



Southwark Tree Management Strategy

2013

**Environment & Leisure Department
Public Realm Division**

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Executive Summary

The Tree Management strategy is a document that sets out the Council's vision for the maintenance and management of Southwark's trees. Southwark is fortunate to have a rich and diverse tree stock which provides numerous benefits: environmental; for biodiversity; for health and wellbeing; aesthetic and economic. This document details where Southwark's trees are located: on housing estates; in parks and open spaces; on the highway; in school grounds; in areas of woodland and on private land. The strategy addresses where there are deficiencies in trees and assigns a CAVAT value to the borough's tree stock.

The strategy acknowledges that trees in Southwark are facing significant challenges both because of the urban nature of the environment in which they grow and because of environmental challenges such as pests and diseases. The strategy sets out how the Council intends to mitigate these challenges.

The document clearly sets out how the borough's trees are managed and maintained. The strategy is clear about who is responsible, what work they do and when, to ensure the health and longevity of Southwark's trees. It sets out the constraints within which the Council must work and shows an understanding of the policy implications and law regarding the management of trees.

One of the objectives of the strategy is to ensure that anyone who is interested in trees can use the strategy to understand how the Council manages its tree stock. The Council is committed to effective communication and customer service regarding Southwark's trees. The strategy clearly sets out this commitment. In addition the strategy sets out how the Council aims to work in partnership and increase community involvement in the management and maintenance of Southwark's trees.

The strategy concludes with an action plan and targets which will help the Council work towards the vision for 2018.

1 Introduction

1.1 What is a Tree Management strategy

A tree management strategy is a policy framework for the trees owned, managed and/or protected by an organisation. Southwark Council's tree management strategy sets out a vision for the coming years and explains how we will achieve this vision. It is a reference document for anyone with an interest in Southwark's trees.

The strategy:

- Sets out our vision for 2017
- Describes the current tree stock and how it is managed
- Identifies the organisations and individuals who have an interest in trees
- Specifies the actions we will take to realise our vision

1.2 The vision for Southwark's tree service

The Council recognises the positive impact that urban trees have on the environment and the lives of people in Southwark and aims to protect the current tree stock. By 2017 the Council aims to have a healthy, protected and sustainably managed tree stock that contributes significantly to the health safety and well being of Southwark residents

1.3 Strategic objectives

To achieve the above vision, this strategy has the following objectives:

- To ensure that the Council has a clear programme of tree maintenance, management and planting
- To ensure that the information people and organisations require about Southwark's tree stock and its management (including this strategy and management regimes for each service area) is easily accessible and comprehensible
- To increase community involvement and understanding of Southwark's trees
- To guide investment in the Borough's trees using the principle of 'right place, right tree'.
- To ensure that by 2017, 95% of Southwark's urban trees are healthy and in a safe condition

2 What are the Benefits of Trees?

2.1 Environmental

- They provide 'breathing spaces' in an otherwise urban environment. In the north of Southwark, parks and open spaces are often the only publicly accessible green space. Trees provide both structure and shade in these open spaces.
- Trees play a crucial role in mitigating climate change. Over a year a mature tree removes about 22kg of carbon dioxide from the atmosphere⁽⁸⁾.
- Trees are essential for improving air quality. Leaves absorb air pollutants such as ozone, carbon monoxide, and sulphur dioxide. Dust and other particulates are collected by leaves and washed to the ground by rain, rather than remaining in the air
- Their role in reducing runoff during flash floods (providing an alternative to engineering solutions) is also being recognised⁽⁹⁾. Vegetation also intercepts more rain thereby reducing the likelihood of flash flooding. The numerous leaves of plants and trees provide a greater area for water to evaporate from than flat surfaces

2.2 Biodiversity

- Trees are an important urban wildlife habitat, they provide nesting, foraging opportunities, and cover for birds from predators. Trees provide roosts, commuting routes and foraging opportunities for bats, they also support many insects.
- Lines of trees are important as they act as links between green spaces allowing wildlife to travel between sites.
- Ivy on trees is a key factor in the diversity of bird, insect and bat species and should be retained where applicable.
- Woodlands provide unique habitat within green spaces and is very valuable ecologically for the wildlife of urban areas.

2.3 Health & Wellbeing

- Trees often provide the only greenery in otherwise heavily built-up urban environments. Most people prefer to live and work in green and leafy surroundings
- Trees are a valuable resource for communities living in dense areas such as Southwark. They are particularly valuable on housing estates as most Council properties are flats without private gardens
- They absorb, and therefore, reduce noise
- Their cooling effect is especially important during extreme summer heat. In England in summer 2006 there were an estimated 75 extra deaths per week for each degree of increase in temperature (NHS Heatwave Plan 2008)

2.4 Aesthetic

- Trees can help to form the identity of an area. They can be important local landmarks and give a sense of continuity and place. Specific species can become part of the atmosphere of a neighbourhood, for example London Plane and Lime trees, planted by the Victorians, make a significant contribution to the character of some Southwark neighbourhoods
- Trees can provide privacy; emphasise views; screen out objectionable views; reduce glare and reflection; direct pedestrian and vehicular traffic; and provide backgrounds to, soften, complement or enhance architecture

⁽⁸⁾ Broadmeadow, M and Matthews R (2003) Forests, Carbon and Climate Change: the UK Contribution.

⁽⁹⁾ National Urban Forestry Unit (2005) Trees Matter: bringing lasting benefits to people in towns. Whitford, V. et al (2001) City form and natural process – indicators for the ecological performance of urban areas and their application to Merseyside. UK, Landscape and Urban Planning, Vol. 57(2).

2.5 Economic

- Trees enhance the character and appearance of areas, and have been shown⁽¹⁰⁾ to enhance property values (for example, the word Avenue or Grove heightens the appeal and value of areas as compared to Road or Street⁽¹¹⁾). Their aesthetic impact encourages businesses to locate and people to live in an area, and reinforces a sense of place, which contributes to economic regeneration

⁽¹⁰⁾ (Luttik, J. (2000) The value of trees, water and open spaces as reflected by house prices in the Netherlands. Landscape and Urban Planning, Vol 48, pp161-167; in CABE (2003) The Value of Public Space – How high quality parks and public spaces create economic, social and environmental value.

⁽¹¹⁾ Wolf, K (2007) City trees and property values. Arborist News, International Society of Arboriculture, London Borough of Richmond, Tree Strategy, 2008.

3 Southwark's Tree Stock

3.1 What trees are there in Southwark?

For this strategy, trees are defined as woody perennial plants that can grow to over 6m on a single stem. There are approximately 90,000 trees⁽¹⁾ in Southwark excluding areas designated as woodland⁽²⁾.

Southwark Council is responsible for the direct management, maintenance and care of over half (57,000) of the borough's tree population as follows:

Housing Estates	17,000
Parks & Open Spaces	22,000
Highways	15,000
Schools	3,000

Trees not managed by Southwark include those managed by Transport for London, trees located within residential gardens and those on other private land.

There are over 300 species of tree found in Southwark, full details are shown in Appendix 1.

For further information on the historical background of Southwark's trees and a brief appraisal of the tree stock by Community Council area please refer to Appendix 2.

3.2 Where in the borough are Southwark's trees?

The northern part of Southwark is densely urbanised with less open space and fewer trees. In this area, the trees for which Southwark Council is responsible are concentrated along roadsides and on housing estates.

The southern part of Southwark is more suburban and includes large open spaces, significant ancient woodland and large private gardens. The trees for which Southwark Council is responsible in this area are concentrated along roadsides and in parks and open spaces.

The distribution of Council managed trees by area is fully illustrated in Appendix 2.

3.3 What is the value of Southwark's trees?

Southwark has estimated the financial value of its trees to be £440,675,529 (based upon existing survey information), using the Quick CAVAT (Capital Asset Value for Amenity Trees) method⁽³⁾, which provides a strategic tool for management of tree stock as a whole, as if it were a financial asset of the community.

Briefly, CAVAT works by calculating a unit value for each square centimetre of tree stem extrapolated from the average cost of a range of newly planted trees. This basic value is then adjusted to reflect the degree of benefit that the tree provides to the local population. The final value aims to reflect realistically the contribution of trees to public welfare through tangible and intangible benefits.

⁽¹⁾ London Tree Survey, 1993.

⁽²⁾ A woodland is an area covered in trees, usually at low density, forming an open habitat, allowing sunlight to penetrate between the trees and limited shade. Southwark has 74 hectares of designated woodland including Dulwich Upper Wood, Sydenham Hill Woods, Russia Dock Woodland, One Tree Hill and parts of Peckham Rye, Nunhead Cemetery and Camberwell Cemetery.

⁽³⁾ Based on a desk top study of data from 2008. An explanation of the CAVAT method can be found at <http://www.ltoa.org.uk/cavat.htm>.

The key variables are:

- Basic value/ unit value x size;
- Relative population density/ location and accessibility;
- Functional value/ functional status;
- Adjusted value/ amenity factors, both positive and negative
- Full value/ safe life expectancy

The aim of the asset value management approach is not simply to produce a figure for the stock value, but to manage the stock to increase the overall value year by year, bearing in mind the particular nature and disposition of the stock, and the opportunities and resources available.

The CAVAT value of an individual tree or group of trees will only be applied when there are proposals to fell healthy trees as part of a planning application or when there is pressure from utility companies to work within a trees root zone which has the potential to cause damage to a tree. CAVAT will not be applied to general tree maintenance operations as there is a duty of care to maintain tree stock in a healthy and safe condition and undertake works as required.

3.4 Trees of Significance

There are a number of trees within the borough on both public and private land which have helped shape Southwark's cultural landscape and character. Trees have historic, botanical, scientific, social, cultural, commemorative and aesthetic values.

Southwark Council is intending to document the list of significant trees and this information will be used by the Council to promote broader community awareness and to highlight its commitment to the protection of trees and their contextual landscapes.

A full survey to determine significant trees will be undertaken throughout 2013 and made available to the public in April 2014.

4 Challenges Facing Southwark's Trees

4.1 Conflicts of trees in the built environment

Due to the unique nature of London, trees in the urban environment will inevitably conflict with people and infrastructure. Trees will conflict with the need for street lighting, traffic lights, surrounding buildings, utility services and pavements which will create pressure on the tree to be pruned or felled. Given the importance of these trees for the reduction of pollution and amenity the Tree Section is working with the other Council departments to find alternative solutions to issues such as damage to footpaths and restricted access to footpaths

Southwark Council will manage all trees with the intention to retain them in their environment for as long as possible. This may lead to specific maintenance actions that will differ from the way other trees in the same area are maintained. Whilst some of these actions may seem severe they are designed to retain the tree and will not endanger the health of the tree. Refer 5.3.1 for a detailed explanation of maintenance actions.

4.2 Trees in the streetscape

4.2.1 Tree Roots

More than a third of a tree is usually hidden beneath the ground. Although they are hidden, the roots are vitally important in a number of ways. Fine roots gather the water and nutrients the tree needs to grow and survive, and these are carried through coarse, woody roots to the stem. The coarse roots have the additional role of supporting the tree and resisting the overturning force of the wind on the crown.

In city streets tree roots are expected to survive in the narrow space between buildings and roads, under solid pavements, and they must grow through a substrate that is often more rubble than soil. Amazingly, not only do roots normally survive in this hostile environment, but they explore its limits, continually pushing against the boundaries.

As they grow and thicken within their limited space, roots can distort and break man-made structures including walls, pipes and pavements, causing damage to many tree-lined streets and creating trip hazards. Ignoring pavement damage is not an option for the Council, especially where there is a risk of injury to pedestrians.

Where this issue has been identified, the roots of trees will be reduced to allow for the footway to be repaired or the roots will be covered by a tarmac to remove the hazard. If space allows the tree pit may also be enlarged. If these options are not possible then the tree may need to be felled.

4.2.2 Pavement widths

A number of trees in the borough are located along footpaths and are causing a narrowing of the footway, restricting pedestrian movement below that of the minimum 1.2m . Whilst these trees are sometimes large and provide visual amenity in the streetscape, if there are situations where a tree is causing a hazard for vehicles and/or pedestrian the council has to intervene.

Whilst Southwark Council endeavours to retain all trees, it is recognised that trees may need to be removed where a tree is causing an unsafe situation. The council will consider all possibilities to retain the tree taking into account the following situations;

- Is there a minimum 1.2m footpath width?
- Is there are safe alternative route?
- Can the direction of the footpath be altered?
- Is it safe for pedestrians to avoid the tree whilst not being on the footway?

If no safe option can be identified and the tree is removed, a replacement tree will be planted as close to the original location as possible. The council will ensure the newly planted tree is planted in a tree pit that adheres to the adopted Tree Pit Design Manual to ensure that issues of safety and nuisance do not occur again in the future.

4.2.3 Street Lighting/Furniture

The combination of trees and street lighting can be problematic. In some cases the canopy of the tree grows to shroud the lamp column. This results in the lighting is not working to its full potential thereby not providing light where it is required. The close proximity of the tree to the light may also mean that damage will occur when branches come into contact with the lamp. During the summer the canopy of a tree can cause the lamp column to remain on day and night, this also has an effect on the trees as the light will interfere with the trees processes for producing sugars.

The Council will undertake an annual survey of all street lighting during the summer months and will provide a report to the Tree section for their consideration on the best way forward to address the concerns raised. Work might include the reduction in the crown of a tree or targeting of specific limbs clear the foliage from the lamp.

The council will assess the conflict of trees and street furniture both proactively and reactively to mitigate the conflict where possible. This includes the obscuring of street signs and traffic lights. Again each issue will be considered individually and the severity will be determined with appropriate works taking place if necessary.

4.3 Pests and Diseases

Britain's trees are facing unprecedented threats from pests and invasive diseases and Southwark is likely to be affected in some way in the future. Pests and diseases can enter the country through the importing of contaminated nursery stock and can also be wind blown from Europe or Africa. Recent research from the Forestry Commission also indicates that climate change will create the conditions for even more pest and disease activity.

Where there is a known threat to the tree stock of Southwark, the council will implement targeted inspections of the species or tree affected to identify trees containing the disease. The council will implement work to mitigate the effects of the pest or disease as soon as possible in line with Forestry Commission recommendations. In addition to targeted inspections for pests and diseases, the Tree Section also undertakes a programme of regular inspections, as detailed in section 5.2.1, which will help to identify any issues.

A description of known pests and diseases is available in Appendix 7.

4.4 Dog Damage and Vandalism

While the vast majority of dog owners in Southwark are responsible, in recent years damage by dogs has become both more widespread and severe. Allowing dogs to damage trees can lead to death of the tree and it is a Council priority to work to curb this behaviour. The approach being adopted is a combination of community engagement, education and enforcement.

To engender a sense of community care of trees and demonstrate Southwark Council's commitment to environmental improvement, the Council aims to respond within 48 hours to all reports of deliberate and accidental tree damage including dog damage.

The Council works closely with 'friends of' groups to identify areas where dog damage is occurring. Educational signage will be erected on housing estate and park notice boards explaining what impact dog damage can have on trees. Where damage is persistent or severe tree guards are installed.

Southwark Council aims to deter and prosecute people who vandalise trees (either directly or through poor control of their dogs) taking specific action when photographic evidence is available. We aim to counteract criminal damage via Community wardens, and prosecute via the Police wherever possible.

4.5 Protecting Trees from the Impact of Development

Important trees can be at risk from private development and to prevent inappropriate pruning or damage to important trees the Council maintains a Tree Preservation Order (TPO) register.

Anyone proposing to carry out works to a tree or trees subject to a TPO must seek permission from the local planning authority. This involves completing an application form identifying the tree(s), detailing the works proposed and explaining the reasons for the works. The Council's Planning Officer will usually inspect the tree(s) prior to making a decision and may recommend alternative works or refuse consent. If authorisation is given to fell a protected tree, a new tree will usually be required to be planted as a replacement and will in turn remain protected.

