


City of London

Tree Strategy

Part 2

CITY OF LONDON

CONTENTS

Part 2: Guidance

The Role of the Tree Strategy

The Tree Strategy seeks to provide a co-ordinated approach to the management of trees in the City of London.

The Strategy comprises two sections

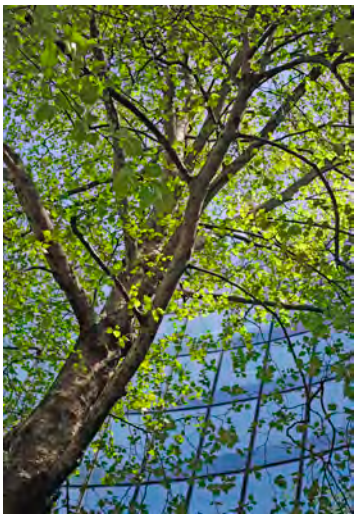
1. Policy framework – Strategy and objectives.
2. Evidence and Practical Guidance – This supports the strategy and provides more detailed information.

Part 2 of the Tree Strategy will not be adopted as a Supplementary Planning Document (SPD) of the Local Development Framework. However, this part should be read in parallel with Part 1 and should be seen as providing a greater level of detail on the Tree Strategy SPD. Part 2 looks at the specific delivery, implementation and guidance associated with the Tree Strategy SPD. Developers should in particular seek to protect trees in accordance with the guidance.

The Tree Strategy as a whole provides advice for all who may wish to undertake work to existing trees or to plant new trees.

The role of the Tree Strategy is to:

1. Confirm the strategy and policies relevant to the City of London.
2. Aid the handling of Planning applications, TPO Applications and Section 211 notices.
3. Assist the arboricultural management of trees in the City of London; those in parks and gardens and on City streets.
4. Provide advice on trees in the City.



1. Strategy Delivery

1.1 Policy Framework

Existing trees

National Legislation	Regional Policy	Local Policy/ Local Development Plan	Tree Strategy Objectives	Data
Town and Country Planning Act 1990 (as amended) **Town and Country Planning (Tree Preservation) (England) Regulations 2012** **Highways Act 1980** The City has a duty to ensure that in granting planning permissions, adequate provision is made, by the imposition of conditions, for the preservation or planting of trees. All risks to trees should be properly considered at the design stage and developers must let the City Corporation know of any works which would affect trees. Statutory undertakers are subject to code of conduct NJUG 10	**London Plan: Policy 7.21** Trees and woodlands should be protected, maintained and enhanced. Existing trees of value should be retained.	**CS19: Open Spaces and Recreation** To encourage healthy lifestyles for all the City's communities through improved access to open space and facilities, increasing the amount and quality of open spaces and green infrastructure, while enhancing biodiversity, by: 3) Protecting the amenity value of trees and retaining and planting more trees wherever practicable.	**Objective 1** To protect, manage and enhance the existing tree stock in its environment, in accordance with good arboricultural practice. **Objective 3** To ensure that full account is taken of existing trees including street trees, on and adjacent to development sites; that they are considered at the earliest design stage and are protected during any works and subsequently in accordance with current standards and legislation. **Objective 4** To ensure Utility companies protect existing trees when undertaking works by complying with current guidance.	The City contains a wide variety of different species, as well as areas of historic planting and trees which contribute to the amenity of different areas within the City. Good arboricultural practice is to maintain a healthy balance of younger and older tree stock. Currently only about 1 in 4 City trees are mature, and over half are young / semi-mature. It is therefore important to allow the younger trees to develop to maturity. See Part 2 of the Tree Strategy for practical guidance on trees and development.

National Legislation	Regional Policy	Local Policy/ Local Development Plan	Tree Strategy Objectives	Data
Town and Country Planning Act 1990 (as amended) **Town and Country Planning (Tree Preservation) (England) Regulations 2012** A TPO is an Order made by a local planning authority in respect of trees or woodlands. The principal effect of a TPO is to prohibit the cutting down, uprooting, topping, lopping, wilful damage, or wilful destruction of trees without the LPA's consent. The cutting of roots although not expressly covered, is potentially damaging and so, in the Secretary of State's view, requires the Local Planning Authority's consent.	**London Plan:** **Policy 7.21** Trees and woodlands should be protected, maintained and enhanced. Existing trees of value should be retained.	**CS12 Historic Environment** To conserve or enhance the significance of the City's heritage assets and their settings, and provide an attractive environment for the City's communities and visitors 4. Safeguarding the character and setting of the City's gardens of special historic interest.	**Objective 2** To safeguard trees which are subject to TPOs and create new TPOs, including trees in conservation areas, when considered expedient to do so.	The majority of trees in the City of London do not have the protection of a TPO, although those in Conservation areas do have protection. Creation of additional TPOs when expedient to do so, will help to protect these trees. It is considered that TPOs are effective in preserving and controlling works to trees.

Removal of trees

National Legislation	Regional Policy	Local Policy/ Local Development Plan	Tree Strategy Objectives	Data
Town and Country Planning Act 1990 (as amended) **Town and Country Planning (Tree Preservation) (England) Regulations 2012** **Highways Act 1980**	**London Plan: Policy 7.21** Trees and woodlands should be protected, maintained and enhanced. Existing trees of value should be retained.	**CS12 Historic Environment** To conserve or enhance the significance of the City's heritage assets and their settings, and provide an attractive environment for the City's communities and visitors 4. Safeguarding the character and setting of the City's gardens of special historic interest.	**Objective 5** To only permit the removal of trees in exceptional circumstances and in accordance with good arboricultural practice and to ensure that adequate and appropriate replacement tree planting places are identified and confirmed before any trees are removed.	

Unauthorised work

National Legislation	Regional Policy	Local Policy/ Local Development Plan	Tree Strategy Objectives	Data
Town and Country Planning Act 1990 (as amended) **Town and Country Planning (Tree Preservation) (England) Regulations 2012** **Highways Act 1980**	**London Plan: Policy 7.21** Trees and woodlands should be protected, maintained and enhanced. Existing trees of value should be retained.	Where unauthorised work is undertaken legal action will be initiated in accordance with the City Enforcement Charter.	**Objective 6** To initiate legal action where unauthorised tree work has been undertaken or when breach of condition has occurred.	

Tree planting

National Legislation	Regional Policy	Local Policy/ Local Development Plan	Tree Strategy Objectives	Data
Planning conditions and obligations negotiated in section 106 agreements and or unilateral undertakings. Section 211 notices TPO applications See Part I section 3 which details climate change, air quality issues.	**London Plan** **Policy 2.18** Provide green infrastructure **Policy 3.6** children's play space should include trees **Policy 5.3** promote and protect biodiversity and green infrastructure **Policy 5.10** Urban Greening: The Mayor will promote urban greening. **Policy 7.4** Local Character **Policy 7.5** Public Realm: Soft landscaping such as tree planting should be maximised. **Policy 7.14** Improving Air Quality **Policy 7.15** Reducing Noise and improving soundscapes. **Policy 7.18** open spaces – encourage green infrastructure	**Policy CS19: Open Spaces and Recreation** 1 (iii) Securing additional publicly accessible open space and pedestrian routes, where practical, particularly in the eastern part of the City 1 (iv) Creating additional civic spaces from underused highways and other land where this would not conflict with other strategic objectives 3 Increasing the biodiversity value of open spaces, paying particular attention to sites of importance for nature conservation such as the River Thames. Protecting the amenity value of trees and retaining and planting more trees wherever applicable. **Policy CS15 Sustainable development and climate change** To enable City businesses and residents to make sustainable choices in their daily activities creating a more sustainable City, adapted to the changing climate, by: 4. Requiring development to positively address: (I) Local air quality, particularly nitrogen dioxide and particulates PM10	**Objective 7** To increase the existing stock of trees and especially to encourage the planting of large-canopied species where appropriate. To increase City Corporation owned trees by 5% by 2019. **Objective 8** To encourage the planting of trees that make a positive contribution to the character and appearance of the City's townscape and encourage green corridors where appropriate **Objective 9** To encourage the planting of trees that, having regard to their amenity, contribute to the biodiversity of the City, make a contribution towards air quality and / or help in off-setting climate change	The City Corporation's programme of tree planting results in higher numbers of young trees. Planting more trees will have benefits on amenity, air quality, climate change, biodiversity and sense of well being in the City. Climate change will affect trees in many ways due to the increased $C0^2$; temperature changes; reduced summer rainfall. Appropriate locations for new planting are based on areas of deficiency, the character of the area and underground utilities.

National Legislation	Regional Policy	Local Policy/ Local Development Plan	Tree Strategy Objectives	Data
	Policy 7.19 Biodiversity and Access to Nature **Policy 7.21** Trees and woodlands should be protected, maintained and enhanced. Existing trees of value should be retained.	(iv) water quality and flood risk particularly in areas of sewer flooding (vi) the need to enhance biodiversity and provide for its conservation and enhancement, particularly for the City's flagship species and the City's priority habitats (urban green spaces, churchyards and cemeteries, built structures and the tidal Thames) 5. Incorporating climate change adaptation measures into development and the City's infrastructure, including street scene, transport and utility infrastructure, social and emergency infrastructure, and heritage assets having regard to the need to protect their historic significance. **Policy CS10: Design** 5. Ensuring that new development respects and maintains the City's characteristic dense network of streets and alleyways 6. Delivering continuous improvement in the environment, amenities and enjoyment of open spaces, play areas, streets, lanes and alleys through public realm enhancement strategies incorporating innovative design solutions		

National Legislation	Regional Policy	Local Policy/ Local Development Plan	Tree Strategy Objectives	Data
		Policy CS12 Historic Environment To conserve or enhance the significance of the City's heritage assets and their settings, and provide an attractive environment for the City's communities and visitors		

Information sharing

National Legislation	Regional Policy	Local Policy/ Local Development Plan	Tree Strategy Objectives	Data
	London Plan A city of diverse, strong, secure and accessible neighbourhoods to which Londoners feel attached, which provide all of its residents, workers, visitors and students – whatever their origin, background, age or status – with opportunities to realise and express their potential and a high quality environment for individuals to enjoy, live together and thrive.	**Policy CS19: Open Spaces and Recreation** 4. Improving inclusion and access to affordable sport, play and recreation, protecting and enhancing existing facilities and encouraging the provision of further facilities within major developments **Policy CS22** 2 v) ensuring that the use, design and management of new development and spaces help deliver healthy outcomes, particularly for more deprived residents.	**Objective 10** To provide information and advice about the value and contribution of trees in the City to developers, businesses, residents, visitors and others	

National Legislation	Regional Policy	Local Policy/ Local Development Plan	Tree Strategy Objectives	Data
	London Plan **A city of diverse, strong, secure and accessible neighbourhoods** to which Londoners feel attached, which provide all of its residents, workers, visitors and students – whatever their origin, background, age or status – with opportunities to realise and express their potential and a high quality environment for individuals to enjoy, live together and thrive...		**Objective 11** To explore ways for greater involvement, consultation and partnerships with the GLA, developers, businesses, residents and other interested parties to fulfil the aims of this strategy and its progression / implementation.	

1.2 Monitoring and Delivery

Actions, Delivery Partners and Timescales

These objectives have been developed by the Department of the Built Environment in partnership with Open Spaces Department, from a consideration of alternative options and formulated in the light of information gathering and consultation. Internal consultation has taken place with The Chamberlain, The City Surveyor, Director of Community and Children's Services, Comptroller and City Solicitor, the former Department of Environmental Services, The Remembrancer, and The Town Clerk.

