

## **Scrutiny Task & Finish Group – Tree Policy Review**

### **List of Documents**

1. EDMT discussion paper
2. Tree policy recommendations – Highways
3. Tree management strategy 2009
4. Footway crossings in relation to trees 2011
5. CAVAT note and valuation of Broad Street tree
6. National Joint Utility Group (NJUG) guidelines – works near trees 2007
7. Soil requirements of healthy urban trees
8. Trees in the public highway – Scrutiny Review Feb 2006
9. City Centre canopy cover map
10. Breakdown of tree stock by family – parks data.

### **Summary of document**

1. EDMT Discussion Paper. This document arose from the request of the Deputy Leader to Anne Shaw (then AD of Transportation) for an assessment of current tree policy and practice. The report summarises the discussions of the City's tree officers and recommendations for changes to internal processes and policy.
2. Tree Policy Recommendations – Highways. This is a personal reflection from the Highways tree manager (now left BCC) on issues around tree management and conflicts within internal working.
3. Tree Management Strategy 2009 – This is the current tree policy document. It does need a general overhaul to reflect up to date information and/ or revised versions of reference documents such as BS 3998 :2010 Tree Work Recommendations. Section 4 Planting of trees in the City will need updating and this is where information on tree species, available rooting volume, incorporation of SUDS etc. could be included and reference to the developing Design Guide. Much of the information in section 5.2 Management of trees is still relevant but will require revision of data.
4. Footway crossings in relation to Trees. Fairly self-explanatory but it is felt that there needed to be a clear and robust process for assessment of trees when requests for their removal come in for instance to facilitate off street parking. This document sets out a clear process for assessment of if removal would be rejected, granted, alternative provision or installation method.
5. Capital Assessment Value for Amenity Trees. A brief note on CAVAT and a demonstration of the valuation of the London Plane removed from Broad Street. This method is used by a number of local authorities to aid in the justification of retention of trees or to secure replacement tree stock of more equal benefit. This has also been used to set levels for fines where there has been reckless damage caused resulting in unplanned management or early removal of a tree or trees. More details can be obtained online (free) by searching CAVAT and London Tree Officers Association.
6. National Joint Utilities Group (NJUG) Volume 4. Details best practice that utility companies should be adhering to in order to prevent physical or long term damage to trees.

7. Soil requirements of healthy urban trees. Too often tree replacements (especially in the hard landscape) are installed with insufficient rooting area to allow them to grow to maturity. Creation of properly constructed tree pits can have multiple benefits as localised SUDS can be built in. This is an example of just one supplier of the type of materials available.
8. City Centre canopy map – map indicates levels of canopy cover within the city centre area. Blue indicates 12% or more while Red is less than 3%. Current thinking for cities to combat climate change is a minimum of 25%. While this may not be practicable in the inner city area we are losing or have lost some of those higher level areas indicated with no long term plan for replacement ( such as Park Street Gardens).
9. Breakdown of tree stock by family (parks data only). A visual representation of the family groups for trees in parks (excluding woodland). General consensus is that to provide resilience against climate change and pests and diseases that a population should be no more that 30% of a family group, 20% of a genus and 10% of a species.

Family	Genus	Species
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For example Common Hawthorn is: Rosaceae Crataegus monogyna

Looking at the tree stock on a constituency basis at 5 yearly intervals as part of a 25 year plan should help indicate trends in both canopy cover and composition.

# EDMT discussion paper

## Tree strategy and policies on tree management.

Due to a high profile public campaign on social media, TV and The Press the Deputy Leader and Cabinet member for Transport and Roads have called for a review of internal decision making processes and city wide policies on tree management.

### Internal decision making processes – Economy Directorate specific

A review of the decision making process was undertaken by a cross directorate team of tree management professionals. A number of issues were found and resolutions that could be immediately applied to these are set out below.

**Issue 1:** Within many design schemes trees are not considered at the start of the design process. Officers with specific responsibility for trees are often not included in the initial stages of design resulting in little or no consideration of retention and suitable design, locations and species for replacement planting.

**Resolution:** Tree constraints should be mapped prior to design process using a BS 5837 2012 (Trees in relation to design, demolition and construction) compliant survey. The relevant professionally qualified officers need to be included within the design process. Design proposals that require tree works or removals should not be signed off without the appropriate tree professional's approval.

**Issue 2:** Adequate numbers of tree replacement sites are not/ rarely identified within the design process leading to inadequate numbers being planted (in contradiction to the current tree management policy).

**Resolution:** Retain suitable trees wherever possible. Early consideration of tree replacement numbers and locations, Tree pit design (including adequate rooting volume – ideal volume 30m<sup>3</sup> per tree) and species selection within design. Advice from the relevant professionally qualified officers should be sought early in the design process.

**Issue 3:** The profile of trees and the role they play in ecosystem services and the multiple health and welfare benefits along with an understanding of the long term financial savings is too low on the development agenda.

**Resolution:** Heads of service to make all staff aware of who the relevant professional tree officers are and where required request that a staff briefing session be delivered (as part of CPD?) to raise awareness.

**Issue 4:** Limited diversity of species or in appropriate species included within designs leading to long term management issues, early failure or potential for significant loss through pest and disease threats.

**Resolution:** Advice should be sought from the appropriate professionally qualified officers at the earliest opportunity.

**Issue 5:** Trees being cleared from land recently sold by BCC (or to be sold by BCC through BPS) as part of preparation for development with no prior consideration of the role these played within the local environment. While this is permitted development concern has been raised by the public over the wholesale clearance of previously tree'd sites and the expectation that the council has a duty to protect these trees via TPO's.

**Resolution:** While there is no wish to prevent or hinder development BCC sites identified for disposal should be passed to the Planning Arboricultural Officers for consideration before being cleared or put on the open market. Where there are trees that may be worthy of retention then a TPO (individual or area) may be applied. This action will ensure that in these circumstances that due consideration of the tree resource is given as part of the development process.

All the above should be adhered to where trees are on BCC managed land regardless of if internal or external bodies are involved in the process. It is especially important that full consideration and meaningful consultation is undertaken where infrastructure projects are fully undertaken on our behalf by third party/ partner organisations such as Metro.

- ❖ ***Request to EDMT - That EDMT acknowledge the above issues and accept the proposed resolutions and; where these issues and resolutions are pertinent to their sections, that they disseminate the appropriate information and ensure implementation. Support will be given by the appropriate tree management officers.***

### **BCC tree policy review – Cross Directorate**

A reassessment of our **current tree management policy (agreed by cabinet in 2009)** was undertaken to determine if it was still relevant and fit for purpose. In addition research into the current best practice delivered in the UK, Europe and around the world was carried out to give a base line against which to make comparisons. It was found that elements of the current policy are still relevant but there are many areas where work is required to provide a comprehensive city wide tree strategy and management document that is fit for purpose.

Within planning, while the adopted BDP in section 6 gives a broad brush approach to trees there is little detail. To ensure the Birmingham Forest (as mentioned in the BDP) is fit to meet the challenges placed upon it we need to give city officers and developers alike clear information that can be used to inform and guide development and current and future management of these assets.

(Trees tie directly into the following Environmental Thematic Policies:-TP1, TP2, TP3, TP6, TP7, TP8, TP9, TP10.) The developing Design Guide can be used to set out in more detail integrated approaches to the protection and management of the Birmingham forest however there is much information that should be detailed in a single agreed document – A Tree Strategy – that can be updated as required to reflect the changing dynamics of the city's tree stock, threats from new pests and diseases and new thinking. This strategy would be the single main reference point for tree managers from **all directorates** and should form an appendix to the Design Guide.

It must be reiterated that a Tree Strategy is not just a document for the Economy Directorate, it is the basis for all tree management and therefore relevant to the Place and People Directorates.

The **strategic Director for Place** is aware of the need for, and backs the approach of, an updated cross directorate tree strategy as currently this directorate is responsible for the management and maintenance of all non-HMPE trees in city ownership.

The City's own tree experts are well placed to draw up this tree strategy however in order to provide transparency external organisations that have a focus on trees in the urban landscape such as Birmingham Tree for Life, The Woodland Trust and the Trees and Design Action Group should also be brought together to form a review and strategy development panel.

Areas to be addressed as part of this review would include (but not limited to):

- The development of a 25 year strategic plan to include a target increase for canopy cover within Birmingham. This Strategic plan would be used to inform 5 year management plans with each (tree related) service area deriving annual operating plans from these. Consideration will need to be given as to what impact this may have on the PFI contract.
- Assessment of the current methods of valuation of tree stock and the relationship to retention/ replacement. The principles of Avoid, Mitigate and Compensate (in that order) should be applied to all situations.
- Assessment of public tree removal requests, such as for footway crossings.



- Assessment of current tree stock composition (age, condition, and species) and setting of idealised composition targets as part of the 25 year strategic plan.
  - Processes for identification and installation/ incorporation of tree planting areas within development zones (highways infrastructure, planning / regeneration and parks/public open spaces).
  - Production of a recommended tree species list. This will follow the principles of “right tree – right place” while considering current and future threats from climate change and pests and diseases.
  - Development of a set of standards/ designs for tree planting locations. These will be dependent on overall location but will need to cover minimum rooting volumes, incorporation of rain water harvesting within hard landscape situations, cable and services routing and canopy space.
  - The need for greater transparency in the availability of information on the distribution and management of Birmingham’s tree stock. A review of web page information should be included as currently tree management information is disjointed – a one stop shop for tree related information is needed. The general populous should have access to clear and concise information on the value of the city’s tree stock and the role it plays in delivering benefits across the health and well-being agenda along with ecosystem services. Information of the city’s 25 year strategic tree plan should be published along with an interactive map of the publically owned tree stock. This interactive map should show Location, Species, height, DBH, condition, valuation (CAVAT or I- Tree Eco) managing dept. and contact details.
  - Identification of delivery routes and funding methods to achieve the 25 year strategic plan.
- ❖ ***Request to EDMT – That EDMT acknowledge the need for a revised cross directorate tree strategy and will act as co-sponsors for the development of such a document. Resources in the form of Arboricultural Officer time will be required from Highways Asset Management and the City Design Team (Officer time has already been agreed by place Directorate)***

## Tree Policy Recommendations - Highways

Without at least some of the more important measures here, there will be a progressive but marked contraction in tree numbers, age and size over the next 50 years as the trees of the early 20<sup>th</sup> Century die. These trees enjoyed low density development on virgin land allowing them to establish and grow to the age they have. Today's new trees have an average life expectancy of just 25 years due to redevelopment, soil compaction and highly engineered surfaces.

### 1. Soil

To be sustainable and improve the life expectancy of trees, soil in the urban environment is *the* critical factor. It is so critical it could be the tree policy on its own as, without it, no tree planting can take place- no regeneration can happen. With an abundance of it tree can be planted everywhere.

Many development projects have multi-million pound budgets while tree planting only has a few thousand. If a development backfills site with spoil or fill, the tree budget will rarely extend to re-excitation in the future. It is vital that soil is the default material in development unless there is an engineering need - it's cheap to buy, cheap to work, requires little engineering and works as drainage.

Equally it makes sense that grass is the default surface unless there is an engineering need - it is cheaper to maintain than asphalt under PFI costs and parks combined, it provides annual employment to cut, it reduces urban heat island effect, it evaporates surface water through transpiration, it regenerates perpetually and it provides social and health benefits through amenity. Where grass can't be used, suspended surfaces and geo-grids should be employed. Applying this as policy means there would be no shortage of sites to plant trees, trees would live longer, trees would be more resistant to disease, damage to surfacing would reduce and consequently trees would be safer and need less maintenance. Finally if the soil is installed, it is there forever meaning new trees can be planted long after the first generation has gone.

The above is a project considered called 'green first'. Typically an engineer or architect will start with designing a road by assuming everything is asphalt or concrete. They may then design in the verges and perhaps some trees. More often nothing is designed in as the engineer doesn't feel comfortable designing in green. The budget hasn't been factored for landscape advice. Schemes then end up wall to wall asphalt which is environmentally deficient in every way:



Green first takes the idea from country lanes. They were simply a road laid over a field and whatever wasn't needed wasn't touched. Using this approach if an engineer creates a green field and lays the minimum road width and necessary footway over the top the green will remain. This approach forces the engineers or architects to question the need for asphalt. In the example above 50% or more of the surfacing could have been grass and trees or other plants. With verge in place the demand for drainage in the foreground would have been reduced.

Defra's guide on sustainable soil is linked below:

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/69308/pb13298-code-of-practice-090910.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69308/pb13298-code-of-practice-090910.pdf)

## 2. Footways

Planning policy is pushing trees into front gardens off the footway due to the cost of commuted sums. This is storing up a critical problem for the future. When trees on new developments are not planted in the footway, this gives utility companies carte blanche to place their apparatus. Any future street tree planting can't then happen for at least a generation, if ever, as the footway is occupied.

Instead trees are planted in front gardens as compensation by the developer. Many of these trees die as they are not watered during construction or the first few years of ownership. Others are removed as the homeowner no longer wants them in close proximity to the house. The end result is that no trees are able to be planted in the footway and most trees die out and are not replaced in front gardens. The image below shows the end result. Conversely if the tree were in the footway it would not be so close and could not be removed without permission. It would be maintained and it would be replaced.



### 3. Street works Permitting and Street works.

Street works creates a major conflict and, as noted above, is the major reason why trees cannot be planted in footway. As BCC move from a noticing Street Works Register to a Street Works Permitting system, robust controls to limit the impact in placing apparatus need to be in place. Ducting needs to be considered wherever possible, particularly shared ducting. This prevents the risk of apparatus being damaged and allows replacement without excavation therefore preventing trenching around trees.

Greater tolerance of trees near apparatus should be considered. In many cases it should only be a risk where there is rigid apparatus such as large gas and sewer pipes that may crack under rigid roots of a mature tree. Even so the likelihood is low and the risk is often overplayed by utility companies. Most footways are 1–2m wide and many have trees in close proximity to apparatus without risk or claim.

### 4. Reactive v Preventative Tree Care.

In line with the point on soil above, tree care should be focussed on preventative care and good asset management. Sadly, the industry is historically set up to deal with trees in a reactive manner. This is akin to having a doctor that will only treat a patient with a septic cut in the finger once gangrene has set into the whole arm. Tree surgeons will prune and remove trees yet there is very little thought given to watering, weeding, fertilizing and mulching trees. There is even less that looks at nutrient deficiency or soil tests or looks at other diagnostics which, if employed on a large scale, would show economies of scale. A young failed tree costs around £650 to plant, remove and replant. It costs a few pounds to test the leaves for vitality or a few more to analyse leaves for nutrient deficiency. Aside from helping the tree, with practice, this data can provide information about the site that could remedy the soil and encourage growth for years or decades.

Improving work near trees prolongs their life. A large percentage of trees are being removed on highway due to a decay fungus called Ganoderma. Ganoderma is thought to be an opportunist fungus exploiting wounds and weaknesses in the tree. By damaging trees on footway works, for example, the tree may succumb 10 years later and become a risk that needs removing.

## **5. Data management**

Data is recorded often as a means to cover a duty of care or 'just because...'. Data should be captured to improve the asset or pre-empt when it is not doing so well. Things like crown density, shoot extension growth, diameter or annual increment can, with practice, be used as a quick measure of tree vitality to employ further analysis as described above. The data should improve the asset first and cover liability second. A poor performing asset increases overall risk and cost. Safety risk can be covered quite easily with adequate inspection and works ordering. Collecting data like 'near to a street light' is not needed. Simple spatial analysis in GIS should allow this.

Data should also seek to measure rather than estimate. Over a population of hundreds of thousands of trees inspected on a 5 year cycle, one individual estimating would lead to quite a wide margin of error. The same number of parameters estimated by two or twenty different inspectors estimating leads to a large margin of error to render data woolly at best. By consistent measuring the error is removed or reduced. The gold standard is an accurate measurement of all trees or a parameter at the same time. Remote sensing and aerial imagery is advancing to help this become a possibility and should be factored in.

## **6. Asset Modelling and forecasting**

Once good preventative care and data capture are in place, good modelling can be employed. Forecasting a high, medium or low yield is common place in commercial forestry and the urban foresters should be seeking to do the same. This can be where trees are performing and those that are struggling have an optimistic and pessimistic growth forecast respectively.

Forecasting can then predict when a tree might overgrow its location or when the shade is excessive.

## **7. Customer Service**

With better data and better modelling, a strategy and a story can be given to the citizens of Birmingham to consult. A 3D plan can be given based on optimistic or pessimistic growth forecasts in a given street. Replacement locations can be identified and trees can be rotated over a set cycle if needed to reduce conflicts. Species can be planned and optimised based on site constraints and local preference.

## **8. Dropped Kerbs**

In terms of street scene, dropped kerbs are an innocuous little evil. What may only start as a dropped kerb here and there snowballs into a destruction of the street scene. The triple whammy of resurfacing front gardens, removing trees then grass verge slowly but surely ruins the street scene. Policy should be robust to minimise the impact of dropped kerbs including using engineered solutions to retain trees, using permeable paving to ensure permeability to soil water and air for roots, ensuring verges aren't removed or fragmented and most importantly restricting the size of a dropped kerb allowed.

## **9. Electric Cars**

Consideration of the electrification of cars in future and their charging needs is likely to have a big impact on demand for off street parking and charging stations within the highway. Both will impact on trees through dropped kerbs and street works.

## **10. Officer compliance with policy**

Many of the issues faced are from project officers and developers doing as they please. While tree officers are thought to be the controller of which tree should stay, they are largely at the mercy of projects and developments. Current policy is only loosely followed by projects which has led to the loss of trees in the city centre. Removing a tree without permission from a city tree officer or subsequent appeal should be a disciplinary offence. If a waste management operative deliberately drove a £100,000 waste truck into a wall and wrote it off, the act would constitute gross misconduct. Removing a tree with a CAVAT value of £100,000 receives no action.

Dominic Waller

Principal Street Scene and Tree Officer

21<sup>st</sup> July 2017.



# Tree Management Strategy



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# 1 Introduction

## 1.1 Background

- 1.1.1 Birmingham City Council is a major land owner. Every Department of the City Council is responsible for areas of land and consequently the risks and hazards arising from these, including trees. It is estimated there are 900,000 individual trees, plus up to 94,000 street trees which are the City's responsibility. Additionally there are around 600 hectares of woodland.
- 1.1.2 A review of the Council's street tree maintenance and management arrangements was carried out following an accident on 3 December 1999 when three people were killed on Alcester Road South as a result of a large tree being blown down by high winds falling onto cars in stationary traffic. The review was done as a result of an Improvement Notice issued under the Health and Safety Executive (HSE).
- 1.1.3 The review informed the preparation of a Street Tree Policy Statement that was submitted to Cabinet on 21 January 2002. The report was approved and adopted as the policy of the City Council.
- 1.1.4 In July 2005, Members from the Leisure, Sport and Culture Overview and Scrutiny Committee undertook a Review of Trees in the Public Highway. A sub-group of Members heard evidence from a range of officers and external experts on the importance of street trees and the threats affecting them. Evidence was taken on the effect that the proposed Private Finance Initiative for the Maintenance and Management of the Cities Highways would have on the City's Street Trees.
- 1.1.5 At the City Council meeting in February 2006, the Scrutiny Recommendations were approved and the Executive requested to implement them.
- 1.1.6 One of the recommendations was "That the Council's Tree Management Policy Statement (in so far as it affects street trees) be revised and included in the 'Best and Final Offer' PFI documentation. The revisions should include the conclusions and recommendations from this Scrutiny Review.
- 1.1.7 This current policy document is a restatement of the Tree Policy Statement - 'The Maintenance and Management of the City's Trees', January 2002
- 1.1.8 In addition new material has been incorporated from the findings of the Overview and Scrutiny Review of Trees in the Public Highway as set out in Recommendation R12 of the Review. Further sections deal with issues of increasing concern such as Climate Change and new legislation such as the Natural Environment and Rural Communities Act 2006.
- 1.1.9 The policy document is intended to be read in conjunction with the latest update of the Tree Strategy document. The Strategy document details the context in which the trees are managed and describes the specific tree management services and how they are to be delivered.

## 2 Promoting the Benefits of Trees in the City

### 2.1

#### Historical Background

- 2.1.1 The City needs to be proud of its magnificent heritage of trees.
- 2.1.2 The Council owns about 1,000,000 trees located in streets, housing areas, cemeteries and crematoria, schools, playing fields, social services homes and parks and open spaces. These trees have a strong impact on everyone in the City as they go about their daily life.
- 2.1.3 Street trees are fundamental to the City's tree heritage. In late Victorian times, the City forefathers realised the importance of trees to the quality of life of the growing City. They planted the first street trees in 1870 in Pershore Street, Edgbaston Street and Broad Street. Shortly afterwards, the City created its own tree nurseries and planted 1,000 trees in the streets every year (with two interruptions for the two world wars).
- 2.1.4 Birmingham's parks and open spaces contain a high proportion of Birmingham's trees representing historic gardens and landscapes and more recent planting associated with park refurbishment and woodland habitat creation.



Bristol Road, Selly Oak

## **2.2 Policies relating to Trees**

- 2.2.1 The importance of trees in the City is recognised in the Birmingham Unitary Development Plan 2005 in Policy 3.16A which relates to the need for protection of trees, additional planting and tree management and Policy 3.16B which seeks to increase the City's woodland resource.
- 2.2.2 The Birmingham Nature Conservation Strategy 1997 which is adopted as Supplementary Planning Guidance, notes that woodland accounts for less than 2% of the total area of the City, but recognises the significant contribution that trees make to the urban landscape and wildlife habitat. Policy 9 of the Nature Conservation Strategy seeks to protect wildlife habitats from development, and wherever possible increase them.
- 2.2.3 The Birmingham and Black Country Biodiversity Action Plan 2000 identifies woodland, trees and scrub as a priority habitat requiring protection. The vision for woodland and trees is "to be diverse, to have a full range of different species and ages of trees and shrubs with a flourishing ground flora to be full of wildlife and above all to be safe and accessible so that they can be enjoyed by everyone. We want our streets, parks and neighbourhoods to be enhanced by healthy trees, showing a full age range from saplings, through to mature trees of forest size, to noble veterans, and we want our special trees of character to be identified and conserved". Safety may have to be balanced in certain instances against conservation features such as standing dead wood or ancient trees. This can be acceptably managed by designing access so as to attract people away from the areas of potential fall etc
- 2.2.4 The Natural Environment and Rural Communities Act 2006 (the NERC Act) creates a duty for every public authority to conserve biodiversity. The Duty is created by Section 40 (1) of the Act which states;

*"Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity."*

The implications of this Act affect every facet of the Council's activities, and will therefore affect every service affecting trees in the City.

## **2.3 Trees Bring Environmental and Climate Change Benefit**

- 2.3.1 Trees reduce the Greenhouse Effect by absorbing carbon dioxide and releasing oxygen. Each year a mature tree produces enough oxygen for 10 people. By planting and maintaining more trees and woodland we can help to offset the damage done by harmful emissions.
- 2.3.2 Trees reduce flooding by slowing down the rate at which heavy rain hits the ground. Birmingham has seen an increase in violent storms in the last few years, illustrating that fears of climate change are becoming a reality. Flash flooding following rapid run off causes damage to roads and houses. There is an increasing trend of cities being paved over – such as front gardens being paved for car parking.
- 2.3.3 Trees provide essential wildlife habitats which contribute to maintaining biodiversity. Whilst this is important locally, wildlife corridors play an essential role in regional and national nature conservation. The Nature Conservation Strategy highlights the fact that in some places trees may be the only available habitat for wildlife. The Local Biodiversity Action Plan emphasises how important trees are for birdlife in the City.

## **2.4 Trees help to keep us Healthier**

- 2.4.1 Trees are important in filtering out harmful polluting particles from vehicle emissions and in absorbing the harmful gases, which can trigger respiratory problems including asthma. Research from Lancaster University demonstrating how increasing the extent of the West Midland urban tree canopy could help prevent premature deaths from cardio-respiratory diseases. Respiratory illnesses in the City are a cause for concern and pollution levels along our most heavily trafficked roads are very close to levels which can cause health concerns.