If a tree protected by a TPO is felled, pruned or wilfully damaged without consent from the Council, the person who carried out the works is liable to be fined up to £20,000 through the Magistrates Court or, if taken to the Crown Court, fines may exceed £20,000. There are exceptional circumstances, such as when a tree is dead, dying or dangerous, when permission is not required but it is advisable to seek advice from the Council and give five days notice before carrying out any works (except in an emergency).

The Council is acting on the following recommendations, arising from an internal audit of the processes that determine planning applications that include reference to TPO trees:

- Maintain a register of all tree-felling applications and make it available to the public on request
- Inform local residents of significant planned tree-felling operations through public notices followed by a reasonable period of public consultation, in which the public may voice their objections
- Liaison between the Council's Tree Section and Planning department to review TPO applications where necessary
- Use of standard forms for all decisions made in relation to tree-felling applications.
- Where an application is likely to attract public objection, the final decision should be reached by the Planning Committee
- Protocol document setting out the decision-making process for tree-felling applications should be drafted and approved by the Planning Division, Tree section and the Planning Committee

5 How are Southwark's trees managed and maintained?

5.1 Responsibility

The responsibility for the management of Southwark's trees is as follows:

- Parks, open spaces, woodlands & highways – Public Realm
- Housing estates – Housing and Community Services
- Schools – individual schools
- Corporate buildings – Corporate Facilities Management
- Planning policy and tree preservation orders – Planning

The Education Department is currently deciding whether it wishes the Tree Section to maintain its trees on a more formal basis. The Tree Section will be contacting schools to offer a more formal service including surveying, the provision of costed recommendations, pruning and planting. The Tree Section recommends that specific survey schedules are agreed to identify higher risk trees in school grounds.

Woodlands are currently maintained on an ad hoc basis and the Tree Section will be working with the Ecology Officer and stakeholder groups to develop woodland management plans to preserve and enhance Southwark's woodland areas.

The Tree Section's key roles are:

- To manage surveying and keep a record of the Borough's trees (through developing and maintaining a computerised database and mapping system detailing the location, species and history of each tree)
- To identify changes in tree sizes and safety hazards and how these should be addressed, e.g. by pruning (through organising tree surveys) for all trees maintained by Southwark Council
- To organise and oversee pruning and other tree works via Planned and Reactive work programmes
- To provide support and advice relating to trees to other Council services
- To deal with enquiries and complaints
- To communicate with, and consult community stakeholders
- To measure and monitor the quality and performance of work undertaken by Southwark Council's tree contractor
- Develop and review this strategy

In addition to the Tree Section, the Council has employed a Senior Planner specialising in Urban Forestry to manage planning related tree enquiries. The Tree Section will continue to provide support on planning issues as necessary and provide a role of expert consultees as required.

5.2 How do we decide what is done when?

The management of Southwark's trees mainly involves the following categories of activity:

- Surveying and recording of information
- Routine/planned maintenance
- Reactive maintenance
- Planting
- Dealing with enquires and insurance claims

5.2.1 Surveying

Trees are constantly growing and changing. Surveying enables the Council to keep a record of all the borough's trees, including ongoing issues and defects. It allows managers to know what work is required and, in many cases, to plan this work in advance.

There are three main types of survey:

- A defect-led condition or visual survey is a method for rapidly detecting and dealing with hazards. It doesn't involve measurement unless it identifies a defect, such as a rotten or damaged bough. These surveys are undertaken in response to a query or complaint about a particular tree or group of trees.
- More detailed or a full Visual Tree Assessment (VTA) survey include accurate measurements. Full surveys enable cyclical maintenance and maintenance regimes to be determined, allow for greater programming of work based on the size and location of the tree. They may also include a valuation survey to estimate the monetary value and appropriateness of trees in terms of their location and species.
- Surveys to determine the suitability of Tree Preservation Orders and as part of planning applications.

The Council inputs the results of surveys to a database/asset management system called SBS CONFIRM and plots them on a map, see figure 1. The data can also be linked to CAVAT valuations (refer Section 3.3). Using this system the tree section is able to record a significant amount of information about individual trees including:

- Location
- Species
- Tree measurements; height, canopy spread and trunk diameter
- Condition and health of the tree
- Any defects, i.e. damage to stem or limbs, decay
- Inspection date and officer
- Works history

Together this information provides an important record of the history of Southwark's trees as well as being an important management tool.

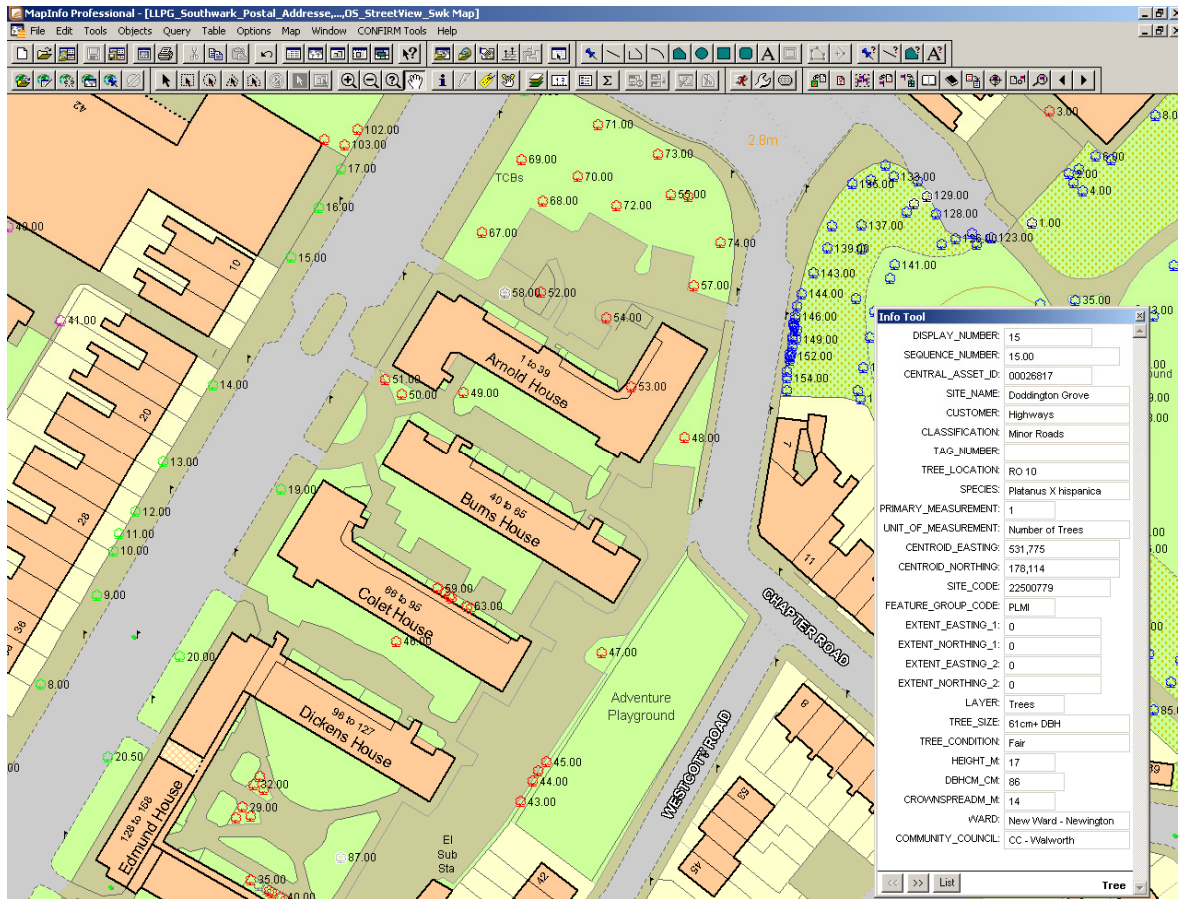


Figure 1. Tree mapping screen

Table 5.1 shows the frequency with which the Council should undertaken a Visual Tree Assessment (VTA) survey trees for defects, decided according to their location and the type and degree of any risk they present. For example, trees on busy major roads, with high volumes of passing traffic and pedestrians, are categorised as a higher risk than those within a wooded area away from paths.

Table 5.1: Visual Tree Assessment Survey Cycle

Location	Survey cycle
Highways ⁽⁴⁾ ; Principle, Major and Minor roads	3 years
Housing Estates	3 years
Parks and Woodland	5 years

Southwark Council will undertake a full Visual Tree Inspection for all trees every three to five years on a rolling basis to check for defects which may be hazardous. The survey then allows Tree Officers to determine maintenance work to be prioritised, issued and scheduled. This also allows the Council to identify priority trees, determine an appropriate cyclical maintenance regime and increase planned maintenance programmes.

Where surveys identify concerns about a particular tree, the Council monitors that tree more frequently, to check for deterioration. The intention is to try to retain valuable or especially distinctive trees through appropriate maintenance regimes whenever possible.

⁽⁴⁾ Trees on Red Routes are managed by Transport for London.

5.2.2 Routine/planned maintenance

Routine or planned maintenance is the Council's preferred method of maintenance to maintain the tree stock in a safe and healthy condition. Planned maintenance can help to retain the tree in its environment by reducing the risk of damage and nuisance, pre-empt complaints and meet the majority of customer requirements for tree pruning.

Ideally each tree would be placed in an appropriate maintenance cycle. The maintenance cycle is likely to be different for each tree due to their type, size and location. Some trees need to be placed on an 18-24 month cycle due to insurance related issues while other trees are more suited to a longer maintenance cycle e.g. 5 years. Certain species or locations, such as woodland trees and mature park specimens, require only occasional care and attention.

Southwark has fixed maintenance cycles for trees that require pollarding and are involved in insurance related issues. All other trees are assessed for works during the Visual Tree Assessment survey undertaken every 3 to 5 years and only necessary works being undertaken as a result.

Through implementing this strategy and undertaking a programme of full surveys the Council will be able to increase the number of priority trees that can be placed in a fixed maintenance cycle enabling more routine maintenance to be planned and undertaken.

The remaining trees will be assessed via a programme of condition surveying and works allocated on a priority basis within the identified resources.

Planned maintenance includes;

- Routine tree maintenance
- Replacement tree planting and young tree maintenance
- Root/branch encroachment over property boundaries
- New Tree Planting if budget is made available

5.2.3 Reactive maintenance

Reactive works are carried out in response to an immediate health and safety hazard, such as fallen trees/branches, hanging branches, branches obstructing sightlines or access, or roots causing trip hazards.

Reactive works can include tree felling and in response to emergencies. Southwark Council aim is to retain trees and will not fell a tree without justification. Where felling is justified replacement trees will be planted where appropriate to maintain the Council's tree stock during the following planting season (November – March)

Reactive maintenance is often undertaken in response to enquiries from other organisations, Council departments or members of the public. By increasing surveying in order to identify maintenance issues which can be addressed through routine/planned maintenance, the Council aims to reduce the need for reactive maintenance.

Reactive maintenance includes the following issues;

- Dead, dying or dangerous
- Legal nuisance, e.g. trees involved in insurance claims or obstructing access
- Trees posing an immediate threat to pedestrians and vehicles
- Overgrown trees or in close proximity to buildings
- Trees that are blocking street lights, obscuring traffic signals or obstructing traffic flow
- Trip hazards
- Insurance mitigation
- Hazardous pests and diseases for example Ash dieback

5.2.4 Emergency Works

Environment and Leisure has an Emergency plan for severe weather conditions affecting all Council owned trees. During office hours all emergency calls are directed to the Tree Section, which assesses and prioritises works and instructs a contractor. Out of hours calls go through to an Emergency Duty Officer and passed direct to the Contractor and Tree Section staff if necessary. This service applies to all Southwark Council owned property.

Emergency works include;

- Trees that pose an immediate threat to safety
- Trees that have fallen across roads or footways
- Trees that are blocking street lights, obscuring traffic signals or obstructing traffic flow
- Trip hazards
- Hazardous pests and diseases for example brown tail moth

Full details of Southwark's emergency procedures are contained in Appendix 6.

5.2.5 Planting

Replacement Planting

The Council fells approximately 500 trees per year because they are dead, dangerous and/dying. The Council replaces as many trees as possible as planned or reactive maintenance within existing budgets.

The Council does not always replace like for like because the replacement trees are chosen as per the 'right tree, right place' principle. See section 6 for more details about how new trees are chosen. This means that the new tree might be a different species and might even be planted in a new location if necessary.

5.2.6 New Planting

New planting is distinct from replacement planting and is not covered by existing revenue budgets.

The Council will consider carefully where and when to plant new trees for the following reasons:

- To manage the financial implications appropriately. New planting incurs initial pit excavation in hard surfacing, supply, planting and watering costs of £420 on average per tree, and maintenance costs estimated at £350 per tree over a ten-year period.
- To ensure that capital funding is sought for new trees as the cost of this cannot be covered within existing budgets
- To ensure that revenue implications are assessed and met by capital schemes. A 3 year maintenance and defects liability period e.g. Mayor of London's Priority Tree Programme should be included as a minimum
- To ensure that new trees are planted only in appropriate areas using the principle of 'right place, right tree'.
- To replace tree stock and plan for new green infrastructure

Permission for new (as opposed to replacement) tree planting is given by the relevant division, with guidance from the Tree Section and Urban Forester. For example, new trees on streets are the responsibility of the Public Realm Asset Management Team, on estates by Housing Management and in open spaces by Parks Management.

The guidance Southwark Council follows when planting a new tree is detailed in Section 6.

5.2.7 Excluded works

To ensure that current resources are utilised most effectively, the Council will not undertake works to address the following issues;

- Tree blocking light or creating shade
- Interference with TV or satellite dish reception
- Blocking or obscuring views
- Nuisance from Insects or other non-hazardous wildlife
- Droppings from roosting birds
- Honeydew sap
- Leaf, fruit and seed fall
- Pollen
- Tree is considered too large by complainant
- Maintain trees in tenants front/rear gardens unless instructed by Housing

The Council will not prune or remove trees in response to these issues as these works can be detrimental to the health and appearance of Southwark's trees.

5.3 Tree Maintenance Operations

5.3.1 General

Tree Maintenance Operations all come under the heading of 'Pruning'. Pruning is defined as 'to cut off or remove dead or living parts or branches of tree to improve shape or growth'.

Pruning work can help remedy immediate health and safety issues, reduce longer-term management issues and increase the longevity of a tree. Where public safety is not compromised, pruning work will be undertaken to conserve trees with high ecological value and to preserve trees with significant local historical and/or aesthetic value.

The decision for tree work is made by a qualified Arboriculturist. An assessment of the trees requirements for pruning is made during the survey undertaken every 3-5 years or in response to a query or complaint.

While mature trees may require pruning to aid their health, they are more likely to require it to remedy or reduce conflicts with their environment and people (remedial pruning).

Pruning can result in vigorous growth and increase the amount of regular maintenance the tree requires.

The timing of pruning must comply with relevant legislation. Maintenance of trees will be undertaken throughout the year. Due to the high number of trees in Southwark it is not possible for tree works to be undertaken in the winter months when the trees are no longer in leaf. When undertaking works while the trees are in leaf, the tree will be inspected thoroughly prior to the commencement of works for nesting birds and works will not be undertaken if a nest is discovered unless the tree is an immediate danger to the public.

The way in which a cut is made will affect the way repair tissue grows over a wound to heal and protect the tree from infection. It is therefore important that pruning operations are carried out to a high standard in accordance with best Arboricultural practice (see BS3998). The number of pruning cuts should be limited and pruning wounds kept as small as possible.

For most trees requiring pruning works, one or a combination of the following common arboricultural operations will be suitable;

Crown thinning

Crown thinning (usually specified as a percentage) involves sensitively removing small branches evenly throughout the canopy/crown of the tree (the main foliage-bearing part of the tree). This reduces the overall density of the crown whilst retaining the natural outline of the tree and even distribution of foliage. It allows crossing branches, deadwood etc to be removed (which lets more light through the canopy) and reduces the density of foliage exposed to the wind (which reduce the likelihood of wind damage).