The Tree Strategy - Objective 1:
To protect, manage and enhance the existing tree stock in its environment, in accordance with good arboricultural practice

Actions	Delivery partner	Timescale
1) Maintenance of database and Inspection regime		
i) The City Corporation will continue to maintain a computerised record of its tree stock. A survey of private trees will normally be undertaken every 10 years, subject to funding.	Open Spaces	Ongoing
ii) City Corporation Trees will normally be inspected according to need; all mature trees and ca. 25% of all young and middle-aged trees will be inspected annually, on a four year cycle. They will be inspected in accordance with an agreed survey specification based on Best practice.	Open Spaces	4 yearly review, with mature trees annually
iii) Recommended actions arising from tree inspections will be recorded on the database and will clearly specify the City Corporation proposed course of action and timescale.	Open Spaces	Ongoing
iv) A programme of staff training will be established to enable them to carry out regular inspections	Open Spaces	Subject to funding
v) In future CAVAT will be used as a tool to put a notional value on City Corporation owned trees where necessary or appropriate	Open Spaces	As required
vi) All trees which are the subject of an enquiry from the general public, including requests for pruning, will be inspected as soon as possible, where it is necessary.	Open Spaces / Department of the Built Environment (Planning)	Normally within 48 hours

Actions	Delivery partner	Timescale
2) Pruning		
i) Tree works will be planned according to priority and within budgetary constraints, on the assumption of a four year pruning cycle, with mature trees being pruned annually where required This includes all forms of pruning including (but not limited to) removal of dead, dying and diseased wood, crossing branches, double leaders, crown reduction, lifting and thinning. On very rare occasions and when necessary for the health of the tree, pollarding may be used by exception	Open Spaces	4 yearly review, with mature trees annually as required
ii) Trees will be pruned to ensure free passage for users of both footways and roads and to give adequate clearance from properties whilst maintaining a well balanced appearance	Open Spaces	Ongoing
iii) To commission pruning services from contractors who offer high standards of tree surgery, public safety and customer care	Open Spaces	Ongoing
3) Lease agreements		
i) To include the protection and provision of trees within lease agreements between the City Corporation and the lessees where appropriate	Comptroller and City Solicitor	Ongoing
4) Conditions and informatives		
i) Conditions and informatives will be attached as appropriate to TPO consents and planning applications. Informatives will be attached to section 211 consents and obligations will be secured in section 106 agreements and or unilateral undertakings to safeguard existing trees	Department of the Built Environment (Planning) / Comptroller and City Solicitor	Ongoing

The Tree Strategy - Objective 2:
To safeguard trees which are subject to Tree Preservation Orders and create new Tree Preservation Orders, including trees in conservation areas, when considered expedient to do so

Actions	Delivery partner	Timescale
i) Agree brief to survey trees which are covered by TPOs as part of the annual assessment programme	Department of the Built Environment (Planning) / Open Spaces	Annually
ii) Provide advice for applicants who wish to undertake works to trees which are subject to a TPO and/ or applicants who may wish to request a new TPO	Department of the Built Environment (Planning) / Open Spaces	As required
iii) Identify new trees which are worthy of preservation and create new TPOs for both publicly and privately owned trees when considered expedient to do so including those in conservation areas.	Department of the Built Environment (Planning) / Open Spaces	Ongoing
iv) Produce an amenity check list of criteria for identifying trees for TPO protection	Department of the Built Environment (Planning)	
v) Set up TPO module for making and confirming TPO	Department of the Built Environment (Planning) / Comptroller and City Solicitor	Ongoing
vi) Process TPO applications in accordance with legislation and best practice	Department of the Built Environment (Planning) / Comptroller and City Solicitor	Ongoing

The Tree Strategy - Objective 3:
To ensure that full account is taken of existing trees including street trees, on and adjacent to development sites; that they are considered at the earliest design stage and are protected during any works and subsequently in accordance with current standards and legislation.

Actions	Delivery partner	Timescale
i) Publicise the following key codes of practice :		
The Tree Strategy SPD	Department of the Built Environment (Planning)	May 2012
'Code of practice for Deconstruction and Construction Sites'	Department of the Built Environment (Highways)	Ongoing
'City developer guidelines for incoming utilities services'	Department of the Built Environment (Highways)	Ongoing
Manual for Sustainable Streets SPD	Department of the Built Environment (Planning)	Ongoing
ii) Provide advice as to the correct procedures and information required to validate a planning application	Department of the Built Environment (Planning)	Ongoing
iii) Review standard tree conditions and informatives	Department of the Built Environment (Planning)	Annually
iv) Conditions and informatives will be attached as appropriate to TPO consents and planning applications. Informatives will be attached to section 211 consents and obligations will be secured in section 106 agreements (if appropriate) and or unilateral undertakings to safeguard existing trees	Department of the Built Environment (Planning) / Comptroller and City Solicitor	Ongoing

The Tree Strategy - Objective 4:

To ensure Utility companies protect existing trees when undertaking works by complying with current guidance

Actions	Delivery partner	Timescale
In addition to the actions set down in policy 3.1- 3.4, above: i) Encourage regular contact with utility operators in accordance with advice given in Government Circular 9/95 and Core Strategy Policy CS2	Department of the Built Environment (Highways)	Ongoing

The Tree Strategy - Objective 5:

To only permit the removal of trees in exceptional circumstances and in accordance with good arboricultural practice and to ensure that adequate and appropriate replacement tree planting places are identified and confirmed before any trees are removed.

Actions	Delivery partner	Timescale
i) To remove without delay any trees or branches identified as being an immediate danger or hazardous to persons or property where the City Corporation has the powers to do so.	Open Spaces	Normally within 24 hours
ii) In the case of trees subject to a TPO and those situated in a conservation area, to respond in writing to a request from the general public to remove a tree which is dead, or dangerous, normally within the five day notice period	Department of the Built Environment (Highways) / Open Spaces	Normally within 24 hours
iii) To attach conditions and informatives on planning permissions and enter into Section 106 agreements and or unilateral undertakings, if appropriate, to ensure that Developers protect trees from demolition and construction work.	Department of the Built Environment (Planning) / Comptroller and City Solicitor	Ongoing
iv) To use the tree database to report on City Corporation managed, new, removed and replacement trees	Open Spaces	As required

The Tree Strategy - Objective 6:
To initiate legal action where unauthorised tree work has been undertaken or when breach of condition has occurred.

Actions	Delivery partner	Timescale
i) To investigate the evidence with a view to initiating appropriate legal proceedings for example prosecution, breach of condition notice.	Department of the Built Environment (Planning) / Comptroller and City Solicitor	As required

Tree Planting
There are three objectives related to tree planting. The actions are shown in combination rather than against each objective in turn.

The Tree Strategy - Objective 7: (increase stock of trees):
To increase the existing stock of trees and especially to encourage the planting of large- canopied species where appropriate. To increase City Corporation owned trees by 5% by 2019.

The Tree Strategy - Objective 8: (increase amenity and green corridors):
To encourage the planting of trees that make a positive contribution to the character and appearance of the City's townscape and encourage green corridors where appropriate.

The Tree Strategy - Objective 9: (bio-diversity, air quality and climate change) :
To encourage the planting of trees that, having regard to their amenity, contribute to the bio-diversity of the City, make a contribution towards air quality and / or help in off-setting climate change

Actions	Delivery partner	Timescale
1) Planting programme – City Corporation owned and managed trees		
i) The City Corporation will prioritise its resources to the replacement of removed trees, followed by the establishment of new tree planting	Open Spaces	Subject to funding
ii) Where a street tree is felled it will be replaced in the following tree planting season where possible	Open Spaces	Normally within 12 months

Actions	Delivery partner	Timescale
iii) The City Open Spaces Department will increase the number of trees in accordance with objective 7	Open Spaces	2019
2) Species selection		
i) Species should be chosen which are judged to be appropriate for the circumstances and situation and which will preserve or enhance the amenity of the area. Large canopied species are advocated whenever possible.	Open Spaces	Ongoing
ii) Species should be chosen which are likely to enhance biodiversity and have a positive effect on air quality, whilst having regard to likely climate change. A document providing guidance on species choice will be issued.	Open Spaces Department of the Built Environment (Planning) / Department of Markets and Consumer Protection Open Spaces	Ongoing Ongoing
iii) Liaise with resident groups on estates to plant fruit trees, which can contribute to healthy eating and can be managed by the residents.	Open Spaces / Community Services	Ongoing
3) Locations for planting		
i) Prior to planting a new street tree a trial hole may be excavated to investigate ground conditions including potential archaeological remains and existing utilities which may preclude planting	Open Spaces	As required
ii) Trees that are or will be owned or managed by the City Corporation will only be planted where the City Corporation considers it safe to do so.	Open Spaces	Ongoing

The Tree Strategy - Objective 10:

To provide information and advice about the value and contribution of trees in the City to developers, businesses, residents, visitors and others.

Actions	Delivery partner	Timescale
i) The City Corporation website will be updated regularly. This will include information outlining the role and benefits of trees	Department of the Built Environment (Planning) / Open Spaces	Normally on an annual basis
ii) Advice on submitting applications for works to trees in the City of London, TPO applications, planning applications and section 211 notices will be available on the web site and updated as necessary	Department of the Built Environment (Planning)	Ongoing

The Tree Strategy - Objective 11:

To explore ways for greater involvement, consultation and partnerships with the GLA, developers, businesses, residents and other interested parties to fulfil the aims of this strategy and its progression / implementation.

Actions	Delivery partner	Timescale
i) To provide advice on trees to other Departments for inclusion in their publications	Open Spaces / Department of the Built Environment (Planning)	Ongoing
ii) To undertake consultation on planning applications in accordance with the City of London Statement of Community Involvement.	Department of the Built Environment (Planning)	Ongoing
iii) To involve the relevant interested parties in the development and updates of this strategy and any related publications in accordance with the City of London Consultation and Engagement Framework.	Department of the Built Environment (Planning)	Ongoing

1.3 Monitoring Indicators

Existing stock

1) Number of live trees - City Corporation owned/managed and privately owned
2) Condition of trees
3) Range of species

TPO

1) Number of existing TPO trees including those in conservation areas
2) Identify potential trees to be covered by TPO in response to development or other pressures

Development

1) Protective measures taken for existing trees during works
2) Maintenance of trees following completion of works

Removal and replacement

1) Number of trees removed
2) Number and merit of replacement planting

Legal action

1) Type of legal action taken

New planting

1) Number of new trees planted on land owned by the City Corporation
2) Number of green corridors created
3) Number of relevant species planted (with respect to biodiversity, climate change, air quality)

Information sharing

1) Public awareness of the value and contribution of trees
2) City Corporation Departmental awareness of issues and plans concerning City trees

2. Development and Planting – Practical Guidance

This section offers practical guidance for development when planning for trees on development sites. For general planning policy please see Part 1

2.1 How trees sustain damage

2.1.1 During development trees may be damaged by activities which take place both above and below ground. The diagram below illustrates some of the causes and effects of development activity near to trees.