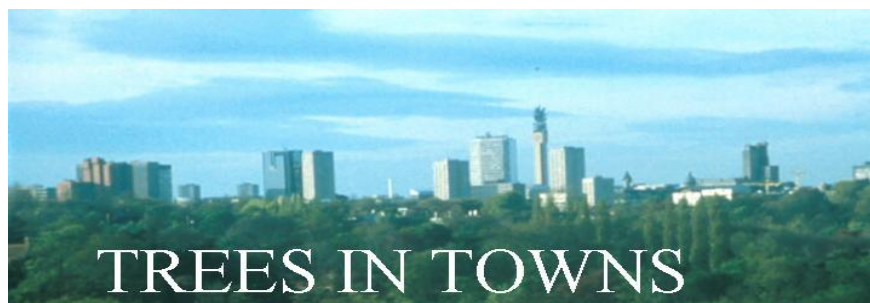


Stratford Road, Sparkhill

- 2.4.2 Evidence is clear that trees and open spaces reduce the stress of urban living. Research shows that after three minutes exposure to 'green space', actual relaxation can be measured in terms of reduction in muscle tension and blood pressure. With six million working days lost a year due to stress, trees have an important role to play.
- 2.4.3 The value of the shade that trees cast in summer is becoming increasingly recognised as the dangers of direct sunlight on the skin are recognised. Skin cancer claims the lives of 2,000 people per year in the UK and trees in school playgrounds, for example, would help protect children.

## 2.5 Trees support Economic Regeneration

- 2.5.1 Research, done by the Government Agency CABE Space, has shown that residential property prices are higher in areas where there is greenspace and trees in comparison with areas of the same type of house, but no green space and trees. There is also a clear correlation between high social deprivation indices and lack of tree cover. Many of our inner city areas of high-density housing have fewer trees than lower density suburban areas. As our stocks of street trees become older, their replacement in all types of residential areas is essential to ensure that economically deprived areas are not also deprived of the benefits trees can bring.
- 2.5.2 The image of Birmingham as a leafy city is often used in promotional material and there is no doubt that the perception of the City is greatly enhanced by its legacy of street trees.



## **2.6 Trees and sustainability**

- 2.6.1 Within the current contract for tree maintenance the disposal of waste timber is the responsibility of the service provider. Some waste material is transported to Berkshire for use as fuel at a power station in Slough. The objective of the Parks Service is to reduce and ultimately remove the requirement for timber to leave the City boundaries, in an endeavour to meet sustainability targets and minimise the impact of its operations on the environment.
- 2.6.2 These objectives are to be addressed in the new contracts which are currently under review. The new service providers will have a role to play, but it is the Council that will set the agenda. The new specification will need to be clear about the Council's expectations and what is expected of the City and its providers.
- 2.6.3 **C1 - Investigate and promote sustainable use of the timber resource – seeking alternative uses for arisings from tree work to ensure as much as possible is re-used or recycled and the tipping and burning of wood is kept to a minimum**

## **2.7 Perceptions of Trees**

- 2.7.1 Many residents love trees and want to see more of them in the City. This concern is apparent when residents phone the Parks & Nature Conservation Enquiry Team or their local Councillor to express distress when a tree is felled for any reason. The importance of trees to our environment is increasingly recognised and with examples of climate change affecting the City (such as the tornado in July 2005) local awareness of the importance of trees is increasing.
- 2.7.2 However, not all residents and communities feel the same way – some people dislike trees. As society has become more sophisticated, the public's attitude to nature has in some way become more intolerant. Residents find leaves, falling fruit, sticky deposits and insects associated with trees inconvenient and messy when they fall on driveways, cars or homes.
- 2.7.3 Trees close to houses are viewed with increasing suspicion especially when they grow large. House subsidence problems are frequently (rightly or wrongly) attributed to trees near houses. House insurance companies are increasingly receiving claims from householders which have resulted in a negative attitude to trees close to houses from surveyors, mortgage lenders and estate agents.
- 2.7.4 In some inner areas of the city, high levels of car ownership and lack of off-street parking can result in residents feeling that having their car parked directly outside their house is more important than having space for street trees.

## **2.8 Increasing awareness and Understanding**

- 2.8.1 To counteract negative views, the level of understanding of the significance of trees needs to be much more actively promoted in the City. The importance of trees to health, the environment and to economic regeneration may not be widely understood. The Overview and Scrutiny Committee Review of Trees in the Public Highway 2006 recommended that a new partnership "Birmingham Trees for Life" be developed with Birmingham Civic Society. "Birmingham Trees for Life" is devoted to promoting awareness and understanding throughout the City of the value and importance of trees, to raise money to enable more trees to be planted and to encourage the involvement of everyone, especially young people, in tree planting. This project will continue to be supported by the City Council.
- 2.8.2 **C2 – Support the Birmingham Trees for Life Initiative**

## **2.9 Birmingham City Council Website**

- 2.9.1 Information on Birmingham's trees and the benefits they bring to the City is available on the City Council's website. The information available there will be regularly updated and reviewed.
- 2.9.2 **C3 - Maintain and develop website information on the importance and value of trees**

### **Policy Statement 1.**

**The City Council will continue to support a high profile campaign to promote the importance and value of trees**

#### **Objectives**

To increase awareness and understanding of the importance and value of trees and the requirements to manage them in line with good arboricultural practice

#### **Commitments**

C1 - Investigate and promote sustainable use of the timber resource – seeking alternative uses for arisings from tree work to ensure as much as possible is re-used or recycled and the tipping and burning of wood is kept to a minimum

C2 - Support the Birmingham Trees for Life initiative

C3 - Maintain and develop website information on the importance and value of trees



# 3 Protection of Trees in the City

## 3.1 The threat to trees from development

- 3.1.1 There are some specific threats that have potential to lead to severe loss of the City's tree heritage. These include loss of trees from development on City Council land, particularly road improvements, creation of street parking and new access to individual properties and new developments which threaten street tree. The problem is not just the loss of trees. New developments can bring forward potential conflict with the trees needs for space and light and access for all.
- 3.1.2 Trees are easily damaged and when established trees they die they cannot be replaced by a tree of equivalent age. A mature tree contributes a huge amount to the environment, to the appearance of an area and to community pride. A young, newly planted tree will take a very long time to replace the benefits of a mature tree.
- 3.1.3 However a modern and dynamic city needs development, an efficient road system and access to development off that road system. Trees sometimes get in the way. Any policy for the management and maintenance of the city's trees has to consider how these sometimes conflicting pressures can be managed.

## 3.2 Protection of trees from development works

- 3.2.1 Under section 197 of the Town and Country Planning Act 1990, local planning authorities are under a duty to ensure that they make adequate provision for the protection and planting of trees when granting planning permission. They do this by a combination of planning conditions and Tree Preservation Orders. However, Tree Preservation Orders are not applied to trees owned by the Council although planning approvals for development on City Council land may contain conditions to protect trees and replace unavoidable losses through new planting.
- 3.2.2 Where major development is taking place affecting trees the current City Council Protocol "Building a Better Birmingham – A Charter for Development" ensures that all City Council departments involved in the development process work together with the developer – facilitated by a Project Coordinator. The Scrutiny Review was concerned whether this protocol was working effectively. One of the recommendations of the Review was that that a report be submitted to the Scrutiny Committee on an internal review of the protocol that had taken place. A report was submitted to Leisure, Sport and Culture Overview and Scrutiny Committee in November 2006 by the Assistant Director, Planning Control.
- 3.2.3 Regulations for permit schemes under the Traffic Management Act come into force in late 2007 whereby all works undertaken on the highway will require a permit. Following the Scrutiny Review all permits for work on the highway now include a requirement to identify works near trees. Permits for work near trees are only being issued once the applicant has address tree protection measures (NGUG VOL 4 or equivalent as agreed with the Tree Officer), a method statement and risk assessment. When work adjacent to trees has been identified, the location and timing of the work will be forwarded to the relevant Tree Officer.
- 3.2.4 **STSC 1 - Inclusion of tree protection measures in all 'Permits to Work' on the highway**
- 3.2.5 The relevant City Council Departments will need to work together to review appropriate practices and guidelines and ensure their implementation. Training will be provided to Highways Inspectors in tree protection standards.
- 3.2.6 **STSC 2 - Training of highway inspectors in tree protection standards**
- 3.2.7 The major threats from development to trees on public land that need to be managed are:
  - Utility cable laying
  - New development requiring new access from the highway
  - Measures to improve traffic flow on strategic routes



- Street Parking schemes
- Dropped kerb vehicle crossings to accommodate off street parking

### 3.3 Utility Cable Laying

- 3.3.1 Utilities working under statutory powers do not require permits from the highway authority but are required to work under strict standards. The Highway Authority & Utilities Committee facilitates discussions between the City Council and the Utility companies. Birmingham HAUC meet once a quarter to discuss any utility problems. The regulations that govern the way utilities are required to work in the vicinity of trees are the National Joint Utilities Group 'Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees' Issue 1 October 2007, known as NGUG VOL 4. The guidance is based on establishing a Precautionary Area for protecting the roots – in many cases this is the area under the tree canopy. Within this precautionary area care must be taken not to damage tree roots. A copy of these guidelines is attached in the Appendix.
- 3.3.2 The area beneath the pavement or footway is the major location for pipes and wires carrying services to homes including, gas, electricity, water and Cable TV/Broadband/telephone. Footways are frequently dug up to access existing services, or lay new ones in trenches. If this is done by machine street tree roots can be damaged. A large street tree has an extensive root system close to the surface of the soil. A tree can withstand a small proportion of its roots being damaged; however root damage often leads to the tree deteriorating in health over a short, or longer period of time. The tree can then present an unacceptable risk and has to be removed by the Council on safety grounds.



*Villa Road, Handsworth*

- 3.3.3 The indiscriminate use of modern machinery, coupled with inadequate site supervision, has led to examples in the city of tree roots being damaged. Compliance is monitored through sample inspections by Highways Officers and any damage reported to Tree Officers.
- 3.3.4 **STSC 3 - Monitor activities of utility companies with Statutory Licences when working in or opening up the highway.**
- 3.3.5 **C4 - Enforcement of standards for working near trees as detailed in the *NJUG (Volume 4)* guidance notes through compliance inspections**
- 3.3.6 **C5 - Reporting of any suspected damage for investigation by a Tree Officer**

### **3.4 New development requiring new access from the highway**

- 3.4.1 The regeneration of the City requires development of a wide variety of sites for employment opportunities, hospitals, shopping areas and homes. Safe and convenient access off major routes is essential. However new access point construction can conflict with the health of our street trees. New developments can affect existing street trees where additional or improved access points are needed off the highway.
- 3.4.2 All Planning Applications with highway implications go through Transportation Development Control section for comments. Where a planning application is approved for a development that requires work to the Public Highway, it is subject to a legal agreement to procure the access. Traditionally Section 106 of the Town & Country Planning Act required the developer to fund the highway works which were carried out by the Local Authority. However this process was seen to take too long. Now under an agreement within Section 278 of the Highways Act 1980, the developer carries out the work at their own expense and the Local Authority has an inspection role. Planning applications are available for public viewing and the Local Planning Authority consults widely with Members, the public and Council Services.
- 3.4.3 The process for approval of Section 278 agreements has been reviewed with regard to tree protection issues. Tree Officers are now consulted during the technical approval stage of all S278 schemes that are likely to affect trees. The S278 agreements have additional clauses requiring compliance with NJUG 10 guidelines.
- 3.4.4 Before any construction on the Highway can take place, detailed plans have to be approved by the Assistant Director (Development Strategy) after consultation with ward Councillors and the Cabinet Members. Plans must show any trees affected. Trees can only be felled with the permission of the Chief Highway Engineer and Cabinet Member for Transportation.
- 3.4.5 **STSC 4 - With the exception of the street tree 'fell and replant' programme, trees will only be removed by express written consent of the Chief Highway Engineer on the grounds of:**
- Immediate or imminent safety risk to persons or property
  - Unacceptable restriction to movement of traffic
  - Unacceptable restriction to highway accessibility of any user
  - Unavoidable obstacle to programmed highway improvements

### **3.5 Improving Traffic Flow on Strategic Routes**

- 3.5.1 Street trees on strategic routes have to compete with the priority of improving traffic flow. In addition where strategic routes pass through Local Centres, trees also have to compete with the demands of servicing shops and the need for parking. If these demands outweigh the value placed on trees and if existing trees are not protected, then trees will be lost in these locations.
- 3.5.2 The creation of 'bus only lanes' are an important part of improving traffic flow on major routes. However creating bus lanes may require a road to be widened, either by the compulsory purchase of privately owned land adjacent to the highway, or by incorporating grass verges into the carriageway. In either case trees may need to be felled. In one area of the city a bus lane proposal was drawn up in response to the need to improve traffic flows in and out of the city but the public became very concerned as several mature trees would have to have been felled to make way for the new carriageway. A vigorous public campaign followed and the scheme was dropped. This scheme is an illustration of the choices that the City Council has to make between reducing congestion & keeping major routes flowing and preserving street trees.
- 3.5.3 The creation of 'red routes' may lead to increased demand for parking bays so that cars are not parked in prohibited areas on the main through route. In some cases these bays have to be constructed by inserting them between the street trees in the former footway. In one area of the city there have been demands from shopkeepers for street trees to be removed in order to facilitate better access to their premises for deliveries. In this case permission was refused, but the pressures remain. This scheme is an example of the choices that the City Council has to make between retailers demands and keeping existing trees.
- 3.5.4 In more residential areas, there may be pressures to convert grass verges into parking bays to ensure that residents' cars are not parked on the red route carriageway.

### 3.6 Off- street parking - dropped kerb vehicle crossings

- 3.6.1 In many areas of the city, there is little provision for off street parking. This is especially the case in the inner areas of the city when homes were built long before the explosion in car ownership. Many households have more than one car and now drive or garage.
- 3.6.2 Where the design of the house provides a front garden big enough, cars can be parked off the road.
- 3.6.3 The creation of a new front garden parking area will lead to a request to the Council to agree to the provision of a "Dropped Kerb Vehicle Crossing". Householders are required to pay for this work, which comprises lowering the kerb and laying foundations and tarmac from the road to the house, across the footway and/or grass verge.
- 3.6.4 This has a visual impact on the street scene since plants and grass in front gardens is replaced by hard-standing, and grass verge by tarmac. In addition the verge may contain a tree which would need to be felled for the Dropped Kerb Vehicle Crossing to be achieved.
- 3.6.5 No tree on the Highway can be removed without the authorisation of the Chief Highway Engineer. If a tree is removed without consent then a claim against the offender may be pursued. The intention would be to recover sufficient costs to provide a replacement semi-mature tree to be planted as close to the felled tree as possible. If a crossing is proposed on a quiet avenue where a car parked on the street would not cause a traffic hazard, then consent to fell a tree for a crossing is unlikely to be granted. However, where off street parking is desirable for removing parked cars from heavily trafficked routes, and then consent may be given to fell a tree to enable a crossing. Each case was dealt with on its merits.
- 3.6.6 In 2006 69 trees were removed for crossings compared with 142 in 2004. Trees have previously been replaced on the highway on a 'one for one' basis in every instance.

### 3.7 Inner City Environmental Improvement Programmes

- 3.7.1 Where front gardens are small – as in the many inner city Victorian terraces – parking is confined to the road. Victorian street trees can come under pressure as they reduce the space available for parking. Many of these inner city areas were the subject of environmental improvement schemes within the Inner City Partnership Programme during the 1990s and street trees were introduced into areas lacking trees.
- 3.7.2 The pressures of parking have resulted in many of these young trees being damaged. In addition trees may be seen in these areas as less important than the need to park a highly valued car right outside the house.



3.7.3 *An empty tree pit*

3.7.4

## Policy Statement 2

The City Council will protect and safeguard tree health and stability by controlling the activities of contractors working for developers, utilities or the highway authority, near to trees.

### Objectives

To prevent damage to trees caused by works in or adjacent to trees.

### Commitments

C4 Enforcement of standards for working near trees as detailed in the *NJUG (Volume 4)* guidance notes through compliance inspections

C5 The reporting of any suspected damage for investigation by a Tree Officer.

### Highways Specific Commitments:

STSC1 Inclusion of tree protection measures in all 'Permits to Work' on the highway.

STSC 2 Training of highway inspectors in tree protection standards

STSC 3 Monitor activities of utility companies with Statutory Licences when working in or opening up the highway.

STSC 4 With the exception of the street tree 'fell and replant' programme, trees will only be removed by express written consent of the Chief Highway Engineer on the grounds of:

- Immediate or imminent safety risk to persons or property
- Unacceptable restriction to movement of traffic
- Unacceptable restriction to highway accessibility of any user
- Unavoidable obstacle to programmed highway improvements

## 3.8 Insurance claims

- 3.8.1 Homeowners are increasingly viewing trees near their property with suspicion. There has been an increase in the tendency to blame trees for subsidence of houses. Subsidence is a much more significant problem in London because of widespread clay soils – such soils are only found in areas in South and West Birmingham and these types of claims are confined to those areas. Most, but not all cases, involve highway trees – most, but not all, involve larger and older trees.
- 3.8.2 The insurance industry is involved in several ways. When new mortgages are sought on a property with a tree close by, surveyors conducting mortgage reports increasingly recommend the report of a tree specialist. Arboricultural advisors are increasing in number to meet the demand for advice. There have been concerns that reports are prepared after only cursory site visits. Where tree roots are identified in the vicinity of a house, pre-emptive tree felling may well be suggested. If the tree is in a street owned by the Council, felling by the Council is requested.
- 3.8.3 If a house has shown symptoms of subsidence, such as cracks in the internal plaster or in the external brickwork, nearby trees are often blamed. The justification for the blame is usually made by claiming that tree roots have removed water from the subsoil under, or near to the foundations. The volume of clay soil reduces if it dries out significantly and this can cause the seasonal movement of foundations and therefore structures.
- 3.8.4 Physical damage may arise where tree roots lift walls, drives or paving. If such damage is proved to be caused by a street tree, and a complaint is made against the Council, the Council's makes a claim on its insurance which is then paid to the householder in compensation which pays for the repair/replacement of the drives/walls.
- 3.8.5 Evidence suggests that there has not been a rise in incidents of direct physical damage, rather an increase in claims to the Council because of the increased focus on household "perfection", decreasing tolerance and an increasingly litigious society.

- 3.8.6 Preventative management would involve felling and replacing trees in known “hotspots”. Replacement trees should be grown in root restricting pits. Research has shown that pruning does not reduce the impact of root systems.

### 3.9 Street Tree Felling

- 3.9.1 Residents of the City have different attitudes towards the removal of trees. Some people want trees near their houses felled because they see them as a danger or a nuisance or because they want to park their cars in the space released. Other people feel strongly that trees should not be removed and campaign for their retention.
- 3.9.2 There are up to an estimated 94,000 trees on the highways. During 2006 the number of these trees felled was 796. Of these, 90 were removed as part of the phased removal programme, where trees had become too old, had outgrown the space available or caused obstruction. A further 69 were removed for dropped kerb vehicle crossings and 565 were felled because they were dead, diseased or dangerous.



- 3.9.3 Trees need to be removed for a number of reasons. Within the Tree Management & Maintenance Programme, these are:
- Some old trees considered likely to fail and cause a safety hazard
  - Diseased or dead trees
  - Trees the subject of a successful legal claim that they are causing damage
  - Trees sustaining root damage which may cause tree failure and a public hazard
  - Trees which are too large for the space they are growing in causing damage to footways or walls/buildings
- 3.9.4 As regards trees affected by Highway Improvement Works and Footway Crossings, these are:
- Where dropped kerb vehicle crossing is deemed essential
  - Where highway improvements need to be implemented
- 3.9.5 Trees on the public highway can only be removed with the permission of the Chief Highway Engineer. It is essential that any tree that threatens the safety of the public be removed. Where trees are affected by Highway Improvement Works and Footway Crossings, tree removals are authorised on a scheme by scheme basis by the Chief Highway Engineer. He is advised by the City’s arboricultural experts – the Tree Officers within the Tree Management Service. Within the Tree Maintenance and Management Programme, removal permissions are delegated to the Assistant Director (Parks, Sports and Events).
- 3.9.6 **C6 - To only carry out works to trees where the City Council has a legal obligation to do so or where it is in the interests of good arboricultural or forestry practices.**
- 3.9.7 **C7 - Where works are required this will be carried out in line with national arboricultural standards as set out in BS 3998 (1989)**



- 3.9.8 The Scrutiny Review of Trees on the Public Highway concluded that the City Council needed to be much more vigilant in recording when street trees have been removed. A register of removed street trees (together with the reason for removal) is recorded on the Confirm Arbor Database. This identifies when and where a replacement tree has been, or is proposed to be planted.

### **Policy Statement 3**

**When considering third party claims and complaints, the City Council will only remove or prune trees that are proved to be causing damage or legal nuisance and where it is considered to be the most appropriate solution.**

### **Objectives**

To ensure that the City Council's obligations in respect of the maintenance and management of its tree stock are adequately and continuously discharged.

### **Commitments**

C6 To only carry out works to trees where the City Council has a legal obligation to do so or where it is in the interests of good arboricultural or forestry practices.

C7 Where works are required this will be carried out in line with national arboricultural standards as set out in BS 3998 (1989).



# 4 Planting of Trees in the City

## 4.1 City Council Policies for Tree Planting

- 4.1.1 Council Policies recognise the benefits of trees and require an increase on City owned and managed land. A target was set in Birmingham's Nature Conservation Strategy 1997 for the increase in woodland hectareage from 554 hectares to 610 hectares. This reflects the continuing need to compensate for storm damage and to consolidate the City's position as one of the most tree-populated cities in Europe.
- 4.1.2 A substantial planting programme is needed both to replace trees which are necessarily lost to development, vandalism, old age and disease and to increase the overall stock. Changes to the tree stock will be monitored on an annual basis.
- 4.1.3 **C8 – Annual performance monitoring of changes in tree stock quantities to be undertaken.**

## 4.2 Street Tree Replacement

- 4.2.1 Within the City Council policy for tree stock preservation, there is a commitment to replace street trees that have been removed for whatever reason. Tree replacement on Highways is carried out within the Annual Highway Tree Pruning and Replacement Programme.
- 4.2.2 **STSC 5 - Every tree removed (for whatever reason), to be replaced with two new trees planted in highway as near as is reasonably practicable to the original location.**
- 4.2.3 On average 1,100 trees are ordered every year to be planted citywide – which works out at about 100 per Constituency. During 2006/7, 895 trees were removed from the highway and 1,391 replacement trees were planted. Our commitment from 2009 is to ensure that that a ratio of 2 trees planted for each tree removed on the highway will be built into the highways tree replacement programme
- 4.2.4 At present the responsibility for replanting on minor schemes lies with the Constituency Parks Manager (CPM) and the Constituency Tree Officer. Where specialist advice on tree species etc is required, the CPM will consult with the Constituency Tree Officer. The planting work at present is carried out by the Council's Horticultural Maintenance Contractors. However, from April 2009 tree planting work will be the responsibility of the Tree Service Contractors. The responsibility for replanting on major schemes, especially when developer's contractors are involved lies with the Council's Landscape Practice Group (LPG).

## 4.3 Fell and Replant Programmes

- 4.3.1 Some streets may have individual trees that need replacing because they are old and becoming unsafe or whole streets of trees may need replacing where they have outgrown their location.
- 4.3.2 **STSC 6 Undertake an annual street tree 'fell and replant' programme giving consideration to age, condition and suitability of trees to their location.**
- 4.3.3 In drawing up the programme consideration is given to roads where:
  - where trees have outgrown their location leading to damage to footways or road surface
  - where trees have been lost to disease or storm damage
  - trees have become unsuitable for their locations
- 4.3.4 Such a programme aims to remove the trees in a particular road, or road length, over a specified period of years on a phased basis and replace them with more appropriate species. This ensures that the replacement trees planted at the beginning of the programme are well established by the time the final phase trees are removed and replaced.