Crown reduction

Crown reduction involves pruning the outermost edges of the crown. This reduces the outline of the tree and may alleviate encroachments of foliage over highways, buildings, street lighting etc. It also reduces the twig and foliage area exposed to the wind so reducing the likelihood of wind damage. Although it reduces the size of the crown, crown reduction should retain the natural, balanced outline of the tree. To maintain healthy growth the reduction should not remove more than 30 per cent of the crown. The response to crown reduction varies between tree species but some trees (plane trees in particular) may respond by producing vigorous straight growth which then requires cyclical maintenance. Crown reduction is usually therefore appropriate only where trees have been previously managed in this way or where the tree is proven to be implicated in an insurance claim related to subsidence or other structural damage.

Crown lifting

Crown lifting involves the removal of branches or parts of branches of the lower crown to increase the clear space below the crown. It is often used to provide clearance and prevent obstruction over pavements and roads. In most cases pruning should not leave wounds greater than 50mm across.

Crown cleaning and dead wood removal

This involves selective removal of branches or parts of branches which have become weak or diseased, are dead or are dying, and which would cause damage or nuisance if they were to fall. Dead wood is valuable for wildlife and where safe should be left on site.

Pollarding and re-pollarding

Pollarding is usually initiated when a tree is immature. It involves drastically cutting back branches to approximately the same height, close to the main stem. This usually prompts new vigorous growth produced straight from the cuts, creating an unnatural shaped tree. It restricts the height of a tree so is often used where a large tree species has been planted there is not enough space for it to grow (this can include urban street trees). Once a tree has been pruned in this way, the new growth must be cut back regularly (re-pollarded) just above the previous pruning cuts.

Southwark Council does not pollard trees that have not been previously pollarded unless it is required for insurance mitigation purposes. This approach is used to retain the tree in its environment as apposed to felling the tree.

All pollarding will be undertaken during the winter months when the tree is devoid of foliage.

Formative pruning

Young immature trees, particularly in an urban setting, can benefit from nurturing and pruning in their formative years. This involves removing crossing/rubbing branches and potentially weak forks to encourage a good natural shape, reduce health issues and reduce the need for major pruning when the tree is mature.

Tree felling

Tree felling takes place when a tree is dead, dying or dangerous and where public safety is at risk. Southwark will not normally fell a healthy tree, however occasionally healthy trees do need to be removed for the following reasons:

- when the tree has caused damage to property, roads or buildings and remedial pruning is not a viable option e.g. cases of severe and prolonged subsidence

- where an approved planning application or essential development works requires tree removal
- to follow best management practice and promote tree health e.g. to allow other trees nearby to develop. It may be necessary to remove trees that are suppressing or excessively shading other trees especially in woodland or densely planted areas
- where the inconvenience and detrimental impacts of the tree outweigh its benefits. These decisions are carefully considered by Southwark's arboricultural officers following consultation with local residents and other stakeholders wherever possible.

Where trees have been felled the tree section will endeavour to provide a replacement tree as close to the location of the felled tree as practicable during the next planting season. A sign will be placed in the original location of the felled tree detailing that the tree will be replaced in the same location or a nearby location.

5.3.2 Specification

More detailed specification information and advice about other operations can be provided by the Council's Tree Section or found in the British Standard for Tree Work BS 3998:2010.

5.4 Within what constraints do we work?

The Tree section has identified the relevant legislation and policies which govern and guide the way Southwark trees are managed. Full details are contained in Appendix 8. The following is a brief summary of legislation;

- The Town And Country Planning Act (as amended) 1990
- The Town And Country Planning (Trees) Regulations 1999 as amended by The Town And Country Planning (Trees) (Amendment) (England) Regulations 2008
- Common law as it relates to ownership, hazardous trees, nuisance, light etc
- The Hedgerow Regulations 1997
- The Forestry Act 1967 – as amended by The Trees Act 1970 and The Forestry Acts 1979 and 1986
- The Forestry (Exemptions From Restrictions Of Felling) Regulations 1979 as amended by The Forestry (Exceptions From Restriction Of Felling) (Amendment)
- The Wildlife And Countryside Act 1981
- Conservation (natural habitats etc) Regulations 1994
- Construction (Design and Management) Regulations 1994
- Health And Safety At Work Act.

6 Planting

6.1 Replacement Planting

Replacement tree planting is needed to replenish Southwark's tree stock: to replace trees lost through disease, age and development, and to conserve and enhance Southwark's varied landscape character. The size of tree and design layout needs to complement the existing landscape character and be appropriate for the function of the site.

Replacement planting will be undertaken between November - March for trees removed in the previous 12 months to ensure the replenishment of Southwark's tree stock.

6.2 New Planting

Trees will often form an important element of green infrastructure plans linking areas deficient in green amenity, for retail, housing or economic regeneration, on transport routes, as flood risk amelioration and to adapt to climate change.

New planting may include larger individual specimen trees planted as a focal point, smaller trees planted in groups, avenues and boulevards, trees planted as a screen or trees planted informally in woodland. In an urban setting, street tree planting can improve the sense of local identity and for example, as part of a 'home zone' scheme, can form part of sensitive traffic-calming measures.

New tree planting will only be undertaken when extra funding is made available through grants or improvement projects.

6.3 Priorities for Tree Planting

Where external funding becomes available for tree planting, planting will be prioritised in existing tree pits before new tree locations are considered. New trees will be installed in the areas of need i.e. Camberwell and Bankside where tree numbers are below the 80 trees per linear kilometer as recommended in the biodiversity action plan.

6.4 Maintenance of Planted Trees (Young Tree Maintenance)

All new and replacement trees will include a 3 year maintenance programme and is the responsibility of the contractor for this period. The maintenance

Young Tree Maintenance includes but is not limited to;

- Replacement of the tree if it fails within the 3 year period
- Watering of the tree as required
- Topping up of mulch/gravel levels
- Ensuring stakes and ties are kept in good condition
- Ensuring protective guards are kept in good condition
- Dealing with pests and diseases
- Removing weeds and rubbish from tree pits

6.5 Choosing the Right Tree

Some trees are more suitable than others due to their particular characteristics such as resistance to pollution, drought or disease, rooting behaviour, form, shade or other interest. These characteristics should be fully considered prior to selection of a new tree.

The Tree and Woodland Framework for London supports the principle of 'Right Place, Right Tree', 'which seeks to ensure new planting/colonisation is appropriately located and designed'. The Framework provides a useful checklist of factors to be considered which are summarised below.

- **Right location?**
 - Existing habitat and landscape value: assess and record the habitat types and landscape character of the site. The shade cast by trees, and their demands on soil, water and nutrients can have a negative impact on existing valuable wildlife habitats or landscape character. Understand the value of the site before committing to planting.
 - Tree cover history: Historically would there have been trees on the site? Check historical records to establish whether the creation of new woodland or tree cover would be appropriate.
- **Right species and appropriate design?**
 - Development design: avoid locating trees where they will experience inappropriate growing conditions, e.g. in the shadow of tall buildings.
 - Space: check available space against the final height and spread of the proposed tree species with a view to minimising frequency and amount of pruning required, particularly where near to buildings or built structures.
 - Infrastructure: do not plant too close to existing or proposed over/underground infrastructure (utilities). Replace removed trees in the same pit if appropriate.
 - Local character: is there history for the use of a particular species in the area that could be reflected in new tree planting?
 - Work with nature: in natural areas, use tree stock of locally native origin or ideally encourage natural regeneration.
 - Great trees of the future: where the setting allows, select and plant large species of trees with a longer lifespan.
 - Accessibility: new trees and woodlands are most needed where they can provide people with access to nature and natural landscape in areas presently lacking in such access.
 - Highways: meet the statutory safety requirements to maintain a clear route along roads (consider heights of buses, HGVs, cars, cycles and horses).
 - Soil condition: the soil in hard landscaped areas is often poor. Soil compaction needs to be limited in the tree pit and adequate nutrients supplied. Use species known to be robust to these limitations.

Southwark has also produced a Tree Pit Design Manual for Highways trees to ensure that all new trees planted will be suitable for the space and maintain optimum growing conditions such as soil structure, climate, available space, and species selection. This design manual will help to prevent trees from causing unnecessary damage to infrastructure in the future whilst also preserving and enhancing Southwark's tree stock. All new tree proposals on Highways will be discussed with the Highways Design Manager to ensure adherence to the manual.

- **Right time to plant?**
 - New trees are best planted during the Autumn/Winter, Southwark's planting season runs from November to March. Care must be taken to avoid planting when the soil is frozen or waterlogged. Container grown trees can be planted at any time, provided they are watered regularly during dry periods. This is because their roots have grown in a container and so do not suffer the same root disturbance as bare root stock which have to be dug from the ground prior to transporting to the planting site.

New trees should conform to and be planted in accordance with the following British Standard Codes of Practice:

- BS 3936-1: 1992 Nursery stock specification for trees and shrubs
- BS 4043: 1989 Recommendations for transplanting root-balled trees
- BS 4428: 1989 (Section 7) Recommendations for General Landscape Operations

Particular reference also needs to be taken of guidance contained within The Validation of Planning Applications (DCLG, 2008) and Trees in the Townscape (TDAG 2012)

A large number of mature and over-mature trees in a population can have significant long-term implications on sustaining tree cover for the future. An ongoing replacement planting programme is essential in order to counter tree losses, to ensure that a stock of maturing trees is available to take the place of those that, through necessity, must be felled.

Species choice for a particular location will affect a tree's subsequent management and maintenance requirements. Wherever appropriate, native species are preferred for ecological reasons. However due to the ecology of urban areas, impact of climate change and existing local conditions, it is necessary to prioritise species that can tolerate the harsh urban environment. Species choice needs to be determined on a site-by-site basis and a balanced approach is needed.

6.6 Protecting Trees

All new trees will be protected from vandalism, dogs and accidents through the installation of a protective guard. The guard will be maintained as part of the Young Tree Maintenance programme and will be kept free from litter at all times. The tree planting detail is available in Appendix 1.

7 Our Commitment to Customer Service

7.1 Communicating Our Work Schedules

The annual tree works schedule is now published on Southwark's website for the community to access and make comment on. The Council sees this as an important tool for communicating to the local community about tree work planned for their area. The schedule provides an annual outline of the specific parks, streets or housing estates where tree works will be carried out. Specific details of jobs for individual sites are made available on the website at the beginning of each month. The schedule can be viewed online at;

http://www.southwark.gov.uk/downloads/download/2389/tree_maintenance_schedule_2010-2011

The schedule will be sent to Housing Resident Services Managers and Parks Area Contract and Service Managers to communicate to relevant stakeholder groups. Ward Councillors will also be sent the schedule to provide an understanding of works being undertaken in their area.

7.2 Consultation

When considering works on Council trees the Council will consult residents and stakeholders regarding the following kinds of work:

- Any tree work which that will have a significant impact on the character and biodiversity of an immediate area
- New tree planting locations
- Replacement plantings that will impact on the character and ecology of an immediate area
- Felling healthy trees over 7.5 cm diameter

Time scales for consultations vary according to the type and urgency of work, significance of the tree and local context. For planned works where trees are due to be removed and where work to highway trees requires parking exclusion areas advance notices are attached to individual trees five working days prior to the start of work. The notices will explain the reasons for the tree being removed

Consultation will not normally be carried out for the following kinds of tree work:

- Replacement plantings unless as a result of consultation from a significant number of tree felled in an immediate area
- Routine or emergency pruning and felling
- Tree testing for health, disease or safety
- Felling trees that are dead, dying or dangerous unless the trees have a significant impact on the immediate area

7.3 Enquiries

7.3.1 Customer Service Centre (CSC) Procedure

The Council's Customer Service Centre (CSC) is responsible for taking enquiries and complaints from the public, including those relating to trees. CSC staff are therefore likely to be the first experience that stakeholders have of the Council's Tree service. A new approach to customer service has been developed within the CSC to enable residents to clearly identify problem trees and service outcomes that may be expected. A Tree Oracle provides full details of how trees are

managed, processes for dealing with enquiries, work schedules and general information about the tree service. This enables the CSC to directly advise and respond to enquiries in the first instance.

Once a caller has contacted the CSC the caller is taken through the following procedure:

- The customer's name and contact details are taken
- The exact location of the tree(s) they are calling about is confirmed
 - Trees on highways
 - Trees in parks
 - Trees in housing estates managed by Area Housing Offices
 - Trees in street properties managed by Area Housing Offices
 - Trees in schools
 - Trees in social services grounds
- The nature of their request is clarified, i.e. dangerous tree, fallen limb, overgrown, pruning required, trip hazard, tree related insurance claim, tree planting, nuisance etc
- The caller is advised of general information about tree pruning including details about the annual schedule, priority works and policy
- If the enquirer's query has still not been resolved and needs to be forwarded to the tree section the collected information is entered into a database and the information is made immediately available to the Tree Section.
- The customer is given a reference number and informed that they will be contacted by the Tree section within 10 working days. Emergency enquiries will be transferred directly to the Tree section.

7.3.2 Tree Section Procedure

As soon as the enquiry is received by the Tree section the following procedure is carried out:

- The enquiry is allocated to the relevant Tree officer
- The officer will then investigate the enquiry and make an inspection if necessary to determine whether a serious hazard or legal nuisance exists
- The Tree section will contact the customer within 10 working days with the outcome of the investigation

7.4 Partnership working

Tree Officers work in partnership with a range of local authorities, statutory bodies and community organisations and new avenues for partnership working are continually being sought. Partnership working includes tree planting projects or tree surveying work with schools, Transport for London, Living Streets, Business Improvement Districts and a number of community groups.

Southwark also participates in the London Tree Officers Association (LTOA) to discuss the latest issues affecting the arboriculture industry. The LTOA is also an important forum where partnerships with other London Boroughs can be established.

There are opportunities to broaden our partnership working with other regional and local residents associations. The central issue to be addressed in any partnership should be: 'What does the public want from this service and how can it be improved?' Consultation with the community will help identify public requirements.

Local, national or international bodies, as well as individuals wishing to initiate projects in their local areas, are encouraged to contact officers who may be able to offer practical assistance and guidance with the project and provide general information leaflets. Business sponsorship may be sought from private firms if suitable opportunities arise.

The Forestry Commission and Southwark Council share several common aims and often work together in partnership. Officers have carried out volunteer moth trapping to monitor the tree health and the outbreak of Oak Processionary Moth. The Forestry Commission register for felling and tree planting is monitored to view proposals for grant aided woodland works in our area via the Woodland Grant Scheme.

The majority of reports of suspicious tree work are reported by local residents. Without these reports the Council would not know of many incidents which may need investigation. The Council also supplies free literature to answer commonly asked questions about a range of tree related issues and are able to recommend suitable tree contractors/consultants whom individuals may wish to employ.

7.5 Community involvement

7.5.1 Engaging the local community

The Council has been working with The Conservation Volunteers for over 6 years and has carried out successful joint projects in Russia Dock Woodland, Burgess Park, Surrey Docks, Camberwell Old Cemetery and Durand's Wharf to name a few.

Local 'friends groups' are an excellent means of involving the public in the management of their trees and green spaces. Local groups exist at all the major parks and at 32 smaller ones and the Council aim to encourage and support such groups. Within residential areas engagement is being managed via the Street Leaders schemes. Recent school leavers are encouraged to shadow officers for a brief period in order to gain important work experience.

Students of arboriculture occasionally ask us to answer questionnaires as part of their research. This is mutually helpful as we can obtain results of their research that can be used proactively in the management of our trees. Tree Officers are affiliated to the Arboricultural Association (AA) and International Society of Arboriculture (ISA). These organisations keep members up to date on the latest issues affecting the arboriculture industry. When appropriate, we will feed back comments to these organisations and occasionally assist them with projects.

7.5.2 Tree Wardens

Community involvement has the potential to provide additional resources for tree management and maintenance. Past planting projects in Southwark have demonstrated that, when local residents are involved in planting and maintenance, new planting have a better survival rate, are less likely to be vandalised and give a sense of ownership to the local community.

The Council will continue to encourage greater community involvement in the care and management of Southwark's trees through schemes such as community planting and Tree Warden programmes. Tree Wardens will work with the Council to promote trees throughout the borough and be eyes and ears for the Council on tree related issues. The programme will be implemented in 2013.