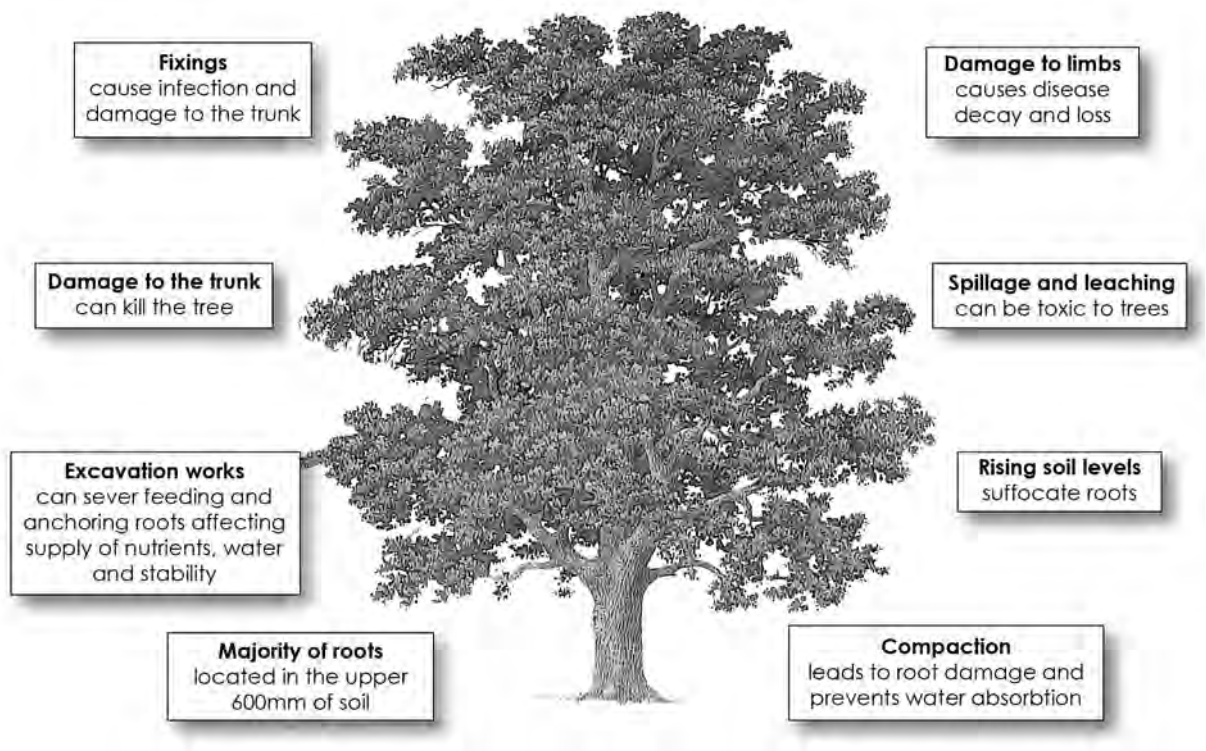
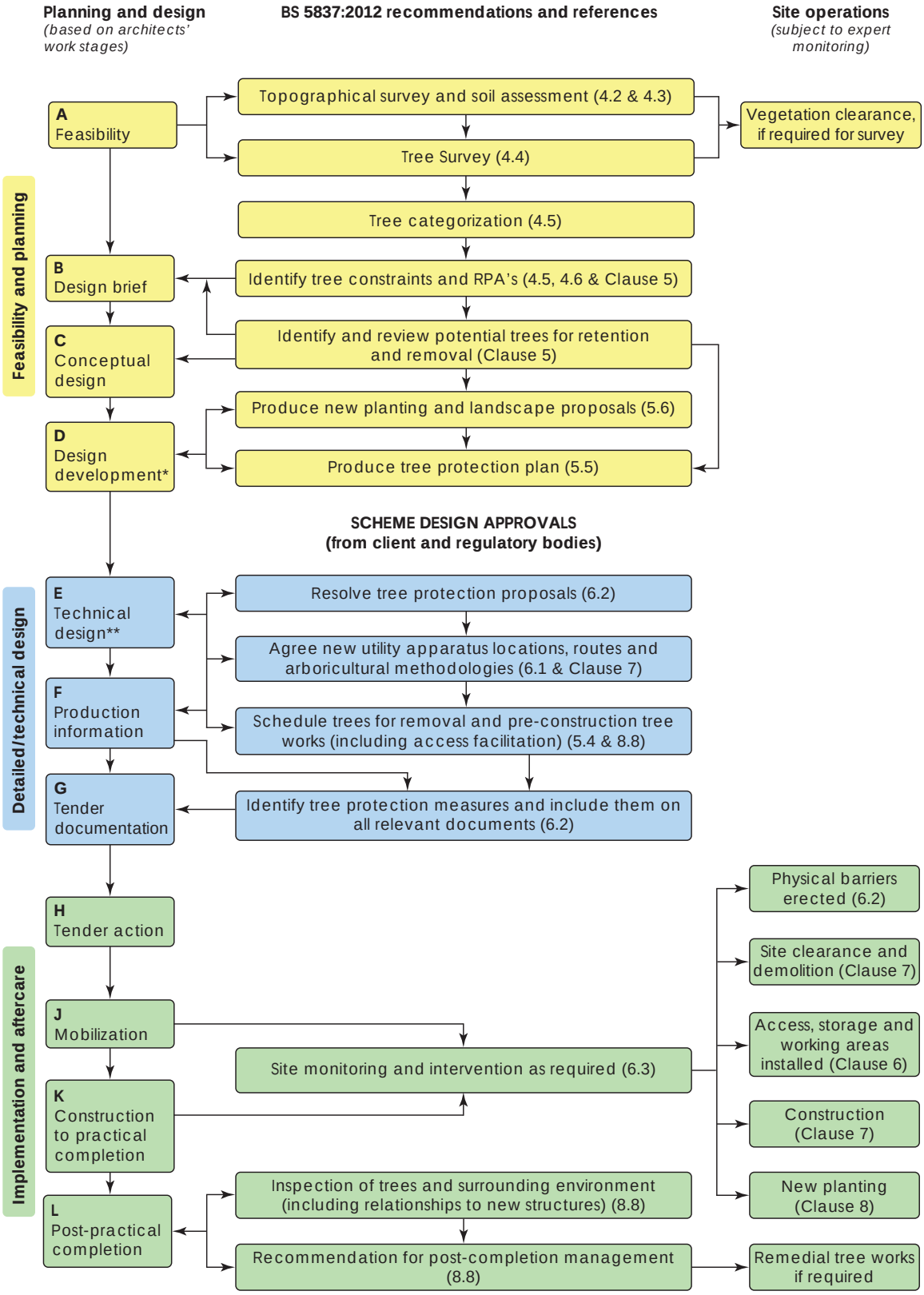


Figure 1: Causes and effects of development activity near trees

2.1.2 Consideration should be given to how the trees may be protected during the design, demolition and construction phases and during future maintenance of the development.

2.1.3 British Standard 5837:2012 Trees in relation to design, demolition and construction – Recommendations provides guidance where tree retention or planting is proposed near to construction, the objective being to achieve a long term harmonious relationship. The good practice recommended in this British Standard is intended to assist in achieving this objective. The standard follows a logical sequence of events that has tree care at the heart of the process and is summarised as a flow diagram (Figure 2)

2.1.4 Whilst the City acknowledges BS 4043:1989, BS 4428:1989 and BS 5837:2012 British Standards, due to constraints within the City's highly developed environment, these British Standards have been altered where required to accommodate the City Corporation's specific constraints.



** The design development stage D in particular is an iterative process, responding to and resolving constraints as they emerge but once completed, there needs to be a high level of certainty for proposed outcomes.*

*** See commentary on Clause 6.*

Figure 2: The design and construction process and tree care

Source: BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations: Figure 1

2.2 Planning for Trees on Development Sites

The following is a basic check-list for planning for trees on development sites in the City including the impact of development on trees in the long term.

Design Stage	Arrange pre-application discussion with Planning Officer
	Carry out land survey to establish contours
	Seek arboricultural advice
	Carry out tree survey including adjoining private and street trees
	Identify TPO trees
	Establish trees to be retained / removed
	Carry out ecological survey including bat survey
	Locate sub surface infrastructure – archaeology and services
	Determine positioning of site huts, scaffolding and cranes, site entrances, and any other buildings and structures to be located on site during demolition and construction
	Determine proximity of trees to the new build and any buildings to be retained on site including window cleaning system
	Liaise with the City's Open Spaces Department regarding any proposed works on the City's street trees and open spaces
	Formulate Tree Protection Plan
New Planting	Consider how the trees relate to and affect the surroundings and their impact on history, architecture and tradition
	Consider scale and proportion of trees when fully grown
	Frame desirable and hide undesirable views
	Protect and enhance significant City and London views of important buildings, townscape and skylines, including designated views of and the setting and backdrop to St. Paul's Cathedral, securing an appropriate setting of and backdrop to the Tower of London, significant local views of and from the Monument and views of historic City landmarks and skyline features
	Preserve or enhance the City's heritage assets and their settings
	Plant for the long term with emphasis on quality rather than quantity (trees of stature)
Demolition and construction	Ensure compliance with planning and TPO conditions, S106 and 278 agreements and unilateral undertakings.
	Notify and obtain permission of owner prior to undertaking work.
	For works to trees on church land Consult London Diocesan Committee to check if a Faculty is required
	Identify trees to be removed
	Establish root protection area/construction exclusion zone around trees to be retained
	Install protection measures i.e. barriers / fencing/warning notices prior to commencement of works. See figs 3 to 5
	Make all parties aware of protection measures
	Ensure site huts, scaffolding and cranes, temporary site entrances, and any other buildings and structures to be located on site during the demolition and construction phase do not interfere with trees, including their canopies and root system.

Store and dispose of materials so as not to interfere with the well being of the trees

Consider archaeological implications when removing or digging tree pits and arrange archaeological recording where appropriate

Monitor works on site

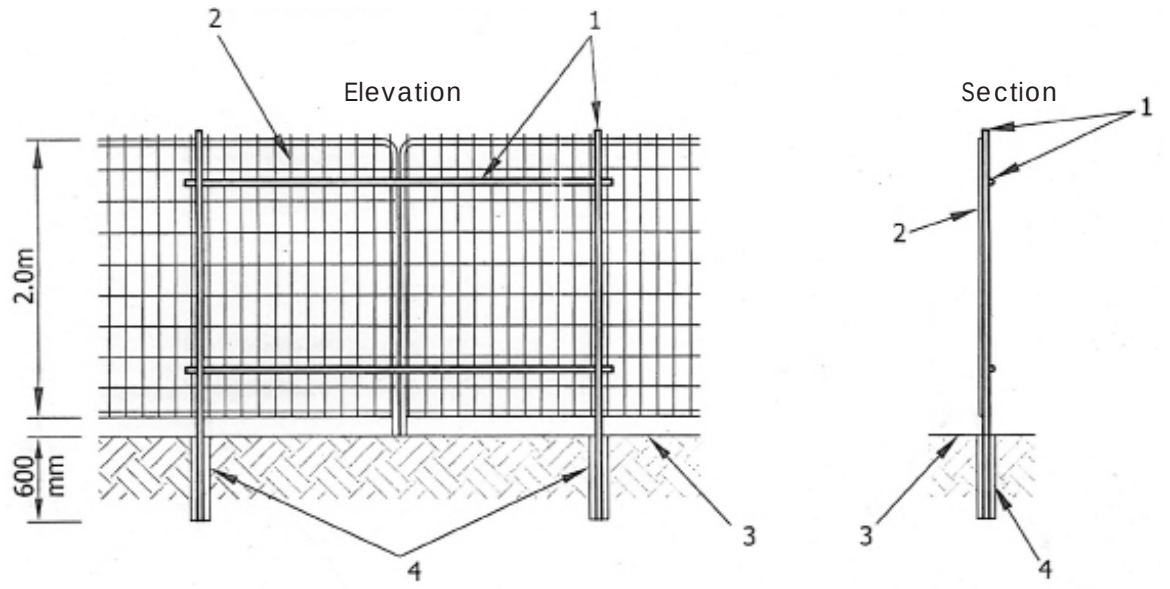
Long Term Management

Set up a tree maintenance regime for the protection of the existing and new trees

Ensure any trees overhanging a highway are maintained in a safe condition, provide sufficient headroom for vehicles, do not obscure any traffic signs, sight lines or interfere with street furniture including lighting columns and CCTV

Ensure trees on private footways are maintained to prevent trip hazards and the fruit fall

Ensure relevant consents/permissions are obtained as and when future maintenance work is required



1 Framework of standard scaffold poles joined with standard scaffold clamps

2 Proprietary weldmesh panels 2.0m high secured to scaffold framework with wire ties

3 Ground level

4 Posts set in concrete. Max hole to be 300mm square (or diameter) by 600mm deep. Alternative immovable fixings will be considered

Warning: Beware of subterranean and overhead services when erecting fencing. Undertake a thorough site specific risk assessment before erecting.