## 4.4 Constraints to Planting on the Highway

- 4.4.1 Planting new trees in the highway is beset with problems. Where a tree has been removed, it is not possible to plant another in the same place. When a tree is felled it is cut off at the level of the footway and the trunk area is broken up with a stump grinder machine. The roots are left in situ to slowly rot away since it is impossible to remove them - this is because over time, they would have threaded themselves through service cables and root removal would damage the services.
- 4.4.2 Where new street tree planting is desirable, a search has to be made of the utility cables/pipes that run beneath the surface. These plans are produced by the utility companies and copies are available from the Chief Highway Engineer. However, evidence suggests that these plans are often inaccurate. Once a suitable location appears to have been found, a trial pit may need to be dug. If no services are found, then a tree may be planted.
- 4.4.3 Therefore, there would be a gradual decline in the total number of street trees were it not for planting within new road schemes, local centres, regeneration projects and local level Constituency planting projects.
- 4.4.4 All appropriate highway maintenance and highway improvement projects will be assessed to identify opportunities to incorporate new street tree planting.
- 4.4.5 New services could be ducted so as to facilitate future repair with minimal disturbance to the tree roots.
- 4.4.6 If streets are increasingly hostile places for trees to be, consideration needs to be given for increasing the number of trees on sites next to the highway. This could be on land owned by the Council, or privately owned. Local residents may wish to plant trees in their front gardens (where there is space) but lack the knowledge or ability to do this.

## 4.5 New Roads

- 4.5.1 The construction of new roads in the City can both provide opportunities for new tree planting, but also may threaten existing trees. Each scheme is a balance between retaining existing trees and incorporating new trees into the design. Since inserting new trees into existing streets is difficult due to services, new schemes can create planting sites with sufficient soil suitable for good tree growth. The cost of the tree planting is met from the finance package for the whole project.
- 4.5.2 **STSC 7 Planting schemes as part of highway improvements projects to be designed to include optimum number of trees with a minimum of two replacement trees for every one removed.**
- 4.5.3 Where the City's Landscape Practice Group is commissioned to advise on the landscaping of new schemes, their role is to:
- Design the tree planting and landscaping
  - Advise on the suitability of the type of street trees
  - Select the individual trees in the tree nursery
  - Supervise the planting of the trees between November and March – the planting season
- 4.5.4 The first two years of the care of the trees is part of the initial contract to ensure that the trees grow well – if they do not then they are replaced.

## 4.6 Impact of new planting on strategic routes into the City

- 4.6.1 Street trees on major routes have a big impact on the impression of the City that residents and visitors see on a daily basis, if they are travelling around the City. Evidence suggests that tree lined streets have a positive effect on our health and well-being.





*The Bull Ring Boulevard*

- 4.6.2 In the 1980's a pioneering project 'Operation Green-Up' project replaced swathes of grass adjacent to the then Middle Ring Road with intensive shrub and tree planting. The trees planted at that time are now maturing, not only in Birmingham – around Dartmouth Circus – but also in cities such as Sheffield.
- 4.6.3 However increasingly trees are under pressure as traffic levels grow, travel demands increase the number of journeys - our radial routes struggle to cope with being both through routes and neighbourhood high streets. Not only are measures necessary to protect existing trees from these pressures, but sites for new planting need to be found.
- 4.6.4 Street trees on major routes are usually planted when they are about eight years old – this is old enough for the tree to make an impact straight away. At this age they are 6-7 feet high and have trunks 14-16cm thick. Although they have been specially raised to have a small root ball (to facilitate replanting), a hole with good soil is needed at least 1 metre square.
- 4.6.5 In urban areas finding areas of ground that are not constrained by previous tree roots, previous development or underground services is very difficult.
- 4.6.6 The National Forest are keen to promote the importance of tree planting along the major routes linking the National Forest (to the north of the City in Staffordshire) with the City. Such tree planting would not only create a wildlife corridor, but also improve the image of the approach to the City from the North.
- 4.6.7 The effect of the Olympics in London in 2012 could be to attract training camps for athletes and other sportsmen and women. However, the routes to and from these training camps would form an impression of the City - environmental improvements such as tree planting planned well ahead of 2012 would effectively improve the image of the City to an international audience.

## **4.7 Local planting schemes**

- 4.7.1 Following the City's devolution programme, some Constituencies are looking at new ways of increasing the numbers of street trees. For example, Members have been approached by local residents from Moseley, Cotteridge and Stirchley asking if more trees could be planted in their streets. In one area residents hope that planting well protected trees will stop cars parking on footways and verges.

## **4.8 Home Zones**

- 4.8.1 In some European countries, traffic calming is achieved by narrowing roads in residential areas and planting trees in parts of the carriageway. This not only slows traffic, but introduces more trees in the street scene. In this way they can be planted away from existing utilities in the footway. There are examples of Home Zones in the UK and the concept is supported by the Government.



*Northmoor, Manchester - Home Zone*

- 4.8.2 However Home Zones are relatively expensive to implement and some residents only feel comfortable if their car is parked immediately outside their house.
- 4.8.3 It may be that some of the principles of Home Zones could be adapted for use to enable more street trees to be incorporated in high density residential areas.

## **4.9 Trees in new development**

- 4.9.1 When new developments within the City are planned the City Council will foster a co-ownership approach to works. This approach will ensure optimum solutions, and determine tree planting to enhance the long-term visual appearance of the scheme. This approach to tree planting schemes will ensure that the knowledge and expertise available within the Council will be fully utilised at the planning stage. Where necessary Tree Officers will consult with an appointed ecologist and seek advice regarding the sustainability of the proposed plans. Following commencement of work there will be regular communication between Designers, Engineers, Tree Officers and representatives of the service provider.
- 4.9.2 The City Council in the development of tree planting will incorporate best practice in planting and incorporate appropriate pavement designs to ensure trees can take root and grow to maturity.

## **4.10 Woodland Planting**

- 4.10.1 As part of ongoing management of woodlands within the City, occasional planting of forestry stock is carried out to replace trees lost through vandalism or natural causes. Over 40,000 trees were planted in 2000 to commemorate the Millennium with grant aid from the Forestry Commission. The City Council is committed to replacing trees in Millennium Woodlands throughout the City in line with Forestry Commission requirements.
- 4.10.2 **C9 - Maintain the Millennium Woodlands in partnership with the Forest Commission.**

## **4.11 Housing/Parks/Schools/Social Services**

- 4.11.1 Opportunities for tree planting can be realised through the implementation of capital projects for environmental improvements.

## **4.12 Birmingham Trees for Life**

- 4.12.1 Birmingham Trees for Life aims to promote trees by sponsoring new planting schemes with support of the community. Projects have involved schools and Friends of Parks groups.

#### 4.12.2 C10 – Support the sponsorship of new planting through the Birmingham Trees for Life Initiative.

### 4.13 Tree Varieties

- 4.13.1 There are different views on the varieties of trees used in new schemes and where trees have to be replaced. On the one hand, some people as too large for urban areas see large trees such as the Common Lime but there is sufficient evidence to confirm that Lime trees are extremely important to the wildlife. On the other hand the ecological benefit of some small ornamental trees can be limited.
- 4.13.2 New varieties of trees are being bred which do not have some of the negative features sometimes associated with trees. The major nursery suppliers of street trees are working hard to develop varieties which are of the greatest benefit and which are of the size and shape to suit a variety of locations.
- 4.13.3 The effects of climate change on tree varieties also need to be considered. Current predictions suggest that the climate will be unsuitable for some species of tree in as little as twenty years' time, whilst other species which have hitherto been poorly adapted to our climate will thrive. Latest guidance will be sought for new planting schemes.
- 4.13.4 **C11 – All new trees to be of a species appropriate to the ground conditions and local environment and take into account climate change.**

#### Policy Statement 4

**The City Council recognises the importance of maintaining Birmingham's tree heritage and will aim to increase the number of trees in the City.**

#### Objectives

To ensure that the City's heritage is maintained and enhanced for future generations and targets for street trees and woodland are met.

#### Commitments

C8 Annual performance monitoring of changes in tree stock quantities to be undertaken.

C9 Maintain the Millennium Woodlands in partnership with the Forest Commission

C10 To support the sponsorship of new planting through the Birmingham Trees for Life initiative

C11 All new trees to be of a species appropriate to the ground conditions and local environment and take into account climate change.

#### Highways Specific Commitments:

STSC 5 Every tree removed (for whatever reason), to be replaced with two new trees planted in highway as near as is reasonably practicable to the original location.

STSC 6 Undertake an annual street tree 'fell and replant' programme giving consideration to age, condition and suitability of trees to their location.

STSC 7. Planting schemes as part of highway improvements projects to be designed to include optimum number of trees with a minimum of two replacement trees for every one removed.



*Balsall Heath Park following the tornado of 2006*

# 5 Management of Trees

## 5.1 The Importance of Tree Management

- 5.1.1 In all urban areas, trees are inevitably a compromise. In many cases they lose leaves in the autumn, produce fruit, deflect light and sometimes cause damage to surfaces and very occasionally buildings. Although trees are natural, living things which usually grow happily, they do need to be looked after.
- 5.1.2 Even though trees can enhance our City, the urban environment is often a hostile one. Many urban trees show signs of stress. They grow slowly and are more prone to disease. They are subjected to a variety of pollutants such as car fumes, herbicides, salt and other de-icing agents from roads. Vandals rip off branches, strip off the bark or set trees on fire.
- 5.1.3 Even under the guise of tree care there can be subconscious acts of vandalism. For example, tree ties that are left in place can strangle the tree they were meant to support. Also, incorrect pruning can leave unsightly trees struggling to survive.
- 5.1.4 Urban trees are more susceptible to drought. Many of the surfaces that they grow in are impervious to water and air, because the soil is compacted and any excess rainwater is drained
- 5.1.5 Tree roots are frequently severed during installation of underground services or to allow for construction work. This can lead to the premature death of trees and lead to increased hazards. All these factors mean that the life expectancy of urban trees is greatly reduced. Latest research indicates that the life expectancy of a newly planted street tree is approximately 11 years
- 5.1.6 Changing climatic conditions including cataclysmic storms, high winds, such as the hurricanes in 1987 and 1991 culminating in the tornado in July 2005, cause severe damage to tree stocks. Climate change may mean that the current tree species may not be suitable. Also physical damage to any one of these can reduce the health, and therefore the life of the tree. Other threats include chemicals in the soil, air pollution, disease (especially fungus) and old age.
- 5.1.7 Without regular tree management, trees not only die earlier than necessary, but they may become a hazard to people and property as branches may fall off and the whole tree could potentially uproot or break off at the trunk particularly in storm conditions.
- 5.1.8 The City Council's Tree Management and Maintenance Programme includes:
- Annual Highway Tree Pruning Programme
  - Programmed Fell and Replant
  - Programmed removal of basal growth
  - Ad hoc Tree Felling
  - Tree Planting
- 5.1.9 The City's Tree Management is undertaken by a range of professionals:
- The City's Tree Manager and the Constituency Tree Officers are qualified arboriculturists – they advise and manage the various programmes
  - The City's horticultural contractors undertake minor pruning at present.
  - The City's arboricultural contractors undertake major pruning, tree surgery and felling.

## 5.2 Arboricultural Standards

- 5.2.1 In terms of arboricultural maintenance the City Council will employ only specialist approved Service Providers to undertake this work on behalf of the City. Work carried out will be in compliance with the requirements set out in a contract specification. This specification will include all elements of Health and Safety together with methods of operation to protect tree health and the surrounding environment. In carrying out pruning work this will be to established arboricultural standards to ensure the future health of the tree. Management systems for the tree maintenance service have been accredited by external assessment to meet ISO9002 quality systems standard.

## 5.3 Annual Highway Tree Pruning Programme

- 5.3.1 Since many street trees were planted in late Victorian and Edwardian times, many are mature and often very large. Whilst there is the major imperative of conserving and enhancing the existing tree stock, this has to be balanced by the requirement to ensure the safety of pedestrians and users of the highway network. The Annual Highway Tree Pruning Programme has the following objectives:

- to keep mature stock healthy and safe
- to prevent tree failure and the possibility of high wind blow downs
- to ensure pedestrian safety by removing the tripping hazard of exposed roots
- to maintain clear pedestrian footway routes by removing basal growth obstruction
- to retain driver sight lines at junctions and for signals and signs
- to enable vehicular access for cars, buses and parking, including dropped kerbs
- to reduce interference to street lighting from trees caused by low tree canopies and overgrowth
- to prevent tree roots damaging services and utilities
- to prevent damage to property directly by roots and or branches



*This tree in Grove Lane, Handsworth was included in the 2005/06 Pruning Plan*

- 5.3.2 Each year the annual programme of highway tree management is drawn up and agreed with the Cabinet Member for Transportation and Street Services. The programme includes work to be done in each Ward. Once it is agreed it is circulated to the Constituencies and is available to the public on the Council's Web Site
- 5.3.3 The roads to be included in the Annual Highway Tree Pruning programme are selected by the Tree Management Service using the following criteria:
- Age, size & species of tree
  - Proximity to highways and buildings
  - Public concern, levels of enquiries received
  - Length of time since previous pruning
  - Budgetary availability



**C12 Provide a cycle of tree pruning appropriate to tree species, age and location to promote tree health as required by good arboricultural practice.**

5.3.4 When drawing up the programme, Tree Officers are mindful that residents can be concerned about what is happening to trees that they have affection for. For example, severe pruning of mature trees such as London Plane or Lime can cause concern with residents. In Hall Green some residents were particularly proud of their lime trees and insisted that the type of pruning was discussed with them in detail prior to the work going ahead. This model for public consultation has been developed for other areas of the City.

5.3.5 There are a number of perceived problems with trees that are in fact natural occurrences and pruning will not resolve the issue and are certainly not a justifiable reason to remove a healthy tree. The most common are:

- Bird droppings and honey dew dropping from leaves onto cars and pavements.
- Fruit and leaves dropping on to pavements.
- Insects associated with trees such as wasps or moths.
- Heavy leaf fall.

Most of these problems are minor or seasonal and should be accepted as natural occurrences associated with living near trees.

5.3.6 Other areas of complaint are regarding trees blocking natural light or interfering with satellite reception.

There is no legal right to natural light in law. This can be minimised by selective planting of suitable tree species.

5.3.7 There is no legal right to television reception. Existing trees on neighbouring land which interfere with television reception, especially with satellite transmissions are unlikely to be regarded as a 'nuisance' in law. As a general policy the Council will not undertake the topping, thinning or felling of trees simply to improve television or satellite reception, where the trees in question would not otherwise require any surgery

## **5.4 Ad hoc work to trees on the highway**

5.4.1 In addition to the Annual Highway Tree Pruning Programme, emergency and urgent remedial street tree works will be carried out wherever and whenever necessary on a city-wide basis throughout the year. Work is given priority if a danger to persons or property exists. Limited 'one-off' tree pruning will be undertaken if high risks are identified.

5.4.2 Included in this work is pruning to ensure safety of users of the highway – immediate pruning takes place if visibility at junctions is obscured, traffic lights adversely affected by branches or pedestrian safety is compromised.

5.4.3 **C13 – Provide a 24hour emergency tree service giving priority to any works where an immediate or imminent danger has been identified.**

## **5.5 The Safety of Members of the Public**

**5.5.1** Birmingham City Council is a major landowner. Every Department of the City Council is responsible for areas of land. Every tree has an owner and the responsibility for the tree lies with the owner of the land on which it grows. Under legislation, the owner of the tree has a duty of care to ensure that tree(s) on their land do not cause damage to persons or property. Any actions the tree owner takes (or does not take) may be judged in a legal sense as to whether they were “within reason” or “reasonably practicable”.

5.5.2 The paramount importance when managing Birmingham’s street trees is the safety of members of the public. Trees growing on Council owned land can be a ‘risk’ as identified in the Health and Safety at Work Act 1974.

5.5.3 Other primary legislation affecting the management of highway trees include:

- The Occupiers Liability Acts (1957 and 1984), concerning duty of care to people when accessing property.

- Highways Act (1980), deals with maintaining clearance of highway, visibility, removal of dangerous trees affecting the highway etc.
- Local Government (Miscellaneous Provisions) Act (1957), deals with removal of dangerous trees on private property.

5.5.4 As described in the previous section, owners and occupiers of property have a duty of care to control hazards.

The Management of Health and Safety at Work Regulations came into force in 1993, as the principal method of implementing the EC Framework Directive (89/391/EC). The regulations have been amended four times since then, most recently in 1999. The extracts from the regulations below explore some of the legal obligations but these are not the limit to an “employers responsibilities” therein.

- Whatever the purpose of a tree, whether it be managed for landscape, habitat, commercial or multi-purpose objectives, the legal obligations on the owner, to ensure the reasonable safety of people and property are the same.
- Owners are required to consider the level of risk associated with a tree and whether it is reasonable to protect against the risk, (i.e. a “Risk Assessment”). The basis for assessing liability is to consider whether a danger posed by a tree could be foreseeable, and whether reasonable measures could be undertaken to reduce the risk to an acceptable level.
- Owners must manage risk and be seen to do so. And if necessary provide evidence that this is being done. Therefore the assessment of risk is never a one-off activity, but a continuing process.
- To assess the potential risk posed by trees requires that trees and their environs need to be the subject of a formal, structured procedure for their care and maintenance.

5.5.5 “So far as is reasonably practicable” has been considered by the Courts. The proper test of what is “reasonably practicable” is not just whether the measures were physically or financially possible. There must be taken into account the principle that the degree of risk has to be weighed against the costs involved. If the cost is disproportionately heavy in relation to the risk, then the measures are not “reasonably practicable”.

5.5.6 Trees confer many benefits, being essential to our well-being and generally enhancing our built and natural environments. Mature trees do present a safety risk to road traffic in terms of their lack of impact absorption characteristics in loss of control road traffic accidents. The amenity value of street trees is taken into account in determining any appropriate response to serious and fatal road traffic accidents involving trees.

5.5.7 It is essential to maintain a balance between the benefits and cost of risk reduction. Accordingly, it must as a matter of record be stated that the degree of risk to members of the public is low. This does not mean that an accident relating to tree failure could not happen but statistics show that there have only been two tree failures resulting in fatalities in the last 25 years which shows cogent evidence of low risk. Set against this, the Council expends annually the sum of around £1 million on tree maintenance and a primary consideration of such maintenance is the safety of members of the public. The Council has therefore discharged its responsibility under the Health and Safety at Work Act and such discharge exceeds the statutory requirement of “so far as is reasonably practicable”.

5.5.8 It follows from the legal opinion expressed in the preceding paragraph that the current expenditure on tree maintenance might be reduced but that the legal requirement under the Act would nevertheless still be fulfilled.

5.5.9 However, as a local authority, the City Council may seek to improve upon legal minimum standards in order to implement its policies and promote the well-being of the people of the City. It needs to be emphasised that legal standards are frequently “minimum” and often only provide a “floor of rights and responsibilities”. Accordingly, it would be consistent with the Council’s fiduciary duties and primary objectives to enhance expenditure above minimum legal requirements, as indeed the Council has done.



## 5.6 Tree Inspection and risk assessment

5.6.1 The primary consideration of the tree maintenance and management of street trees is the safety of members of the public. In addition the annual programme for the maintenance of trees must be based on an assessment of the health of the tree stock. Therefore tree inspection and risk assessment are a fundamental basis for any tree management policy.

### 5.6.2 **STSC 8 Follow risk management procedures in line with the national code of practice 'Well Maintained Highways' UK Roads Board 2005**

5.6.3 Trees on the Highway are deemed to be a higher risk due to the volume of people passing by. A City-wide investigation in 2002 showed 94,000 street trees. A preliminary survey of all these trees was carried out to identify those trees that had characteristics that are associated with tree failure. Proposed areas of zoning will identify different levels of usage for different types of highway and that will help in the assessment of risk.

5.6.4 From the findings of the preliminary survey, the Tree Service established a Priority Inspection Register which included 4,174 trees considered to present a potential risk to public safety as defined in the January 2002 Cabinet Report – The Maintenance and Management of the City's Trees, (attached in the Appendix to this report).

5.6.5 **C14 Continue to manage and maintain an electronic database of all trees and tree groups managed by the City Council, including a priority inspection register, setting out risk associated with each tree, maintenance required and inspection intervals.**

5.6.6 Specific inspection programmes and frequencies are in place according to the risk level posed by the tree characteristics. The trees on the Priority Inspection Register are categorised into three types:

- Unacceptable risk and were felled immediately
- Requiring immediate attention such as pruning
- Satisfactory at the time of survey but needing re-inspection at specific intervals such as 2, 3 or 4 years dependant on species and location etc.

5.6.7 Since the initial 2002 survey, specialist consultants have re-inspected those trees on the Priority Inspection Register as required. The report on each of these trees sets out the level of risk associated with the tree, the maintenance required and the future inspection interval necessary. Clearly the principles of risk assessment using appropriate quantitative or semi-quantitative methods are used to determine tree maintenance priorities. The number of trees on the Priority Inspection Register across all Directorates is 3,531 as of 24<sup>th</sup> April 2009.

5.6.8 The inspection of the City Council's trees by qualified arboriculturists has been extended to trees in lower risk locations. By 2007 an inspection of trees on Housing sites has been undertaken, and includes 29,725 trees. An inspection of trees on Education sites has been undertaken, and includes 34,614 trees. An inspection of trees within Cemeteries and Crematoria has been undertaken and includes 14,180 trees. An inspection of trees on Social Service sites has been undertaken and includes 2,864 trees. These inspections are undertaken every 3 to 5 years by the Parks & Nature Conservation Service and any work identified is actioned accordingly.

5.6.9 Further inspections are also carried out by the tree service provider during annual Highway pruning programmes.

5.6.10 Trees in parks are subject to an annual visual inspection as part of the park inspection, undertaken by the parks or Ranger Service staff assisted by a qualified Tree Officer when necessary. The parks staff and Rangers will have received organised training in the recognition of possible tree defects. This annual site inspection generally covers trees alongside main high usage public areas and within falling distance of, park perimeter adjoining a major/busy public highway, park entrances, buildings, main well used path/drives, car parks, seating areas, children's play areas, work yards. This complies with the most recent Health and Safety Guidelines SIM01/2007/05 - Management of the risk from falling trees.

5.6.11 In 2007 and 2008 selected officers from a number of City Council Departments including Transportation, Housing, Bereavement Services as well as Parks and Ranger staff took part in a Tree Hazard Training course led by one of the country's leading arboricultural consultants. Biannual refresher training will be offered to all City Council staff with a responsibility for site risk assessments incorporating Tree Hazard Identification.

5.6.12 There is a two stage process combining Tree Inspection and, if required, Tree Risk Assessment.

Tree Inspection - is undertaken by a competent member of staff who will have undertaken a recognised training programme on Tree Hazard Identification.

Tree Risk Assessment - is undertaken by a qualified Tree Officer following concerns raised through the Tree Inspection process.

To make the tree inspection programme manageable, it has been considered necessary to direct most resources to the areas where there is potentially more risk to people and property. This has been achieved by designating each part of the sites into an agreed number of Risk Zones (ie this has been agreed as between 1 to 3 Risk Zones in Parks).

High Risk: i.e. main high usage public areas and within falling distance of, park perimeter adjoining a major/busy public highway, park entrances, buildings, main well used path/drives, car parks, seating areas, children's play areas, work yards. (zone 1)

Medium Risk: i.e. within falling distance of secondary paths/desire lines/routes, areas of medium usage including amenity/or sports areas (zone 2)

Low Risk: i.e. within falling distance of most lightly used areas and routes. Designated woodland areas. (zone 3)

The use of zones reflects normal usage and will be kept under review as the level of risk changes over time. For example, the line of a footpath may alter or a public event may be held within a low risk area altering its status to medium or even high risk: new facilities, activities or management practices on the site may more permanently alter the patterns of public usage and hence necessitate a review of a designated risk zone.

**C15 Manage a proactive tree inspection programme and tree risk assessments in line with latest industry guidance and take appropriate and timely remedial actions. Develop and maintain management arrangements for the suitable and sufficient health and safety risk assessment of all the City Council's trees.**

## 5.7 Trees on private land

5.7.1 The City Council Tree service provides for inspection, risk assessment and carrying out of any necessary emergency works where the Head of Environmental Health identifies a concern that a tree poses an imminent risk to public safety. The request is made in line with Work Guidance 1E – 11 Dealing with Trees on Private Land. The cost is reclaimed from the landowner.