7.5.3 Adopt a Tree

Southwark will be running a pilot 'Adopt a Tree' programme for the first time in 2014. Members of the community will be encouraged to sign up to adopting a tree in front of their house or along their street. The programme encourages residents to help establish newly planted trees and hopefully increasing their survival rate as well as playing a role in improving their street. Residents who sign up will be encouraged to:

- Water the tree

- Weed the tree pit
- Plant the tree pit with low shrubs or flowering plants
- Report any damage, disease or pruning needs to the tree section

The 'Adopt a Tree' programme hopes to engender a sense of pride in Southwark's trees and streets and will allow residents to have a more proactive role in tree management. The initial programme will focus on newly planted trees.

8 Insurance Claims

8.1 Insurance Claim Mitigation

Southwark's Insurance Section supported by the Tree Section currently manages all claims relating to the Council's trees. Where a tree is implicated as having caused subsidence⁽⁵⁾ or damage to a property, the onus is on the claimant to provide evidence that the tree is the cause.

To manage risk and reduce liability, the maintenance regime for insurance-related pruning involves individual large trees and whole streets being pruned more frequently. Southwark Council recently agreed with its insurers to adopt the London Tree Officers Association's Joint Mitigation Protocol and the Tree Risk Management Review, and has therefore undertaken the following actions:

- Instigate a regime of cyclical pruning of Council tree stock in areas predisposed to building movement where this is appropriate
- Provide dedicated resources for dealing with subsidence-generated claims directed at Council owned trees
- Instigate a regime of selective removal and replacement of street tree stock in areas predisposed to building movement where this is appropriate
- Challenge unwarranted claims based on poorly investigated or inaccurate evidence

Recent wet summers and more proactive maintenance have led to a decrease in the numbers of payments from insurance claims, as shown in Table 8.1.

Table 8.1: Numbers of insurance claim annually

Year	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Number of insurance claims	95	74	42	25	51	56	54
Net Paid (£)	602,366	532,402	257,031	142,775	149,481	148,377	15,898

8.2 Insurance Claim Procedure

The process for dealing with insurance claims is as follows:

- The claimant must contact the Council to report the claim and to check the tree concerned is owned by the Council.
- The claimant/property owner or their building insurers must provide the Council with the following:
 - A structural report with a formal description of the damage (usually carried out by an appointed Chartered Surveyor)
 - Twelve months crack monitoring to show evidence of the cyclical movement relating to the seasonal growth of vegetation (as opposed to the effect of defective drainage or other causes)
 - Positive tree and root identification, i.e. tree species, location, and nearness of roots to property
 - Soil analysis

⁽⁵⁾ Subsidence occurs on clay soils, which naturally shrink or swell with changes in soil moisture. The water demand from trees and other vegetation growing on clay soils can affect the shrink/swell effect and, where close to buildings, a tree's effect on clay shrinkage can cause damage. Many properties in the south of the borough are built on sub soils with a high proportion of London clay.

- The Council carries out its own assessment, including tree inspection. It produces a short report for its Insurance Section detailing information held on a database including works previously carried out on the tree
- The Tree Section and Insurance Section collate the evidence provided to assess whether the tree roots are the primary cause of damage. If tree roots are proven to be a cause of damage, the Council will compensate the claimant and take action to abate further nuisance

Such insurance claims are dealt with on a case-by-case basis. A tree will not necessarily be felled as a result of a claim but will usually be included on the Council's enhanced 18-24 month inspection and maintenance cycle. This normally involves repeated crown reduction, which can reduce a tree's demand for water. This may in turn reduce the clay soil shrinkage and prevent further structural damage to the property. Where the decision is taken to fell a tree, the Council assesses whether it is appropriate to plant a replacement tree.

By maintaining detailed records of all Council-owned trees implicated in insurance claims, the Tree Section, in liaison with the Insurance Section, monitors where claims occur, and the maturity and species of trees involved. This enables them to develop a proactive approach to managing tree risks. It may be cost-effective to carry out pre-emptive crown reduction in high subsidence risk areas. The use of root barriers or similar tree growth restriction methods for newly planted trees should be considered in such high-risk areas.

9 Which organisations and individuals have an interest in trees?

9.1 The Council

All departments that implement physical changes or projects in Southwark have an interest in trees. New schemes may seek to remove existing trees or replace them with new trees.

The Council is running a fully integrated Arboricultural service which manages the entire Council tree stock on behalf of the following Council departments and services.

The relationship between the Tree Section and other Departments and Sections is defined below.

9.1.1 Housing & Community Services

The Public Realm Tree Section acts as the managing agent for Highways and Parks. For Housing, the Tree Section is responsible for the provision of an effective tree management programme for Area Housing Offices via a Service Level Agreement (SLA). The SLA includes all relevant surveying and safety inspection, the drawing up of a planned maintenance schedules, contract management, the processing of payments and the provision of emergency cover.

The SLA does not include trees located in front and rear gardens which are the responsibility of tenants and leaseholders. The handling of enquiries and complaints, as well as the management of access arrangements, are the direct responsibility of the Area Housing Offices.

9.1.2 Highways

As for Housing, services undertaken by the Tree Section for Highways include regular safety inspections, surveying to identify works within planned maintenance schedules and issuing of work to contractors, including an emergency call out service. This includes maintenance pruning, felling and replacement planting, together with the organisation of enabling works such as parking bay suspensions, traffic management and advance notification. As well as managing the contract, monthly performance reports are provided detailing the quality, timeliness and efficiency of both planned and reactive works.

Further advice is given regarding subsidence claims and the repair of footways where these are damaged by tree roots. Trip hazards related to roots and other issues such as vacant tree pits and overhanging vegetation from private properties are reported to the section by highways Inspectors, whose responsibility it is to notify private property owners of the need for pruning.

All resurfacing and repair to the footway is undertaken by contractors managed by highways engineers who work in close liaison with the Tree Section. Where footway or kerb damage has been caused by tree roots this may lead to root pruning and in extreme cases can require the removal and replacement of the tree. Future damage can be avoided by the use of the most suitable species and locations, together with root deflectors for new planting sites where appropriate.

9.1.3 Parks & Open Spaces

The Tree Section sits within the Parks and open Spaces Business Unit. The Section oversees all tree work in the borough, including that required to Parks trees. Trees in parks have less intensive requirements for maintenance in comparison to highways and many housing sites, allowing survey and scheduling to be undertaken in a more flexible manner.

9.1.4 Traffic management, parking & CCTV

Network Management and Parking teams work closely with the Tree Section to enable planned works on streets and estates where these need parking bays to be suspended or where statutory

notices and road works require advance notification and coordination with utilities, buses, traffic lights, the emergency services and closed circuit television cameras.

9.1.5 Insurance mitigation

A number of highways trees have been identified as likely to be implicated in claims and which therefore need pro-active management on a more frequent maintenance cycle. These works are carried out by the Tree Section on behalf of the Council's Insurance Section.

9.1.6 Planning

The Council's Development Management Business manages planning applications, oversees government guidance and legislation on biodiversity and green issues, applies Tree Preservation Orders (TPO's), authorises and oversees works in Conservation Areas.

The Development Management Business Unit has employed a Senior Planner specialising in Urban Forestry to manage planning related tree enquiries. This role is to:

- Respond to enquiries relating to planning issues
- Gauge the impact on trees and landscape when considering planning applications and other issues related to new development
- Commenting on BS5837 surveys and approving tree protection and landscaping plans produced by private developers;
- Manage and maintain the Council's Tree Preservation Order register, managing and processing of current and new TPO's
- Advice on applications to undertake work on trees subject to TPOs and trees in Conservation Areas
- Investigation of unauthorised works to protected trees
- Provide input to policy on green infrastructure and determine the application of available s106 funds, including advice on the design and management of planting and other landscaping projects, strategic new planting and biodiversity
- Advice on project management and technical support regarding the design, maintenance and procurement of trees and landscaping for capital funded projects such as s106, CGS and Major Projects
- Consultation, including site visits, community council meetings and court evidence

Tree Preservation Orders

The Council complies with the statutory requirement under s214 TCPA 1990 to maintain a register of applications to do works to preserved trees and those within conservation areas. This information is available online via the Southwark website along with planning applications and is managed within Development Management.

However, information regarding existing TPO's is currently only available to the public by enquiry (written, email or telephone). This is to be reviewed with the desire to provide more readily accessible information via the website, One Stop Shops and other means once a survey has been completed of existing and potential trees protected with Tree Preservation Orders.

Policy

The planning policy team are responsible for preparing planning documents that make up the Local Development Framework. These documents set out policies and planning guidance for the borough and cover issues such as public realm and open space. The Tree Section will work with the planning policy team in the preparation of LDF documents to ensure the Tree Strategy is taken into consideration and to ensure development in the borough will not negatively impact on Southwark's trees. Guidance on trees and landscape can be incorporated in forthcoming area based Supplementary Planning Documents and Area Action Plans and themed documents

covering green infrastructure. The timetable for preparing these documents has been agreed through the Local Development Framework.

9.1.7 Projects

The Cleaner Greener Safer section of the Public Realm division within Southwark Council's Department of Environment & Leisure, manages environmental improvement projects some of which include tree planting projects. On these occasions advice will be sought from the Tree Section and Urban Forester where necessary.

9.1.8 Education

While the Council does not currently provide a direct service to the Education department of the Council or to individual schools, Southwark Council is writing to all educational organisations offering a tree maintenance and management service. In the meantime works are recharged on an individual basis including a Client fee of 15 per cent to cover management and administration.

9.1.9 Corporate property

An ad-hoc service is provided to various other sites where trees may need occasional inspection and maintenance on land owned by the Council on a rechargeable basis.

9.1.10 Social Services

Social Services own areas of land with trees. The Tree Section provides management and advice when requested on a rechargeable basis.

9.1.11 Director of Public Health

The Director of Public Health has an interest in trees due to the contribution to health and wellbeing of the borough.

9.1.12 Customer Service Centre

The Council's Customer Service Centre (CSC) is responsible for taking enquiries and complaints from the public, including those relating to trees. CSC staff are therefore likely to be the first experience that stakeholders have of the Council's Tree service. A new approach to customer service has been developed within the CSC to enable residents to clearly identify problem trees and service outcomes that may be expected. A Tree Oracle has been produced and will provide full details of how trees are managed, processes for dealing with enquiries, work schedules and general information about the tree service. This will enable the CSC to directly advise and respond to enquiries in the first instance.

Details of Southwark's CSC procedures in relation to tree enquires are contained in Appendix 8.

Further information about Southwark's Tree services is also available on the Southwark website; <http://www.southwark.gov.uk/trees>

9.2 External

9.2.1 Members of the public/local residents

Local residents and members of the public are often concerned about the status of trees in their area. The Council receives a number of ad hoc enquiries about trees from members of the public and these are dealt with via the Customer Service Centre or directly via correspondence to Council offices.

9.2.2 Housing associations

Housing Associations own and manage trees on their land. The Planning Department provides occasional advice relating to planning and Conservation Area permission, whilst the Tree Section may undertake work on request on a rechargeable basis.

9.2.3 Voluntary organisations

Since the 1980s, the London Wildlife Trust, The Conservation Volunteers (TCV), Groundwork Trusts, the Bankside open Spaces Trust (BOST) and many local organisations have been actively promoting community interest and engagement in trees, often in partnership with local authorities and Government agencies. Trees for London (an independent charity), established in 1993, has become a key player in promoting tree planting, especially in areas of economic deprivation. Trees for Cities published The London Tree Manifesto in 2001, which the Mayor of London has signed up to help deliver.

Other voluntary sector organisations, such as Dulwich, Peckham and Camberwell Societies and Friends of Parks groups, have an active interest in trees. These groups undertake informal surveillance and report issues with trees. Such reports are handled as described in section 7.3.

The Dulwich Estate is a registered charity and have responsibility for the management of trees on their land.

10 Actions and targets: how we will achieve our vision and measure our performance against it

Objective 1. To ensure that the Council has a clear programme of tree maintenance, management and planting.

Action no	Action	Target	Timeframe	Responsibility
1.1	Make strategy and management regimes available to stakeholders	This strategy and new management regimes for each service area available through the Council's website	February 2013	Tree section, E Comms
1.2	Surveying	All publicly owned highways housing and parks trees in Southwark surveyed and mapped every 3-5 years	Ongoing	Tree section
1.3	Develop planning guidance	Supplementary Planning Document (s) for Trees and landscaping, Green Infrastructure	April 2014	Development Management Planning Policy
1.4	Woodland Management	Woodland Management Plans for all woodland sites in the borough produced	April 2015	Tree section, Ecology Officer, External Contractor

Objective 2. To ensure that the information people and organisations require about Southwark's tree stock and its management (including this strategy and management regimes for each service area) is easily accessible and comprehensible

Action no	Action	Target	Timeframe	Responsibility
2.1	Maintain high level customer service and share information	Publishing of schedules and review customer service procedures	Ongoing	Tree section, E Comms
2.2	Reduction in number of complaints received	Number of complaints received below 30 per annum	Ongoing	Tree section
2.3	Develop an accurate register of Tree Preservation Orders	All TPOs on register	April 2014	Development Management
2.4	Valuing	Value of all publicly owned trees in Southwark assessed using CAVAT system.	Ongoing	Tree section

Objective 3. To increase community involvement and understanding of Southwark's trees

Action no	Action	Target	Timeframe	Responsibility
3.1	Introduce a Tree Warden Programme	Implemented programme and wardens reporting issues to the Tree Section	April 2013	Tree section
3.2	Introduce a pilot Adopt a Tree Programme	10% of all newly planted trees maintained by residents	April 2014	Tree section
3.3	Implement a Significant Trees list for the borough	All trees on publicised register	April 2014	Tree section

Objective 4. To increase the proportion of the Borough's trees which meet the principle of 'right place, right tree'

Action no	Action	Target	Timeframe	Responsibility
5.2	Produce a Tree Pit Design Guide for new highways planting.	Production and issue of guide	April 2013	Parks management, Public Realm Projects, Tree section, Development Management