Fig.3 Typical barrier to prevent ingress to the protected zone around trees

Source: Ian Keen Limited: Consultants for Trees and Landscapes

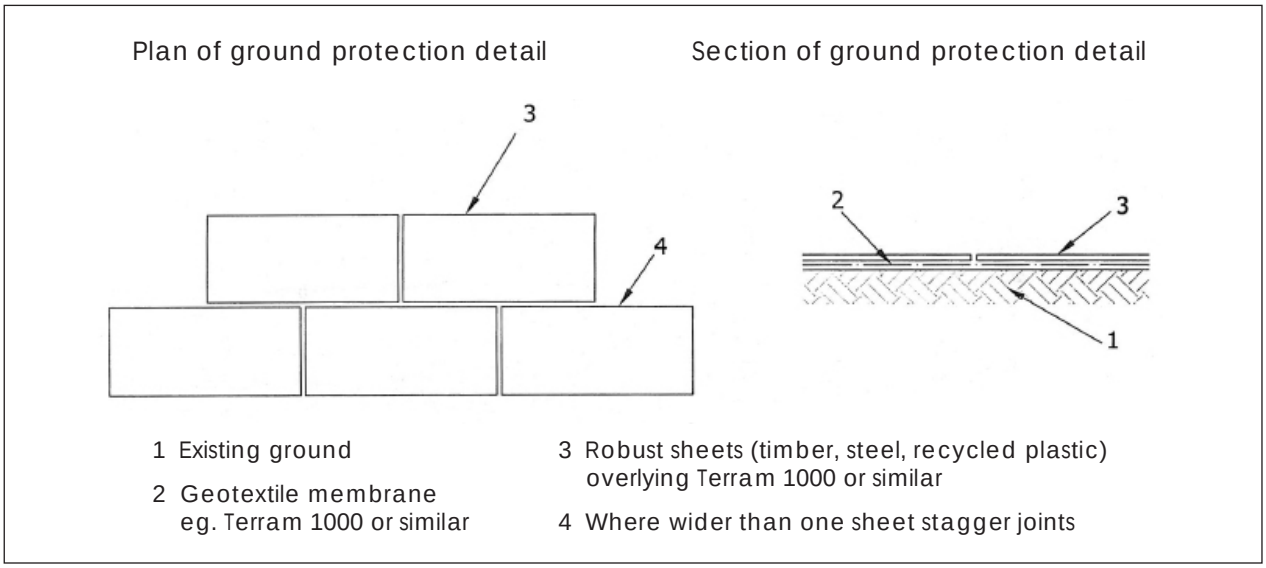


Fig.4 Typical ground protection detail

Source: Ian Keen Limited: Consultants for Trees and Landscapes

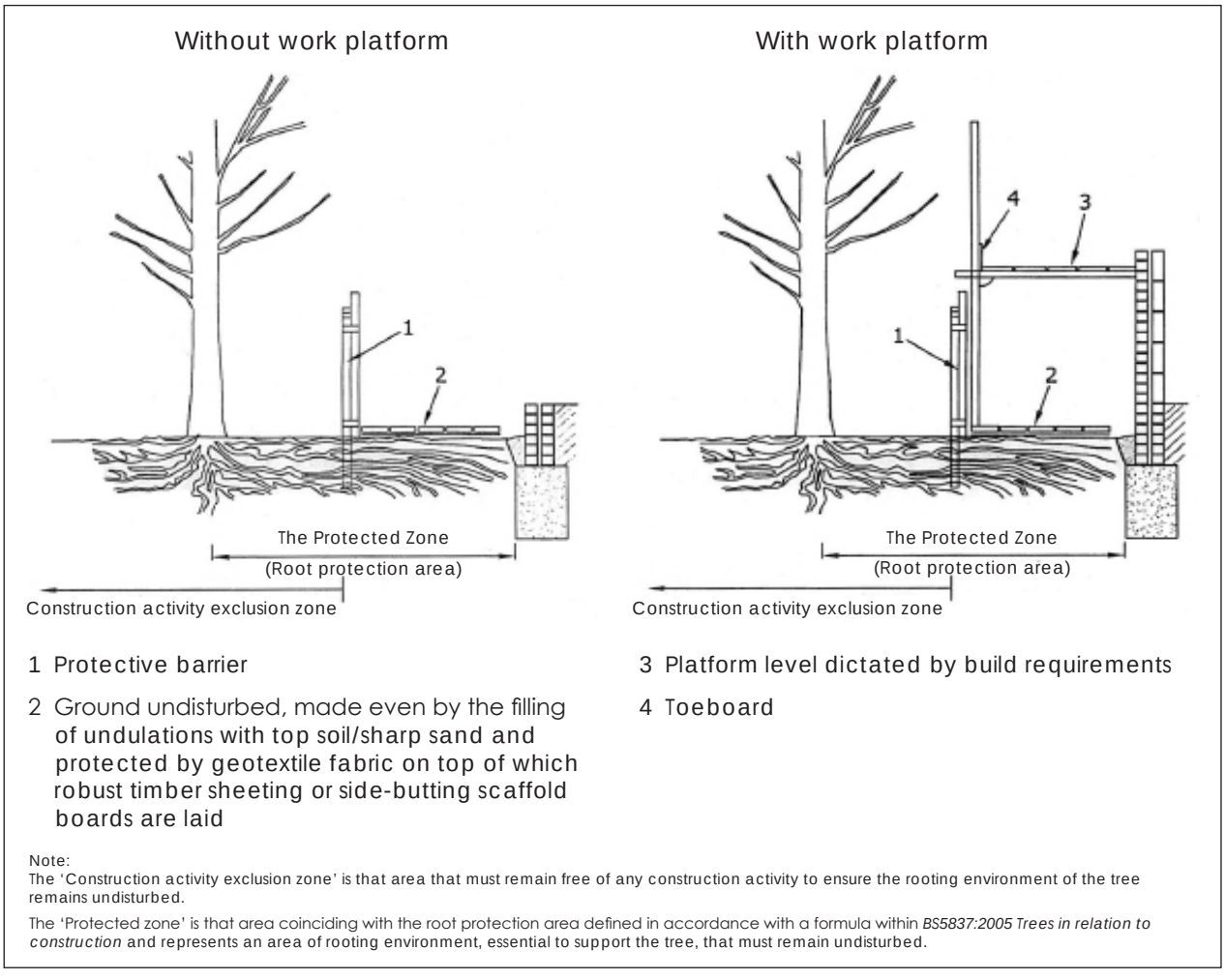


Fig.5 Ground protection abutting the building

Source: Ian Keen Limited: Consultants for Trees and Landscapes: Adapted from figure 3 of BS5837:2005

2.3 Validation Check List – Planning Applications and Notices

Application/Notices	Form of Submission	Information to accompany Application/Notice
Full Planning Permission involving proposals likely to affect trees on or adjacent to the site including street and TPO trees	Standard planning application form	**Arboricultural report and Arboricultural method statement** to be accompanied by elevational drawings and photographs: • detailing the condition of all the trees • specifying the position of all excavations and any special engineering required • detailing the means of protection of the trees both during the demolition and construction works and their long term management **Accurate scaled site plan** showing: • existing ground levels and any proposed alterations in ground level • details of existing trees to be retained and felled including their crown spread to scale • proposed siting of structures • areas for new planting • details of trees and other landscape features on land adjacent to the site affected by the development or useful for screening Where the proposal involves work to a TPO tree or a tree in a conservation area include all the information specified on the TPO application form as appropriate
Outline Planning Permission Involving proposals likely to affect trees on or adjacent to the site including street and TPO trees	Standard outline planning application form	• Before **granting outline permission** consideration will be given to its likely effect on the LPA's ability to provide for the protection and planting of trees when dealing with reserved matters. • An application for the **approval of reserved matters** must include the information required for full planning permission.
TPO Application Works to a tree the subject of a Tree Preservation Order	Standard TPO application forms	**Information required**: - as specified on the standard TPO form. **Photographs** can be useful for identification purposes or to show specific work where there could be doubt for example marking a major branch to be removed. www.planningportal.gov.uk/uploads/appPDF/Help031_england_en.pdf

Application/Notices	Form of Submission	Information to accompany Application/Notice
Section 211 Notice Works to trees in a conservation area not the subject of a Tree Preservation Order	Notice can be given using the standard TPO application form or by writing a letter. The letter must still include the information required by the form (i.e. description of the work proposed and sufficient particulars to identify the trees)	**Information required**: - as specified on the standard TPO application form whether submitted by letter or form. **Photographs** can be useful for identification purposes or to show specific work where there could be doubt for example marking a major branch to be removed. www.planningportal.gov.uk/uploads/appPDF/Help031_england_en.pdf
5 Day Notice Dead and Dangerous Trees	Written Notification	Anyone proposing to cut down, uproot, top or lop a tree the subject of a Tree Preservation Order, that it is dead or poses an immediate risk of serious harm or to such other extent as agreed by the local authority, is required to give the LPA at least five working days' written notice before carrying out the work, unless there is an immediate risk, in which case as soon as practical after the works become necessary. The same notice should be given where the tree concerned is in a conservation area.

NB: Permitted Development Rights do not override the requirement to obtain approval for works to protected trees
http://www.cityoflondon.gov.uk/Corporation/LGNL_Services/Environment_and_planning/Planning/contact_num.htm

2.4 Tree Planting – Practical Guidance

(See New trees and tree planting - Part I page 30)

Unrestricted vs. restrictive soil conditions

2.4.1 The City Corporation endeavours to plant the right tree in the right location. This is a means of ensuring that when planted, trees have optimum conditions for establishment and longevity for future generations to enjoy.

2.4.2 Every opportunity should be made to ensure that trees are planted in a location where the roots can extend within a much wider soil volume than the initial planting location offers. This reduces watering and maximises the chances of survival by providing a rooting environment that will promote a well rounded and visually significant specimen as it matures

2.4.3 Trees planted above or below ground within planters with positive drainage are not encouraged, as the true development and longevity of any tree is compromised. Furthermore, this type of planting requires a life support system of permanent irrigation for the life of the tree. This is not sustainable horticulture and is something that should be avoided wherever possible.

Size at planting

2.4.5 Although an instant impact is often desirable and large trees (up to 90cm girth) are sometimes proposed, these are not likely to thrive long-term, given the poor sub-strata, growing conditions and need for intense maintenance.

2.4.6 A maximum planting girth of 30 - 35cm (measured at 1metre above ground level) where auto-irrigation is installed, and 20 - 25cm girth at all other locations should be specified.

Location

2.4.7 Construction needs to take account of the growth of existing trees on site, so that they may reach maturity without constraint.

2.4.8 Every opportunity should be made to ensure that trees are planted in a location where the roots can extend within a wider soil volume than the initial pit offers, subject to archaeological and other constraints. This will reduce the need for watering, ensure improved establishment and lead to trees being healthier and living longer.

Species selection

2.4.9 Water availability, soil and location are clearly very important in species selection. Trees must be afforded conditions which will ensure they grow successfully to maturity and have a full lifespan. Reference should be made to the City Corporation species master list which provides information on climate resilience and effect on air quality.

2.4.10 Tree locations within developments should be designed so that they are suitable for a range of different tree species and are not limited to one particular species. In all cases species should be chosen which will flourish in the chosen space and not outgrow it.

Purchasing from the nursery

2.4.11 Work is currently underway to update and amend the specification for tree production and planting for example to avoid merely a size specification which may cause selection of tall thin stems and to ensure that a good coverage of branches is present, perhaps even to ground level.