5.7.2 **C16 Act on behalf of Environmental Regulatory Services to deal with trees on private land that deem to be posing an intolerable risk to people or property beyond the boundaries in accordance with Section 23 and 24 of the Local Government (Miscellaneous Provisions) Act 1976**



*Resistograph Decay Detection*

# 6 Resources for Management

## 6.1 Responsibilities for trees across the Council

- 6.1.1 Trees on Council owned land is the responsibility of the Cabinet Member who owns the land. However the responsibility for managing and maintaining all trees has been delegated to the Parks and Nature Conservation section of the Development and Culture Directorate. This section which includes the Tree Service is the responsibility of the Cabinet Member for Leisure, Sport and Culture.
- 6.1.2 This service to manage trees is usually achieved through Service Level Agreements between the relevant Portfolios. A Service Level Agreement is in place covering the Tree Management of Highways and of Housing trees (the Housing agreement is currently being renegotiated by a group of the relevant officers). For all other service areas (Education, Social Services, and Bereavement Services) an approved specification provides the basis for the management and maintenance programme and includes the provision of a 24 hour emergency response to trees that are identified as a potential failure.

## 6.2 The Tree Service

- 6.2.1 The current basis for the Council's management regime for trees is by way of the criteria set out in the report approved by Cabinet on 21 January 2002 titled 'The Maintenance and Management of the City's Trees' which is attached in the Appendix to this report.
- 6.2.2 The work of the Tree Service falls within the remit of the Tree Manager within Parks and Nature Conservation.
- 6.2.3 The service is provided by Tree Officers who carry out inspections in response to enquiries and complaints and devise work programmes and arrange for their implementation in accordance with the agreed policy.
- 6.2.4 The Tree Manager also provides professional and technical guidance, particularly in relation to tree husbandry.
- 6.2.5 **C17 Provide an adequate level of arboricultural advice through the employment of a team of qualified Tree Officers.**
- 6.2.6 Specialist arboricultural contractors carry out the actual work such as pruning and felling. When additional work is needed in the City, such as in the wake of the tornado in 2005, the contractors can draft in additional support through their national networks or engage experienced approved subcontractors.
- 6.2.7 The contractors work to specifications in line with current industry standards.
- 6.2.8 **C18 Regularly review specifications in the contract to ensure that they are precise and meet with currently accepted standards**
- 6.2.9 Programmed tree planting is currently undertaken by the Grounds Maintenance Service Providers. However, this specific operation will be carried out by the Tree Service providers from April 2009.
- 6.2.10 In addition, landscape architects with arboricultural knowledge are located within the Landscape Practice Group within the Parks and Nature Conservation section. Their role is to supervise tree planting works associated with development schemes. The services of this Group are recharged to the Directorates.
- 6.2.11 Staff within the Ranger Service have woodland management skills and undertake some aspects of tree management work and planting in support of the Tree Service.
- 6.2.12 It should be noted that Tree Officers are also employed by the City Council are in the Planning Division. They deal specifically with Tree Preservation Orders (TPO's) and tree matters relating to the Development Control process.

6.2.13 The City Council carries out an ongoing assessment of training needs of all staff involved in tree work, and arranges training to ensure that skills are kept up to date.

6.2.14 **C19 Support the development and training of all arboriculture and associated staff involved in council tree work**

### **6.3 Financing the Tree Management Service**

6.3.1 The City Council finance for tree management is located in the budget of the Portfolio holder who owns the trees. This then forms part of the City Council's Integrated Horticultural Maintenance Budget, which is administered on behalf of all Portfolios by the Parks and Nature Conservation section.

6.3.2 The budget for the Tree Management Service is administered centrally based on priorities identified by Tree Officers in accordance with the agreed policy guidelines.

6.3.3 In addition some finance may be available through a variety of budgets to carry out additional tree maintenance (one offs). Examples include housing revenue funds for additional tree planting on housing land, planting finance from Local Centres; finance associated with minor road schemes and city centre funds. In addition Constituencies may have access to funds such as Neighbourhood Renewal Fund (NRF) and SRB6 for tree planting and management where local Members feel this is particularly important.

### **6.4 Confirm Arbor Database**

6.4.1 The effective management of the City Council's trees is dependent on an up to date and accessible Tree Management Database. From 2000 onwards, Highway Tree Inspection Records have been kept electronically on the computerised system called 'Confirm Arbor'. This is a software package used by many Local Authorities. The database records the location, type, age and condition of Council owned trees together with information affecting tree health or its safety risk assessment. The database is developed from ongoing surveys of trees and it is used to determine the Annual Pruning Programme. Tree maintenance priorities are based on risk assessment and good husbandry.

6.4.2 Those trees currently on the computerised system are as follows:

- All street trees that have been inspected over the last 5 years
- All street trees on the Priority Inspection Register
- Street Trees within the regular Tree Pruning Programme
- Trees within the City Council's Housing areas
- Trees on Education sites including school playing fields
- Trees within Council Cemeteries and Crematoria
- Trees on Social Care sites
- Trees in parks and open spaces

6.4.3 In total about 50,000 of the estimated total of 94,000 street trees are on the computerised system (June 2008). By the end of 2008 survey information on all of the street trees will be installed on the confirm data base system. The ones that are not on the system are young trees, small or isolated ornamental species that are unlikely to pose any risk to public safety.

6.4.4 The intention is to extend the electronic data to include the existing paper records on street trees and also the records of all other Council owned trees. Maintaining accurate data on council owned trees is essential and requires that re-inspection schedules (as determined at the time of inspection) are adhered to. Data held on each tree allows information to be accessed and manipulated to enable enquiries to be dealt with and future actions/ priorities to be determined.

6.4.5 To achieve this City Council have appointed a dedicated System Manager to develop the 'Confirm Arbor' system. The System Manager role is to ensure that further data entry will be carried out to input the information from the paper record system as well as data from new inspections. In addition upgrading and enhancement of the database will take place. This will make the manipulation of data and the production of information reports easier and also assist in dealing with day to day tree enquires from officers Members and the public.

6.4.6 During 2007/8 the Parks and Nature Conservation service commissioned two leading external arboricultural consultants to carry out a review of the services existing tree safety and tree management handling systems and processes.

At the time of this writing this strategy this review is not yet completed although a number of recommendations have already been implemented with others still to be adopted.

#### **Policy Statement 5**

**The City Council will ensure that systems and procedures are in place to take all reasonably practical steps in the maintenance and care of trees to meet legal obligations.**

#### **Objectives**

To ensure that tree failures that may affect the safety of the public are reduced as low as is reasonably practicable through the application of targeted inspections, zoning etc.

To ensure appropriate and proportional allocation of resources to minimise the level of risk whilst retaining the environmental and amenity value of the City's trees.

To ensure the policy and strategies are compliant with Health & Safety SIM Guidelines 2007

#### **Commitments**

C12 Provide a cycle of tree pruning appropriate to tree species, age and location to promote tree health as required by good arboricultural practice.

C13 Provide a 24hour emergency tree service giving priority to any works where an immediate or imminent danger has been identified.

C14 Continue to manage and maintain an electronic database of all trees and tree groups managed by the City Council, including a priority inspection register, setting out risk associated with each tree, maintenance required and inspection intervals.

C15 Manage a proactive tree inspection programme and tree risk assessments in line with latest industry guidance and take appropriate and timely remedial actions. Develop and maintain management arrangements for the suitable and sufficient health and safety risk assessment of all the City Council's trees

C16 Act on behalf of Environmental Regulatory Services to deal with trees on private land that deem to be posing an intolerable risk to people or property beyond the boundaries in accordance with Section 23 and 24 of the Local Government (Miscellaneous Provisions) Act 1976

C17 Provide an adequate level of arboricultural advice through the employment of a team of qualified Tree Officers.

C18 Regularly review specifications in the contract to ensure that they are precise and meet with currently accepted standards

C19 Support the development and training of all arboriculture and associated staff involved in council tree work

#### **Highways Specific Commitments:**

STSC 8 Follow risk management procedures in line with the national code of practice 'Well Maintained Highways' *UK Roads Board 2005*.

## 6.5 The Transfer of Risk to PFI Co

- 6.5.1 The Scrutiny Review of Trees on the Public Highway approved by the City Council in February 2006 looked in some detail at the affect that the proposed Highways Maintenance and Management Private Finance Initiative would have on the legal position regarding the transfer of risk.
- 6.5.2 During the Scrutiny Review Members discussed at length the legal position regarding trees. They heard that responsibilities for accidents were being debated currently due to the case of the Hatfield rail disaster. They realised that as the first Highways PFI contracting authority of a major size (Portsmouth is the only other authority) Birmingham could be in the position of testing out the law should an accident happen.
- 6.5.3 The following advice was subsequently given by the Chief Legal Officer:
- 6.5.4 "The Output Specification in the PFI contract sets out in Performance Standard PS3B obligations in respect of Tree Management and Maintenance for trees on the Council's highway network (Project Network). The PS3B obligations should include;
- Reducing the potential risk as low as reasonably practicable that trees on the Project Network do not cause a danger or obstruct the Project Network and/or any land and/or property in the possession of a third party
  - Ensuring that the trees on the Project Network shall not damage any land and/or property in the possession of a third party and where any damage occurs be responsible for any costs associated with any such damage;
  - Inspecting every tree on the Project Network for evidence of disease and decay.
  - Not removing a tree from the Project Network without the prior written consent of the Authority unless such removal is a Highway Emergency (a highway emergency includes any unplanned occurrences which may affect safety on the Project Network including trees which have blown over, fallen over or are in imminent danger of the same).

The consequence of a failure by the PFI contractor to comply with the PS3B obligations is that the PFI contractor has to indemnify the Council from all liability for:-

- death and personal injury;
- loss or damage to property;
- breach of statutory duty;
- actions, claims, demands, costs, charges and expenses;
- ("the Indemnified Losses") which may arise as a result.

This means that the PFI contractor has a contractual responsibility for the performing the PS3 obligations. If the contractor breaches these obligations the Council has an effective remedy against any civil claim it may face as a consequence.

The Council cannot contract out of any criminal liability which it may have.

There will not be a transfer of any highways infrastructure assets to the PFI contractor. Therefore street lighting and highway trees remain in the Council's ownership. Ultimately legal responsibility for the trees remains with the Council as highway authority. The PFI contractor is still liable to indemnify the Council in respect of claims arising out of a breach of the PS3B obligations as referred to above.

There is an exception to the indemnity principle where the PFI contractor properly acts on the instructions of the Council. In those circumstances the PFI contractor is not responsible for the Indemnified Losses. If therefore the PFI contractor requests permission to remove a tree on a highway because the PFI contractor considers it is at risk of falling as it is diseased, but the Council refuses consent, then if the tree falls and causes damage and is found to have been diseased then the PFI contractor is not at fault and does not have to indemnify the Council."

- 6.5.5 During the Scrutiny Review, Members were concerned about the possibility that the PFI Contractor may want to minimise risk to a very low level by requesting the removal of any tree that may have a potential problem. This could result in widespread requests to remove trees adjacent, or near to the highway on public safety grounds. Pressure could be considerable to replace mature trees with small ornamental trees. This would have a damaging effect on wildlife in the city and also change the visual appearance of many streets. Discussions referred to the widespread clearance of trees near railway lines following changes to the way the railway network is managed and concerns to minimise risk.
- 6.5.6 **STSC 9 – Undertake a review of all conditions of contract at pre-procurement stage in respect of risk and liabilities.**

**The City Council will ensure that any contract that involves services for the maintenance and management of trees clearly sets out the legal position regarding the liabilities for risk.**

**Objectives**

To ensure that the City Council's obligations in respect of the maintenance and management of its tree stock are adequately and continuously discharged.

**Highways Specific Commitments**

STSC 9 Undertake a review of all conditions of contract at pre-procurement stage in respect of risk and liabilities.

# 7 Involving Local People

## 7.1 The role of Members and Constituency Committees

- 7.1.1 Following localisation and the increased involvement of Members in their local areas through the Constituency Committees, the Constituency Members are well placed to respond to the views of local people regarding street trees.
- 7.1.2 Constituency Committees are involved in the approval of the Tree Management Programme for their Constituency.
- 7.1.3 Constituency Members have the support of arboricultural advice from Tree Officers employed by the City Council. A Tree Officer is located within the Constituency Park Managers team and a good relationship can be developed with other local officers. Constituency teams are actively involved in working with residents on all local tree matters.

## 7.2 Constituency planting schemes involving residents

- 7.2.1 In some Constituencies of the City, residents have been very keen to plant more street trees and local tree planting projects have been developed – funded from Constituency resources. New techniques have been piloted, such as the use of ‘service root guards’ to enable trees to be planted in footways without damaging utility pipes and cables.
- 7.2.2 **C20 - Seek new ways of planting more trees in neighbourhoods with the involvement of local residents.**



Constituency funded tree planting in Selly Oak in January 2006

- 7.2.3 Such projects are very important in involving local people in improving their street scene. However these schemes are dependent on external funding.



## 7.3 Dealing with Tree Enquiries

- 7.3.1 All public enquiries by telephone, fax, e-mail and letter, are received by a small unit of staff located within the Parks & Nature Conservation Enquiry Team who provide an administration service for all requests for advice and information on horticultural and tree enquiries. Relevant queries about Council owned trees are recorded and passed on to the Tree Officers for assessment. All relevant enquiries are investigated by the Tree Officers with a full visual inspection of the tree. The person making the enquiry is notified of the result of the inspection with details of any proposed action arising from the inspection. All other enquiries are passed on as appropriate.
- 7.3.2 The volume of calls received by the unit is in the region of 30,000 to 35,000 calls per annum of which about 75% are tree related enquiries. The lines are often busy and there are occasions when enquirers are not able to speak directly to a member of staff. A message box is available for callers to leave information at any time of the day or night. These are collected the following day, recorded and passed to a tree officer if appropriate.
- 7.3.3 Out of office hours in the event of an emergency the message directs callers to the telephone number for the Duty Engineer at Lancaster Circus. The Council provides an emergency service, 24 hours per day, 365 days of the year, to deal with dangerous trees. This provides a call out team of tree surgeons who deal with dangerous or fallen trees on the highway, or private property where they are a threat to life and/or property.
- 7.3.4 Councillors' enquiries are logged on a centralised enquiry system managed by the Parks and Nature Conservation Enquiry Team. These are passed to the appropriate Tree Officer for a time limited response.
- 7.3.5 There is concern that the enquiry service is under-resourced bearing in mind the number and complexity of phone calls from the public and Members regarding trees. It is considered important to ensure that all tree enquiries are dealt with efficiently because of the essential requirement to minimise risk to the public from old or damaged trees. The Customer First Business Transformation Programme provides an opportunity to review the current arrangements and identify potential improvements.
- 7.3.6 **C21 Continually investigate ways of improving the current tree enquiry service including any possible interim improvements and incorporation into the Customer First Business Transformation Programme**

## 7.4 Improve access to information

- 7.4.1 The Government has published guidance on "e" standards for local authority Tree Services to improve delivery. This recommends providing information on line to reduce the number of telephone and e mail queries and reduce the need for qualified officers to give advice.
- 7.4.2 At present information on trees, the Tree Service and pruning programmes is available to the general public on the City Council website. Other information that would be of benefit includes guidance on arboricultural best practice, an explanation of the City Council's tree management policies and strategy and the annual planned maintenance programme for trees.
- 7.4.3 **STSC 9 Publish the Annual Street Tree Pruning Programmes setting out tree maintenance priorities for the year.**
- 7.4.4 **C22 Explore with partners the feasibility of adopting and using the National e-Service Delivery Standards (NeSDS) programme, which is developing "e" standards for Local Authority Tree Services**
- 7.4.5 For those without internet access it will be appropriate to provide some information in paper format. In particular a leaflet explaining the City's policies will be produced to accompany responses to resident and councillor enquiries.
- 7.4.6 **C23 Publish guidelines for arboriculture best practice.**

## 7.5 Street Tree Removal

- 7.5.1 As part of the evidence gathering for the Scrutiny Review on Trees in the Public Highway in 2006 Members accepted that there were many legitimate reasons for removing street trees, however they understood the concerns of local residents and the Civic Society that these trees appear not to be replaced. Members expressed concerns that that they were often approached by worried constituents if there were rumours of a street tree to be felled, or if one had been felled, with an expectation that they would know the reasons for its removal and when it would be replaced.

7.5.2 Following the approval of the Scrutiny Review at Council in February 2006, the process is now:

- Prior to the removal of any street tree Ward Councillors are notified by letter or e-mail – however this requirement is waived should the tree need to be felled for emergency safety reasons. In this case local Members could be informed retrospectively of the reason for the emergency felling of the tree.

**STSC 10 No street trees will be removed (except on safety grounds) without prior notification to ward members and in the case of highway projects, without ward committee approval.**

- a register of removed street trees (together with the reason for removal) is recorded on the Confirm Arbor Database. This identifies when and where a replacement tree has been, or is proposed to be planted.

**STSC 12 The register of all street tree removals will be made available to the public**

**Policy Statement 7. The City Council will endeavour to involve local communities, Ward Councillors and Constituency Committees in decisions related to management of trees.**

**Objectives**

To improve the flow of information between the City Council and local communities to enable more effective and appropriate management of trees.

To increase awareness and understanding of tree matters and the need for tree management in line with good arboricultural practice

**Commitments**

C20 Seek new ways of planting more trees in neighbourhoods with the involvement of local residents.

C21 Continually investigate ways of improving the current tree enquiry service including any possible interim improvements and incorporation into the Customer First Business Transformation Programme

C22 To Explore with partners the feasibility of adopting and using the National e-Service Delivery Standards (NeSDS) programme, which is developing “e” standards for Local Authority Tree Services

C23 Publish guidelines for arboriculture best practice.

**Highways Specific Commitments:**

STSC 9 Publish the Annual Street Tree Pruning Programmes setting out tree maintenance priorities for the year.

STSC 10 No street tree will be removed (except on safety grounds) without prior notification to ward members and in the case of programmed highway projects, without ward committee approval

STSC 11 Upon any decision to remove any street tree a notice stating the reason for the removal will be posted on the tree except in the case of an emergency

STSC 12 The register of all street tree removals will be made available to the public

## 8 Appendices:

1. Tree Policy Statement - 'The Maintenance and Management of the City's Trees', January 2002
2. Overview and Scrutiny Review of Street Trees- Recommendations 2006
3. National Joint Utilities Group 'Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees' Volume 4 Issue 2 October 2007
4. Well-maintained Highways – Code of Practice for Highway Maintenance Management 2007
5. Management of the risk from falling trees – Health & Safety Guidance Notes. SIM 01/2007/05
6. BS 8516 Recommendations for tree safety inspection (draft only)

## **Birmingham City Council Street Services**

### **Footway Crossings In Relation to Trees**

March 2011.



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“197 It shall be the duty of the local planning authority—

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

**Town and Country Planning Act 1990: section 197(a)**

“the task of balancing parking supply and demand can rarely be carried out without the need to reconcile conflicting objectives and interest”

**(Institution of Highways and Transportation 2005: 64).**

## **1. Footway Crossings**

**1.1** With around 1400 footway crossings being installed each year in Birmingham, the impacts are substantial. Considered in terms of an individual car park, 1400 spaces is similar in scale to a large sized commercial car park. The combined parking allocation for the Bullring numbers 2200 spaces between the Moor Street and Park Street sites.

**1.2** Around 80 trees are removed every year under current practices to enable footway crossings. Many may be mature specimens in historic avenues, others may be poor specimens in isolation. In addition to removal, many trees are insensitively managed during footway crossing construction with implications for future health and stability. The process at present is ill defined, leaving decisions on tree management inconsistent and unclear to crossing applicants and members alike.

**1.3** Consideration of tree management policies in isolation would be naive. To zealously defend trees without having a general understanding of parking issues would be ineffective. This document, therefore, seeks to find a balanced progressive process. Both highway development and tree preservation have emanated from the planning system. Those principles will therefore, be most relevant here.

## **2. Legal Position:**

**2.1** Section 184(11) of Highways Act 1980 allows a resident a resident to apply for footway crossing on highway maintainable at the public expense. Under that section the authority will:

“approve the request with or without modification, or may propose alternative works or reject the request; and in determining how to exercise their powers under this subsection an authority shall have regard to the matters mentioned in subsection (5) above”

Subsection 5 of section 184 states:

“(5) In determining whether to exercise their powers under subsection (1) or (3) above, a highway authority shall have regard to the need to prevent damage to a footway or verge, and in determining the works to be specified in a notice under subsection 1(a) or (3) an authority shall have regard to that and the following other matters, namely—

(a) the need to ensure, so far as practicable, safe access to and egress from premises; and

(b) the need to facilitate, so far as practicable, the passage of vehicular traffic in highways.”

The exact meaning of subsection 5 was a point for debate in the high court. In particular, whether these two bases on which the act provides for is rigidly exclusive or simply indicative; In *R. v Royal Borough of Kensington and Chelsea*, ex parte *Eminian* 2000 ruled:

“I do not consider that the language of subsections (5) and (11) is such that they [the defendants] were prohibited from having regard to matters other than those specified in subsection (5)”.

Presumably the ruling intended to stop short of restricting the considerations simply to those enacted and by doing so, allow relevant authorities more control in managing their activities (in this case the operation of a controlled parking zone). If then, the authority’s considerations are unbounded, what are the rights of the applicant?

The vestry of *St. Mary, Newington v Jacobs* (1871) ruled that:

“The owner, who dedicates to public use as a highway a portion of his land, parts with no other right than a right of passage to the public over the land so dedicated, and may exercise all other rights of ownership, not inconsistent therewith”.

That right, in this case being reasonable access “for the purpose of the reasonable enjoyment of the adjoining premises” (*ibid*). It is worth considering that the modern planning system and provisions of land use planning were not yet in place. That such an old case has been succeeded in part by statute as mentioned above may also reduce what is inferred to be a common law right of access.

**2.2** In conclusion it would seem that refusal of a footway crossing is permissible for any number of reasons but this should be weighed against a common law right of access as laid out in *Newington*. Such refusal might need significant justification. In terms of trees, arguably, those trees or avenues deemed particularly important to the street scene may be significant justification.

### **3. National Planning Guidance for Parking.**

**3.1** Planning Policy Guidance 13 (PPG13) published in January 2011 quite simply lays out its objectives as:

- “[a]. Promote more sustainable transport choices for both people and for moving freight
- [b]. Promote accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling and
- [c]. Reduce the need to travel, especially by car”. PPG13 (2011: 6)

**3.2** Part of achieving these objectives clearly involves parking management. It is not necessary to go into the detail but suffice it to say that curtailment of car ownership is a primary objective of Government reducing congestion and meeting climate change targets.

**3.3** Managing parking demand is a major factor in controlling car ownership but local policies are to be applied locally to meet a number of competing objectives. Most importantly car parking is major factor in regeneration in terms of access to facilities and businesses.

**3.4** While car usage has its problems, policy acknowledges that in certain instances such as disabled users or rural residents, car ownership may be essential. The take home message is that parking is essential but must be carefully managed.

### **4. Birmingham City Parking Guidance**

**4.1** A large number of documents exist which are relevant to parking these include:

- Birmingham Parking Policy 2010
- Birmingham Unitary Development Plan 2005 as amended
- West Midlands Local Transport Plan (2006)
- Overview and Scrutiny Review of Policies for Residential Parking (2003)
- Places for Living (2001)

Of all these documents similar themes are echoed throughout, namely congestion, access and mobility, CO<sub>2</sub> emissions and other pollutants and street scene impacts.

**4.2.** Much of this is distilled into Birmingham’s Car Parking Guidelines: Draft Supplementary Planning Guidance (2010). It would therefore seem appropriate (and consistent) that this document is viewed, along side Birmingham Tree Policy, as primary guidance if not in detail, then in principle. The key points to derive from this are:



- The parking maxima per dwelling are set at 0.75, 1.5 and 2 cars for city centre (area 1), outer city centre (area 2) and rest of the city (area 3) respectively.
- Area 2 standards i.e. 1.5 cars per dwelling are set near rail/metro stations.