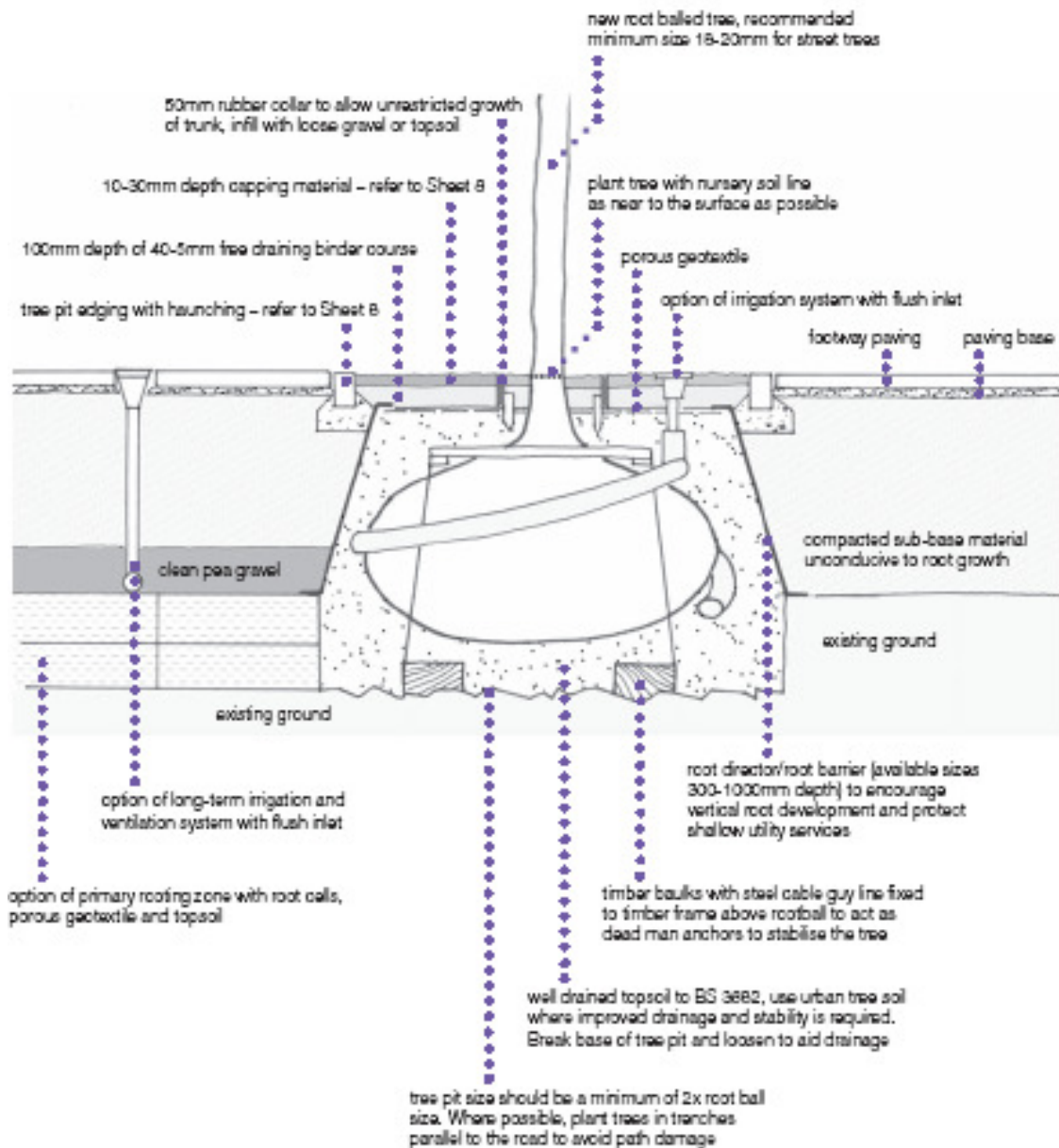
Objective 5. To ensure that, by 2015, the majority of Southwark's trees are healthy and in a safe condition

Action no	Action	Target	Timeframe	Responsibility
6.1	Implementation of the planned maintenance programme	95% of trees healthy and safe	2015	Tree section
6.2	Develop an SLA for Schools	SLA	April 2013	Education, Tree section, Sustainable Services

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Appendix 1 – Tree pit design – Highways



Appendix 2 – Index of tree species found in Southwark

Deciduous trees (those trees which lose their leaves in winter) form the greatest part of Southwark's tree stock. Species include London Planes, Limes, Cherries, ornamental flowering Plum and Maples.

The three native species of evergreen, or coniferous, trees (Yew, Juniper and Scots Pine) are rarely found other than as individual specimen trees (large solitary trees chosen for their particular shape) in parks or cemeteries. However, an increasing number of smaller exotic evergreen trees are being planted in streets for their year round interest and small compact crown, which is ideal for use in confined spaces or more formal designs. These are usually from Mediterranean-type climates and include Privet, Olive and Magnolia.

Naturally occurring, self-seeded trees are found within woodlands, disused land, boundaries and back gardens. These are usually native or naturalised species, such as Sycamore, Birch, Elderberry, Poplar, Willow and Ash, where seeds from nearby trees have been dispersed by wind or wildlife. Other non-native species, such as Tree of Heaven, Robinia and Holm Oak, are also increasing in number by natural regeneration, helped by a warmer climate.

The following table includes a list of tree species found in Southwark:

Common name	Scientific name	Native
Fir, Caucasian	<i>Abies nordmanniana</i>	
Mimosa	<i>Acacia dealbata</i>	
Field maple	<i>Acer campestre</i>	
	<i>Acer capillipes</i>	
	<i>Acer cappadocicum</i>	
	<i>Acer davidii</i>	
	<i>Acer ginnala</i>	
	<i>Acer grisium</i>	
	<i>Acer negundo</i>	
	<i>Acer palmatum</i>	
Maple, Norway	<i>Acer platanoides</i>	
	<i>Acer platanoides</i> 'Columare'	
	<i>Acer platanoides</i> 'Drummondii'	
	<i>Acer platanoides</i> 'Globosum'	
Sycamore	<i>Acer pseudoplatanus</i>	
	<i>Acer pseudoplatanus</i> 'Leopoldii'	
	<i>Acer rubrum</i>	
	<i>Acer saccharinum</i>	
	<i>Acer saccharum</i>	
	<i>Aesculus Flava</i>	
Horse chestnut	<i>Aesculus hippocastanum</i>	
Indian Chestnut	<i>Aesculus indica</i>	
	<i>Aesculus pavia</i>	
Red Chestnut	<i>Aesculus X carnea</i>	
Tree-of-Heaven	<i>Ailanthis altissima</i>	
	<i>Albizia julibrissin</i>	
Alder, Italian	<i>Alnus cordata</i>	
	<i>Alnus glutinosa</i>	X

	Alnus incana	
	Alnus Incana 'Aurea'	
	Amelanchier Canadensis	
	Amelanchier laevis	
	Amelanchier lamarckii	
Monkey Puzzle	Araucaria araucana	
Strawberry Tree	Arbutus unedo	
	Betula ermanii	
Birch, Kashmir/Himalayan	Betula jacquemontii	
	Betula Lenta	
	Betula nigra	
	Betula papyrifera	
Birch, silver	Betula pendula	X
	Betula pendula 'Dalecarlica'	
	Betula pubescens	X
	Butia capitata	
	Butia eriospatha	
Box	Buxus sempiverens	X
	Callistemon laevis	
	Calocedrus decurrens	
Hornbeam	Carpinus betulus	X
	Carpinus betulus 'Fastigiata'	
Sweet chestnut	Castanea sativa	
Indian bean-tree	Catalpa bignonioides	
	Catalpa bignonioides Aurea	
Norther Catalpa	Catalpa speciosa	
Cedar, Atlas	Cedrus atlantica	
	Cedrus atlantica 'Glauca'	
	Cedrus deodara	
Cedar of Lebanon	Cedrus libani	
Hackberry	Celtis australis	
Candy Floss Tree / Katsura	Cercidiphyllum japonicum	
	Cercidiphyllum japonicum ftd	
Forest Pansy	Cercis Canadensis	
Judas Tree	Cercis siliquastrum	
Cypress, Lawson's	Chamaecyparis lawsoniana	
	Chamaecyparis nootkatensis	
Yellowwood, American	Cladrastris lutea	
	Clerodendron trichotomum	
Wedding cake tree	Cornus controversa	
Dog wood	Cornus kousa	
Hazel	Corylus avellana	X
	Corylus avellana 'Contorta'	
Turkish Hazel	Corylus colurna	
Cotoneaster	Cotoneaster sp.	

Hawthorn	<i>Crataegus monogyna</i>	
Cockspur Thorn	<i>Crataegus crus-galli</i>	X
	<i>Crataegus oxycantha</i>	
	<i>Crataegus X lavallei</i>	
	<i>Crataegus X prunifolia</i>	
Cypress, Leyland	<i>Cupressus leylandii</i>	
	<i>Cupressus glabra</i>	
	<i>Cupressus lusitanica</i>	
	<i>Cupressus macrocarpa</i>	
Handkerchief Tree	<i>Davidia involucrate</i>	
Tasmania Fern Tree	<i>Dicksonia Antarctica</i>	
	<i>Elaegnus angustifolia</i>	
Gum, Snow	<i>Eucalyptus debeuzevillei</i>	
Gum, Cider	<i>Eucalyptus gunnii</i>	
	<i>Eucalyptus niphophila</i>	
Bee Tree	<i>Euodia hupehensis</i>	
Spindle	<i>Euonymus europaeus</i>	
Beech	<i>Fagus sylvatica</i>	X
	<i>Fagus sylvatica 'Dawyck'</i>	
	<i>Fagus sylvatica 'Purpurea'</i>	
Fig	<i>Ficus carica</i>	
Forsythia	<i>Forysthia x intermedia</i>	
Ash	<i>Fraxinus excelsior</i>	X
	<i>Fraxinus excelsior 'Diversifol</i>	
	<i>Fraxinus excelsior 'Jaspidea'</i>	
Ash, Weeping	<i>Fraxinus excelsior 'Pendula'</i>	
	<i>Fraxinus Americana</i>	
	<i>Fraxinus angustifolia 'pendula</i>	
Ash, Manna	<i>Fraxinus ornus</i>	
	<i>Fraxinus oxycarpa 'Raywood'</i>	
	<i>Fraxinus Pennsylvanica</i>	
	<i>Fraxinus Velutina</i>	
Maidenhair Tree	<i>Gingko biloba</i>	
Honey-locust	<i>Gleditsia triacanthos</i>	
	<i>Gleditsia triacanthos Skyline</i>	
	<i>Gleditsia triacanthos Sunburst</i>	
	<i>Halesia monticola</i>	
Sea-Buckthorn	<i>Hippophae rhamnoides</i>	
Holly	<i>Ilex aquifolium</i>	X
	<i>Ilex Aquifolium Ferox</i>	
	<i>Ilex aquifolium 'unidentified</i>	
	<i>Ilex castaneifolia</i>	
	<i>Ilex X altaclarensis</i>	
Palm, Chilean Wine	<i>Jubaea chilensis</i>	
Black Walnut	<i>Juglans nigra</i>	

Walnut, Common	Juglans regia	
Juniper, Common	Juniperus communis	
	Koelreuteria paniculata	
	Laburnocytisus adamii	
Laburnum	Laburnum sp.	
	Laburnum anagyroides	
Golden Rain Tree	Laburnum X watereri 'Vossii'	
	Lagerstroemia indica Rosea	
Larch	Larix decidua	
	Larix kaempferi	
Bay	Laurus nobilis	
Privet	Ligustrum chinensis	
	Ligustrum ovalifolium	
	Ligustrum texanum	
	Ligustrum vulgare	
Sweetgum	Liquidambar styraciflua	
Tulip Tree	Liriodendron tulipifera	
Magnolia	Magnolia Galaxy	
	Magnolia grandiflora	
	Magnolia x soulangiana	
	Magnolia x loebneri 'Merrill'	
Apple,	Malus domestica cultivar	
Crabapple, Japanese	Malus floribunda	
	Malus 'Golden hornet'	
	Malus hupehensis	
	Malus 'John Downie'	
	Malus 'Profusion'	
	Malus Prunifolia 'Pendula'	
Apple, crab	Malus sylvestris	X
	Malus transitoria	
	Malus Tschonoskii	
	Malus X purpurea	
Medlar, Common	Mespilus germanica	
Dawn Redwood	Metasequoia glyptostroboides	
Mulberry, White	Morus alba	
Mulberry, Black	Morus nigra	
Beech, Antarctic	Nothofagus Antarctica	
	Nothofagus dombeyi	
	Nothofagus obliqua	
	Nothofagus procera	
Tupelo, Black	Nyssa sylvatica	
Olive	Olea europaea	
Persian Ironwood	Parrotia persica	
Foxglove Tree	Paulownia tomentosa	
Palm, Canary Island Date	Phoenix canariensis	

Spruce, Norway	<i>Picea abies</i>	
	<i>Picea Brewerana</i>	
Spruce, White	<i>Picea glauca</i>	
	<i>Picea omorika</i>	
	<i>Picea orientalis</i>	
	<i>Picea pungens</i>	
Pine, Austrian	<i>Pinus nigra</i>	
	<i>Pinus pinaster</i>	
Pine, Stone	<i>Pinus pinea</i>	
	<i>Pinus strobus</i>	
Pine, Scot's	<i>Pinus sylvestris</i>	X
	<i>Pinus wallichiana</i>	
Plane, Oriental	<i>Platanus orientalis</i>	
Plane, London	<i>Platanus x hispanica</i>	
	<i>Platanus x tremonia</i>	
Poplar, White	<i>Populus alba</i>	
Poplar, Balsam	<i>Populus balsamifera</i>	
	<i>Populus candicans</i> 'Aurora'	
Black Poplar	<i>Populus nigra</i>	X
	<i>Populus nigra Italica</i>	
Aspen	<i>Populus tremula</i>	X
	<i>Populus serotina</i>	
	<i>Populus serotina</i> 'Aurea'	
Cherry, wild or Gean	<i>Prunus avium</i>	X
	<i>Prunus avium</i> 'Plena'	
	<i>Prunus</i> 'Accolade'	
	<i>Prunus</i> 'Amanogawa'	
Cherry, Plum	<i>Prunus cerasifera</i>	
Plum, purple-leaved	<i>Prunus cerasifera</i> 'Pissardii'	
	<i>Prunus cersifera nigra</i>	
Plum	<i>Prunus domestica</i>	
Almond	<i>Prunus dulcis</i>	
Cherry, dwarf	<i>Prunus fruticosa</i>	
	<i>Prunus</i> 'Ichiyo'	
	<i>Prunus incise</i>	
	<i>Prunus kanzan</i>	
	<i>Prunus laur. magnolifolia</i>	
	<i>Prunus lauroceasus</i>	
Cherry-laurel	<i>Prunus lusitanica</i>	
	<i>Prunus macchii</i>	
	<i>Prunus padus</i>	X
Cherry, Bird	<i>Prunus 'Pandora'</i>	
	<i>Prunus 'Pink Perfection'</i>	
	<i>Prunus sargentii</i>	
Sargent Cherry	<i>Prunus sargentii</i>	
	<i>Prunus sargentii</i> 'Rancho'	

Cherry, Black	Prunus serotina	
Cherry, Tibetan	Prunus serrula	
	Prunus serrulata 'Kiku-Shidare	
	Prunus 'Shirotae'	
Blackthorn	Prunus spinosa	X
	Prunus subhirtella	
	Prunus subhirtella 'Autumnalis	
	Prunus Sunset Boulevard	
	Prunus 'Tai Haku'	
	Prunus 'Umineko'	
	Prunus Virginiana 'Schubert'	
	Prunus X blireana	
	Prunus X hillieri 'Spire'	
Yoshino Cherry	Prunus X yedoensis	
Fir, Douglas	Pseudotsuga menziesii	
Caucasian Wingnut	Pterocarya Fraxinifolia	
Pemegranate	Punica granatum	
Pear, Ornamental	Pyrus calleryana 'Chanticleer'	
Pear, Conference	Pyrus communis	
	Pyrus Communis 'Beech Hill'	
	Pyrus salicifolia	
	Pyrus salicifolia 'Pendula'	
Oak, English	Quercus robur	X
	Quercus robur 'Fastigiata'	
	Quercus acutissima	
	Quercus castaneifolia	
Oak, Turkey	Quercus cerris	
	Quercus coccinea	
Oak, Hungarian	Quercus frainetto	
	Quercus hispanica 'Lucombeana'	
Oak, Holm	Quercus ilex	
	Quercus Illicifolia	
	Quercus Imbricaria	
Oak, Pin	Quercus palustris	
	Quercus phellos	
	Quercus rubra 'Salicifolia'	
Oak, Red	Quercus rubra	
	Quercus Shumardii	
Oak, Cork	Quercus suber	
	Quercus X Turneri	
Oak, Sessile	Quercus petraea	
	Rhododendron ponticum	
Sumach, stag's-horn	Rhus typhina	
	Rhus typhina 'Laciniata'	
Black Locust	Robinia pseudoacacia	

	Robinia pseudoacacia Casque Rou	
	Robinia Pseudicacia Bessoniana	
	Robinia pseudoacacia 'Frisia'	
	Robinia pseudoacacia 'Inermis'	
Willow, white	Salix alba	X
	Salix alba 'Tristis'	
Willow, Weeping	Salix babylonica	
Willow, Pussy	Salix caprea	X
	Salix caprea 'Pendula'	
	Salix Chrysocoma	
Willow, Crack	Salix fragilis	
	Salix matsudana 'Tortuosa'	
Willow, Bay	Salix pentandra	X
	Salix tortuosa	
	Salix X chrysocoma	
	Salix x sepulcralis	
Elderflower	Sambucus nigra	X
	Sequoia sempervirens	
Wellingtonia	Sequoiadendron giganteum	
Pagoda Tree	Sophora japonica	
Whitebeam	Sorbus aria	X
	Sorbus aria 'Lutescens'	
Rowan or Mountain-ash	Sorbus aucuparia	X
	Sorbus aucuparia 'Sheerwater	
	Sorbus aucuparia 'Fastigiata'	
	Sorbus commixta	
Service tree	Sorbus domestica	
	Sorbus hupehensis	
Whitebeam, Swedish	Sorbus intermedia	
	Sorbus 'Joseph Rock'	
Wild Service Tree	Sorbus torminalis	X
	Sorbus X thuringiaca	
	Sorbus X thuringiaca 'Fastigia	
	Syringa vulgaris	
Tamarix	Tamarix aestivalis	
	Tamarix pentandra	
	Tamarix tetandra	
Swamp Cypress	Taxodium distichum	
Common Yew	Taxus baccata	X
	Taxus baccata 'Aurea'	
	Taxus baccata 'Fastigiata'	
	Thuja plicata	
Lime, common	Tilia x vulgaris	X
	Tilia Americana	
Lime, Small leaved	Tilia cordata	X

	Tilia cordata 'Green spire'	
Lime, Caucasian	Tilia Euchlora	
	Tilia Europaea	
	Tilia henryana	
Lime, Mongolian	Tilia mongolica	
	Tilia oliveri	
	Tilia pettiolaris	
Lime, Broad Leaved	Tilia platyphyllos	X
	Tilia platyphyllos 'Rubra'	
Lime, Silver	Tilia tomentosa	
Windmill Palm	Trachycarpus Fortuneii	
English Elm	Ulmus procera	X
Princeton Elm	Ulmus americana Princeton	
Field Elm	Ulmus carpinifolia	
Wych Helm	Ulmus glabra	X
	Ulmus glabra Camperdownii	
	Ulmus sophora 'Autumn Gold'	
Dutch Elm	Ulmus X Hollandica	
Caucasian Elm	Zelkova Carpinifolia	
	Zelkova serrata	
	Zizyphus guiggiolo	

Appendix 3 – Historical background to Southwark’s trees and appraisal of the tree stock by Community Council area

According to the 1993 London Tree Survey, mean tree density for Southwark was estimated at 31 trees per hectare (90,000 trees) one of the highest densities of any London Borough. This figure is impressive considering that many parts of Southwark are in central London.