2.4.12 There are three main types available; bare root, rootballed and container grown (in order of increased cost). The basic features are detailed in the table below:

Bare root	Grown in the open field and dug up late Autumn / Winter Should be accompanied by dense root system / high proportion of fine roots Best planted mid Nov – end Dec (can be planted to end Feb) May be difficult to establish
Root balled	Includes soil in which grown, within a hessian and wire mesh wrapping Prepared by nursery to ensure fine rooting is included in rootball Best planted mid Nov- end March (some leeway) Less prone to desiccation (than bare root) if soil is kept moist
Container grown	Often field grown, rootballed and then grown on within the container, so risks associated with other types don't apply Best planted mid Nov – end March

The planting

2.4.13 Once the desired location is established hazards and risks should be assessed and mitigation measures taken to minimise or eliminate potential problems. Good planting practise is:

a) Tree pit to be excavated before taking delivery of the new tree to ensure it does not contain any debris or construction

b) Throughout the planting the roots of the tree shall be covered to avoid desiccation

c) The pit shall be deep enough to accommodate the roots without bending and be of minimum one cubic metre

d) The bottom and sides of the pit should be forked over to ease the passage of roots into the soil and avoid smearing

e) Insertion of below-ground support as required.

f) Excavated topsoil shall be removed and replaced with imported backfill material consisting of 60% fibrous loam, 20% composted green waste and 20% horticultural sand or grit.

g) After placement in the pit, the tree should be oriented to best advantage in bare rooted stock. Roots shall be spread evenly, ensuring they do not circle the hole or point upwards. Any circling roots on the edge of a rootball or container grown tree should be cut

h) The tree shall be placed at the same level as it had been growing in the nursery ('nursery mark' - evident at the base of the stem)

i) Fertiliser or compost nutrient may be necessary, dependent on the nutrient content of the backfill material

j) The pit shall be backfilled in layers not exceeding 15cm in depth and that soil shall be consolidated to ensure there are no air pockets around the roots and that the tree is firmly anchored within the soil. Backfill material shall be brought up in those layers to the finished planting depth, taking into account the need to observe the 'nursery mark'.

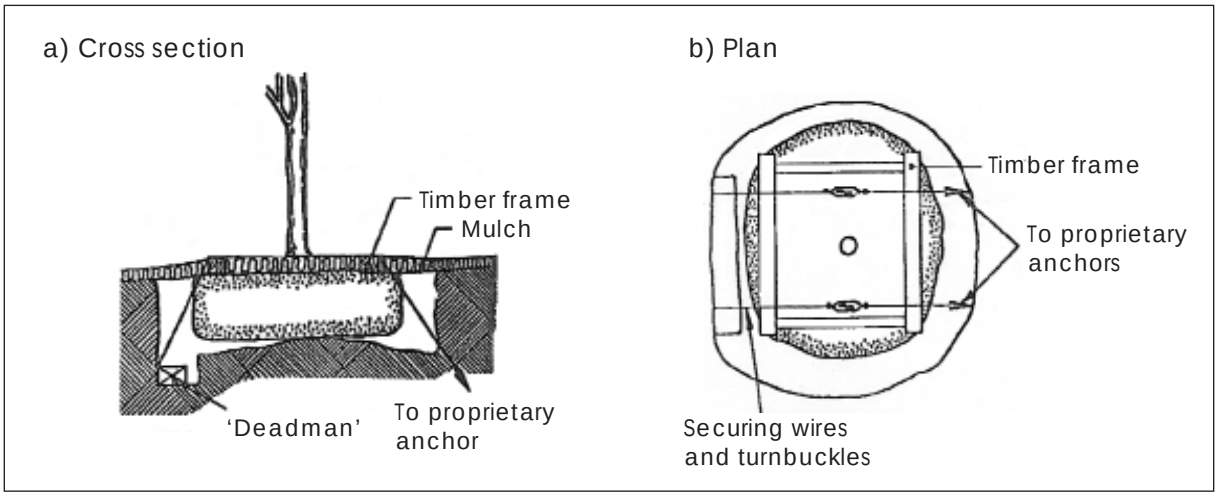


Figure 6: 'Deadman' or proprietory anchors for underground anchoring of rootballs

Source: BS 4043:1989 Transplanting root-balled trees - Figure 3

When transplanting root balled trees the above method should be adhered to.

Supporting the tree during establishment

2.4.14 The methods for supporting trees as they establish are essentially of two types; above and below ground support.

a) Above ground support (see figure 7 below)

i) A stake and tie, either single or multiple, is the most common form of above ground support.

ii) For bare root trees, where a suitable void in the root system exists, a single stake may be appropriate

iii) For rootball and container grown trees, an angled single stake or two stakes on either side of the rootball are more appropriate

iv) In either case, the tree should be supported at no more than one third of the clear stem height to allow the tree to sway and promote thickening of the stem and development of roots

v) Guy wires, as a method of above ground support, are only suitable in low access situations as they represent a hazard to walkers.

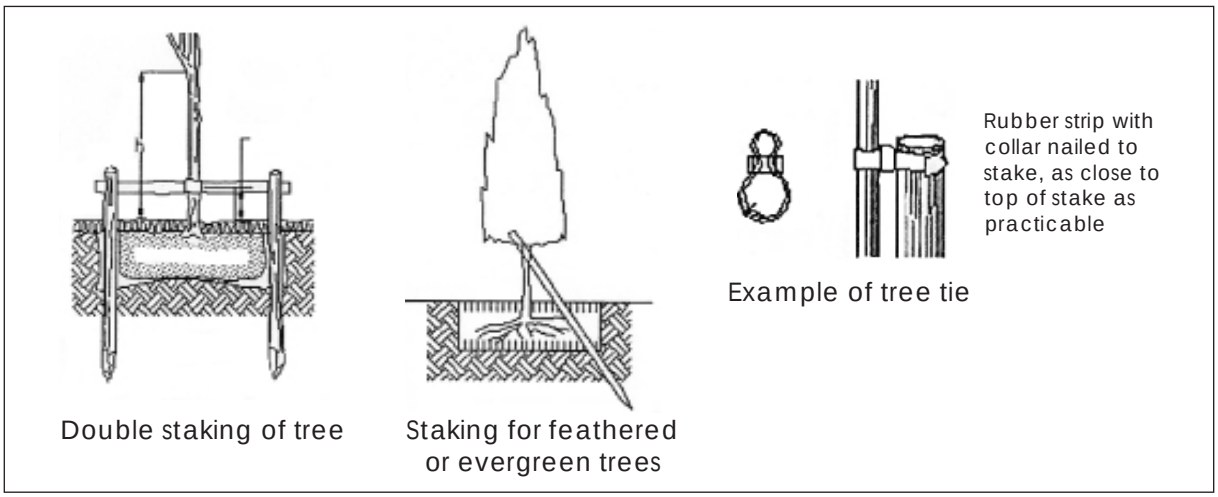


Figure 7: Method of supporting trees

Source: BS 4043:1989 Transplanting root-balled trees - Figure 5 and BS 4428:1989 Code of practice for general landscape operations (excluding hard surfaces) figs 7 and 9 with modifications

b) Below ground support (utilised by the City)

There are proprietary systems for underground support, all of which use a system of 'deadmen' (lengths of wood or concrete that cannot be pulled from the soil) to which wires are attached and passed over the rootball.

i) A mat is placed between the rootball and wire

ii) Ratchets are used to tension the wires ensuring that the rootball is held firmly within the soil

iii) Care is necessary during installation to avoid damage to the rootball.

iv) Additional forms of support for example above ground, may be necessary if the rootball is not of sufficient integrity

v) Re-visit after a 6 month period to tension up any looseness in the wires

Irrigation

2.4.15

a) Immediately post planting the soil surrounding the tree shall be thoroughly saturated

b) Thorough and consistent irrigation of the soil around a new tree is essential to ensure its survival. This should continue for a 3-5 year period

c) Water from natural sources (rainfall and ground water) cannot be relied on to be sufficient for the tree's needs during establishment

d) Within the City of London it is found that watering is required on a weekly basis from very early Spring and throughout the growing season.

e) As a rule of thumb 150 litres of water should be administered weekly to newly planted trees during the first three growing seasons post planting, with gradual reductions in volume over the next two years

f) Little or no watering is required during late Autumn and Winter (depending on rainfall)

g) All trees planted within a hard surface for example highway or pavement area shall be fitted with a proprietary system at the time of planting that will enable ease of watering and placement of water where it is needed, around the rootball. Such systems tend to use a porous pipe that is wrapped around the rootball and incorporated in the backfill material. This pipe extends upwards at one end to meet the existing soil level or tree grille, thereby allowing manual watering where it is needed and rootball aeration. Ideally the surface soil should also be watered to ensure maximum coverage.

Surface treatment

2.4.16 After planting and initial irrigation the surface of the tree pit can be mulched, normally with a loose organic matter such as fine shredded farmyard manure, fine composted green waste or loose self-binding inert gravels.

2.4.17 The loose organic matter releases nutrients into the soil as it decomposes and mulching helps prevent weed growth and therefore reduces competition for nutrients and water.

Aftercare

2.4.18 The aftercare of young trees is essential to avoid complications in future years. Areas for consideration are:

Firming up	Soil may settle after planting Firming up / topping up with more soil will ensure stability
Mulching	Needs to be maintained as mulch materials can decompose or be disturbed
Watering	See 'Irrigation' 2.4.15

Pruning	Formative pruning to remove dead and crossing branches as well as branches that are of a poor shape, form or have a poor union with a parent stem This should reduce the need for large scale pruning of serious defects in the maturing tree
Weeding	The base of the tree needs to be kept free of weeds, especially grass, which compete for moisture
Support systems	See 'Supporting the tree during establishment' 2.4.14 Systems need to be checked within weeks of planting to ensure they are performing their intended function Below ground systems may be affected by soil settlement and require adjustment Above ground systems may result in abrasion or ingress to the growing stem
Protection	Human activity for example strimming against the base of trees Mammalian pests for example squirrels damage bark, allowing entry to pathogens that can result in branch failure and death of stems Vehicle collision damage The use of chemicals and salt on surrounding hard areas for example during snowfall, can have a detrimental affect on root systems

3. City of London Tree Survey

3.1 Overview

NB Notes for subsequent tabular data:

1. All numbers are % within that column unless otherwise stated for example 25% of all City trees are Mature and 20% of City Corporation trees are mature (approx 600 trees and 260 trees respectively)
2. Percentages may not add to 100% due to rounding error
3.* indicates a percentage between 0 and 1 i.e. less than one but not zero
4. Trees in Towns II (122,612) - comprises a sample of trees taken from 147 towns www.communities.gov.uk/publications/planningandbuilding/treesintownsii

	All City Trees (2413) %	City Corporation Trees (1307) %	Private Trees (1106) %	Trees in Towns II (122,612) %
Age				
Over-mature	*		*	
Established	24	25	23	
Mature (full height; over 50% attainable age)	25	20	29	17
Early mature (almost full height; up to 50% attainable age				27
Semi-mature (up to 25% attainable age)	38	41	34	41
Young	14	13	14	14
Height				
> 20 metres	6	6	5	
10.1 – 20 metres	21	23	19	
0.1 – 10 metres	73	71	76	
Condition				
Good	38	67	3	70
Fair	59	29	95	
Poor	2	4	2	

continued overleaf

	All City Trees (2413)%	City Corporation Trees (1307)%	Private Trees (1106)%	Trees in Towns II (122,612)%
BS5837 grading NB No data for private trees				
Trees of high quality and value (A)		12		14
Trees of moderate quality and value (B)		31		35
Trees of low quality and value (C)		56		49
Trees which should be removed (D)		2		2
Tree Preservation Orders				
NB Numbers of trees under TPO	34 (number)	24 (number)	10 (number)	