**4.3** In addition to these area zonings further consideration is given on the following grounds:

- The size of the dwellings proposed.
- The proximity of facilities such as schools, shops or employment areas.
- The availability of on-street and public car parking in the area.
- The width of the highway, and its capacity for safe on-street parking in front of dwellings.
- The likelihood that any existing on-street parking problems will be made worse.

These criteria would be coterminous with the assessments made for suitability of footway crossing i.e. controlling parking provision, and as such can serve as a guide for the decision process being developed.

## **5. Tree Policy and Nature Conservation.**

**5.1** National guidance is largely enshrined in the planning process and everyday guidance is to be found in government circulars and texts. As seen above, section 197 of the Town and Country Planning Act 1990 makes it a duty of a local planning authority to consider tree preservation and planting.

**5.2** Section 198 provides for tree preservation orders, however it is rarely deemed necessary that the authority will protect its own trees if they are under the management of qualified, competent staff. As such there is little legal protection and the requirements for documents such as this become more important.

**5.3** PPG 13 Annex C states:

“C1. Care must be taken to avoid or minimise the environmental impact of any new transport infrastructure projects, or improvements to existing infrastructure; this includes the impacts which may be caused during construction (including the need to transport materials to and from the site, and dispose of spoil). Wherever possible, appropriate measures should be implemented to mitigate the impacts of transport infrastructure. Further guidance is given in the Transport white paper (CM 3950) and Minerals and Planning Policy Guidance Notes.” (2011).

**5.4** The planning system is guided largely by applications made incorporating criteria from ‘BS5837:2005 Trees in Relation to Construction’ (BSI 2005). This guidance not

only lays out what criteria are to be valued but also the standards required during construction. Themes have been incorporated into the Tree/Crossing Assessment (TCA) process (see below).

**5.5** The idea of a 'good tree' is in many ways abstract, however various evaluation methods exist which attempt to give a relative evaluation such as Tree Evaluation Method for Preservation Orders (TEMPO) (Forbes-Laird 2009). Financial valuation methods of trees have also been used, particularly as evidence for fines and compensation in court. The Heliwell System (Heliwell, 2008) has been used for many years but Capital Asset Valuation of Amenity Trees (CAVAT) (Nielen 2005) is also useful. The direct use of these systems has informed the TCA process.

**5.6** The National Joint Utilities council provide guidance under NJUG volume 4 (2007) for carrying out trench and construction near trees for statutory undertakers, however this is also applied to highway surfacing works and street lighting.

## **6. Birmingham Tree Policies**

**6.1** Birmingham Unitary Development Plan (UDP) exists as a template and policy for development in the city. As part of chapter 3 'Environment' policies are put in place to safeguard the existing environment through preservation and protection. With reference to trees:

"3.14D Any existing mature trees should be retained where possible, and the planting of new trees will be required where appropriate in accordance with the policy set out in paragraph 3.16A below." (Birmingham UDP, Chapter 3 – Environment: 25)

3.16A being:

"3.16A The City Council will continue to promote tree management plans where appropriate in order to ensure the long term amenity of an area. These will include the management of street trees which are coming under increasing threat from redevelopment or from the renewal or replacement of underground public utilities." (Birmingham UDP, Chapter 3 – Environment: 29)

**6.2** Birmingham Tree policy succinctly outlines its purpose in its introduction:

"The aims of this tree policy are:

- To promote awareness of the importance and value of trees
- To protect and safeguard trees
- To provide an increasing and varied tree population within the City that is responsive to specific locations and climate change

- To ensure the safe, efficient and sustainable management of all trees owned and maintained by Birmingham City Council
- To clarify legal responsibilities and liabilities for trees
- To develop the involvement of local communities in tree matters” (2009:2)

Clearly this is *the* Birmingham City Council policy on trees and is ratified by cabinet. The difficulty as has been reviewed is what is the more important policy or practice?

## 7. Conclusion

The general statements cited above are somewhat iterative to broadly outline policy views. Essentially, the competition for space is always going to be the deciding parameter in an urban environment, particularly where trees are expansive. Mature trees confer most benefit and more so where they are in a location frequently used and viewed by the public – high use areas requiring space for growth. This is the basis of amenity assessment. However this is also the case for crossings – high use areas requiring space for access and parking.

It is therefore down to the argument for what is more important in a given scenario? tree growth or vehicle access? TEMPO is a tool which can be used to decide just how important a tree is to the landscape. The guidance in Car Parking Guidelines: Draft Supplementary Planning Guidance (2010) can provide some consistent assessment for parking requirements.

By employing both guides with a balanced scoring system the proposed system will hopefully provide consistency, fairness and be a tool to retain those trees of value to the city or allow access where it is required. The TCA process, a derived method from both TEMPO and Parking Guidelines is shown in table 1 and explained in the following section.

## **8. Proposed Process.**

### **8.1 First principles and Assessment**

1. Tree Preservation to sustain good trees and avenues, as stipulated by TCA will be the first consideration.
2. Resident right to access – as outlined in section 2 above the resident's right to access carries some legal weight. This will be second consideration.
3. Parking provision and its effects on the street. This will be third consideration.
4. Other considerations including access to public transport based on 4.2 and 4.3 above will also be considered.
5. No tree will be removed or severely pruned for in-out access or crossing extensions.
6. The criteria will not apply retrospectively such that where a tree is sited within 1m of a crossing this alone will not be justification for removal.
7. Any historical practice will not provide a justification for removal or work contrary to this document.
8. The Scoring system outlined in Table 1 will in this version be a start point. As more assessments are carried out the scoring may be altered to achieve a more desirable result.

For detailed explanation of the criteria in table 1 please see appendix 1. The assessment is based on a score with maximum of 5 points for each criteria. The maximum for the tree is 20 while the maximum for the road is 18. This is based on the fact that a tree scoring 19 or twenty is likely to be of exceptional quality and value.

The 2 total scores are tabulated and a compared. Other factors may come into play but those used, seek to address the issues in a systematic and objective way.

## Footway Crossings in Relation to Trees

<b>Site:</b>					<b>Tree Species</b>	<b>Height</b>	<b>Spread</b>	<b>DBH</b>	<b>Min Clearance</b>
<b>Conservation Area (Y/N):</b>									
<b>App No</b>									
<b>Tree Position</b>									
<b>Tree Assessment</b>					<b>Road and User Assessment</b>				
<b>Amenity Assessment</b>					<b>Congestion Score</b>				
Prime Health	5				Major parking shortage	5			
Good Health	4				Parking shortage	4			
Fair Health	3				Parking Limit	3			
Poor health	2				Easy parking	2			
Dead	1				Free parking	1			
<b>Retention</b>					<b>Road Score</b>				
100+	5				less than 5.7m wide	5			
40-99	4				5.8m to 7.6m wide	4			
20-40	3				7.7 to 9.5m wide	3			
10-20	2				greater than 9.5m	1			
<10 newly or young tree	1								
<b>Public Visibility</b>					<b>Other Factors</b>				
Major strategic (a roads)	5				Registered Disabled	5			
Distributor (b roads)	4				Whole Verge Parking	4			
Residential main roads	3				Obstructions	3			
Residential access roads	2				Partial verge parking	2			
Cul de sacs	1				No damage	1			
<b>Avenue Score</b>					<b>Parking Policy Score</b>				
Contiguous wide	5				Zone 3	3			
Contiguous close	4				zone 2	2			
Contiguous remnants	3				Zone 1	1			
intermittant	2								
solitary	1								
<b>Total Tree Score</b>					<b>Total Road Score</b>				

Table 1. Tree- Crossing Assessment Form. – See appendix 1 for notes.

### 8.2 Removal or Retention?

Where the total tree score is higher than the total road score then the tree will probably remain under all circumstances. Where the road score is higher than the tree score then the tree will be allowed to be removed. The criteria for assessment are located in appendix 1. In instances where the score does not appear to reasonably reflect what is observed the result should be reviewed. If it still does not reflect the situation then the TCA will only be used as a guide to the assessor.

### 8.3 Crossing type and Installation.

In the event that a tree is to be retained the crossing will need to be sited in a position as sensitive to the tree roots as possible. In order to achieve some common standards the designs are outlined and the principles are defined below.

### 8.4 Tolerance

Where a crossing is set too close to the tree significant damage to the tree during construction and during use is likely. 'Reaction wood' can develop as a response to traffic which may later damage the crossing. Where younger trees are near a crossing, the stem expansion may cause uplift to the crossing and wounding on the tree. Setting the crossing in the place least likely to affect the tree is essential. The absolute minimum distance for installation is set in line with NJUG volume 4.

- a) Target minimum distance from tree will be '4 stem diameters' (4XD zone) or 0.5 m from visible ground disturbance attributed to that tree.
- b) Absolute minimum distance, in any case, will be 1m from tree stem

### 8.5 Size and Design

- a) Standard 2.75m width is the usual size crossing – this will be allowed where 4XD (2 metre minimum) is possible. Total necessary frontage. = 4.75m
- b) Minimum 2.45m is the absolute minimum – this will be required where the encroachment is within the 4XD zone (1 metre minimum). Total necessary frontage = 3.45m.
- c) Dipper kerb designs require the apron of the crossing to be splayed. This will require extra width which in turn will encroach on larger tree roots. The dipper also re-levels the whole apron as oppose to the front 0.8m. Unless there is ample space for the crossing a radius kerb or a half length dipped kerb will be required.

### 8.6 Choice hierarchy in relation to trees:

As a result of 8.5 the following hierarchy of designs will normally be considered:

1. Extension to existing or neighbours crossing – minimal tree encroachment
2. 2.75 standard radius (where allowed as per 8.5)
3. 2.75 Dipper (as 8.5)
4. 2.45 Radius (as per 8.5)
5. 2.45 Dipper (as per 8.5)
6. 2.45 Minimum (as per 8.5)
7. larger than standard – only where trees or tree space are not an issue.

## 9. Tree Works and Standard Responses

### 9.1 Root Prunes

Supervised Root prunes are required both to ensure trees health and longevity and also to ensure that trees are left in a safe and stable condition as far as is reasonably practicable. A tree that has its roots cut indiscriminately may fail leading to injury, death and/or litigation. Therefore Birmingham City Council must discharge this duty of care under expert supervision. The applicant is responsible for funding this process.

A supervised root prune will be required where the tree is greater than 10cm in diameter (assuming rule 8.2.1b) and ten times the trees diameter e.g. 25cm diameter = crossing within 2.5m, 70cm diameter = crossing within 7m.

If the assessment determines that a root prune is unlikely and as such the crossing is refused the resident may pay for a root inspection trench to be dug in the grass verge (where present). If no roots are found the resident will pay for the remaining hard surfacing to be 'root pruned'.

### 9.2 Tree Removal and Replacement

Where a tree is deemed an unnecessary obstruction as a result of the TCA but not falling into a condition required for removal under the PFI contract, the resident will be required to fund the costs for both removal and one replacement. In line with city tree policy the street services division will be required to purchase an additional tree for replanting to fulfill the '2 for 1' policy.

### 9.3 Proposed Standard Responses

#### 9.3.1 Root Prune. (TCA tree score greater than road score)

"In processing your application we have assessed the tree near the proposed crossing. The assessment has deemed the tree worthy of retention. Included in your quote is the cost of professional arboricultural supervision in order to complete the



crossing with minimal impact to the tree and to leave the tree in a safe condition. As part of this supervision, roots will be cut/pruned where necessary.

Due to the value placed on the tree, if the root prune is not possible we regret we will not be able to complete the crossing. All monies excluding the application fee will be refunded".

### **9.3.2 Root prune (TCA tree score less road score or less than 12)**

"In processing your application we have assessed the tree near the proposed crossing. The assessment has deemed the tree worthy of retention. Due to the potential for large roots in the vicinity of the crossing tree retention may not be possible. We have therefore provided a quote on the basis of tree removal and replacement.

We will investigate the ground first to see if there are significant roots present. If roots are not present *or* of a size that we can cut then we will retain the tree and refund the difference as shown in the quote below. Please provide payment on the basis of removal and replacement in the first instance.

### **9.3.3 Refusal (TCA tree score greater than road score and greater than 12 – cannot root prune)**

"In processing your application we have assessed the tree near the proposed crossing. The assessment has deemed the tree worthy of retention and we regret to inform you that your application has been refused.

In carrying out the tree assessment we have followed industry standard guidelines and applied these to our decision process. We have also considered a number of layouts to allow construction but unfortunately, none will allow tree retention. If you wish to discuss the matter further please contact me on the attached correspondence below."

### **9.3.4 Acceptance removal (TCA tree score less than road score or less than 12 – cannot root prune)**

"Further to your dropped kerb application I can confirm that it has been accepted with the provision that the tree outside your property will be required to be removed and replaced as part of the quote provided.

In carrying out the tree assessment we have followed industry standard guidelines and applied these to our decision process. We have also considered a number of layouts to allow construction but unfortunately, none will allow tree retention.

Please see below for details."

## Appendix 1 Tree Crossing Evaluation Form Notes

### Tree Assessment

**Amenity Assessment** – An overall valuation of tree condition

**Prime Health** – At least early mature trees that are notable because of the representative form for the species showing no or very minor signs of poor health. Little or no detrimental pruning has taken place. Old trees or veteran trees that are suitable for the location or of such importance that location is a secondary consideration.

**Good Health** – Trees that show no or little signs of poor health that are of reasonable form for the species and have had reasonable pruning work carried out. Trees that have re-grown from historic pruning in a healthy manner and are desirable in the current location.

**Fair Health** – Trees that show signs of notable impaired vigour and/or disease or decay that is not a structural concern. Trees that have been poorly pruned and present reasonable health but poor form. Trees that are beginning to outgrow their location where pruning is not a medium term viable option. Evidence of localised dieback, deadwood or large wounds.

**Poor Health** – Trees that are of significantly reduced vigour with serious structural defects present such as large decay cavities, extensive deadwood, extensive included bark, fruiting bodies from known parasitic fungi. Trees causing obvious damage to third party property that is not rectifiable without removing the tree.

**Dead or unsafe** – Trees showing little or no signs of life. Trees with major safety issues requiring urgent or imminent removal.

### Note 1: Trees classed as poor or dead will be removed by Amey.

**Retention Assessment** – How long will the tree survive in its present location?

**100+ years** – Trees that are older than ten years that are in areas likely to confer maximum growth potential allowing 100+ years of growth. Early mature trees in highway open spaces for example.

**40 - 99 years** – Trees that are older than ten years that are in areas likely to confer maximum growth potential allowing 40-99 years of growth. Mature trees in Highway open spaces or grass verges for example. Early mature trees in smaller verges and footways

**20-39 years** - Trees that are older than ten years that are in areas likely to confer maximum growth potential of 20-39 years of growth. Mature Highway trees in smaller grass verges or footways for example.

**10-19 Years** - Trees that are older than ten years that are in areas likely to confer maximum growth potential allowing 10-19 years of growth. Over mature Trees in the footway. Poor to fair health trees.

**<10 years or young trees**- Trees that are not older than 10 years or dead or poor health trees.

**Tree Assessment Cont...**

**Note 2: Trees with less than 10 years or trees younger than 10 years will not prevent crossing approval.**

**Avenue Assessment** – How established is the avenue in the street and what are the likely consequences for the current removal. What are the implications for the rest of the trees and therefore the avenue.

**Contiguous Avenue Wide Spacing** – Where greater than 80% of the avenue remains in uniform repetition. Where the wide spacing would mean that 1 tree removal would open the highway up instantly and excessively. Where the spacing allows for other residents to apply without affecting the trees. **ALSO Solitary trees that are of important landscape value in their own right AND trees in Conservation Areas.**

**Contiguous Avenue Narrow Spacing** – Where greater than 80% of the avenue remains in uniform repetition. Where the narrow spacing would mitigate impact of 1 tree removal however the implications for removal would slowly erode the avenue value overall.

**Contiguous Remnants** – Where sections of a contiguous avenue remain and more than 30% of trees have been removed. The avenue has lost its character but it would be desirable to retain the remaining trees.

**Intermittent** – No real avenue is present. Trees are of varied size and species. Some parts of an avenue may remain but not to the point of any defined structure.

**Solitary** - Individual Trees that are not part of any avenue and that confer no real benefit in their own right.

**Note 3 Solitary low value trees will not prevent crossing approval**

**Public Visibility Assessment** – How visible are the trees to the general public as oppose to the local residents?

**Major Strategic** – A roads found within the city such as the A38 or A4040. Areas near major shopping centres, village greens – community focal points.

**Distributor roads** – Roads that arise or end at an A road or roads with near continuous or regular traffic where use is mixed. Roads that link residential roads together.

**Residential Main roads** – Roads that are primarily residential in nature that have regular but discontinuous traffic. Roads that link residential access roads together.

**Residential Access Road** – Roads that are through roads but serve in ordinary circumstances as access to property as oppose to thoroughfares for local traffic.

**Cul-de-sacs** – Dead end roads whose sole purpose is access to residents of that road only.

### Road and User Assessment

**Congestion Score** – how is the parking situation affecting the residents and road users.

**Major Parking Shortage**- Cars double parked or illegally parked due to lack of alternative parking.

**Parking Shortage** – most available spaces are full with no immediately visible locations. Extensive parking restrictions within the area through traffic regulation orders.

**Parking Limit** – Parking is available but shortages are likely to occur from time to time.

**Easy Parking** – No real restriction on parking within sight of residents property.

**Free Parking** – resident can more often than not park directly outside their property.

**Road Assessment** - Road width calculated on the width of a large family car (ford mondeo) at 1.9m. Multiples to take account of passing space or around 60cm+.

**Less than 5.7m** – Road would only allow three cars width such that multiple cars parked on the road would significantly impede two-way traffic.

**5.8 to 7.6m** - Road would only allow up to four cars width such that multiple cars parked on both sides of the road would impede two-way traffic.

**7.7 to 9.5m** - Road would allow 5 cars width such that multiple cars parked on both sides of the road would allow two-way traffic.

**Greater than 9.5m** – Road would allow more than 5 cars width such that multiple cars parked on the road would not impede two-way traffic.

**Other Factors** – Other considerations which should be balanced against tree retention.

**Registered Disabled** – Resident is a blue badge holder and as such needs direct access however if on-street parking is available, a disabled bay may be more appropriate.

**Whole Verge Parking** – Resident parking car on grass verges or crossing verges causing significant damage. **ONLY to be used where tree scores less than 12.**

**Obstructions** – Residents parking cars creating footpath obstructions or parking on corners etc.

**Partial Verge Parking** – Residents parking partly on the carriageway and partly on the footway particularly where damage to grass verge is present.

**No Damage**- No transgressions are evident at the time of assessment.

**Road and User Assessment Cont..**

**Parking Policy Score** - Based on planning guidance the assessment factors in planning policy as follows (see section 4.2).

**Zone 3** - No immediate access to amenities via alternative means – not within easy walk of shopping centre or train station.

**Zone 2** - Access to amenities via alternative means – within easy walk of shopping centre or train station.

**Zone 1** –City centre – any area within the inner ring road (A4050).

**Note 4. Trees in the city centre or in local shopping areas will not generally be removed unless in poor condition.**

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West Midlands Local Transport Plan (2006) at:  
[http://www.westmidlandsltp.gov.uk/2006/section\\_40.html](http://www.westmidlandsltp.gov.uk/2006/section_40.html)

### **Legal References**

The vestry of St. Mary, Newington v Jacobs (1871)

Highways Act 1980

Town and Country Planning Act 1990

R. v Royal Borough of Kensington and Chelsea, ex parte Eminian (2000)



## Introduction

CAVAT (Capital Asset Value for Amenity Trees) provides a basis for managing trees in the UK as public assets rather than liabilities. It is designed not only to be a strategic tool and aid to decision-making in relation to the tree stock as a whole, but also to be applicable to individual cases, where the value of a single tree needs to be expressed in monetary terms.

It is intended particularly for councils and other Public Authorities and primarily for publicly owned trees. However, it may be used by other public bodies, including the Courts, private institutions and individuals. It complements other tools of arboricultural analysis, such as single tree hazard assessment systems. So far as possible it draws upon objective evidence and published data, but it also relies on expert arboricultural knowledge and in some cases assessments that are specific to CAVAT. It can therefore only be used by arboriculturists who have received relevant training, and who have the relevant skills and experience.

It is established in UK law, in the Town and Country Planning Act 1990 Section 198, that trees have value as a public amenity and therefore local planning authorities are given a duty to protect trees in the public interest. The legislation itself does not specify how amenity is to be assessed, leaving it open for the value of trees to be expressed in the most appropriate way for the intended purpose, and not necessarily in monetary terms. Because CAVAT is specifically designed as an asset management tool for trees that are publicly owned, or of public importance, it does express value in monetary terms, and in a way that is directly related to the quantum of public benefits that each particular tree provides. Applied to the tree stock as a whole it enables it to be managed as if it were a financial asset of the community. Applied to single trees it gives a value that is meaningful in itself but allows a comparison to be made with the value of other public trees.

## Notes

### **Note 1: CAVAT, Lifetime Benefit and the Trunk Formula Method**

CAVAT has been designed primarily as an asset management tool. However, the full version is expressly designed for cases where the value of an individual tree needs to be expressed. The premise of CAVAT is that the widely accepted approach of depreciated replacement cost is used as the basis for a calculation of value since it is suitably robust, practicable and useful for these purposes.

The basis of the method is to calculate the value of a tree by extrapolation from the cost of a newly planted standard tree, using the ratio between their respective trunk areas as the critical measurement. This approach is also used in the Council of Tree and Landscape Appraisers (CTLA) "trunk formula method", an appraisal method widely used in the U.S.A. However the CAVAT methods are designed to give the value of trees as public assets in the UK in comparison to the CTLA method whose stated aim is to express the private value of the tree to its owner.

CAVAT allows for the contribution of the factors of location, relative contribution to amenity social value and appropriateness, and an assessment of functionality and life expectancy. Essentially, the planting cost basis is then modified by a consideration of the impact of those factors that contribute to the quantum of benefits that the public may expect to receive from it. The factors which are essentially related to "wear and tear" on the tree, including a shortened life expectancy, are dealt with in terms of depreciation. On the other hand factors based on variation from an arithmetic mean, (for example the particular benefits that flow from the characteristics of the species in question) allow for a either a potential increase or decrease in value.

Its results are broadly comparable with what research suggests both in the U.S.A. and the U.K. is a realistic estimate of the tangible lifetime benefits of trees to the community. The tangible benefits approach is reflected both in use of official population statistics to generate the CTI index rating in CAVAT and the nature of the adjustment for functionality, and also in the scale of the adjustments for accessibility and amenity factors.

# CAVAT

## SPREADSHEET TO CALCULATE VALUE OF INDIVIDUAL TREE STOCK (FULL)

© Christopher Neillan

Created by Alexandra Sleat

*Only enter data in the green boxes*

CAVAT	Quantities you measure / look up	Calculated Values
<u><b>Step 1: Basic Value</b></u> Stem Diameter Unit Value Factor Basic Value	<div>Value Bands Table</div> <div>87</div> <div>15.88</div>	<div>£94,401</div>
<u><b>Step 2: CTI Value</b></u> CTI Factor Accessibility CTI Value	<div>125%</div> <div>100%</div>	<div>£118,002</div>
<u><b>Step 3: Functional Value</b></u> Functional Value Factor Functional Value	<div>90%</div>	<div>£106,202</div>
<u><b>Step 4: Adjusted Value</b></u> Amenity Factors Appropriateness Adjusted Value	<div>2</div> <div>2</div> <div>100%</div>	<div>£106,202</div>
<u><b>Step 5: Final Value</b></u> Life Expect. Factor	<div>80+</div>	
<b>FINAL VALUE</b>		<div>£106,202</div>

**NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees**

**Volume 4**

**NJUG GUIDELINES FOR THE PLANNING, INSTALLATION AND  
MAINTENANCE OF UTILITY APPARATUS IN PROXIMITY TO  
TREES**

**PLEASE ENSURE THAT YOU READ THE LEGAL NOTICE AND DISCLAIMER  
WHICH APPEARS IN APPENDIX B OF THIS PUBLICATION**

**Issue 2: 16<sup>th</sup> November 2007**

**NJUG has a vision for street works, this vision is simply:**

- **Safety is the number one priority**
- **Damage to underground assets is avoided**
- **Utilities work together and in partnership with local authorities to minimise disruption**
- **Utilities deliver consistent high quality**
- **Utilities maximise the use of sustainable methods and materials**
- **Street Works in the U.K. are regarded as world class**

**This document forms part of that vision.**

**Mark Ostheimer  
Director, Safety and Policy**

## NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees

The following volumes constitute the NJUG Publications. They are living documents and may be amended from time to time. There is no attempt to describe any specific industry process as each utility has its own specifications and procedures. Not all the publications will necessarily be available at one time as individual volumes will be published when available.