The survey estimated the following for Southwark:

- The biological condition (health), 82 per cent Southwark’s trees as being in the best condition.
- The structural condition (safety), 80 per cent of Southwark’s trees were in the best structural condition.
- The maturity of trees in Southwark was estimated as 36 per cent mature and 61 per cent immature.
- The suitability of trees judged on the species potential for growth and the actual growing space was also estimated. The suitability of trees in Southwark in the best category was 70 per cent and 8 per cent in the worst.

Summary and implications of London tree survey on strategy

Tree ownership in Southwark is roughly half publicly owned and half privately owned. 54 per cent of all Southwark’s trees are in residential properties, 17 per cent in open spaces and 16 per cent are street trees. The bulk of staffing resources are required to maintain Council owned trees, in streets, housing and parks, and also to provide planning control on works to a considerable quantity of private trees.

A large number of mature and over-mature trees in a population can have significant long-term implications for sustainable tree cover and landscape. Mature trees are concentrated in specific locations in parks, throughout Dulwich and as historical Victorian street plantings, rather than as an even distribution throughout the borough.

The Council is committed to increasing the percentage of suitable trees based on the principle of ‘right place, right tree’ when undertaking new or replacement planting schemes.

Southwark tree survey data

The majority of Council owned trees are inspected every three to five years. A comprehensive re-survey of all Council managed trees is planned over the next three years, commencing with highway trees in 2010-11. The results of the highway tree survey will be available from April 2011.

The Council records the results of surveys onto a database/asset management system called SBS CONFIRM. Using this system the Council is able to record a significant amount of information about individual trees including:

- Location
- Species
- Tree measurements; height, canopy spread and trunk diameter
- Condition and health of the tree
- Any defects, i.e. damage to stem or limbs, decay
- Inspection date and officer
- Works history

Together this information provides an important record of the history of Southwark's trees as well as being an important management tool.

Numbers

The 1993 London Tree Survey estimated the population of trees in Southwark as 90,000. Southwark Council is responsible for the direct management, maintenance and care of over half (57,000) of the borough's tree population

Condition

The London Tree Survey recorded the biological and structural condition of Southwark's trees. They estimated that 80 per cent were in the best condition, this figure is also representative of Southwark's tree stock in 2010.

Distribution

The number of publically owned trees, based on existing data, is shown below according to each Community Council area.

Community Council area	Number of trees
Bermondsey & Rotherhithe	15,776
Borough, Bankside and Walworth	11,326
Camberwell	6,474
Dulwich	10,029
Peckham & Nunhead	13,081
Total	56,686

Species

There are over 300 species of trees in Southwark including both native and species. These are listed in Appendix 2.

The following table shows the ten most common trees across the borough;

Tree Type	Common Name	% of Stock
Platanus x hispanica	London Plane	10.8%
Prunus	Cherry	10.5%
Tilia	Lime	6.7%
Acer pseudoplatanus	Sycamore	5.1%
Fraxinus	Ash	5.3%
Acer platanoides	Maple	4.3%
Crataegus	Hawthorn	3.2%
Pryus	Pear	2.9%
Quercus	Oak	2.5%

Bermondsey & Rotherhithe

The highest percentage of trees are located on Highways followed by Parks and Open Spaces

The largest trees are on highways, probably because of the number of Poplar and Plane trees which have large diameter stems. This is followed in descending order by trees in parks, housing and schools.

The largest trees are on highways followed by parks and housing sites. Sizes for highway trees are evenly spread at around a medium size, reflecting the recent regeneration of the area.

The main types of trees are Planes, Maples, Cherries, Sorbus and Limes. A high proportion of trees on highways are London Planes, with historic plantings of Poplar and Ailanthus linked to Dr Alfred Salter.

Borough, Bankside & Walworth

In Borough, Bankside & Walworth the majority of trees are located in Parks and Open Spaces. Parks improvement projects such as the Burgess Park Revitalisation project have increased tree stock in this area.. The largest trees are located in parks followed by highways. Housing and school trees are smaller with a more normal distribution of sizes.

The principle type of trees are London Planes and Limes located on highways. In parks, Planes and Cherries dominate whilst on housing land the majority of tree types are Maple and Cherry. The small numbers of school trees are split between all three species.

Camberwell

In Camberwell the majority of trees are either on the highway or in housing sites, with relatively few in parks and schools.

The mean diameter of trees implies that the oldest are in parks although this is based on a small sample size. Highways, housing and school trees are of similar ages.

This pattern indicates a fairly even age distribution. Opportunities exist for planting in open spaces and a commitment elsewhere to maintain the even age structure.

The principle tree type is overwhelmingly Plane on highways followed by Lime. Maple, Cherry and Lime are respectively the most commonly planted on Housing sites. Parks and schools have a small sampling size and there is no obvious pattern in the genera recorded. The priority here is to increase the diversity of species planted on highways.

Dulwich

In Dulwich the majority of trees are either in Parks with significant trees on Highways as well. There are a less significant number of trees on housing sites and few in schools.

The mean diameter of the trees implies that the oldest trees are in housing and schools. However, there is a high standard deviation for parks indicating a greater variety of tree ages.

This pattern is probably largely due to Dulwich Park which, although established in the nineteenth century, has retained a number of trees from before this time. The tree population includes a number of veteran trees, particularly Oak. Sympathetic planting should be encouraged although the planting opportunities in a busy park with mixed uses are finite.

The principle genera on highways are Plane closely followed by Cherry. In parks Oak dominate followed by Maple and Cherry. In housing land the majority are Maple, Lime and Cherry. The small number of trees in schools is mainly Maple and Lime.

The high proportion of London clay in the Dulwich area means there is an increased occurrence of tree related subsidence. Replacement and new planting needs to take this into account. Smaller, less water intensive trees with smaller rooting areas are appropriate as they are less likely to be implicated in subsidence.

Peckham & Nunhead

The majority of trees are situated within Parks with housing sites also maintaining a large tree stock. The most common tree types are Maple, Lime, Cherry and Sorbus. Planes are more prevalent on streets and within parks but Sorbus are the most common highway tree.

The Peckham area has the smallest average sized trees in all sectors indicating that the trees are youngest here with a high proportion of smaller ornamental species of Cherry and Sorbus.

Some implications of tree data

London Plane trees represent over 10% of Southwark's publically owned tree stock reflecting historic planting patterns. A large number of these are planted along residential streets in close proximity to properties. Plane trees are very large trees and can reach up to 30m high and 20m across, when planted very close to properties they can cause problems such as encroachment and subsidence. Given their size and close proximity to property and roads Plane trees also tend to be very expensive to maintain.

Using the principle of 'right place, right tree' it will not always be appropriate to replace these streets with Planes, smaller more appropriate species will be considered to be more suitable replacements.

The large numbers of short-lived Sorbus species, particularly Rowan, in the streets of Peckham (nearly 20 per cent) will mean that a fair proportion of the trees will need regular replacement. This genus may be phased out by replacing with more drought tolerant species when they die.

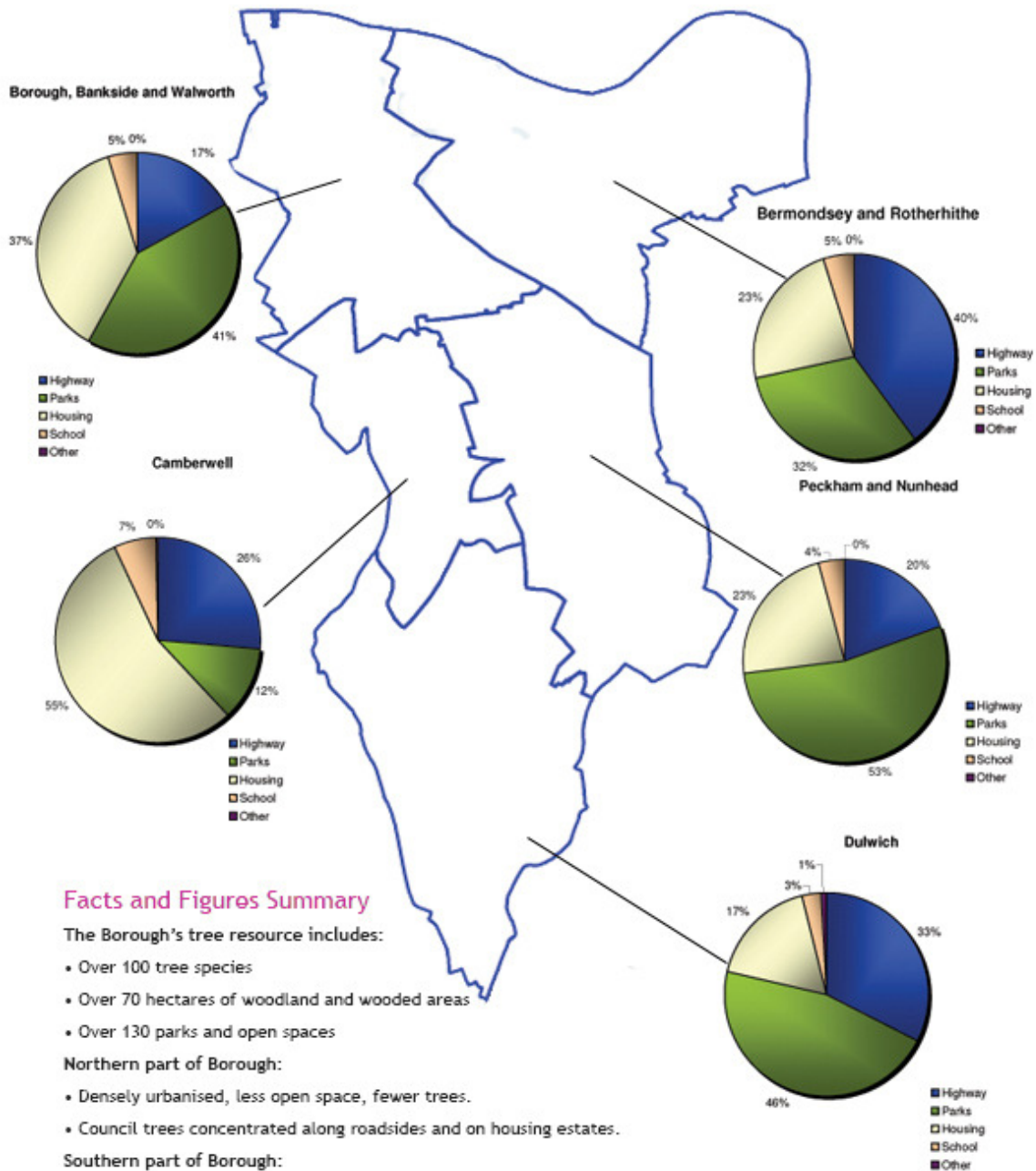
Southwark's replacement and new planting programme will take in to account the need to maintain overall canopy cover to ameliorate and adapt to the effects of climate change.

On the whole, the majority of larger trees are located within parks and on highways.

Appendix 4 – The distribution of Council managed trees

The Distribution of Council Managed Trees

(Note: This map does not show woodland areas or trees on private land. Not all of the Borough's schools have been surveyed therefore the figures shown are not comprehensive.)



Facts and Figures Summary

The Borough's tree resource includes:

- Over 100 tree species
- Over 70 hectares of woodland and wooded areas
- Over 130 parks and open spaces

Northern part of Borough:

- Densely urbanised, less open space, fewer trees.
- Council trees concentrated along roadsides and on housing estates.

Southern part of Borough:

- Suburban, large open spaces, significant ancient woodland, large private gardens.
- Council trees concentrated along roadsides and in parks and open spaces.

Appendix 5 – Emergency procedures

Call out procedure

The Council has implemented an emergency call out procedure for dealing with emergencies involving trees. This service will be provided for all Southwark Council owned properties. An emergency is defined as any tree identified as posing an actual hazard or an imminent risk to public safety or property.

For example;

- a tree or large limb has fallen onto a road and is obstructing vehicles or pedestrians
- a large limb hanging in a tree which may pose a risk to public safety or property if it became dislodged
- a tree that has been hit by a vehicle and has become badly damaged or unstable
- when there is obvious movement of soil or roots at or surrounding the tree base
- when a tree has recently begun to lean which may pose a risk to public safety or property if it fell

Who to contact

1. Normal office hours

During normal office hours Monday to Friday (excluding Bank Holidays) 9am - 5pm all calls should be directed to the Customer Service Centre who forward the enquiry to the tree section for assessment, prioritisation and distribution to the arboricultural contractor. The arboricultural contractor will respond to an emergency within 2 hour and will ensure adequate resources are available.

Normal Office Hours Contact: 020 7525 2000

2. Outside of normal working hours

Outside normal working hours (Between 5pm - 9am and Weekends and Bank Holidays) calls will be directed to the Emergency Duty Officer (EDO). The EDO will take the initial call and then contact the arboricultural contractor direct requesting that they attend. The arboricultural contractor will respond to an emergency within 2 hours and will ensure adequate resources are available.

Out of Hours Contact: 020 7525 2000 / 0207 525 5000

In severe cases, the Council's Emergency Duty Officer may also contact the Tree section or Public Realm call out Officers directly for further assistance.

Emergency plan

The Council has developed an emergency plan for dealing with severe weather conditions affecting all Council owned trees.

1. Background

The main risk to the general public from trees occurs during periods of severe weather, where large, high-lighted by storms in October 2000 and November 1987. Fortunately, these instances are few and far between. The purpose of this plan is to detail priority when dealing with multiple tree falls across the Borough.

The general pattern for tree fall is for a prolonged period of heavy rain followed by high winds. Heavy rain leads to saturated soil conditions and reduced dynamic soil/root stability which, in turn, compromises the ability of trees to withstand high winds.