3.2 Genus / Species Analysis

NB Ranked in order of presence in the City of London

Species	Total 2413 %	COL 1307 %	Private 1106 %	Native species within this genus	Common name	Comment
Platanus	14	12	16		Plane	Plane - mostly x hispanica (London Plane); also orientalis (Oriental) and acerifolia (hybrid of orientalis and occidentalis). Tolerant of pollution and root compaction, but may cause breathing problems for asthmatics
Tilia	9	12	6	y	Lime	Long-lived and provide good shade.
Acer	8	7	9	y	Maple	More popular - private. Saccharinum (Sugar Maple) has vivid autumn foliage
Prunus	8	6	9	y	Cherry	More popular - private. Schmittii = common street tree; early 20th Century hybrid. Food for insects but may be toxic for birds
Carpinus	6	4	9	y	Hornbeam	Linked to Beech family. Groups (for example Devonshire Square)
Betula	5	5	6	y	Birch	Groups - London Wall. White Barked Himalayan Birch - Brewers Hall
Sorbus	4	3	5	y	Rowan / Whitebeam	Food plant for some insects
Quercus	3	4	3	y	Oak	Mostly established / mature. Groups for example Tower Place, Broadgate Estate
Broadleaf (other)	3	1	6			Non-identified broadleaf

Species	Total 2413 %	COL 1307 %	Private 1106 %	Native species within this genus	Common name	Comment
Magnolia	3	4	1			Ancient species. Asian origin
Robinia	3	2	4		Locust Tree	North American origin. Food for larvae of some moths
Fraxinus	3	4	1	y	Ash	Insect pest (Emerald ash borer) causing major problems in USA
Taxus	2	1	4	y	Yew	Beaufort House Courtyard and Monkwell Square. Highly toxic for animals
Ginkgo	2	3	1			Unusual non-flowering plant. Regarded as a 'living fossil'. Groups
Malus	2	2	2	y	Apple	Food source for many insects. Apples and crab apples. Temples, Churchyards and street trees
Aesculus	2	1	2		Horse Chestnut	Groups - Exchange Square
Alnus	2	2	*	y	Alder	Birch family. Food source for many insects
Corylus	1	2	*	y	Hazel	Groups - Fann Street Gardens
Ilex	1	2	*	y	Holly	Important for birds
Fagus	1	2	*	y	Beech	
Crataegus	1	*	1	y	Hawthorn	Groups - Temples
Chamaecyparis	1	*	2		False Cypress	Conifer

Species	Total 2413 %	COL 1307 %	Private 1106 %	Native species within this genus	Common name	Comment
Amelanchier	1	*	1		Shadbush	Rose family. Food plant for insects but susceptible to disease
Gleditsia	*	*	1		Locust Tree	Across City, including Cheapside
Salix	*	2	0	y	Willow	Fann Street Gardens
Liriodendron	*	1	*		Tulip Tree	Very large fast growing tree from N E America. Shade-intolerant. Many seeds
Ulmus	*	1	*		Elm	Ancient origin. 6 – Queen Victoria Street
Pyrus	*	*	*		Pear	Fann Street. Callery pear now seen as invasive in North America
Azara	*	1	0			Evergreen sub-tropical shrub from South America
Taxodium	*	*	*		Bald Cypress	St Mary Axe
Parrotia	*	1	0		Persian Ironwood	Autumn colours
Sophora	*	1	0			Pea family. Asia Pacific origin
Laburnum	*	*	*			All parts of this plant are poisonous
Liquidambar	*	*	*		American Sweet Gum	Autumn colours
Metasequoia	*	*	*		Redwood	St Andrews by the Wardrobe

Species	Total 2413 %	COL 1307 %	Private 1106 %	Native species within this genus	Common name	Comment
Juglans	*	*	*		Black Walnut	St Paul's Churchyard. Poisons soil by secretion of juglone.
Eucalyptus	*	*	*			More popular - private. Water-sucker, used for draining swamps
Morus	*	*	*		Mulberry	Seething gardens
Ailanthus	*	*	*		Tree of Heaven	Chinese. Silk moth habitat. Bad smell and suckering habit. 19th Century street tree. Now considered a noxious weed in USA, Australia and NZ and parts of Europe
Catalpa	*	*	*		Indian Bean Tree	Large leaves give shade and shelter for birds
Conifer	*	*	*			
Arbutus	*	*	0	y	Strawberry Tree	Mediterranean
Ficus	*	*	0		Fig	Ancient species. Encourages diversity
Koelreuteria	*	*	*		Golden Rain Tree	Used in landscaping. Seen as invasive in North America
Acacia	*	*	*			Mimosa family. Australian (Silver Wattle)
Cercidiphyllum	*	*	*			Very large (45m) hardwood - Japan. Leaf colour in autumn
Thuja	*	*	*			Western Red Cedar (evergreen cypress). British Columbian heritage
Cedrus	*	*	*		Cedar	Timber

Species	Total 2413 %	COL 1307 %	Private 1106 %	Native species within this genus	Common name	Comment
Cupressocyparis	*	*	*		Leyland Cypress	Fast growing evergreen cypress
Ligustrum sp.	*	*	0		Privet	Linked to pollen allergies / hay fever if in enclosed areas
Phillyrea	*	*	0		Green Olive Tree	Japanese slow growing evergreen
Paulonia	*	*	*		Foxglove Tree	Extremely fast growing. Seen as invasive in USA
Cotoneaster	*	*	*			Larval food plant for some moths
Cercis	*	*	0		European Redbud (Judas Tree)	Food plant for insects
Nothofagus	*	*	0		Southern Beech	Argentina / Chile
Poncirus	*	*	0		Japanese Bitter Orange	Used as root stock for citrus
Abies	*	*	0			Evergreen conifer
Aralia	*	*	0		Devil's Walking Stick	Mountain woodlands habitat. Palm-like in appearance. Large leaves with autumn colours. Invasive species in NE USA
Cornus	*	*	0		Dogwood	Barbican
Pterocarya	*	*	0		Caucasian Wingnut	Walnut family; Asian origin

Species	Total 2413 %	COL 1307 %	Private 1106 %	Native species within this genus	Common name	Comment
Umbellularia	*	*	0		California Laurel	Valued for medicinal and cooking uses
Buddleia	*	*	0			
Celtis	*	*	0		Hackberry	Ancient species
Cupressus	*	*	0		Monterey Cypress	
Davidia	*	*	0		Dove Tree	Chinese. Flowers resemble white doves.
Fremontoden-dron	*	*	0		Flannel Bush	Leaf texture resembles flannel. California. St Paul's Churchyard
Cryptomeria	*	0	*		Japanese Cedar	Large evergreen cypress (Bart's Hospital). NB It is not a Cedar
Pinus	*	0	*	y	Pine	
Unclassified	*	*	*			

3.3 BS5837:2005 Grading

This table shows the BS5837:2005 grading for City Corporation owned and/or managed trees. The definitions are:

Category A Those of high quality and value: in such a condition as to make a substantial contribution (a minimum of 40 years is suggested).

Category B Those of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested).

Category C Those of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150mm.

Category R Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management.

Species	Common name	Total City Corporation trees (number)	High quality and value (number)	Moderate quality and value (number)	Low quality and value (number)	Poor quality and value (number)
BS5837 grading			A	B	C	R
Platanus	Plane	162	79	29	54	
Tilia	Lime	158	19	80	58	1
Acer	Maple	85	7	33	43	2
Prunus	Cherry	81		7	72	2
Betula	Birch	68		9	57	2
Magnolia		59	2	11	46	
Carpinus	Hornbeam	51	1	17	33	
Quercus	Oak	48	1	19	28	
Fraxinus	Ash	46		26	19	1

Species	Common name	Total City Corporation trees (number)	High quality and value (number)	Moderate quality and value (number)	Low quality/value (number)	Poor quality and value (number)
BS5837 grading			A	B	C	R
Ginkgo		38		22	16	
Sorbus	Rowan / Whitebeam	36	1	14	20	1
Corylus	Hazel	28		2	26	
Alnus	Alder	27		15	12	
Fagus	Beech	26	4	8	14	
Malus	Apple	25		2	20	3
Ilex	Holly	24			24	
Robinia	Locust Tree	24	1	14	8	1
Salix	Willow	20	2	3	12	3
Taxus	Yew	19		2	14	3
Aesculus	Horse Chestnut	18	8	6	4	
Ulmus	Elm	17			17	
Azara		15		3	12	
Parrotia	Persian Ironwood	14	1	3	10	
Liriodendron	Tulip Tree	14	2	3	9	

Species	Common name	Total City Corporation trees (number)	High quality and value (number)	Moderate quality and value (number)	Low quality/value (number)	Poor quality and value (number)
BS5837 grading			A	B	C	R
Sophora		14	1	12	1	
Amelanchier	Shadbush	13		1	12	
Broadleaf (other)		13		1	12	
Pyrus	Pear	12		7	5	
Crataegus	Hawthorn	11		3	8	
Metasequoia	Redwood	11	1	5	5	
Liquidambar	American Sweet Gum	10	1	2	7	
Gleditsia	Locust Tree	9		5	4	
Juglans	Black Walnut	8		7	1	
Laburnum		7		1	6	
Ficus	Fig	7	1	2	4	
Arbutus	Strawberry Tree	7	1	5	1	
Morus	Mulberry	7	5	1	1	
Chamaecyparis	False Cypress	6			5	1
Cercidiphyllum		6		2	3	1

Species	Common name	Total City Corporation trees (number)	High quality and value (number)	Moderate quality and value (number)	Low quality/value (number)	Poor quality and value (number)
BS5837 grading			A	B	C	R
Unclassified		5			5	
Acacia		5	1	3	1	
Ligustrum sp.	Privet	4			4	
Phillyrea	Green Olive Tree	4			4	
Ailanthus	Tree of Heaven	4	2		2	
Taxodium	Bald Cypress	4	1	2	1	
Nothofagus	Southern Beech	3		2	1	
Cercis	European Redbud (Judas Tree)	3	1	2		
Koelreuteria	Golden Rain Tree	3	1	2		
Paulonia	Foxglove Tree	3	2	1		
Poncirus	Japanese Bitter Orange	3		3		
Aralia	Devil's Walking Stick	2			2	
Cornus	Dogwood	2			2	
Eucalyptus		2			2	
Abies		2		1	1	

Species	Common name	Total City Corporation trees (number)	High quality and value (number)	Moderate quality and value (number)	Low quality/value (number)	Poor quality and value (number)
BS5837 grading			A	B	C	R
Cotoneaster		2	1		1	
Catalpa	Indian Bean Tree	2	1	1		
Pterocarya	Caucasian Wingnut	2	2			
Umbellularia	California Laurel	2		2		
Celtis	Hackberry	1			1	
Cupressus	Monterey Cypress	1			1	
Thuja		1			1	
Buddleia		1				1
Davidia	Dove Tree	1	1			
Fremontodendron	Flannel Bush	1	1			
TOTAL		**1307**	**152**	**401**	**732**	**22**

4. Trees and the Environment

4.1 Amenity Valuation

Valuation of trees

4.1.1 Whether and how green assets should be valued is the subject of much debate. Economic theories of evaluation are used at a national level. In planning terms, 'amenity' is a material consideration and arboriculturalists favour models such as CAVAT which uses a tree replacement cost calculation and incorporates an element designed to record the social value of the tree.

4.1.2 Trees and Design Action Group (TDAG) has been actively promoting strategic planning and a cost-benefit analysis for urban trees.
(Reference: No trees, no future, November 2008)

4.1.3 There are currently three principal methods in use:

1) Helliwell Method for Amenity Valuation of Trees : generally used for establishing the value of individual high amenity trees.
2) The Council of Tree and Landscape Appraisers (CLTA) " Guide for Plant Appraisal" The Depreciated Replacement Cost Method : generally used for valuing multiple trees in private ownership and for establishing the value of the tree to the private owner.
3) Capital Asset Value for Community Trees (CAVAT) : used as a management tool for valuing publicly owned trees to establish value to the community.