<b>NJUG PUBLICATIONS</b>	
<i>Current</i>	<i>Previous</i>
<b>VOLUME 1</b>	
NJUG Guidelines on the Positioning and Colour Coding of Underground Utilities' Apparatus	NJUG 4 & 7
<b>VOLUME 2</b>	
NJUG Guidelines on the Positioning of Underground Utilities Apparatus for New Development Sites	NJUG 2, 5 & 6
<b>VOLUME 3</b>	
NJUG Guidelines on the Management of Third Party Cable Ducting	New
<b>VOLUME 4</b>	
NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees	NJUG 10
<b>VOLUME 5</b>	
NJUG Guidelines on Environmental Good Practice	New
<b>VOLUME 6</b>	
Legislation & Bibliography	NJUG 1

The following NJUG publications have not been reviewed and have been completely withdrawn:

NJUG 3 – Cable Locating Devices  
 NJUG 8 – Performance Guide for the Assessment of Metallic Pipe and Cable Locators  
 NJUG 9 – Recommendations for the Exchange of Records of Apparatus between Utilities  
 NJUG 11 – Proposed Data Exchange Format for Utility Map Data  
 NJUG 12 – NJUG Specification for the Digitisation of Large Scale OS Maps  
 NJUG 13 – Quality Control Procedure for Large Scale OS Maps Digitised to OS 1988  
 NJUG 15 – NJUG/Ordnance Survey Service Level Agreement (Technical) for Digital Map Products and Services

## **NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees**

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**In this document the word ‘apparatus’ is used to describe both the distribution mains and also the lateral apparatus to properties. The words ‘plant’ or ‘services’ are also used to collectively describe this and other equipment.**

## **NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees**

This volume supersedes NJUG 10 'Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees' and has been drafted by NJUG members and arboriculturists.

### **Background**

The statutory right of undertakers (utilities) to carry out works within the public highway in order to provide and maintain their apparatus dates from the mid - 19th century. There are no statutory obligations governing the position or depth at which apparatus should be laid within the highway. The following guidelines should therefore be adhered to wherever practicable.

The New Roads and Street Works Act 1991, as amended by the Transport Act 2000, the Traffic Management Act 2004, the Transport (Scotland) Act 2005 together with the Street Works (Northern Ireland) Order 1995, sets down the legislative requirements to be adopted during the installation, repair and maintenance of apparatus in roads and streets (**see Volume 6 – 'Legislation and Bibliography'**).

### **Scope**

(i) Trees (including shrubs and hedges) play an essential role in the environment and visual amenity of both rural and urban landscapes. They may take decades to grow, but can be destroyed in minutes. Wherever they are growing, whether in public footpaths, private gardens, rural verges or elsewhere, they require space for the adequate development of their root systems and to allow the branches to develop an attractive and natural shape.

(ii) Modern society expects a multiplicity of apparatus (electricity, gas, water, sewage, telecommunications and cable television) each of which requires an extensive distribution network, both above and below ground. These networks also need space, and they are frequently under tight constraints regarding their alignment.

(iii) The space available for both trees and apparatus is often very restricted, and they are frequently forced to share the available space, both above and below ground. Where they are in close proximity, there is the potential for either the tree or the apparatus to be subject to damage. To successfully co-exist precautions should be taken to minimise the risk of damage to both trees and apparatus based upon technical guidance obtained from this document and where appropriate further advice from local authority arboriculturists.



## **NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees**

(iv) Legislative mechanisms for ensuring that existing trees (including shrubs and hedges) are safeguarded already exist (see sub-section 7 – ‘Legislation’). References to legislation relate to the whole of the United Kingdom (UK) but variations between countries may occur. They seek to provide constructive advice on how to minimise damage to trees by undertakers (utilities) and to utility apparatus by trees and will be helpful to utility companies, contractors, arboriculturists, highway engineers, developers and planners. The guidelines have been prepared in collaboration between representatives of the utilities, the arboricultural and urban forestry professions and the Department for Communities and Local Government. As with all guidelines, their interpretation and application should be complimented at all times by common sense. However, expert guidance on specific instances should be sought from the appropriate utility, local authority or arboriculturist. The emphasis throughout this document is on the need for local liaison and communication.

(v) Certain trees are subject to Tree Preservation Orders (TPOs). Trees protected by a TPO must not be willfully damaged or destroyed and cannot be cut down, uprooted, topped or lopped without the local planning authority consent.

(vi) These guidelines are applicable to all apparatus (underground and overhead) and to trees in any location (public or private, rural or urban). They should be considered when new apparatus is planned to be constructed adjacent to existing trees, when new trees are to be planted adjacent to existing apparatus and where apparatus is to be maintained or repaired and trees are to be managed (e.g. pruning, removal or replacement).

(vii) Site surveys should be undertaken appropriate to the scale of the planned works. These surveys will identify the presence of trees which could impact on works. Advice should then be sought from a local authority tree officer. However, on major projects, a consultant arboriculturist may be employed to liaise with the local authority tree officer. Site surveys should be carried out according to the recommendations within BS 5837 (see sub-section 8 – ‘Other Useful Publications’).

(viii) The principles set out in these guidelines also have relevance in respect of work carried out to highways near trees (e.g. kerbing, footway reinstatement).



## **NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees**

### **1. HOW TREES ARE DAMAGED**

Trees are complex living organisms, which are susceptible to damage from a wide range of physical agents or activities. Trees do not heal, damage caused to a tree will remain for the rest of its life. Even minor damage may set up circumstances leading to serious long term decay.

Contrary to popular belief, the root system of a tree is not a mirror image of the branches, nor is there usually a 'tap root'. The majority of the root system of any tree is in the surface 600mm of soil, extending radially in any direction for distances frequently in excess of the tree's height. Excavation or other works within this area are liable to damage the roots.

#### **1.1 The Root System**

The base of a trunk typically flares out in buttresses extending into the main lateral structural roots. These rapidly subdivide into the mass of smaller roots which serve to anchor the tree into the soil and transport water and nutrients. Even at a short distance (3m) from a large mature tree, most roots will be less than 10mm in diameter, but these may extend to well beyond the branch spread of the tree. A mass of fine roots, less than 1 mm in diameter, develop off all parts of this root system. These fine roots also absorb the water and nutrients, which are essential for the growth of the tree.



## **NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees**

The main structural roots (close to the trunk) develop as the tree grows in response to the need for physical stability. Beyond these major roots growth is influenced by the availability of water, air and nutrients in the soil. Disturbance of soil provides ideal conditions for root growth. Apparatus is often cooler than the surrounding soil encouraging moisture within the soil to condense on its surface stimulating root growth close to the apparatus. For all these reasons root growth is often most prolific within the backfilled trench and in the soil around the apparatus.

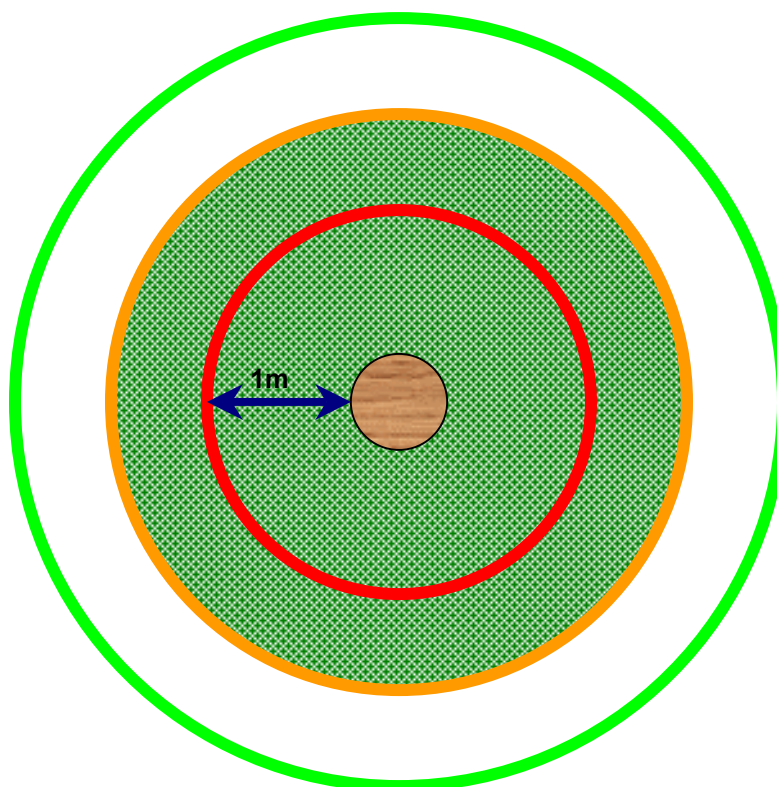
There are certain areas around trees, illustrated in Figure 1 – ‘Tree Protection Zone’, where excavation either must not be undertaken or only undertaken under strict conditions in order to avoid or minimise any damage to a tree’s root system.

For the purposes of this guideline document they are called zones;

- the Prohibited Zone (1m from the trunk)
- the Precautionary Zone (4 x the tree circumference)
- the Permitted Zone (outside of the Precautionary Zone)

## NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees

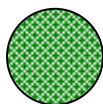
**FIGURE 1 – Tree Protection Zone**



### Key



Trunk of tree



Canopy or branch spread



**PROHIBITED ZONE – 1m from trunk.** Excavations of any kind must not be undertaken within this zone unless full consultation with the local authority Tree Officer is undertaken. Materials, plant and spoil must not be stored within this zone.



**PRECAUTIONARY ZONE – 4 x tree circumference.** Where excavations must be undertaken within this zone the use of mechanical excavation plant should be prohibited. Precautions should be undertaken to protect any exposed roots. Materials, plant and spoil should not be stored within this zone. Consult with the local authority Tree Officer if in any doubt.



**PERMITTED ZONE – outside of the precautionary zone.** Excavation works may be undertaken within this zone, however caution must be applied and the use of mechanical plant limited. Any exposed roots should be protected.

## **NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees**

### **1.2 Below Ground**

#### **1.2.1 Root systems can be damaged by;**

- the severance of a root, for example by trenching will destroy all parts of the root beyond that point. Even roots less than 10mm in diameter may be serving the fine roots over a wide area. The larger the root severed, the greater the impact on the tree.



**Typical root damage caused by excavation works**

- damage to the bark on the root. The bark protects the root from decay and is also essential for further root growth. It is loosely attached and easily damaged. If damage to the bark extends around the whole circumference the root beyond that point will be killed.
- damage to surface roots. Care must be taken when using mechanical plant. Materials and vehicles must never be stored within the Prohibited Zone and ideally should not be stored within the Precautionary Zone.



## **NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees**

- compaction of the soil. Incidental compaction may occur from storage of materials and / or the passing of heavy equipment over the roots. This can restrict or even prevent gaseous diffusion through the soil, and thereby asphyxiate the roots. The roots must have oxygen for survival, growth and effective functioning.



### **Poor site management within the Precautionary Zone**

- alterations in soil level. Lowering the level will strip out the mass of roots near the surface. Raising levels will have the same effect as soil compaction.
- the application of herbicide - frequently used to clear weed growth on operational land (e.g. substations). The wide-ranging root system of a tree may extend into the operational land and absorb herbicides, which have been applied to the ground. Herbicide absorbed in one part of the root system can kill the whole tree.

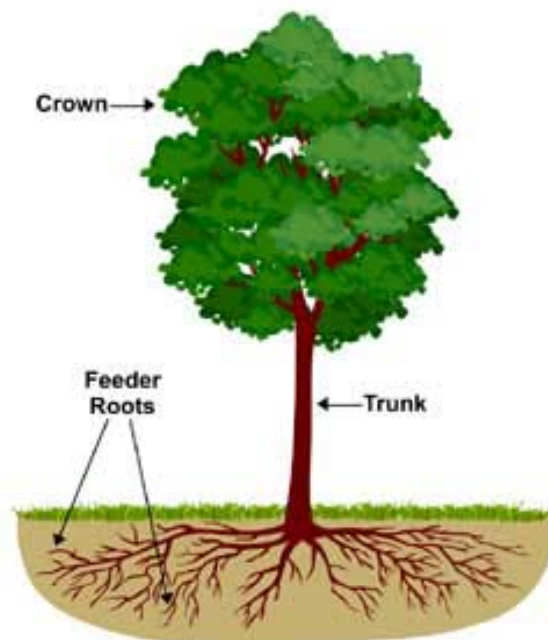
## NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees

*NOTE: The selection and application of herbicides must be undertaken by a competent person in accordance with Control of Substances Hazardous to Health (COSHH) regulations.*

- spillage of oils or other materials (e.g. diesel oil, cement, resins). Spillage can permeate into the soil and damage root systems (see sub-section 4.3 – ‘Chemical Damage to Trees’).

### 1.2.2 If roots are damaged;

- close to the trunk. The anchorage and stability of the tree may be adversely affected rendering the tree immediately hazardous.
- anywhere along their length. The distal portion including the fine roots they serve, will be destroyed. Damage to fine roots by severance of a main root, or by compaction or alteration of ground levels, will prevent fine roots from absorbing the water and nutrients which are essential for the well-being, growth and anchorage of the tree.
- by successive excavations. Multi-utility excavations close to a tree can cumulatively damage a root system.



**Figure 2 - Typical Tree Structure**

## **NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees**

### **1.2.3 Symptoms**

Trees with damage may not show any immediate symptoms. Such symptoms may range from minor branch dieback to deterioration and ultimate death and collapse of the tree dependent on the severity of damage and the ability of the roots to regenerate.

If a root of 25mm diameter or over is severed, as a precautionary measure, a local authority tree officer / arboricultural officer should be contacted immediately.

### **1.3 Above Ground**

Trees have a single or multi-stemmed trunk supporting a framework of branches and twigs. These structures are protected by a layer of bark, the purpose of which is to protect the functional tissues immediately beneath.

#### **Trees can be damaged by:**

- Direct impact by plant or machinery
- Fire and scorching.
- Poor pruning
- Abrasion by overhead apparatus
- Chemicals and fuel oils
- Storage of materials within the Prohibited and Precautionary Zones

#### **1.3.1 Abrasion**

The tree may be damaged by abrasion with overhead apparatus. Initially this only removes the outer bark. If the abrasion continues it can expose the underlying wood which may increase the risk of fire or eventual collapse of the branch or the tree.

If trees are growing in proximity to overhead apparatus it should be possible to prevent the development of problems by timely pruning and tree management. This requires knowledge of the growth pattern of the many different species of tree, consideration of the effects of the pruning on the appearance of the tree and application of the correct pruning techniques. All pruning should be in accordance with BS 3998 (see sub-section 8 – ‘Other Useful Publications’). All operatives should be authorised and competent.

For all works other than emergency or urgent works, notification and consultation with all interested parties is necessary before work commences (see section 5 – ‘How to Avoid Damage to Apparatus by Trees’).

## **NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees**

### **1.3.2 Permissions / Notifications**

Any work to trees adjacent to an area of operations that extends beyond what is absolutely necessary for operational requirements may require either written permission from the local planning authority (in respect to tree preservation orders) or six weeks' notification to the local planning authority (in respect to trees in conservation areas)(see also section 6 – 'Sites with Designated Status').

## **2. HOW APPARATUS IS DAMAGED**

The positioning and type of underground apparatus are detailed in NJUG publication **Volume 1 – 'NJUG Guidelines on the Positioning and Colour Coding of Underground Utilities' Apparatus**.

Construction methods and utility service materials are subject to change and any cluster of utility services is likely to consist of a variety of historic and modern materials constructed to various specifications. In general utility apparatus includes the following:

- Pipes
- Cables
- Ducts
- Chambers
- Poles/Towers/Masts/Satellite dishes
- Above ground installations

### **2.1 Below Ground**

Underground apparatus (especially those less than 600mm deep) may be affected by tree roots. The risk will depend on the ability of the apparatus, in particular any joints, to resist or tolerate distortion.

#### **2.1.1 Direct damage**

Direct damage is caused by the annual increase in root thickness resulting in eventual contact with apparatus. However, it is usually either the root or the adjacent soil that will distort rather than the apparatus itself. The potential for damage depends on how much the root thickens and is greatest in the main structural roots within 3 metres of the tree. Roots may grow around an apparatus to form a sheath but this will rarely exert sufficient pressure to cause any damage. Surface wrappings inadequately attached to an apparatus, if non-toxic, may be colonised by roots and eventually lifted off.



## **NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees**

### **2.1.2 Indirect damage**

Indirect damage is restricted to shrinkable soils, mainly clays but also peat and some silts. Such soils shrink as they dry with the potential to distort any apparatus supported by the soil. Vegetation growing within the same area of soil may increase the drying effect.

The degree of the shrinkability of the soil will affect the amount of movement caused by drying and thus the potential for damage to occur. In situations where apparatus passes from a shrinkable soil into a rigid structure there is the possibility of extreme distortion taking place. Regular seasonal movement can also cause damage even in the absence of roots, particularly with short segmented pipes (see sub-section 3.1.4 – ‘Shrinkable Soils’).

### **2.1.3 Root incursion**

Intact apparatus will not generally be penetrated by roots. However roots can exploit existing defects such as;

- defective pipe joints
- cracks in foul or surface water drains
- inadequate or degraded pointing of inspection chambers.

Where internal conditions are moist and aerated and therefore most conducive to root growth, root proliferation may occur and ultimately block the apparatus. If root thickening occurs where it passes into apparatus, root related enlargement of a defect may occur. This is unlikely at distances 3 metres or more from the trunk.

### **2.1.4 Trees and Wind Movement.**

The potential for damage to apparatus close to a tree may increase due to movement of the lower trunk and a structural root as the tree sways in strong winds. Such movement may result in direct pressure being applied to the apparatus. Furthermore, if a tree is uprooted, any apparatus passing across or through the disturbed root plate may also be displaced. Such events are unlikely and are restricted to situations where apparatus is in close proximity to the trunk of the tree, but the potential may be increased if other structural roots are severed. Encasing apparatus in lean mix or coarse concrete can exacerbate this problem as fine roots may penetrate the material providing a greater ‘hold’ on the apparatus unless an appropriate root barrier material is used to separate the apparatus from the root system.

## **NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees**

### **2.1.5 Mechanical Removal of Trees and Stumps**

The mechanical removal of tree stumps by grinding or grubbing may disturb or damage apparatus passing across or through the root plate of the tree. Using a mechanical digger to uproot a tree scheduled for removal is very likely to damage apparatus within and also close to the Prohibited or Precautionary Zones as the roots will apply pressure to the apparatus as they are uprooted.

### **2.2 Above Ground**

If overhead apparatus come into contact with trees they may be damaged as a result of:

- Abrasion when the tree and / or apparatus move in the wind bringing them into contact. The resultant abrasion can damage wires affecting their efficiency, strength and causing interference or loss of supply.
- The collapse of a branch or a whole tree which could bring down overhead lines.

## **3. PLANNING OF WORKS**

The inherently variable nature of trees, and also the generally low incidence of damage to underground apparatus, makes it neither practical nor justifiable to impose absolute limits on the proximity of trees to apparatus. Therefore site specific liaison and agreement between the asset owner and other interested parties is essential.

With respect to overhead apparatus there are minimum established clearances which must be maintained. Details of these clearances can be obtained from the utility network operator.

Before new trees are planted the advice of a local authority tree officer or arboriculturist should be obtained.

### **3.1 Special Considerations when Planning the Installation of Underground Apparatus**

#### **3.1.1 New / Renewal of Apparatus - New Trees**

In considering the location of new or renewed apparatus in conjunction with a new tree planting scheme early consultation is essential between the relevant

## **NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees**

professional organizations e.g. local authorities, utility companies, developers and landowners

### **3.1.2 New / Renewal of Apparatus - Existing Trees**

When planning the installation or renewal of apparatus the position of existing trees should be considered as one of the primary factors which could affect the siting, depth, method of installation and future maintenance of that apparatus.

Consultation with the relevant interested parties will identify any conflict and consideration should be given to apparatus diversion or felling and re-planting. This decision should be influenced by the value of the tree and the extent of the additional diversionary works.

### **3.1.3 Existing Apparatus - New Trees**

Early consultation with utilities should take place before any tree work, including planting, is undertaken to ascertain the position of existing apparatus. Records of underground apparatus should be obtained from utilities and used in conjunction with on site apparatus detection techniques. The guidance contained within Health and Safety Executive guidance note HSG47 – ‘Avoiding Danger from Underground Services’ should be followed when excavating. In addition, when planning new tree planting, there should be liaison with the utilities, local authority and landowner so that the risks trees may pose to utility apparatus in the future are minimised.

### **3.1.4 Shrinkable Soils**

Apparatus laid in clay or peat should be constructed to tolerate movements of the subsoil caused by root activity. Special precautions for differential movement should be incorporated where apparatus joins rigid structures founded at a different depth to the apparatus (e.g. pipe connections to chambers). See sub-section 2.1.2 ‘Indirect Damage’.

## **3.2 Precautions when Repairing Existing Apparatus**

Where apparatus requires repair the location of the excavation is often defined by the location of the fault. The nature of the work usually requires open excavation. Excavation within the Prohibited and Precautionary Zones should be in accordance with sub-section 4.1 ‘Below Ground’ except for emergency or urgent works.

Where emergency or urgent works may have caused damage to roots with a diameter in excess of 25mm, interested parties should be informed immediately. They may choose to consult a local authority tree officer or arboriculturist regarding whether remedial treatment to the tree is necessary.

## **NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees**

If roots have grown into a drain or duct and proliferated so as to cause a blockage, the removal of the root mass from within the drain or duct will only provide temporary relief. If the root, which originally penetrated the drain, is still present it will regenerate and recreate the same problem. Roots of other plants may have a similar effect. Permanent relief can only be obtained by the proper repair of the original defect e.g. by replacement or refurbishment.

Utility apparatus may be refurbished by the use of pre-fabricated, slip lined or cured-in-place lining systems or pipes. Pre-fabricated and slip lined systems and pipes are generally resistant to root growth / intrusion, but cured-in-place linings may deform and ultimately collapse from the incursion of root growth. Following pre-survey (e.g. CCTV), it is essential that any roots are removed from the bore of the apparatus as far as practicable prior to lining, by the use of proprietary root removal systems (e.g. high-pressure water, flails, or rotating blade cutters).

### **3.3 Special Considerations when Planning the Installation of Above Ground Apparatus**

The aerial parts of a tree are constantly growing larger and are prone to bend and flex in windy conditions. As a result parts of a tree may come close to or into contact with above ground apparatus.

#### **3.3.1 Electricity**

The overhead apparatus belonging to the electricity supply industry is subject to minimum clearances from adjacent trees and other structures. This is to ensure the safety of the public and protect against flashover and loss of supply. Local conditions may require an increase in the clearances specified in current electricity industry standards.

Part IV of The Electricity Supply Regulations covers the construction of power lines above ground. Schedule 4(9) of the Electricity Act 1989 enables electricity companies to require the felling or lopping of trees which obstruct or interfere with the working of their lines or constitute an unacceptable source of danger.

In addition to the above reference should be made to the Energy Networks Association (ENA) document Engineering Recommendation G55/1- Safe Tree Working in Proximity to Overhead Electric Lines (see section 8).

#### **3.3.2 Communications**

Communication operators run their systems under the Telecommunications Act 1984 (as amended by the Communications Act 2003) in accordance with The

## **NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees**

Telecommunications Code (Schedule 2). Paragraph 19 of the Telecommunications Code enables operators to require the lopping of trees which overhang the street and obstruct or interfere with the working of their lines.