When multiple tree falls occur, resources and skilled operatives have to be targeted and co-ordinated to ensure public safety is re-established as soon as possible. Private tree owners will need to organise their own contractors.

This Plan will direct Emergency Duty Officers (EDO), Parks and Housing Contract Officers and Tree Officers by providing an agreed method and priority.

2. Criteria for Targeting and Co-ordination

More densely populated areas should be prioritised (i.e. the centre, north west and south east) together with locations where failure not to clear hazards could lead to major traffic problems and impaired access by Emergency Services.

Such sites will include all arterial roads and roads that lead to principle Hospitals; Kings College Hospital on Denmark Hill and Guys Hospital on Snowfields.

Transport for London is responsible for all red-routes.

The schedule of roads is held by EDOs. Priority is as follows:

- South Circular A205
- Transport for London roads, red routes (see road status list)
- Traffic sensitive roads
- Principle roads
- Major roads
- Minor roads

Once these roads have been made safe, Principle roads and Minor roads can be attended to. This will include hazards located off the highway but threatening safety.

Public areas that can be isolated should be closed to public access until an arboricultural safety assessment is carried out. These areas should include Parks, Open Spaces, School Playgrounds and Housing Estates where possible.

Once the public highway has been cleared, operations can be directed towards potentially hazardous trees on privately owned land which continue to threaten the highway. This may involve felling and removal. Powers to carry out this work are held within the Highways Act. 1980 Section 154 (1 & 2). Costs can be recharged.

Parks and housing estates

All parks and open spaces should be closed to public access where dangerous/fallen or suspected dangerous trees are located. Otherwise, affected areas should be taped and cordoned off from public access.

Both parks and housing estates have grounds maintenance contractors who can be enrolled in assisting the clearance of fallen branches and trees once a qualified Arboriculturist has declared that these are safe to be moved.

Parks and housing contract officers will report fallen and potentially dangerous trees to arboricultural officers for prioritisation.

Parks will be cleared by order of access footpaths, car parks and play areas. Trees in open spaces can be left until priority areas have been cleared.

Schools and other premises must contact the Tree section or the EDO for a response or site inspection. However, Joint Management Boards have an ability to contact other arboricultural contractors on the approved contractors list held by the Arboricultural Association (www.trees.org.uk).

Appendix 6 – Known pests and diseases

This section identifies and provides an explanation of currently known major pests and diseases affecting trees in the United Kingdom;

Diseases

Apiognomonina veneta (Anthracnose of London Plane)

This disease kills bud, shoots and leaves. In spring buds fail to flush, leaves can fall in summer and shoots wilt as if frosted. Usually trees recover by mid summer.

Chalara fraxinea (Ash Die Back)

The disease causes leaf loss and crown die back and can lead to tree death. Symptoms can be visible on leaves shoots and branches, crown shows leaf loss and crown die back. Leaves suffer from wilting and brown black discoloration.

Ganoderma

Ganoderma is the most common bracket fungi found within Southwark. This is a white rot root and butt rot pathogen. These fungi can attack the lower stem and roots of a tree.

Inonotus hispidus.

Bracket fungus found on ash trees. Simultaneous white rot. Branch and stem failure often occurs. Brackets tend to fall from tree and remain intact

Massaria platani / splanchnonemi platani

Affecting London plane trees. Causing rapid decay and branch death. Branches can delaminate and fail.

Meripilus giganteus.

Significant with beech. White rot. Fungal brackets located between buttress roots and at soil level overlapping each other. Root decaying fungi which can lead to whole tree failure due to loss of root system.

Phytophthora.

A group of microscopic fungal pathogens. That attacks the root system of trees and can be spread by free water such as rain splash. Symptoms are black patches on the bark some times bleeding.

Piptoporus betulinus.

Bracket fungi of birch. Brown rot. Causing stem failure.

Pests

Horse Chestnut Leaf Miner.

A moth that lays its eggs on the leaves of horse chestnuts. The larvae then mines the leaves of the green chlorophyll to leave brown blotchy patches by the late summer. Although this looks to causing problems to the tree horse chestnuts seem to cope with the pest and produce a flush of new leaves each spring.

Oak Processionary Moth.

Caterpillars affecting oak trees by defoliating the tree. The caterpillars feed on the leaves of oak trees. Nests are found in the canopies of trees.

Appendix 7 – Relevant legislation and policy

This section identifies the external legislative and policy constraints which govern the management of Southwark's trees.

Legislation

The Council, like any other tree owner, has to abide by certain regulations regarding trees, the main ones are listed below:

- The Town And Country Planning Act (as amended) 1990
- The Town And Country Planning (Trees) Regulations 1999 as amended by The Town And Country Planning (Trees) (Amendment) (England) Regulations 2008
- Common law as it relates to ownership, hazardous trees, nuisance, light etc
- The Hedgerow Regulations 1997
- The Forestry Act 1967 – as amended by The Trees Act 1970 and The Forestry Acts 1979 and 1986
- The Forestry (Felling Of Trees) Regulations 1979 as amended by The Forestry (Felling Of Trees) (Amendment) Regulations 1987
- The Forestry (Exemptions From Restrictions Of Felling) Regulations 1979 as amended by The Forestry (Exceptions From Restriction Of Felling) (Amendment)
- Regulations 1985 and by The Forestry (Exceptions From Restriction Of Felling) (Amendment) Regulations 1988
- The Forestry (Modification Of Felling Restrictions) Regulations 1985
- The Wildlife And Countryside Act 1981
- Conservation (natural habitats etc) Regulations 1994
- New Roads And Street Works Act 1991
- The Land Drainage Act 1976, Section 34
- The Thames Region Flood Defence Bylaws and Land Drainage Bylaws
- Construction (Design and Management) Regulations 1994
- Local Government (Contracts) Act 1997
- Local Government Act 1972 Section 111 (Fundraising)
- Local Government (Misc' Provisions Act) 1976 Sections 23 & 24 (Dangerous Trees)
- Local Government Act 1972 Section 214 & 215 (Closed Church Yards)
- Anti-Social Behaviour Act 2003 (Part 8: High Hedges)
- Health And Safety At Work Act.
- Occupiers Liability Act 1984

Town and Country Planning Act 1990

Sections 197 and 198 of the Town and Country Planning Act 1990 requires local authorities to ensure, in granting planning permission for development, that adequate provision is made for the protection, preservation and planting of trees. It also empowers Southwark Council, as the local planning authority, to make Tree Preservation Orders (TPOs) to prevent trees from being cut down, uprooted, topped, lopped, wilfully damaged, or wilfully destroyed without its consent.

TPOs are usually made on trees that make a significant contribution to the environment and its enjoyment by the public.

The Town and Country Planning Act 1990 states, 'The character and appearance of Conservation Areas should be recognised and respected in any new development within these areas.'

Under Section 211 of the Town and Country Planning Act 1990, the local planning authority requires six weeks written notice of any works proposed to trees within a Conservation Area. Within the six-week notice period, the trees are protected in the same way as with a TPO and any wilful damage or felling is subject to the same penalties.

Tree preservation orders

Within the Development Management Team there is a dedicated Senior Planner – Urban Forester Officer who manages the TPO register and all other planning-related issues and processes that have or are likely to have an impact on trees.

Anyone proposing to carry out works to a tree or trees subject to a TPO must seek permission from the local planning authority. This involves completing an application form identifying the tree(s), detailing the works proposed and explaining the reasons for the works. The Council's Planning Officer will usually inspect the tree(s) prior to making a decision and may recommend alternative works or refuse consent. If authorisation is given to fell a protected tree, a new tree will usually be required to be planted as a replacement and will in turn remain protected.

If a tree protected by a TPO is felled, pruned or wilfully damaged without consent from the Council, the person who carried out the works is liable to be fined up to £20,000 through the Magistrates Court or, if taken to the Crown Court, fines may exceed £20,000. There are exceptional circumstances, such as when a tree is dead, dying or dangerous, when permission is not required but it is advisable to seek advice from the Council and give five days notice before carrying out any works (except in an emergency).

The Council is acting on the following recommendations, arising from an internal audit of the processes that determine planning applications that include reference to TPO trees:

- Maintain a register of all tree-felling applications and make it available to the public on request
- Inform local residents of significant planned tree-felling operations through public notices followed by a reasonable period of public consultation, in which the public may voice their objections
- Liaison between the Tree section and Planning to review TPO applications where necessary
- Use of standard forms for all decisions made in relation to tree-felling applications.
- Where an application is likely to attract public objection, the final decision should be reached by the Planning Committee
- Protocol document setting out the decision-making process for tree-felling applications should be drafted and approved by the Planning Division, Tree section and the Planning Committee

The Council complies with statutory requirements under s214 TCPA 1990 to maintain a register of applications to do works to preserved trees and those within conservation areas. This information is available online via the Southwark website along with planning applications managed within Development Management.

However, information regarding existing TPOs is currently only available to the public by enquiry (written, email or telephone). This is to be reviewed with the desire to provide more readily accessible information via the website, One Stop Shops and other means once a survey has been completed of existing and potential trees protected with preservation orders.

Highways Act 1980

Section 130 of the Highways Act 1980 places a duty on the Highway Authority to protect the rights of the public to use and enjoy the highway. This means that the Council, as the local Highway

Authority, will carry out necessary works to the Council's trees to ensure overhanging vegetation does not create an obstruction or nuisance and that damaged or dangerous trees are made safe.

Under Section 154 of the Highways Act 1980 'Removal of Dangerous Trees', the Council can serve a notice on the owners of overhanging hedges and trees which overhang the highway and obstruct access, sightlines or light from a street lamp, requiring that they are cut back to provide the necessary clearance and abate any nuisance. If the owner does not respond within the specified period of the notice, the Council may carry out the work required and recover the expenses incurred from the person in default.

Unless there is a traffic order in force restricting the size or height of vehicles that can use a particular road, a vertical clearance of 5.3 metres is to be maintained to allow sufficient clearance for vehicles which might ordinarily be expected to use the highway to gain access. Clearance must be at least 2.3 metres above the footway, cycleway and verge

Forestry Act 1967

Even if trees are not protected by a TPO or are not located within a Conservation Area, permission may still be needed to fell them. The Forestry Commission deals with the felling of trees and generally permission is required to fell trees containing over 5 cubic metres of wood. Such a licence is not required to fell trees in private gardens unless permission is required due to protection by a Tree Preservation Order or the trees are within a Conservation Area.

Countryside and Rights of Way Act 2001

The Wildlife and Countryside Act 1981 and the more recent Countryside and Rights of Way Act 2001 make provision for the protection of wildlife. Of particular importance in relation to trees are the legislation and statutory instruments dealing with bats and birds. It is also possible that less disturbed areas of a park or woodland may support badger setts.

All British bat species are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981, as updated by the Countryside and Rights of Way Act 2000. All British bats are also included on Schedule 2 of the Conservation Regulations 1994, as European Protected Species. Taken together, these pieces of legislation make it an offence to:

- Intentionally or recklessly kill, injure or capture bats
- Deliberately or recklessly disturb bats (whether in a roost or not);
- Damage, destroy or obstruct access to bat roosts (whether or not bats are present)

It is critical that trees are inspected, prior to commencement of any felling or pruning works, for signs of bat roosting activity. If bats are known or considered likely to be present. Such work must be carried out under a roost disturbance licence. Breeding roosts cannot be disturbed during the breeding season (May to September) although it would be possible to close non-breeding roosts. It is important to be aware that the English Nature licence application, once submitted, takes a minimum of thirty days to determine. It is important, therefore, that the extent and timing of pruning works should be considered well in advance of works needing to be carried out.

All breeding birds, their nests, eggs and young are protected throughout the breeding season under Schedule 1 of the Wildlife and Countryside Act (as amended). Works on trees likely to support nesting birds should be timed to avoid the breeding season (generally March to the end of July, although some species can have late broods, which may not fledge until well into August).

Environment Act 1985

The Hedgerow Regulations 1997, made under the Environmental Act 1985, prevent the removal of most countryside hedgerows without first submitting a hedgerow removal notice to the local planning authority.

Anti-Social Behaviour Act 2003

From June 2005, Part 8 of the Anti-social Behaviour Act 2003 gives local authorities in England powers to deal with complaints about high hedges. Provided the complainant has tried and exhausted all other avenues for resolving their hedge dispute, they can take their complaint about a neighbour's evergreen hedge to their local authority.

Common Law Duty of Care

As a landowner, Southwark Council has a duty of care to maintain trees on its land in a safe condition, and to reduce the nuisance that its trees may cause to others. Nuisance is generally defined as including dangerous trees (or parts of trees) and actual damage to property. Nuisance does not generally include loss of light, disturbance to TV reception, obstruction of view or minor seasonal issues such as leaf fall, bird droppings or honeydew (dripping sap).

Policy

In addition to legislative requirements tree management also occurs in the context of a broad policy framework.

Environmental

Timber and green waste recycling and reuse

Arboricultural works inevitably generate green waste. Southwark Council requires its arboriculture contractor to arrange for all green and all woody waste to be recycled. This is expected to be approximately 208 tons per month or 2500 tons a year. Soft foliage and smaller branches can be shredded/ chipped and the resulting waste either composted or used directly as a mulch material. Timber too large for chipping may be suitable for local craft or commercial purposes (e.g. as fencing material, firewood or furniture). In woodland or informal parks, the most sustainable solution is often to leave the cut timber in situ. It can be carved into a sculpture or simply stacked into log piles to provide a wildlife habitat. Transportation costs (both financial and environmental) are an important consideration and should be kept to a minimum when moving green waste or timber.

Choosing sustainable products

Wood/Timber

Where possible, timber and timber products purchased (e.g. benches, bollards, fencing) should be sourced from, or specified as sourced from, appropriately certified suppliers to ensure that the timber used is produced legally, and comes from sustainable sources. The United Kingdom Woodland Assurance Standard (UKWAS) sets out criteria for certifying woodland or forest products in the UK. The FSC (Forest Stewardship Council) label operates in accordance with the UKWA Standard, is now recognised by many buyers and consumers, and is supported by most environmental groups. Other certification and sustainable forest management schemes are outlined in DEFRA's Green Buyer's Guide – Wood Action Sheet.

Planting products

Sustainability should also be considered when purchasing tree-planting products. For example, biodegradable tree shelters and products made from recycled materials (such as rubber tree ties) can be used. The durability of products should also be considered and where possible, items should be reused. The use of peat should be avoided with locally-recycled green waste compost or other alternatives used instead. Southwark is currently developing a 'Southwark Streetscape Design Manual' to assist with the selection of quality and sustainable products.

Pesticides

The use of pesticides should be kept to a minimum in accordance with Southwark's Pesticide Reduction Strategy.

Reducing carbon emissions

Southwark's Climate Change Strategy, agreed by the Council Executive in 2006, set a target for 2003 levels of CO₂ emissions across the borough to be reduced by 80 per cent by 2050.

As part of its Local Area Agreement, Southwark has subsequently set a shorter-term target to reduce CO₂ emissions by 8.5 per cent over the three years to 2011.

Producing renewable energy from timber fuel and ensuring that trees removed are replaced can contribute to carbon emission reduction. New tree planting compensates for carbon production because trees act as carbon stores. Over a year, a mature tree removes about 22kg of carbon dioxide. The existing stock of trees, and new and replacement standard size trees to be planted per annum, will sequester carbon emissions, thereby assisting Southwark to become a carbon-neutral authority.

Climate change

The climate of the UK is changing. We have experienced three of the hottest summers on record within the last decade. The most recent predictions for the UK suggest an overall increase in temperature and changes to rainfall patterns and wind speed.

Climate change has a direct and indirect effect on trees in a number of ways. A rise in carbon dioxide levels in the atmosphere causes an increase in tree growth and extends the growing season. Some tree species will experience earlier flushing of leaves and flowers.

Lower summer rainfall and increased evaporation are likely to lead to longer periods of drought-induced stress on trees. An increase in the occurrence of storms will make trees more vulnerable to wind damage. Warmer summers and a rise in temperatures in general are likely to extend the life cycle and geographical range of certain pests and diseases. Trees under stress are more susceptible to colonisation by insect pests and decay-causing fungi.