4.1.4 The City Corporation is required, in accordance with statute, to comply with the Chartered Institute of Public Finance and Accountancy (CIPFA) Code of Practice on Local Authority Accounting. Under current CIPFA requirements open spaces and infrastructure assets are valued at historic cost.

4.1.5 CAVAT is endorsed by the London Tree Officers Association and is the preferred choice of the City's Open Spaces Department for amenity valuation, although it is not currently applied.

Policy context

4.1.6 The Department for Environment, Food and Rural Affairs (Defra) published 'An introductory guide to valuing ecosystem resources' in 2007 which draws on the United Nations' Millennium Ecosystem Assessment. The central theme of this is to ensure that the true value of ecosystems and the services they provide are taken into account in policy decision making. This uses economic theories of evaluation of green assets.

4.2 Human Environment - Benefits

4.2.1 The benefits afforded by trees were summarised in Part 1. This section expands on some aspects.

Amenity / Aesthetic benefits

4.2.2 The aesthetic benefit is determined in planning terms by amenity, which may take into account the following:

- Visibility – the extent to which the trees can be seen by the general public
- Individual impact – size and form, rarity, value as a screen or contribution to the character or appearance of an area
- Wider impact – the significance of the tree(s) in their local surroundings taking into account how suitable they are to their particular setting, as well as the presence of other trees in the vicinity

NB The legislation itself does not specify how amenity is to be assessed.

Health benefits

4.2.3 The intuitive belief that 'green is good for you' is augmented by academic research into the effects of green space on human health and well being, both physiological and psychological.

4.2.4 A report prepared for the City of London summarises the research conducted and best practise in this area (Quietening Open Spaces; Environmental Protection UK; September 2009)

4.2.5 Separate studies in the USA and UK suggest that the presence of trees has a positive effect on the health of individuals as well as a positive effect on neighbourhood cohesion.

1. Residential common areas with trees and other greenery help to build strong neighbourhoods (10)
2. A higher proportion of green space in an area is generally associated with better population health (11)
3. Greenness improves the cognitive functioning of young children (12)

Economic benefits

4.2.6 Trees, especially larger trees, can increase property values in an area, and mature trees may add to the value of development sites.

4.2.7 National Government has been active in assessing Ecosystem services ("services provided by the natural environment that benefit people").

4.2.8 These were discussed in detail by the Department of Environment, Food and Rural Affairs in their December 2007 publication

'An introductory guide to valuing ecosystem services':

http://archive.defra.gov.uk/environment/policy/natural-environ/documents/eco-valuing.pdf

4.2.9 The United Nations Millennium Ecosystem Assessment assessed the consequences of ecosystem change for human well-being. It identifies four broad categories of ecosystem services, to all of which trees may make a contribution.

1. Provisioning (products obtained from ecosystems) for example timber
2. Regulating for example air quality, climate regulation

3. Cultural i.e. non - material benefits for example aesthetic pleasure, recreation
4. Supporting for example provision of habitat, soil formation and retention

4.2.10 The standpoint in the publication is that of an Economist. Total Economic Value, a combination of 'use' and 'non-use' values provides the framework for the valuation of ecosystem services. This includes assessment of the effects of potential loss of green assets (often not noticed until too late) and the value to future generations that is value as a bequest (part of the non-use value).

http://www.maweb.org/

4.3 Heritage Trees

4.3.1 There are a number of trees which are of historic importance to the City. Some are rare species; others are old and mature trees in an important setting.

4.3.2 The Great Trees of London initiative was originally developed by the London Tree Forum and supported by The Countryside Alliance to celebrate and bring to the public's attention the importance and uniqueness of London's tree heritage. In 1987 (the year after the great storm), 41 trees across London were judged to be Great Trees.

4.3.3 Great Trees are judged on the basis that they are publicly accessible (easily viewed from all sides) and are of

1. Historical significance – is the tree related to past events and/or people, or with a story to tell.
2. Location – is the tree situated in a landmark location or somewhere special.
3. Physical character – is the tree very old, very large or an unusual shape.

The Cheapside Plane

4.3.4 At the junction of Cheapside and Wood Street, there is a Plane tree which was planted in 1821 (at the cost of sixpence!). It is possibly the oldest tree in the Square Mile and is the only recognised 'Great Tree' in the City of London

4.3.5 Standing on the site of the churchyard of St Peter's, which was destroyed by the Great Fire of London in 1666, it survived fire damage during 1940. It famously housed rooks in the 19th Century:

"How pleasantly on a summer morning that last of the Mohicans, the green plane-tree now deserted by the rooks, at the corner of Wood Street, flutters its leaves"

Walter Thornbury 1878

This is a reference to the famous novel of 1826; The Last of the Mohicans, by James Fenimore Cooper.

The Wordsworth poem, "*The Reverie of Poor Susan*" also refers to the same site:

"At the corner of Wood Street, when daylight appears,
Hangs a Thrush that sings loud, it has sung for three years:
Poor Susan has passed by the spot, and has heard
In the silence of morning the song of the Bird……..."

William Wordsworth 1797

Finsbury Circus

4.3.6 Finsbury Circus is the oldest public park in London, the largest park in the City (0.5 hectares) and dates back to 1606. The garden was laid out in 1815-17 to the designs of George Dance the Younger. Although partly remodelled in the early 20th century, the structure of the rest of the design survived much as it was in the 17th Century. *(Source: English Heritage Register)*

4.3.7 The park contains a ring of dense tree planting around its perimeter and contains some of the largest and most impressive mature trees in the City which frame the Circus.

4.3.8 A section of Finsbury Circus has been temporarily acquired during the construction of Crossrail's Liverpool Street station (2010 – 2018). Following completion of the works, Finsbury Circus will be restored to its original condition. http://www.crossrail.co.uk/

St Paul's Churchyard – Planes and other species

4.3.9 The three Plane trees in St Paul's Churchyard comprise some of the oldest trees in the City.

4.3.10 The churchyard is a miniature arboretum with an exceptional variety of trees. Species include Black Walnut, Devils Walking Stick, Flannel Bush, Gingkos, Japanese Bitter Orange, Katsura, Silver Fir, Strawberry Tree, Tulip Tree and Weeping Pear.

Inner Temple Garden

4.3.11 The description for the Inner Temple garden mentions a wide range of trees and notable mature Plane Trees lining the raised east-west walk on the south side of the garden. This garden in particular is noted for its large variety of different tree species many of which have historical connections. For example the line of trees to the north of the pool at the southern end of the garden marks the limit of the garden before the river was confined by the embankment in 1870.
Source: English Heritage Register

Middle Temple Garden

4.3.12 In Fountain Court there are mature Planes (mid 19th Century), Chestnuts and two Mulberries set around the fountain (planted in 1887 to commemorate the Queen Victoria Jubilee), as well as other trees planted in the late 20th Century.
Source: English Heritage Register

4.3.13 Fountain Court, was the setting for the lovers' meeting between Ruth Pinch and John Westlock in Martin Chuzzlewit by Charles Dickens.

"Brilliantly the Temple fountain sparkled in the sun, and laughingly its liquid music played, and merrily the idle drops of water danced and danced,
and peeping out in sport among the trees, plunged lightly down to hide themselves…."

Charles Dickens 1843/44

Stationers Hall

4.3.14 The large Plane tree in the garden of Stationers Hall, Warwick Lane, stands on the spot where the Master and Wardens were said to have burned the heretical books condemned by ecclesiastical authorities in Tudor times.

4.3.15 Key trees that make a notable contribution to conservation areas can be found within the relevant Conservation Area Character Summary SPD's.

4.4 Native Trees of Britain

The standard list is in alphabetical order by Latin name (left hand columns) and Common name (right hand columns).

Latin Name	Common Name	Common Name	Latin Name
Acer campestre	Field Maple	Alder	Alnus glutinosa
Alnus glutinosa	Alder	Ash	Fraxinus excelsior
Betula pendula	Silver Birch	Aspen	Populus tremula
Betula pubescens	Downy Birch	Bay Willow	Salix pentandra
Buxus sempervivens	Box	Beech	Fagus sylvatica
Carpinus betulus	Hornbeam	Bird Cherry	Prunus padus
Corylus avellana	Hazel	Black Poplar	Populus nigra
Crataegus leavigata	Midland Hawthorn	Box	Buxus sempervivens
Crataegus monogyna	Hawthorn	Common or Pedunculate Oak	Quercus rober
Fagus sylvatica	Beech	Crab Apple	Malus sylvestris
Fraxinus excelsior	Ash	Crack Willow	Salix fragilis
Ilex aquifolium	Holly	Downy Birch	Betula pubescens
Juniperus communis	Juniper	Field Maple	Acer campestre
Malus sylvestris	Crab Apple	Goat Willow	Salix caprea
Pinus sylvestris	Scots Pine	Hawthorn	Crataegus monogyna
Populus nigra	Black Poplar	Hazel	Corylus avellana
Populus tremula	Aspen	Holly	Ilex aquifolium
Prunus avium	Wild or Gean Cherry	Hornbeam	Carpinus betulus
Prunus padus	Bird Cherry	Juniper	Juniperus communis
Quercus petraea	Sessile Oak	Large Leaved Lime	Tilus platyphillos
Quercus rober	Common or Pedunculate Oak	Midland Hawthorn	Crataegus leavigata
Salix alba	White Willow	Rowan or Mountain Ash	Sorbus aucuparia
Salix caprea	Goat Willow	Scots Pine	Pinus sylvestris
Salix fragilis	Crack Willow	Sessile Oak	Quercus petraea
Salix pentandra	Bay Willow	Silver Birch	Betula pendula
Sorbus aria	Whitebeam	Small Leaved Lime	Tilia cordata

Latin Name	Common Name	Common Name	Latin Name
Sorbus aucuparia	Rowan or Mountain Ash	White Willow	Salix alba
Sorbus torminalis	Wild Service Tree	Whitebeam	Sorbus aria
Taxus baccata	Yew	Wild or Gean Cherry	Prunus avium
Tilia cordata	Small Leaved Lime	Wild Service Tree	Sorbus torminalis
Tilus platyphillos	Large Leaved Lime	Wych Elm	Ulmus glabra
Ulmus glabra	Wych Elm	Yew	Taxus baccata

Source: UK Safari web site

4.5 Threats from Pests and Diseases

4.5.1 Trees in the City are susceptible to the same pests and diseases as other trees and care must be taken to preserve their health.

Diseases

4.5.2 As well as the honey fungus, a threat to all species, other fungal diseases are a potential concern for London Planes and Horse Chestnuts are susceptible to cankers.

This table identifies which species are susceptible to the current tree diseases:

All species	**Honey Fungus** - causes death and/or decay of roots and base
Cherry	**Bacterial Canker** - kills patches of bark and fine branching and can result in girdling and death of branches
Horse Chestnut	**Bleeding Canker** - causes death of patches or strips of bark which can lead to secondary infection and decay of the exposed wood
Horse Chestnut	**Guignardia Leaf Blotch** - causes death of patches of leaf tissue
Horse Chestnut	**Leaf Miner** - causes tunnelling followed by death of leaf tissue
London Plane	**Anthracnose** - causing death of fine branching, small undersized leaves and premature leaf drop
Yew	**Phytophthora** - susceptible if grown in containers where the drainage is impeded

Source: Ian Keen Ltd

Pests

4.5.3 The main pests for trees are:

- Brown tailed moth: causes defoliation of some species. Brown tailed moth numbers have been declining in recent years but still exhibit occasional population spikes.
- Oak Processionary Moth: Native to central and southern Europe, the caterpillars mainly eat the foliage of oak trees and can cause serious defoliation of oaks in some years. The caterpillars have toxic hairs which can irritate human skin and eyes.
- Squirrels; strip the bark and feed on the fruit of some trees.

