay Willow, Grey Willow , Eared Sallow, Downy Birch.
Birch Woodland	W4: Betula pubescens - Molinia caerulea woodland.	Downy Birch , Goat Willow, Common Alder, Grey Willow, Eared Sallow, Bay Willow, Rowan
Alder Carr Woodland	W5: Alnus glutinosa - Carex paniculata woodland	Alder, Downy Birch, Grey Willow.
Valley Fen Alder Woodland	W6: Alnus glutinosa - Urtica dioica woodland	Alder, Crack Willow, Downy Birch, Grey Willow, Elder.
Alder Ash Woodland	W7: Alnus glutinosa - Fraxinus Excelsior - Lysimachia nemorum woodland	Common Alder, Ash, Downy Birch , Goat Willow, Grey Willow, Hazel, Hawthorn, Rowan, Bird Cherry.
Lowland Ash Woodland	W8: Fraxinus excelsior – Acer campestre – Mercurialis perennis woodland	Ash, Wych Elm, Common Oak, Hazel, Hawthorn, Blackthorn,

		Elder, Guelder Rose, Privet, Goat Willow, Grey Willow, Field Maple, Yew, Dogwood, Spindle, Spurge Laurel, Small-leaved Lime.
Upland Ash Woodland	W9: Fraxinus excelsior – Sorbus aucuparia – Mercurialis perennis woodland.	Ash, Wych Elm, Downy Birch, Sessile Oak, Rowan, Hazel, Bird Cherry, Hawthorn, Holly, Aspen, Elder, Grey Willow
Lowland Oak Woodland	W10: Quercus robur – Pteridium aquilinum – Rubus fruticosus woodland.	Common Oak, Sessile Oak, Silver Birch, Hazel, Hawthorn, Holly, Ash, Wych Elm, Rowan, Wild Cherry, Crab Apple, Elder, Blackthorn, Guelder Rose, Small-leaved Lime.
Upland Oak Woodland	W11: Quercus petraea – Betula pubescens – Dicranum majus woodland.	Downy Birch, Sessile Oak, Hazel, Rowan, Holly.
Yew Woodland	W13: Taxus baccata woodland	Yew.
Lowland Oak Birch Woodland	W16: Quercus spp. - Betula spp. - Deschampsia flexuosa woodland	Silver Birch, Downy Birch, Sessile Oak, Common Oak, Rowan, Holly.
Upland Oak Birch Woodland	W17: Quercus petraea – Betula pubescens – Oxalis acetosella woodland.	Downy Birch, Sessile Oak, Rowan, Hazel, Holly.
Juniper Woodland	W19: Juniperus communis - Oxalis acetosella woodland	Juniper, Downy Birch, Rowan, Hawthorn.
Hawthorn Scrub	W21: Crataegus monogyna - Hedera helix scrub	Hawthorn, Blackthorn, Elder, Rose sp., Bramble Honeysuckle, Rowan, Ash, Hazel.
Blackthorn Scrub	W22: Prunus spinosa - Rubus fruticosus scrub	Blackthorn, Hazel, Wild Privet.
Gorse Scrub	W23: Rubus fruticosus scrub	Gorse, Broom, Bramble

Bramble Scrub	W24/25: Rubus fruticosus scrub	Bramble , Rose sp., Hawthorn, Blackthorn, Elder
---------------	--------------------------------	--

Hedges

Hedgerow species mixes recommended by the Durham Hedgerow Partnership

Character Area	Species
North Pennines	Major species (95%): Hawthorn 60%, Blackthorn 20-25%, Hazel and Holly 10-15% Minor species (5%): Bird Cherry, Dog Rose, Rowan
Dales Fringe	Major species (95%): Hawthorn (60%), Blackthorn (20-25%), Hazel and Holly (10-15%) Minor species (5%): Bird Cherry, Dog Rose, Rowan, Wild Privet
West Durham Coalfield	Major species (95%): Hawthorn (60%), Blackthorn (20-25%), Hazel and Holly (10-15%) Minor species (5%): Crab Apple, Bird Cherry, Guelder Rose, Dog Rose, Rowan, Wild Privet
Wear Lowlands	Major species (95%): Hawthorn (60%), Blackthorn (20-25%), Hazel and Holly (10-15%) Minor species (5%): Crab Apple, Bird Cherry, Guelder Rose, Dog Rose, Wild Privet
East Durham Limestone Plateau	Major species (95%): Hawthorn (60%), Blackthorn (20-25%), Hazel (10-15%) Minor species (5%): Field Maple, Holly, Crab Apple, Dog Rose, Wild Privet
Tees Lowlands	Major species (95%): Hawthorn (60%), Blackthorn (20-25%), Hazel, Holly and Field Maple (10-15%) Minor species (5%): Crab Apple, Guelder Rose, Dog Rose, Wild Privet