### **4. HOW TO AVOID DAMAGE TO TREES**

This section gives general guidance on methods of work to minimise damage to trees. The local authority (or for privately owned trees, the owner or their agent), should be consulted at an early stage prior to the commencement of any works. This will reduce the potential for future conflict between trees and apparatus.

#### **4.1 Below Ground**

Wherever trees are present, precautions should be taken to minimise damage to their root systems. As the shape of the root system is unpredictable, there should be control and supervision of any works, particularly if this involves excavating through the surface 600mm, where the majority of roots develop.

##### **4.1.1 Fine Roots**

Fine roots are vulnerable to desiccation once they are exposed to the air. Larger roots have a bark layer which provides some protection against desiccation and temperature change. The greatest risk to these roots occurs when there are rapid fluctuations in air temperature around them e.g. frost and extremes of heat. It is therefore important to protect exposed roots where a trench is to be left open overnight where there is a risk of frost. In winter, before leaving the site at the end of the day, the exposed roots should be wrapped with dry sacking. This sacking must be removed before the trench is backfilled.

##### **4.1.2 Precautions**

The precautions referred to in this section are applicable to any excavations or other works occurring within the Prohibited or Precautionary Zones as illustrated in Figure 1 – ‘Tree Protection Zone’.

##### **4.1.3 Realignment**

Whenever possible apparatus should always be diverted or re-aligned outside the Prohibited or Precautionary Zones. Under no circumstances can machinery be used to excavate open trenches within the Prohibited Zone.

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The appropriate method of working within the Precautionary Zone should be determined in consultation with the local authority (or for privately owned trees the owner or their agent) and may depend on the following circumstances;

- the scope of the works (e.g. one-off repair or part of an extensive operation)
- degree of urgency (e.g. for restoration of supplies)
- knowledge of location of other apparatus
- soil conditions
- age, condition, quality and life expectancy of the tree

Where works are required for the laying or maintenance of any apparatus within the Prohibited or Precautionary Zones there are various techniques available to minimise damage.

Acceptable techniques in order of preference are;

### **a ) Trenchless**

Wherever possible trenchless techniques should be used. The launch and reception pits should be located outside the Prohibited or Precautionary Zones. In order to avoid damage to roots by percussive boring techniques it is recommended that the depth of run should be below 600mm. Techniques involving external lubrication of the equipment with materials other than water (e.g. oil, bentonite, etc.) must not be used when working within the Prohibited Zone. Lubricating materials other than water may be used within the Precautionary Zone following consultation and by agreement.

### **b) Broken Trench - Hand-dug**

This technique combines hand dug trench sections with trenchless techniques if excavation is unavoidable. Excavation should be limited to where there is clear access around and below the roots. The trench is excavated by hand with precautions taken as for continuous trenching as in (c) below. Open sections of the trench should only be long enough to allow access for linking to the next section. The length of sections will be determined by local conditions, especially soil texture and cohesiveness, as well as the practical needs for access. In all cases the open sections should be kept as short as possible and outside of the Prohibited Zone.

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### **c) Continuous Trench - Hand-dug**

The use of this method must be considered only as a last resort if works are to be undertaken by agreement within the Prohibited Zone. The objective being to retain as many undamaged roots as possible.

Hand digging within the Prohibited or Precautionary zones must be undertaken with great care requiring closer supervision than normal operations.

After careful removal of the hard surface material digging must proceed with hand tools. Clumps of roots less than 25mm in diameter (including fibrous roots) should be retained in situ without damage. Throughout the excavation works great care should be taken to protect the bark around the roots.

All roots greater than 25mm diameter should be preserved and worked around. These roots must not be severed without first consulting the owner of the tree or the local authority tree officer / arboriculturist. If after consultation severance is unavoidable, roots must be cut back using a sharp tool to leave the smallest wound.

### **4.1.5 Backfilling**

- Any reinstatement of street works in the United Kingdom must comply with the relevant national legislation (see: **Volume 6 – ‘Legislation and Bibliography’**). In England this relates to the requirements of the code of practice – ‘Specification for the Reinstatement of Openings in Highways’ approved under the New Roads and Street Works Act 1991. Without prejudice to the requirements relating to the specification of materials and the standards of workmanship, backfilling should be carefully carried out to avoid direct damage to roots and excessive compaction of the soil around them.
- The backfill should, where possible, include the placement of an inert granular material mixed with top soil or sharp sand (not builder’s sand) around the roots. This should allow the soil to be compacted for resurfacing without damage to the roots securing a local aerated zone enabling the root to survive in the longer term.
- Backfilling outside the constructed highway limits should be carried out using the excavated soil. This should not be compacted but lightly “tamped” and usually left slightly proud of the surrounding surface to allow natural settlement. Other materials should not be incorporated into the backfill.

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### **4.1.6 Additional Precautions near Trees**

- Movement of heavy mechanical plant (excavators etc.) must not be undertaken within the Prohibited Zone and should be avoided within the Precautionary Zone, except on existing hard surfaces, in order to prevent unnecessary compaction of the soil. This is particularly important on soils with a high proportion of clay. Spoil or material must not be stored within the Prohibited Zone and should be avoided within the Precautionary Zone.
- Where it is absolutely necessary to use mechanical plant within the Precautionary Zone care should be taken to avoid impact damage to the trunk and branches. A tree must not be used as an end-stop for paving slabs or other materials nor for security chaining of mechanical plant. If the trunk or branches of a tree are damaged in any way advice should be sought from the local authority tree officer / arboriculturist.

See TABLE 1 –‘Prevention of Damage to Trees Below Ground’ below for summary details regarding causes and types of damage to trees and the implications of the damage and the necessary precautions to be taken to avoid damage.



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**TABLE 1 - Prevention of Damage to Trees Below Ground**

<b>Causes of Damage</b>	<b>Type of Damage</b>	<b>Implications to Tree</b>	<b>Precautions</b>
Trenching, mechanical digging etc.	Root severance	<ul style="list-style-type: none"> <li>The tree may fall over</li> <li>Death of the root beyond the point of damage</li> <li>Potential risk of infection of the tree</li> </ul> <p>The larger the root the greater the impact on the tree.</p>	Hand excavate only within the Precautionary Zone. Work carefully around roots. Do not cut roots over 25mm in diameter without referring to the local authority tree officer. For roots less than 25mm in diameter use a sharp tool and make a clean cut leaving as small a wound as possible.
Trenching, mechanical digging, top soil surface removal etc.	Root bark damage	<ul style="list-style-type: none"> <li>The tree may fall over</li> <li>If the damage circles the root it will cause the death of the root beyond that point</li> <li>Potential risk of infection of the tree</li> </ul> <p>The larger the root the greater the impact on the tree.</p>	Do not use mechanical machinery to strip the top soil within the Precautionary Zone. Hand excavate only within the Precautionary Zone. Work carefully around roots. Do not cut roots over 25mm in diameter without referring to the local authority tree officer. For roots less than 25mm use a sharp tool and make a clean cut leaving as small a wound as possible.
Vehicle movement and plant use. Material storage within the precautionary area.	Soil compaction & water saturation	Restricts or prevents passage of gaseous diffusion through soil, the roots are asphyxiated and killed affecting the whole tree.	Prevent all vehicle movement, plant use or material storage within the Precautionary Zone.
Top-soil scouring, excavation or banking up.	Alterations in soil level causing compaction or exposure of roots.	Lowering levels strips out the mass of roots over a wide area. Raising soil levels asphyxiates roots and has the same effect as soil compaction.	Avoid altering or disturbing soil levels within the Precautionary Zone.
Use of herbicides.	Poisoning of the tree via root absorption	<ul style="list-style-type: none"> <li>Death of the whole tree</li> <li>Death of individual branches</li> </ul> <p>Damage to leaves and shoots.</p>	The selection and application of herbicides must be undertaken by a competent person in accordance with COSHH regulations.
Spillage of oils or other materials.	Contamination of soil	Toxic and asphyxiation effects of chemicals, oils, building materials (cement, plaster, additives etc.) on the root system can kill the tree.	Never store oils, chemicals or building materials within the Precautionary Zone or within the branch spread of a tree, which ever is the greater.
Placement or replacement of underground apparatus.	Various	Death of all or part of the tree.	Effective planning and liaison with local authority tree officer, taking into consideration the position of trees, and their future growth potential and management

## **NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees**

### **4.2 Above Ground**

#### **4.2.1 Damage by Pruning**

Trees (including shrubs and hedges) can be damaged by inappropriate or excessive pruning. Reference should be made to the Energy Networks Association (ENA) document “Engineering Technical Report 136 Vegetation Management near Electricity Equipment – Principles of Good Practice” (see section 8 – ‘Other Useful Publications’) or appropriate company specific documentation for guidance on pruning.

See TABLE 2 – ‘Prevention of Damage to Trees Above Ground’ below for summary details regarding causes and types of damage to trees and the implications of the damage and the necessary precautions to be taken to avoid damage.

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**TABLE 2 - Prevention of Damage to Trees Above Ground**

<b>Causes of Damage</b>	<b>Type of Damage</b>	<b>Implications for the Tree</b>	<b>Precautions</b>
Impact by vehicle or plant  Physical attachment of signs or hoardings to the trunk  Storage of materials at base of tree  Rubbing by winch or pulling cables	Bark bruising, bark removal, damage to the wood, damage to buttress roots, abrasion to trunk	Wounding with the potential for infection ultimately resulting in death of all or part of the tree.  Structural failure of the tree	Surround the trunk with protective free-standing barrier. Exclude vehicles, plant or material storage from the Precautionary Zone. Ensure sufficient clearance of cables or ropes.
Impact by vehicle or plant  Rubbing by overhead cables	Bark damage to branches, breakage and splitting of branches, abrasion to branches	Structural failure of the branch.  Wounding or loss of a branch with the potential for infection ultimately resulting in death of all or part of the branch or tree.	Exclude vehicles, plant or material storage from the Precautionary Zone. Ensure sufficient clearance of cables or ropes. All pruning should be carried out in accordance with BS3998 ( <i>prune affected branches to give appropriate clearance from cables</i> )
Inappropriate siting of overhead apparatus, such as CCTV, lighting fixtures and communications masts and dishes.	Inappropriate pruning, unnecessary tree removal	Severely pruning tree to acquire line of sight signal for communications dish etc.	Effective planning and liaison with local authority tree officer / arboriculturist, taking into consideration the position of trees, and their future growth potential and management.
Lack of forethought in design and location of apparatus and services entries on new developments	Complete tree removal	The tree is removed unnecessarily	Agree the location and installation of services at the design stage. Consideration should be given to the creation of dedicated service routes wherever possible.
Use of herbicides	Poisoning of the tree via absorption through bark, leaves and shoots	Death of the whole tree, death of individual branches, damage to leaves and shoots	The selection and application of herbicides must be undertaken by a competent person in accordance with COSHH regulations.

## **NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees**

### **4.3 Chemical Damage to Trees**

Chemical damage to trees adjacent to utility premises and operational land can be avoided if;

- the risk is identified when planning any work involving herbicides or other chemicals ensuring that only appropriate chemicals are used. Particular care should be exercised when considering the use of herbicides recommended for “non crop areas” as many of these also specify “do not use where there may be roots of desirable plants”,
- herbicides are applied only at the rate and in the manner recommended by the manufacturer,
- follow-up applications are not undertaken until weeds reappear on the operational land,
- alternative methods of weed control are considered.

## **5. HOW TO AVOID DAMAGE TO APPARATUS BY TREES**

### **5.1 Consultation with Utilities**

The potential for future conflict between trees and above-ground apparatus can be reduced by appropriate planning. Early consultation with utilities should therefore take place before any tree work including planting is undertaken to ascertain the position of existing apparatus. Records of underground apparatus should be obtained from utilities and used in conjunction with on site apparatus detection techniques. Specific care must be taken when removing the stumps of existing trees. In addition when planning new tree planting there should be liaison with the utilities, local authority and landowner so that the risks trees may pose in the future are minimised.

### **5.2 Precautions during Planting**

Every possible precaution should be taken to ensure that the existing apparatus is not damaged during excavation works. Health and Safety Executive guidance note HSG47 – ‘Avoiding Danger from Underground Services’ and any specific guidance issued by the apparatus owner should be followed at all stages of the work.

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### **5.2.1 Below Ground**

Before any excavation work begins, trial holes should be undertaken to validate the results of any detection surveys undertaken to confirm the actual position and depth of the apparatus.

### **5.2.2 Above Ground**

Consideration should be given to the presence of satellite dishes and masts on commercial properties, poles and drop wires, as future tree growth may cause operational problems.

Reference should also be made to Energy Networks Association (ENA) document 'Engineering Technical Report 136 Vegetation Management near Electricity Equipment – Principles of Good Practice' (see section 8 – 'Other Useful Publications') or appropriate company specific documentation.

*NOTE: In all cases where definitive clearances are required, contact must be made with the appropriate electricity or communication company who will determine the clearance to be adopted.*

See also sub-section 3.3 – 'Special Considerations when Planning the Installation of Above Ground Apparatus'.

## **6. SITES WITH DESIGNATED STATUS**

Certain sites may be specifically designated and will require consultation and / or permission from the relevant authority prior to undertaking any works. These sites include:

- Sites of Special Scientific Interest
- English Heritage Sites
- English Nature / Natural England
- National Trust Land
- Nature Reserves
- Conservation Areas
- Scottish Natural Heritage
- Areas of Outstanding Natural Beauty
- Countryside Council for Wales
- Historic Scotland
- Northern Ireland Environment and Heritage Service
- Cadw (Welsh Historic Monuments)

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### **6.1 Tree Preservation Orders and Trees in Conservation Areas**

Section 198 of the Town and Country Planning Act 1990 (the Act) gives local planning authorities powers to make trees and woodlands the subject of tree preservation orders (TPOs) in the interests of amenity. Trees protected by a TPO may not be willfully damaged or destroyed and cannot be cut down, uprooted, topped or lopped without the local planning authority's consent.

Additionally, under section 211 of the Act, anyone proposing to cut down, uproot, top, lop etc. a tree in a conservation area is required to give the local planning authority six weeks' notice before doing so. This gives the authority an opportunity of making a TPO in respect of the tree.

Certain statutory obligations imposed by Acts of Parliament may allow for the limited felling, topping or lopping of trees protected by a TPO in order to supply and maintain service. This does not preclude the requirement to consult with the owner.

See also: **Volume 5 – 'NJUG Guidelines on Environmental Good Practice'**

## **7. LEGISLATION**

Reference should also be made to **Volume 6 – 'Legislation & Bibliography'**.

### **7.1 Primary Legislation**

National Parks and Access to the Countryside Act 1949\*

Health and Safety at Work Act 1974

Highways Act 1980\*\*

Telecommunications Act 1984

Gas Act 1986

Electricity Act 1989

Town and Country Planning Act 1990 (Section 198 Tree Preservation Orders).

Water Industry Act 1991

The New Roads and Street Works Act 1991 (NRSWA)

The Streets Works (Northern Ireland) Order 1995

Communications Act 2003

Traffic Management Act 2004

Transport (Scotland) Act 2005

The Streets Works (Northern Ireland) (Amendment) Order 2007

\* Under the National Parks and Access to the Countryside Act 1949 local authorities are given a general power to plant trees.

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**\*\*** Under the Highways Act 1980 highway authorities may plant trees in the highway, or license others to do so. They need to ensure that trees do not overhang or cause a danger to roads or footpaths, and are given powers to prevent this from happening.

The above list is not exhaustive.

### **7.2 Secondary Legislation**

Each Act of parliament in 7.1 will have various associated regulations that should be referred to.

## **8. OTHER USEFUL PUBLICATIONS**

This is not an exhaustive list of available publications and is only valid at the time of issue.

BS 3998 Recommendations for Tree Work

- Provides general recommendations for tree surgery and other tree work.

BS 5837 Trees in Relation to Construction

- Gives advice on the integration of new development amongst trees.

Codes of Practice approved under the New Roads and Street Works Act 1991

- Co-ordination of Street Works and Works for Road Purposes and Related Matters
- Specification for the Reinstatement of Openings in Highways
- Safety at Street Works and Road Works
- Measures Necessary where Apparatus is Affected by Major Works (Diversionary Works)
- Inspections

Energy Networks Association publications:

- Engineering Technical Report 136 'Vegetation Management Near Electricity Equipment – Principles of Good Practice'
- Engineering Recommendation G55/1 – 'Safe Tree Working in Proximity to Overhead Electric Lines'
- ENA-TS 40-80 – ENA Technical Standard for Overhead Line Clearances
- Engineering Recommendation G70 – Vegetation Control near Overhead Lines

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- ETR 132 – Improving Network Performance (under abnormal weather conditions by the use of a risk based approach to vegetation management near electric overhead lines)
- MNT/004 – UK Distribution Policy for the Inspection and Maintenance of Overhead Lines

HSE Arboriculture and Forestry Advisory Group publications

- AFAG 804 Electricity at work: Forestry and arboriculture
- AFAG 404 Electrical utility arboriculture

Manual for Streets (supercedes Design Bulletin 32 and Places, Streets and Movement)

- The Department for Transport and the Department for Communities and Local Government (DCLG), with support from the Commission for Architecture and the Built Environment (CABE), commissioned WSP , TRL , Llewellyn Davies Yeang and Phil Jones Associates to develop a Manual for Streets to give guidance to a range of practitioners on effective street design.

National House Building Council (NHBC) Standards Chapter 4.2. Building near trees

- Gives information on the design of new foundations in proximity to trees on shrinkable clay soils.

## **9. OTHER REFERENCES**

### **9.1 Arboricultural**

Arboricultural advice may be sought from the:

- Arboricultural Advisory and Information Service
- Arboricultural Association
- Arboriculture and Forestry Advisory Group
- International Society of Arboriculture
- Local authority Arboricultural Officer
- The Tree Advice Trust

### **9.2. Herbicides**

Information on herbicides and their application may be obtained from the:

- British Agrochemicals Association

### **9.3 Utilities**

Utility advice may be sought from the local utility contact or NJUG.



## NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees

### GLOSSARY

<b>Apparatus</b>	Equipment such as valves, stopcocks, chambers, cabinets, transformer chambers etc and includes any structure for the lodging of apparatus.
<b>Arboriculturist</b>	A professional who cultivates and manages trees, hedgerows and shrubs and provides information and advice on specific tree related issues.
<b>Carriageway</b>	A way constituting or comprised in a highway, being a way (other than a cycle track) over which the public have a right of way for the passage of vehicles.
<b>Cycle track</b>	A way constituting or comprised in a highway over which the public have a right of way on pedal cycles with or without a right of way on foot.
<b>Desiccation</b>	The state of extreme dryness, the drying out of roots.
<b>Distal</b>	Situated farthest from the centre.
<b>Drop wires</b>	Overhead wire from telegraph pole to customer premises.
<b>Duct / ducting</b>	Structure (usually cylindrical) used to convey and protect apparatus.
<b>Fibre optic</b>	The use of very thin glass or plastic fibres through which light can be transmitted to carry information from a source to a receiver, especially for telecommunication, television and information technology systems.
<b>Footpath</b>	A highway over which the public have a right of way on foot only, not being a footway.
<b>Footway</b>	A way comprised in a highway which also comprises a carriageway, being a way over which the public have a right of way on foot only.
<b>GRP</b>	Glass Reinforced Plastic
<b>Herbicide</b>	A chemical that destroys plants.
<b>Main</b>	Structure (usually cylindrical) used to convey water or gas or oil generally greater than 50mm in diameter.
<b>NJUG</b>	National Joint Utilities Group Limited.
<b>Pipe</b>	Longitudinal structure (usually cylindrical) used to convey water, gas or oil.
<b>Root plate</b>	Formed just below the soil surface when shallow lateral growing roots predominate over the development of a deep taproot.

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<b>Service strip</b>	A strip of designated land alongside a carriageway or footway used to convey services.
<b>Sub-duct</b>	Longitudinal structure (usually cylindrical) laid inside ducts used to carry smaller diameter cables such as fibre optic.
<b>Tiles</b>	Impact resistant cover constructed of earthenware, concrete or polyethylene for protecting underground cables
<b>Utility</b>	An undertaker by statute that has a legal right to provide customer services (e.g. communications, electricity, gas, water)
<b>Verge</b>	A strip of land which may form part of the public highway alongside a carriageway or footway, which may contain services.

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### **APPENDIX A**

#### **Important Legal Notice and Disclaimer**

1. This publication describes utility industry guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees. NJUG has endeavoured to ensure that the information is correct and up-to-date at the date of first publication, but does not warrant its completeness and accuracy or that it will remain up-to-date. This publication is not intended to be exhaustive and may not be applicable in all situations.
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# Soil Requirements of Healthy Urban Trees



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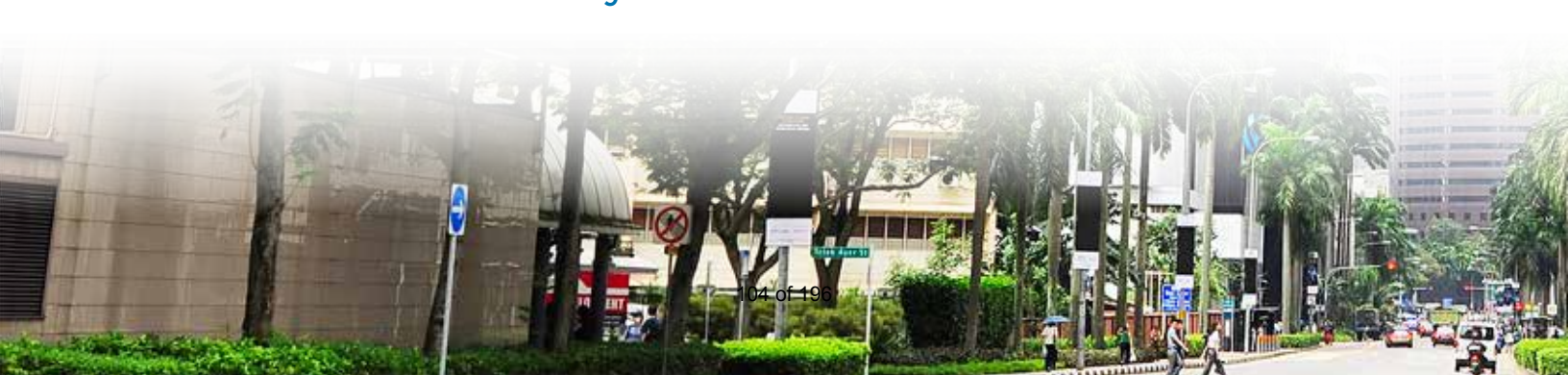
# Healthy Urban Soil



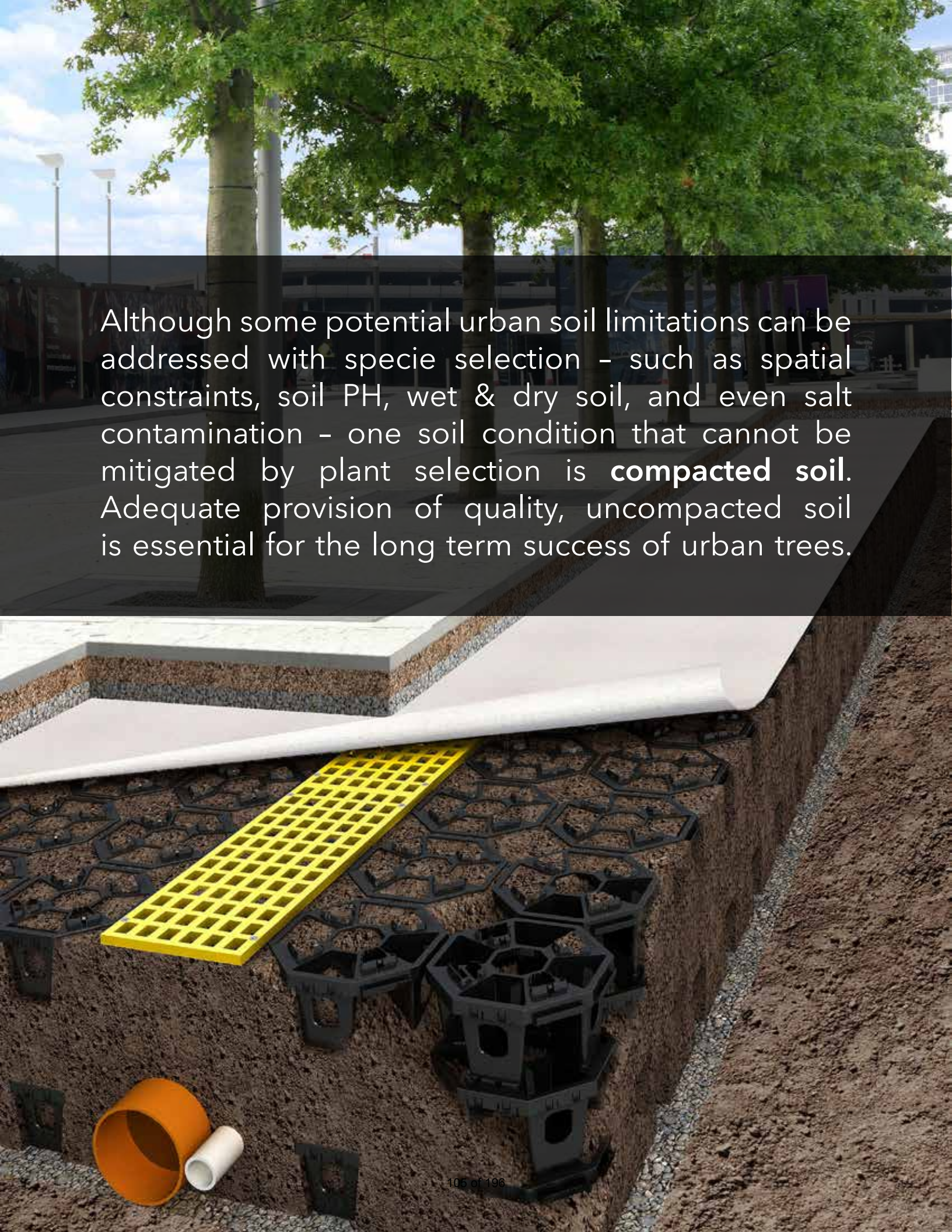
Trees require adequate supply of uncompacted, well aerated, and moist soil in order to thrive. These soil conditions enable tree roots to obtain all the essential elements they require for healthy growth - nutrients, oxygen, and water. They also happen to be the elements found in the soil of natural forest settings. In built-up urban areas however, these soil circumstances are often unavailable. In this ebook, we provide a soil quality definition and explain the soil requirements of urban trees.