The role of trees and woodlands in urban areas will become more important as climate change makes towns and cities increasingly unpleasant during heat waves. Trees produce oxygen and provide shade. They limit the urban heat island effect and intercept rainfall reducing the impact of storms. Southwark Council will ensure appropriate provision is made by planting suitable trees that will withstand the predicted changes to climate and weather patterns.

Climate change will inevitably have a detrimental effect on our present tree population. Shallow rooting species such as Beech and Hornbeam often suffer drought stress during hot periods. Trees can recover from drought conditions, particularly if they occur as single one-off events, but if such conditions are repeated year on year, they can easily succumb. An increased occurrence of high winds, particularly when soils are waterlogged and deciduous trees are in leaf can also damage the local tree population. Warm summers and milder winters can favour the existence of harmful tree pathogens, which become more prevalent in such conditions. An example is the occurrence of Horse Chestnut Bleeding Canker (*Pseudomonas syringae* pv *aesculi*) which has increased significantly in recent years.

It is important, therefore, for tree owners to protect the current tree resource, ensuring that it is sustained and where possible, expanded. It is also important that landscape architects and tree managers have regard to the effects of climate change, particularly when selecting new trees for planting schemes.

Planning

Regional policy

The London Plan (2004)

The current adopted regional policy document setting out the strategic vision and policies to guide development across London. In relation to trees the main policies include:

- London Plan Policy 3D.15 Improving London's Open Environment: boroughs should protect, maintain and enhance trees

The Mayor's Tree and Woodland Framework (2005)

Connecting Londoners with Trees and Woodlands: A Tree and Woodland Framework for London was published by the Mayor in March 2005. The overall goal of the Framework is to provide a strategic approach to trees and woodlands that delivers the Mayor's vision for London and the relevant Mayoral Strategies within the context of the England Forestry Strategy. In doing so, the Framework seeks to ensure that:

- The existing stock of trees and woodlands is managed and maintained to safeguard its value to London both now and in the future.
- There is an increased awareness of the value of trees and woodlands to the health and well being of all Londoners
- The contribution of trees and woodlands to London's sustainability and quality of life is maximised
- Natural regeneration and new planting in appropriate locations is encouraged to further enhance the contribution of trees and woodlands to London life

The draft replacement London Plan (2008)

The draft Replacement London Plan sets out policies for the new strategic vision for development across London. The plan is currently going through an examination in public and is due to be adopted in 2011. In relation to trees the main policies include:

- Policy 3.6 'Children and young people's play and informal recreation facilities' sets out a requirement for the Mayor and appropriate organisations to ensure that all children and young people have safe access to good quality, well-designed, secure and stimulating play and informal recreation provision, incorporating trees and greenery wherever possible.
- Policy 5.10 'Urban greening' states that the Mayor will promote and support urban greening, such as new planting in the public realm and green infrastructure, to contribute to the adaptation to, and mitigation of, the effects of climate change.
 - The Mayor seeks to increase the amount of surface area greened in the Central Activities Zone by at least five per cent by 2030, and a further five per cent by 2050. This will include a need to increase the provision of street trees in the Central Activities Zone.
 - The Mayor has an ambitious programme to plant 10,000 street trees, and wishes to see an additional two million trees in London by 2025 to help with both mitigation of and adaptation to climate change. It is also a key element of the much broader Climate Change Adaptation Strategy, which encourages the use of planting, green roofs and walls and soft landscaping.
- Policy 7.5 'Public realm' seeks to ensure that opportunities for greening, such as through planting of trees and other soft landscaping wherever possible, are maximised.
- Policy 7.21 'Trees and Woodlands' states that trees and woodlands should be protected, maintained, and enhanced, following the guidance of the London Tree and Woodland Framework (or any successor strategy). In collaboration with the Forestry Commission the Mayor will produce supplementary guidance on Tree Strategies to guide each borough's production of a Tree Strategy covering the audit, protection, planting and management of trees and woodland. This should be linked to the borough's Open Space Strategy.
 - Trees should be retained wherever possible and any loss as the result of development should be replaced following the principle of 'right place, right tree'. Wherever possible the planting of additional trees should be included in new developments.
 - Boroughs should follow the advice of PPS 9 to protect 'veteran' trees and ancient woodland where these are not already part of a protected site.

- Boroughs should develop appropriate policies to implement their Borough Tree Strategy.

Local Policy

The Southwark Plan / Local Development Framework

The Southwark Plan (Unitary Development Plan) was adopted in July 2007. The Southwark plan is the main document setting out the policies by which development proposals in the borough are determined. The Southwark Plan is consistent with the policies in the London Plan and sets out how development in Southwark will help to achieve the vision for London as a whole. In relation to trees the main policies include:

- Southwark Plan Policy 3.13 Urban design: Principles of good urban design must be taken into account in all developments. This includes consideration of streetscape which includes planting and landscaping that enhance the area and biodiversity.
- Southwark Plan Policy 3.15 Conservation of the Historic Environment: planning proposals that have an adverse effect on the historic environment will not be permitted. This includes trees that are protected by Tree Preservation Orders, trees that contribute to the character or appearance of a conservation area and ancient hedgerows
- Southwark Plan Policy 3.28 Biodiversity: Developments will not be permitted which would damage the nature conservation value of Sites of Importance for Nature Conservation (SINCs) and Local Nature Reserves (LNRs) and/or damage populations of protected species or priority species identified in the United Kingdom, London or Southwark Biodiversity Action Plan. Where appropriate, developments should include landscape design that enhances the area and biodiversity

The Planning Policy team's Core Strategy sets out the strategic approach to development in the borough up until 2021. The Core Strategy has recently been through an examination in public and is due to be adopted in January 2011.

Strategic Policy 11 of the core strategy states that Southwark will "protect woodland and trees and improve the overall greenness of places". The core strategy replaces some of the policies set out in the Southwark Plan, however policies 3.15 and 3.28 are saved policies and will continue to be applied to development proposals alongside Strategic Policy 11 of the Core Strategy.

Supplementary planning documents (SPDs)

SPDs provide further information and guidance on adopted planning policies. An SPD on Sustainable Design and Construction was adopted in February 2009 and includes detailed guidance on protecting and enhancing trees. This includes:

- Adapting to climate change: which includes landscaping to reduce heat island effect.
- Biodiversity: which outlines duties on landowners to protect habitat, including trees. It includes guidance and standards for protecting trees on development sites and ensuring the design of new development is sensitive to new trees
- A checklist for producing a tree report, which must be submitted when trees are near or on a development site

Retention of existing trees can add maturity to a new development and well planned, designed and maintained new planting can greatly enhance its visual quality and character. Southwark Council expects developers to refer to BS5837: 2005. Tree surveys, protection plans and arboricultural impact assessments should be provided before planning consent is given. Where trees of lesser quality or those with a reduced potential for retention have been identified, replacement planting will be stipulated as part of landscaping plans. For example, for every large tree above 30cm stem diameter there should be five medium sized trees of 15-25cm diameter provided.

Appendix 8 – List of tree management best practice guides

Southwark Council is in the process of producing a 'Southwark Streetscape Design Manual', which aims to support a more consistent and coordinated design approach to the streets of Southwark while maintaining local distinctiveness and character across the Borough. This extends to guiding landscaping and tree planting as part of traffic and public space schemes. In addition to this there are various best practice guides relating to trees which Southwark Council will adopt and comply with in order to manage its trees with proper regard for safety to people and property.

- British Standard 5837 Trees In Relation To Construction
- British Standard 3998 Tree Work
- The London Tree Officers Association Joint Mitigation Protocol For Managing Insurance Claim Risk And Claims Handling
- Arboricultural Practice Notes (published by Aais in conjunction with The Forestry Commission Research Stations)
- Arboricultural Research Notes (published by Aais under the auspices of The Forestry Commission Research Stations).
- The Body Language Of Trees: A Handbook For Failure Analysis; by Claus Mattheck and Helge Breloer.
- Diagnosis Of Ill Health In Trees B=by R G Strouts and T G Winter
- Principals Of Tree Hazard Assessment And Management by Dr David Lonsdale.
- British Standard 3936 Nursery Stock
 - Part 1, Specification Of Trees And Shrubs
 - Part 4, Specification For Forest Trees
 - Part 5, Specification For Poplars And Willows
- British Standard 4043 80 Root Balled Trees
- Njug 10 Guidelines For The Planning, Installation And Maintenance Of Utility Services In Proximity To Trees
- The Cavat System Of Evaluation Of Individual Trees And Tree Populations
- Arboricultural Research Notes
- Arboricultural Practice Notes
- Urban Forestry Practice; Handbook 5. Forestry Commission
- The UK Forestry Standards, Especially 'Standard Note 6: Planting & Managing Small Woods
- Trees in the Townscape 2012; TDAG

Appendix 9 – Glossary

AA

Arboricultural Association. A national organisation devoted to the advancement of arboriculture.

AAIS

Arboricultural Advisory & Information Service

Amenity value

The wide benefits from trees. More generally, the portion of value that results from satisfaction (or benefits) enjoyed by the user of an asset.

APN Arboricultural Practice Note – published by the Forestry Commission’s Arboricultural Advisory Information Service.

Arboriculture

The science and art of managing trees for amenity purposes, frequently in urban situations.

Bleeding Canker

A sometimes fatal bark disease of Horse chestnut caused by the bacteria *Pseudomonas syringae* pathovar *Aesculi* or occasionally the yeast like organism – *Phytophthora citricola* or *P. cactorum*.

BRE Digests

Concise advice including the risk to low-rise buildings on clay.

BS

British Standards that set out minimum standards and guidance for working practices in the UK.

BTCV

British Trust for Conservation Volunteers became an international organisation promoting practical conservation projects.

BVPI 119e

Best Value Performance Indicator for public satisfaction with parks and open spaces – now superseded by National Indicators and contract Performance Indicators.

CA

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

CABE

Commission for Architecture and the Built Environment.

CAVAT

Capital Asset Value for Amenity Trees. A method used in the UK for measuring the amenity value of trees. It takes into account their size, longevity, condition, site suitability and other attributes to give a monetary value used to help guide management decisions.

CCTV

Closed Circuit Television cameras for crime prevention in public places

CLG

Communities and Local Government' formerly known as the Office of the Deputy Prime Minister (ODPM).

CONFIRM

A software system used by officers for recording tree data, issuing work, scheduling and contract administration.

Consultant

Qualified professional employed for complex technical advice.

Contractor/ sub-contractor

Companies able to undertake tree planting, pruning and felling of trees plus ancillary works or technical reports.

Danger

A risk of great magnitude that has become imminently probable.

DBH

Diameter at Breast Height (1.5m from ground level on the stem)

Dutch Elm Disease

A newly introduced strain of fungus *Ophiostoma novo-ulmi* carried by elm bark beetles. It is usually fatal to elms.

EA

Environment Agency

Emergency

Emergencies require immediate action, urgent responses are planned, routine responses are delayed until all emergent and urgent incidents are under control.

European Protected Species Licence

A licence that is obtained from Natural England that allows otherwise unlawful acts under the conservation and natural habitats regulations 1994 to be conducted.

Expediency Test

When considering if a new TPO is needed the Tree Officers consider the level of threat to the tree, necessity of work, legality, impact on the locality and the owner's tree management.

Feathers

Young trees usually with an upright central leading shoot and a stem furnished with evenly spread and balanced lateral growth to near ground level, according to species.

Felling Licence

Permission from the Forestry Commission to fell growing trees.

G.I.S.

Geographical Information System: software providing maps and analysis of data. The system used is called MapInfo.

Glyphosate

The active ingredient of a commonly used systemic herbicide.

Green Infrastructure

The physical environment within and between urban and rural areas. It is a network of multi-functional open spaces, including formal parks, gardens, woodlands, green corridors, waterways, street trees and open countryside. It comprises all environmental resources, and thus a green infrastructure approach also contributes towards sustainable resource management.

Hedge

Trees or bushes planted as linear features for shelter, barriers and/or screening and regularly managed by laying or clipping. Within the context of the High Hedges Regulations a 'nuisance hedge' is an evergreen or semi evergreen row of continuous trees/bushes above 2m in height that detracts from the reasonable enjoyment of a neighbouring home/garden.

ISA

International Society of Arboriculture. An organisation devoted to the advancement of arboriculture.

Item

An instruction issued to our contractor for tree work at a particular location. An element of a 'work order'.

LAs

Local Authorities

Leaf miner

Insect larvae feeding parasitically inside leaves.

LTOA

London Tree Officers Association A forum for the exchange of tree management best practice, ideas and experiences within the London region.

Mega-trends

Large changes in the tree population, often too big and slow to be noticeable without comparing previous records over several years.

National Indicators

The Department for Communities and Local Government's new performance framework for Local Authorities.

National Vegetation Classification

Details of the composition and proportions of woodland plant communities in the UK

Naturalised

Used to describe a non-native species which has successfully spread and established self-maintaining populations.

NHBC

National House Building Council. Their publication 'Chapter 4.2' provides advice on building near trees.

NJUG 10

National Joint Utilities Group publication No 10: Guidance for the planning, installation and maintenance of utility services in proximity to trees.

Nuisance

This word is used in its legal sense of 'a material/financial loss to a neighbour', not in its everyday sense. Within the context of this document nuisance is meant to describe a dispute that is sufficiently serious for a court to decide i.e. it is 'actionable in law'.

NVQ level 3

National Vocational Qualification level sufficient to supervise a work gang, act as assistant Tree Officer and survey trees.

ODPM

Office of the Deputy Prime Minister, now called Communities and

Local Government, see CLG.

Off site provision

Financial or material contribution from developers in lieu of facilities provided in their development sites.

Order

A batch of work items issued monthly to the contractor.

Pathogens

Fungi, bacteria, viruses that can harm their host organism. Some plants and animals can also be considered pathogenic to trees.

Pioneer Woodland

'Pioneer type' woodland is of recent origin and normally arises by self seeding of pioneer species like birch, oak, hawthorn, ash etc.

Pollard

A tree cut once or repeatedly at a particular height. Usually cut on a semi-regular basis, with the majority of the crown removed.

RHS

The Royal Horticultural Society.

Risk

The chance of something adverse happening, its magnitude and probability.

Semi-mature

A large young tree prepared in a nursery for planting. The stem circumference is in excess of 20cm at 1m above ground level.

SBS CONFIRM

See CONFIRM.

SULE

Safe useful life expectancy.

Sites

An ad hoc and unofficial subdivision of Wards, normally the smallest area used for organising tree works.

Sonic tomography

The use of sound waves to create cross sectional illustrations of the internal integrity of tree stems.

Storm

A wind force measuring 'force ten' or more on the Beaufort Scale, seldom experienced inland, causing healthy trees to uproot and causing major structural damage.

Subsidence

Foundations supported on clay soils can move if moisture fluctuations alter the volume of the clay. Tree water demands can cause clay to shrink leading to subsidence. Loss or death of trees can occasionally cause an opposite force known as 'heave'.

Supplementary Planning Documents (SPDs)

Non-statutory local authority approved policy which could be a material consideration in terms of determining planning applications. Formerly called Supplementary Planning Guidance.

TEMPO

A system designed as a guide to decision-making and as a record that a systematic assessment has been made. It considers all of the relevant factors in the TPO decision-making chain

TPO

Tree Preservation Order: a tree, tree group, woodland or area of land on which work is normally unlawful without consent from the local planning authority.

Tree

Wood forming plants capable of growing to a large size and usually forming single, self supporting stems.

Trees in Town II

CLG publication which identifies good practice principles that local authorities should aspire to.

Triage

Division of incidents and work priorities into three categories: 1 emergency, 2 urgent and 3 routine.

Wards

An official geographical/political area of the council. Used as an area for tree management and often subdivided into Sites.

Whips

Young trees consisting of only a single slender stem, without significant side branching.

Wildlife

All living things including their habitats and resources.

Woodland

Land containing many trees and a distinct canopy layer, shrub layer and ground flora.