Glossary

Ancient or veteran tree: A tree which, because of its great age, size or condition is of exceptional biodiversity, cultural or heritage value. All ancient trees are veteran trees. Not all veteran trees are old enough to be ancient but are old relative to other trees of the same species. Very few trees of any species reach the ancient life-stage.

Ancient woodland: An area that has been wooded continuously since at least 1600 AD. It includes ancient semi-natural woodland and plantations on ancient woodland sites (PAWS).

Amenity: A broad concept that refers to the pleasant or satisfactory aspects of a place which add positively to its overall character and to the enjoyment of residents or visitors.

Arboricultural Impact Assessment: An assessment carried out in accordance with BS5837 (2012) of the effects of a development on trees within or near the site.

Arboricultural Method Statement: A method statement produced in accordance with BS5837 (2012) which details any special measures required to protect trees such as barriers, ground protection or special digging or construction techniques.

Arboriculture: The management of individual trees or groups of trees primarily for their amenity value.

Arboriculturist: A specialist who deals with all aspects of growing and managing trees other than as a timber crop.

Broadleaved woodland: Woodland that is dominated by broadleaved trees such as oak, ash and birch.

Canopy / crown: The branches and foliage of trees.

Cellular Confinement System: A proprietary solution for providing ground stabilisation and protection which can be used to protect soils and tree roots from damage and compaction.

Climate change adaptation: Adjustments made to natural or human systems in response to the actual or anticipated impacts of climate change, to mitigate harm or exploit beneficial opportunities.

Climate change mitigation: Action to reduce the impact of human activity on the climate system, primarily through reducing greenhouse gas emissions.

Coniferous woodland: An area of woodland made up predominantly of conifers. Conifers are trees typically bearing cones and having needle like leaves.

Conservation Area: Areas of special architectural or historic interest, the character, appearance or setting of which it is desirable to preserve or enhance.

Construction Exclusion Zone (CEZ): Area to be protected during development by the use of barriers and/or ground protection.

Coppice: Trees or shrubs cut near to ground level and left to regenerate from the stool.

Crown spread: The crown spread of a tree is the distance its branches spread away from its trunk. It is usually measured at the four cardinal points to record an accurate representation of the crown which may not be symmetrical.

Crown / canopy: The branches and foliage of trees.

Crown cleaning: The removal of deadwood from the crown of a tree.

Crown lifting: The removal of limbs and small branches to a specified height above ground level.

Crown reduction: A specified reduction in crown size which preserves as far as possible the natural shape of the tree.

Crown thinning: The removal of a proportion of secondary branch growth throughout the crown to produce an even density of foliage and a well-balanced branch structure.

DBH (Diameter at Breast Height): Stem diameter measured at a height of 1.5 metres above ground or the nearest measurable point. Where measurement at a height of 1.5 metres is not possible, another height may be specified.

Deadwood: Branch or stem wood bearing no living tissue.

Defect: Any feature of a tree which detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsound.

Development: Development means the carrying out of building, engineering, mining or other operations in, on, over or under land, or the making of any material change in the use of any buildings or other land.

Dieback: The death of parts of a woody plant which starts at the tips of shoots or roots.

Disease: A malfunction in or destruction of tissues within a living organism usually caused by pathogenic micro-organisms.

Epicormic growth: Shoots developing from a dormant or adventitious bud on the stem: common at the base of species such as Common Lime.

Felling licence: A permit from the Forestry Commission to fell trees in excess of a stipulated number of stems or volume of timber.

Forestry Commission: The non-ministerial government department responsible for the management of publicly owned forests and the regulation of both public and private forestry in England.

Girdling: A root which circles and constricts the stem or roots causing damage to tissue and preventing the development of a good supporting root system.