Other tree disorders include:

- Restricted root environment: hinders establishment resulting in loss of vigour and sometimes death of the tree.
- Vehicle collision; as a consequence of high-sided vehicles and the excursion of vehicles from the highway.
- Strimmer damage to lower stem; as a consequence of grass management activities.
- Vandalism: through human activity and, in recent years, the use of trees as a training aid in strengthening the jaws of dogs.

4.5.4 The City Corporation works to maintain public health by keeping the trees healthy and ongoing vigilance towards pests for example removing the nests of brown-tailed moths. The use of preventative measures such as plant passports helps avoid bringing diseases into the UK. For example caterpillars of the Oak Processionary moth have toxic hairs which irritate human skin and eyes so it is essential that these do not gain traction here.

4.6 Air Quality

Best at improving air quality	Smaller capacity to improve air quality		Could worsen air quality
Ash	Apple	Holly	Crack Willow
Common Alder	Cherry Laurel	Italian Alder	English Oak
Field Maple	Common Elm	Lawson Cypress	Goat Willow
Larch	Common Lime	Leyland Cypress	Poplar
Norway Maple	Elder	Lilac	Red Oak
Scots Pine	Grey Alder	Mountain Ash	Sessile Oak
Silver Birch	Hawthorn	Sycamore	White Willow
	Hazel	Wild Cherry	

Source: Lancaster University; Centre for Hydrology and Ecology. Development and application of an urban air quality score for photochemical pollution episodes using the Birmingham (UK) area as a case study.

4.6.1 This factor should be taken into account alongside others such as the effects on biodiversity for example Oak has particular strengths for the latter.

4.6.2 Planting in an 'open' style is better than dense planting as it allows the air to circulate freely and thus reduces the 'green tunnel effect' (for example rise in concentration of toxins near roadside trees) as well as reducing pests and diseases due to air movement.

4.6.3 Consideration should be given to targeting trees that will help with air quality near to the worst affected roads – particularly Victoria Embankment through to Tower Hill

5. Glossary of terms

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

CAVAT: Capital Asset Value for Community Trees. A management tool to value publicly owned trees and their value to the community.

Defra: Department for Environment, Food and Rural Affairs.

Delivery Partner: Department of City of London Corporation which is responsible for completing the task / action.

GLA: Greater London Authority

Legislation links:

The Town and Country Planning Act 1990 (as amended)
http://www.legislation.gov.uk/ukpga/1990/8/section/197

Town and Country Planning (Tree Preservation)(England)Regulations 2012
www.communities.gov.uk/planningandbuilding

Section 23 of the Planning and Compensation Act 1991
http://www.legislation.gov.uk/ukpga/1991/34/contents

Highways Act 1980
http://www.legislation.gov.uk/ukpga/1980/66

LDF: Local Development Framework. The City of London's development plan.

London Plan: The Mayor of London's spatial development strategy

LPA: Local Planning Authority (City of London Corporation)

NPPF: National Planning Policy Framework
www.communities.gov.uk/planningandbuilding

s.106 agreement. Legal agreement between the City Corporation and Owners / Developers which confirms the obligations agreed by both parties as part of the development. These may include monetary obligations for example for the Developer to pay towards local community/environment initiatives and non-monetary for example provision of public access.
http://www.communities.gov.uk/publications/planningandbuilding circularplanningobligations

s.211 Notice. The six weeks notice of intent which anyone who wishes to carry out works to trees in a conservation area is obliged to give to the Local Planning Authority.
http://www.legislation.gov.uk/ukpga/1990/8/part/VIII/chapter/I/crossheading/trees-in-conservation-areas?view=plain

s.278 agreement: A legal agreement for the execution of highway works, provided they are of benefit to the public, entered into between the highway authority and any person on terms that the person pays the whole or part of the cost of the works.
http://www.dft.gov.uk/pgr/regional/strategy/policy/guidancesection278highwaysact?page=1

SPD: Supplementary Planning Document which forms part of the Local Development Framework.

TfL: Transport for London

TPO: Tree Preservation Order

Tree: 'Tree' is not defined in the Town and Country Planning (Tree Preservation) (England) Regulations 2012 nor in the Town and Country Planning Act 1990. The Act does not limit the application of Tree Preservation Orders (TPOs) to trees of a minimum size. For the purposes of the TPO legislation, the High Court has held that a 'tree' is anything which ordinarily one would call a tree.

Appendix 1: Contacts

Department of the Built Environment

Planning advice is available by telephoning 020 7332 1709, or by writing to

The City Planning Officer,
City of London Corporation,
PO Box 270,
Guildhall,
London EC2P 2EJ

plans@cityoflondon.gov.uk

The Enquiry Desk of the Department of the Built Environment is open Monday – Friday 9.30am to 4.30pm in the North Wing, Guildhall. It is located on the Ground Floor.

http://www.cityoflondon.gov.uk/Corporation/LGNL_Services/Environment_and_planning/Planning/contact_num.htm

Open Spaces

Advice on street trees is available by telephoning 020 7332 3505 or by writing to

The Director of Open Spaces,
City of London Corporation,
PO Box 270,
Guildhall,
London EC2P 2EJ

parks.gardens@cityoflondon.gov.uk

http://www.cityoflondon.gov.uk/Corporation/LGNL_Services/Environment_and_planning/Parks_and_open_spaces/about.htm

City Parks and Gardens (Direct): 020 7374 4127

Appendix 2: Bibliography

Subject		Title	Originator	Date of Publication	Link
Air quality					
	1	Development and application of an urban tree air quality score	Lancaster University	September 2005	http://www.ncbi.nlm.nih.govpubmed/16190233
	2	Clearing the Air - Air Quality Strategy	London Assembly	Consultation to June 2010	http://www.london.gov.uk/air-quality
Amenity value					
	3	An introductory guide to valuing ecosystem services	Defra	2007	http://www.google.co.uk/search?q=valuing+ecosystems&btnGNS=Search+defra.gov.uk&oi=navquery_searchbox&sa=X&as_sitesearch=defra.gov.uk&hl=en
	4	No trees no future - Trees in the urban realm	Trees and Design Action Group	November 2008	www.forestry.gov.uk/tdag
Biodiversity					
	5	Biodiversity Action Plan 2010 - 2015	City of London Corporation	2010	www.cityoflondon.gov.uk/Corporation/LGNL_Services/Environment_and_planning/Sustainability/biodiversity.htm
	6	London Biodiversity Partnership			http://www.lbp.org.uk
Climate					
	7	The London Climate Change Adaption Strategy	Mayor of London	February 2010	http://www.london.gov.uk/climatechange/sites/climatechange/staticdocs/Climate_change_adaptation.pdf

Subject		Title	Originator	Date of Publication	Link
Climate					
	8	City of London Climate Change Adaptation Strategy	City of London Corporation	2010	http://www.cityoflondon.gov.uk/NR/rdonlyres/ECD1C5D2-A645-4D5F-AD03-F9B17BC1D14C/0/SUS_AdaptationStrategyfinal_2010update.pdf
Health benefits					
	9	Greenspace urbanity and health	University of Edinburgh	2006	http://jech.bmj.com/content/61/8/681.abstract
	10	Landscape and Human Health Laboratory	University of Illinois		http://lhhl.illinois.edu/about.htm
	11	Green Cities: Good Health	University of Washington	2010	http://depts.washington.edu/hhwb/
	12	Effect of greenness on children's cognitive functioning	US Government research	2000	http://www.bing.com/search?q=effect+of+greenness+on+children's+cognitive+functioning&src=IE-Address
Policy					
	13	Unitary Development Plan Supplementary Planning Guidance	City of London Corporation	Adopted 18 May 2004	http://www.cityoflondon.gov.uk/Corporation/LGNL_Services/Environment_and_planning/Planning/Planning_policy/draft_spg_open_spaces.htm
	14	Unitary Development Plan 2002	City of London Corporation	Adopted 9 April 2002	www.cityoflondon.gov.uk/Corporation/LGNL_Services/Environment_and_planning/Planning/Planning_policy/udp_2002.htm
	15	The City Together - A Vision for a World Class City 2008 - 2014	City of London Corporation	May 2004	www.cityoflondon.gov.uk/Corporation/LGNL_Services/Community_and_living/Community_advice/Community_strategy/community.htm

Subject		Title	Originator	Date of Publication	Link
Policy					
	16	Core Strategy	City of London Corporation	Adopted September 2011	www.cityoflondon.gov.uk/ldf
	17	A Strategy for England's Trees, Woods & Forests	Defra	June 2007	http://archive.defra.gov.uk/rural/documents/forestry/20070620-forestry.pdf
	18	The Sixth Environment Action Programme of the European Community	European Commission	2002	http://www.bing.com/search?q=european+union+sixth+environmental+action+plan&go=&form=QBRE&qs=n&sk=
	19	Bringing Common Sense to Tree Management - Trees and safety	Forestry Society		http://www.forestry.gov.uk/website/forestry.nsf/byunique/infd-7t6bs5
	20	Connecting Londoners with Trees and Woodlands A Tree and Woodland Framework for London	Mayor of London	March 2005	www.forestry.gov.uk/forestry/INFD-7CTDTK
	21	A new plan for London - Proposals for the Mayor's London Plan	Mayor of London	April 2009	www.london.gov.uk/thelondonplan
	22	Borough Tree Strategies Guidance for Local Authorities on Producing a Comprehensive Tree Strategy - Draft	The London Tree and Woodland Framework	June 2008	http://www.forestry.gov.uk/pdf/london-tree-strategy-guidance-draft.pdf/$FILE/london-tree-strategy-guidance-draft.pdf
Development					
	23	British Standards	British Standards Institute		http://shop.bsigroup.com/en/ProductDetail/?pid=000000000030139494

Subject		Title	Originator	Date of Publication	Link
Development					
	24	Utilities and street works	National Joint Utilities Group		http://www.njug.org.uk/category/3/pageid/5/
Subsidence					
	25	Chainsaw massacre - A review of London's street trees	London Assembly	May 2007	http://www.london.gov.uk/publication/chainsaw-massacre-review-londons-street-trees
Tree Survey data					
	26	Trees in Towns 2 - A new survey of urban trees in England and their condition and management	Department for Communities and Local Government	February 2008	www.communities.gov.uk/publications/planningandbuilding/treesintownsii
TPO					
	27	Tree Preservation Orders in the City of London	City of London Corporation		http://217.154.230.218/NR/rdonlyres/F9999B49-7DDF-4235-AA67-2811967DCA27/0/DP_PL_TreePreservationOrdersintheCityofLondon.pdf
	28	Protected trees: a guide to tree preservation procedures	Department for Communities and Local Government	March 2010	http://www.communities.gov.uk/publications/planningandbuilding/protectedtreesguide
Useful links					
	29	Department of the Built Environment	City of London Corporation		http://www.cityoflondon.gov.uk/Corporation/LGNL_Services/Environment_and_planning/Planning/contact_num.htm

Subject		Title	Originator	Date of Publication	Link
Useful links					
	30	Department of Open Spaces	City of London Corporation		www.cityoflondon.gov.uk/openspaces
	31	National Planning Policy Statements	Department for Communities and Local Government		www.communities.gov.uk/planningandbuilding
	32	Environment reports	London Assembly		http://legacy.london.gov.uk/assembly/reports/index.jsp
	33	Right trees for a changing climate	Right trees.org		http://www.right-trees.org.uk/partners.aspx
	34	Tree Management	Royal Forestry Society		http://www.rfs.org.uk/
	35	Tree management	Trees for Cities		http://www.treesforcities.org/
	36	Town and Country Planning (Tree Preservation) (England) Regulations 2012	Department for Communities and Local Government		http://www.communities.gov.uk/planningandbuilding/planningenvironment/treepreservationorders/
	37	Species selection	Royal Horticultural Society		http://apps.rhs.org.uk/adcvicesearch/Profile.aspx?pid=712