Girth: The circumference of a tree typically measured at 1.5 m above ground (diameter at breast height) for established trees but commonly at 1m above ground when specifying nursery stock.

Green infrastructure: A network of multi-functional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities. Green Infrastructure also encompasses water-based environments such as rivers and smaller watercourse systems, coastal environments, reservoirs, wetlands, ponds and urban Sustainable Drainage systems. These are sometimes known as blue infrastructure or blue spaces.

Guying: A form of artificial support for trees with cables and ground anchors.

Lopping: A term often used to describe the removal or reduction in length of large branches from a tree.

Material consideration: A material consideration is a matter which the decision maker must take into account when assessing a planning application.

Minor deadwood: dead wood of a diameter less than 25mm and/or considered unlikely to cause significant damage upon impact.

Monolith: The trunk of a tree left in-situ for its wildlife value as dead-wood habitat.

Mulch: Material laid down over the rooting area of a tree to help conserve moisture and suppress weed competition. May consist of organic matter or sheet materials.

Natural Capital: This term is a way of defining the wide range of benefits that we derive from nature, either directly or indirectly bringing value to people and the country at large. They do this in many ways but chiefly by providing us with food, clean air and water, wildlife, energy, wood, recreation and protection from hazards.

Natural England: Government advisors on nature conservation, biodiversity and landscape in England.

Nature Recovery Strategy: Local Nature Recovery Strategies (LNRS) are a new mandatory system of spatial strategies for nature established by the Environment Act 2021. They are designed as tools to encourage more coordinated practical and focused action and investment in nature.

Open space: All open space of public value, including not just land, but also areas of water (such as rivers, canals, lakes and reservoirs) which offer important opportunities for sport and recreation and can act as a visual amenity.

Origin: The geographic location within the natural range of a species where the parent seed source or their wild ancestors originally grew.

Pathogen: A micro-organism which causes disease in another organism.

Planning condition: A condition imposed on a grant of planning permission (in accordance with the Town and Country Planning Act 1990) or a condition included in a Local Development Order or Neighbourhood Development Order.

Planning obligation: A legal obligation entered into under section 106 of the Town and Country Planning Act 1990 to mitigate the impacts of a development proposal.

Plantation: A woodland which has originated from planting, often to produce timber.

Pollard / pollarding: A tree cut once or repeatedly – traditionally at a height above which grazing animals can reach the regenerating shoots. The removal of the tree canopy back to the stem or primary branches.

Provenance: The place in which any tree or shrub, whether indigenous or non-indigenous, is growing (also see origin).

Pruning: The removal or cutting back of twigs or branches.

Root-collar: The transitional area between the stem and roots.

Root protection area (RPA): An area of ground surrounding a tree that contains sufficient rooting volume to ensure the tree's survival. Calculated with reference to BS5837 (2012).

Root zone: The area of soil containing roots.

Saproxyllic (invertebrates): Invertebrates that are dependent on the presence of dead or decaying wood as food or habitat.

Stress: A condition under which one or more physiological functions are not operating within their optimum range, for example due to lack of water or nutrients or extremes of temperature.

Structural roots: Roots generally having a diameter greater than ten millimetres that contribute significantly to the structural support and stability of the tree.

Topping: The reduction in the height of a tree by the removal of the upper parts of the stem and/or main branches.

Transpiration: The evaporation of moisture from the surface of a plant, especially via the leaves, which draws water up from the roots.

Tree Survey: A survey carried out to BS5837 (2012) showing the location, size, species, condition, quality/value, life expectancy, canopy spread and root protection area of trees.

Tree Constraints Plan (TCP): A plan drawn in accordance with BS5837 (2012) showing the location, size, species, condition, current and future canopy spread, root protection area and (optionally) shade pattern of trees suitable for retention.

Tree Protection Plan (TPP): A plan drawn in accordance with BS5837 (2012) showing the location, canopy spread and root protection areas of trees to be retained together with the measures proposed to protect them including barriers, ground protection and special construction methods where appropriate.

Tree Preservation Order: An order made by a Local Planning Authority to protect individual trees or trees within an area, group or woodland from deliberate damage and destruction where those trees are important for the amenity of the area.

Veteran Tree: See Ancient or Veteran Tree.

Windthrow: The blowing over of a tree at its roots.