Soil is the uppermost layer of the earth's crust and is the medium in which trees and other plants grow and spread their roots. Soil is comprised of finely ground rock particles and materials such as sand, silt, clay, and gravel; with void spaces between particles containing air and water.

***"Adequate provision of quality, uncompacted soil is essential  
for long term success of trees in urban areas"***







Although some potential urban soil limitations can be addressed with specie selection – such as spatial constraints, soil PH, wet & dry soil, and even salt contamination – one soil condition that cannot be mitigated by plant selection is **compacted soil**. Adequate provision of quality, uncompacted soil is essential for the long term success of urban trees.



# Healthy Urban Soil



Soil type usually refers to the different sizes of mineral particles in a particular sample. Each size plays a significantly different role. For example, sand represents the largest particles and determines aeration and drainage characteristics, whereas sub-microscopic clay particles are chemically active binding with plant nutrients and water. The ratio of these particle sizes determines soil type: loam, clay, clay-loam, silt-loam, and so on.

Sandy soils have very large particles allowing plant roots, water, and air to move freely. Whereas clay particles are very small and pack together tightly, leaving little room for nutrients and root growth.









# Healthy Urban Soil



Image courtesy of Citygreen Systems

## Nutrients

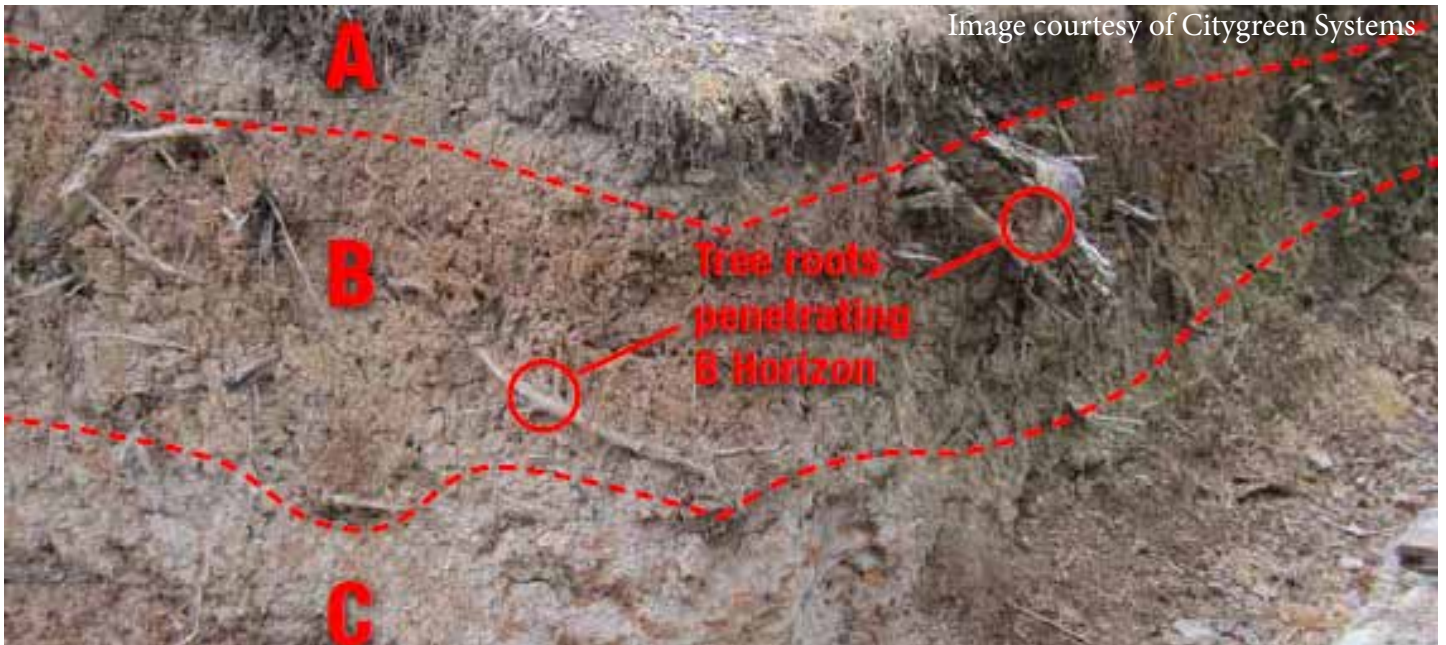
There have been seventeen essential soil nutrients identified. While carbon and oxygen are absorbed from the air, other nutrients, such as water, are obtained from the soil and absorbed by the tree's roots. Nutrients consist of calcium, sulphur, and magnesium (amongst a range of other trace elements), although the primary nutrients are:

- Nitrogen (for healthy stem and leaf growth)
- Phosphorus (for root growth)
- Potassium (for overall plant health - especially the immune system)

***"Proposed filler soils should be specified and approved by a competent soil specialist"***



# Healthy Urban Soil



## Organic Matter

In addition to soil's mineral composition, organic material also plays a critical role in soil fertility and characteristics for plant life. Organic matter improves sandy soil by retaining water and alters clay soil to make it more permeable, allowing water, air, and roots to penetrate.

Soils change in composition and appearance with depth creating what is known as a soil profile. Soil profiles typically have a top layer of decaying organic matter formed by fallen leaves and other debris deposited by plants. This layer also called the 'O horizon'. Below the organic matter is topsoil (or 'A horizon') which can range in depth from a few inches to several feet. This layer consists of decomposed organic matter and minerals, and is usually dark brown or reddish brown in color. This layer is where most tree roots concentrate.





# Healthy Urban Soil



Under the topsoil is subsoil ('B horizon') which generally lacks organic matter and therefore has poorer nutritional value. If oxygen levels are sufficient and drainage is adequate, tree roots can penetrate into this layer.

Below the soil layers lies the parent material ('C horizon'), which is the main source of soil. This material can be transitional, heavy clay, or soft stone. Organic matter and weathering usually do not affect this layer.





# Healthy Urban Soil



## Cation Exchange

Nutrient uptake in the soil is achieved by cation - positively charged ion - exchange. Fibrous roots pump hydrogen ions ( $H^+$ ) into the soil which displace cations attached to negatively charged soil particles, making the cations available for uptake by the root. Roots, and specifically fibrous roots, are the most important organ for the uptake of nutrients.

*"Tree size and health is ultimately relative to three factors: rootable soil volume available, soil oxygen and nutrients, and the moisture holding capacity of the soil - besides genetic and environmental factors"*



# How Much Soil Do Trees Need?



Trees need appropriate amounts of moist, well aerated, and uncompacted soil in order to mature in the urban environment. These conditions enable the tree's roots to obtain nutrients, oxygen, and water - all essential for healthy tree growth. After defining in detail the soil requirements needed for healthy root growth, let's discuss how much of this soil trees need to thrive and reach maturity.

In addition to the nutrients that trees obtain from soil through their roots, they also need oxygen and water that occupy the voids between soil particles. These voids are abundant in uncompacted soil, however, soil in urban areas is usually compacted to provide structural stability for paved surfaces - making void space between soil particles nonexistent.

*"Trees in urban areas are frequently observed either failing in the face of hostile growing conditions, or surviving and causing damage to pavement"*





# How Much Soil Do Trees Need?



If soil alone is depended on as a structural material and required for the load-bearing of buildings, vehicles, and pedestrians; it will be compacted to the point that air and water are excluded and a totally insufficient space for root growth will be available.

Trees planted in unsuitable urban tree pits are usually surrounded by compacted soil which often leads to the roots seeking out the space between the compacted soil and the paved surface above, where air and water are present. This then causes root heaving in the pavement, as shown above.

*"Sidewalk heave and other damage caused by shallow rooting  
is the cause of millions of dollars of infrastructure damage every year"*



# How Much Soil Do Trees Need?



When a tree's need for nutrients, water, and air can no longer be met, the health of the tree suffers and the tree begins to decline and eventually die. Trees grown in these conditions hardly ever reach maturity and do not provide the many benefits that healthy trees offer.

This challenge creates a fundamental conflict for trees in paved areas. Careful consideration needs to be taken regarding the above and below ground space to ensure that each tree has what it requires to reach maturity. The old method of providing a tree pit area the size of the pavement opening is clearly insufficient and results in a lifetime of costly pavement repairs and commits the tree to an untimely death.

So, how much uncompacted soil do trees need to be healthy and reach maturity? Various methods of determining required soil volume may be used to calculate the approximate below ground space that a tree should need for healthy root growth.





# How Much Soil Do Trees Need?



## Mature Canopy Method

Likely the simplest method of calculating soil volume, is estimating the projected mature tree canopy diameter and multiply it by a depth of 2ft. GreenBlue offers a complimentary tree pit soil calculator that will conveniently provide these calculations for you. Access it for free: [greenblue.com/tree-pit-soil-calculator](https://greenblue.com/tree-pit-soil-calculator)

As a general rule:

- Allow 32ft for canopy development for large trees
- Allow 20ft for canopy development for medium trees
- Allow 10ft for screens, shelter belts, or park group plantings
- Allow a minimum of 8ft in any instance

The availability of space for tree roots to develop is crucial to a tree's health, since a growing tree's roots will extend far into the surrounding soil to more than twice the diameter of the mature tree's canopy"





# How Much Soil Do Trees Need?



## Mature Trunk Caliper Method

Trunk diameter is another predictor of root spread. For young trees less than about 8" in diameter, the ratio of root radius to trunk diameter has been found to be around 38:1 - therefore a 6" diameter tree at maturity could have a root system extending nearly 20ft from the trunk.

## Suggested Soil Volumes

Minimum recommended soil volumes are:

Small Tree: 5-15 cubic meters

Medium Tree: 20-40 cubic meters

Large Tree: 50+ cubic meters





# How Much Soil Do Trees Need?



So how do we maximize uncompacted soil volume available for root growth without jeopardizing a stable base for sidewalks and roads? Soil support cells assemble underground to form a structural matrix filled with uncompacted soil to accommodate healthy root growth, while also providing a load-bearing structure for paved surfaces. They are the proven method for street trees, successfully implemented on thousands of projects around the world.

By understanding the soil conditions that urban trees need to reach maturity, landscape architects and related professionals can take the required steps in specifying the systems and best practice procedures that will ensure the success of our urban tree populations.



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# About GreenBlue Urban

Founded in 1992, GreenBlue was established to conduct research into urban tree planting practices and provide solutions to assist trees in their battle to thrive in urban areas. With the goal of drastically improving urban planting success and increasing leaf canopy in cities, GreenBlue tirelessly analyzed the challenges, the causes of failure, and the reasons for premature mortality in urban trees. We then examined the negative impact that poor planting can have on urban infrastructures. Having identified the key issues in both of these areas, we systematically researched the solutions for those issues and designed practical products and systems to address them.

Local authorities, landscape architects, engineers and other related professionals increasingly turn to GreenBlue for guidance and best practice advice in tree planting implementation. As the global market leader and specialist in urban landscape products, GreenBlue and our overseas partners are able to offer the results of nearly twenty years of frontline experience, exhaustive research, product development and field trials. Our program of continuous product development ensures that specifiers and clients can rest assured that the systems we offer for urban planting schemes represent the best available. For further information, please visit our website or contact our knowledgeable team of consultants.

Establishing the future urban landscape



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## Review of Trees in the Public Highway

Tuesday 7<sup>th</sup> February 2006

Report to the City Council

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# Trees in the Public Highway



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Further copies of this report can be obtained from:

Scrutiny Support Officer: Ann D'Arcy

☎: 303 1729

E-mail: [Ann.D'Arcy@birmingham.gov.uk](mailto:Ann.D'Arcy@birmingham.gov.uk)

Reports that have been submitted to Council can be downloaded from  
[www.birmingham.gov.uk/scrutiny](http://www.birmingham.gov.uk/scrutiny).



# Review of Trees in the Public Highway

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## Review of Trees in the Public Highway

# Preface

**By Councillor Ray Hassall**  
Chairman, Leisure, Sport & Culture  
Overview and Scrutiny Committee



Visitors to our city are often surprised by the numbers and beauty of trees on our highways, but many of us have noted the amount of trees that have been removed due to various factors. There are about 100,000 trees on our highways. Last year, about 1,200 of these were felled. Many of these were diseased or dangerous - lots of the mature trees that we take for granted around the city were planted in Victorian times and as they get older, some have to be felled. Some trees have to be removed to improve the road system and many of us will have noticed that dropped kerbs have been installed across the city, but in doing so hundreds of trees have been removed from the street scene. About the same number of trees have been planted to replace the lost trees, but not always on our streets. Regrettably we are not increasing the numbers of street trees in the city at the moment. We now need to be more imaginative on the way forward to replace trees back on the public highway and increase our total number of trees.

I think that this Scrutiny Review turned out to be one great learning curve for many of us and it was only when we started talking to people that we became aware not only of the importance of trees to our health, to regeneration and to our environment, but also of the many threats to our trees and the problems that the city was encountering in replacing them back on the highway.

During our many discussions and in drawing up our recommendations, we always needed to keep in our minds the ongoing talks regarding the Private Finance Initiative proposed for our Highways and the possible long term effect that it may have on our trees.

The last few months have really made me appreciate the wonderful trees in our city and the urgent need to protect them. We have to thank the foresight of the Councillors in Victorian times who decided to invest nearly £60 (a lot of money in those days!) in planting lots of trees in our city. They planted the first street trees in 1870 in Pershore





## Review of Trees in the Public Highway

Street, Edgbaston Street and Broad Street. I feel we have an obligation to the people of our city in the years to come to ensure they have the same enjoyment from trees that we have had.

Our thanks go to the many people who came in their own time to give evidence. I would like to thank the Overview and Scrutiny Members especially those who joined the Review Group - Cllr David Pears, Cllr Margaret Waddington, Cllr Anita Ward, Cllr Martin Mullaney, Cllr Peter Hollingworth and Cllr Mohammed Fazal – and attended the many sessions that were necessary to hear a great deal of evidence. My thanks also go to Sue Griffith and Amanda Simcox for the great deal of hard work done behind the scenes to ensure that everything went smoothly.

Finally a vote of thanks to Geoff Cole and Gordon Richards of Local Services - their incredible amount of knowledge regarding trees was a great asset to all of us.

A handwritten signature in purple ink, reading 'Ray Russell'.



## Review of Trees in the Public Highway

# 1 Summary

- 1.1.1 Many people visiting the city remark how green it is and they notice the tree lined streets leading to the City Centre. Residents in many areas of the city enjoy their "green" outlook. Years ago in late Victorian times, City Councillors ensured that trees were planted along new main roads and in streets where houses were springing up. These trees now give Birmingham its tree lined image.
- 1.1.2 The Council owns about 1,000,000 trees and it is estimated that 100,000 of these are street trees. These street trees have a strong impact on everyone in the city as they go about their daily life.
- 1.1.3 However Members of the Leisure, Sport and Culture Overview & Scrutiny Committee became concerned that our street trees are under threat at a time when their importance to the environment and climate is increasingly relevant. They asked colleagues from the Transportation and Street Services Overview & Scrutiny Committee to join a Review Group to take evidence on the issues.
- 1.1.4 In the short term the Review Group wanted to make Recommendations as to how current policies and processes could be improved to safeguard our street trees. In the longer term they wanted to ensure that the proposed Highways Maintenance and Management - Private Finance Initiative would not lead to additional threats and challenges to our street trees.
- 1.1.5 First of all the Review Group heard from environmental experts on the wider benefits trees bring to the city. They heard how trees help keep us healthier by absorbing pollution and reducing stress; bring environmental benefits by helping to reduce climate change and provide wildlife habitats and contribute to environmental regeneration by improving perceptions of the city. The Review concludes that an understanding of the significance of trees needs to be much more actively promoted in the city.
- 1.1.6 The Review Group looked at street trees in residential areas and considered the threats to them which sometimes led to their removal. They also heard how replacing street trees is very difficult. The Review concludes that we need to be much more vigilant in recording when street trees have been removed and more active in finding new ways to replace them.



## Review of Trees in the Public Highway

- 1.1.7 The Review Group considered the importance of street trees on our major routes. They were pleased to see new tree planting where new roads are being constructed. They became aware of the choices that sometimes have to be made between improving traffic flows and preserving trees close to major roads. They looked at two case studies to illustrate the way development can affect existing trees. The Review concludes that there are major concerns regarding the Council's apparent difficulty in controlling the activities of contractors working in the vicinity of trees. In addition, Members thought that the process for ensuring co-ordination across Council services during development needs attention.
- 1.1.8 The management of the Council's million trees is a corporate service. The Review Group heard about the objectives of the service – in particular the imperative of ensuring public safety, and the way the service was run. They acknowledged the balance to be struck between maintaining a stock of mature street trees without jeopardising the safety and serviceability of a live and dynamic highway network. The review concludes that the completion and enhancement of a high quality database on City Council trees is a high priority. Not only will this enable the efficiency of tree husbandry to be improved but it will also ensure that the needs of our street trees are apparent in the years ahead.
- 1.1.9 Finally, the Review Group considered in two sessions, the effect of the proposed Private Finance Initiative on our street trees. The Group were unified in their belief that should the management and maintenance of street trees become the responsibility of the successful PFI Contractor, then a strong policy statement is necessary from the City Council to protect our heritage. Members welcomed the opportunity created to update the existing Tree Management Policy (in so far as it affects street trees) and thought that the outcomes of this Scrutiny Review should be fed into it.
- 1.1.10 The Group were very concerned about whether sufficient Tree Officers will be retained by the City Council to advise Members on tree matters should the PFI go ahead. They referred back to the Cabinet Decision of December 2004 when it was decided to include trees within the PFI – subject to a number of safeguards. One of these safeguards was that "client to contain appropriate tree officer capacity to ensure compliance". They spent some time discussing what the appropriate capacity would be.
- 1.1.11 They were also aware that Birmingham could be in the unfortunate position of testing out the law should an accident happen due to a tree falling on the highway. Therefore they recommend that further advice is needed for Members on the legal issues surrounding the transfer of risk.



## Review of Trees in the Public Highway

- 1.1.12 Many of the members involved in this review said they learnt a great deal about trees during the months of the evidence gathering sessions. They had not realised the great importance of trees to the health and wellbeing of the city.
- 1.1.13 Members realised that this review has generated a relatively large number of recommendations. However, they considered that this was a result of several Cabinet Members and Chairmen and many Directorates and services being involved in issues affecting street trees. It also reflected the importance which they placed on the outcome of their wide ranging discussions with experts and officers.



## Review of Trees in the Public Highway

# 2 Summary of Recommendations

	Recommendation	Responsibility	Completion Date
R1	That consideration be given to supporting the setting up of a Birmingham branch of the charity 'Trees for Cities'.	Cabinet Member for Leisure, Sport & Culture & Cabinet Member for Transportation and Street Services	September 2006
R2	That if a street tree is to be removed for any reason, Ward Councillors be informed and a register of such trees be set up within the existing 'Confirm Arbor' database.	Cabinet Member for Leisure, Sport & Culture & Cabinet Member for Transportation and Street Services	September 2006
R3	That a summary report of Street Trees Removed and Replaced be submitted to the Leisure, Sport and Culture Overview & Scrutiny Committee on a six monthly basis.	Cabinet Member for Leisure, Sport & Culture	September 2006
R4	That a report of the evaluation of street tree planting proposals within the Pilot Projects in Selly Oak and Edgbaston Districts to identify ways of increasing tree planting in residential areas, be submitted to the Leisure, Sport & Culture Overview & Scrutiny Committee.	District Chairs for Selly Oak and Edgbaston	March 2007
R5	That consideration be given to setting up a pilot project to identify ways of using street trees in traffic calming schemes.	Cabinet Member for Transportation & Street Services	September 2006
R6	That a process be introduced to require developers, utilities and their contractors to obtain a Permit to Work Adjacent to Trees before consent is granted to open up the highway.	Cabinet Member for Transportation & Street Services	September 2005
R7	That a report on the internal review of the effectiveness of the protocol 'Building a Better Birmingham – A Charter for Development' be submitted to the Leisure, Sport and Culture Overview & Scrutiny Committee.	Cabinet Member for Regeneration	September 2006
R8	<p>That a review of the process and content of the S278 Highways Act Agreement be undertaken including:</p> <ul style="list-style-type: none"> <li>• Development of the highway affecting any tree in the city, on any street.</li> <li>• The connections between the Planning Control process and the S278 Highways Act process.</li> <li>• The process for obtaining arboricultural advice.</li> </ul> <p>The measures and resources currently in place to supervise contractors working in the vicinity of street trees.</p>	Cabinet Member for Transportation & Street Services	September 2006



## Review of Trees in the Public Highway

9	That a seminar be organised for the officers and Members involved in development planning to provide advice on the processes within the City Council for securing arboriculture advice. The proceedings of the seminar should be written up and made widely available, including a report to the Leisure, Sport and Culture Overview & Scrutiny Committee.	Cabinet Member for Leisure, Sport & Culture	June 2006
R10	That consideration be given to upgrading and enhancing the 'Confirm Arbor' database as an urgent priority.	Cabinet Member for Leisure, Sport & Culture	July 2006
R11	That a business case be prepared that sets out the scope for and the consequences of transferring the role of the Tree Contact Centre to the City Council's call centre.	Cabinet Member for Leisure, Sport & Culture & Deputy Leader	September 2006
R12	That the Council's current Tree Management Policy Statement (in so far as it affects street trees) be revised and included in the 'Best & Final Offer' PFI documentation. The revisions should include the conclusions and recommendations from this Scrutiny Review.	Cabinet Member for Leisure, Sport & Culture & Cabinet PFI Committee	March 2006
R13	That all necessary steps are taken to give the best opportunity for the existing Tree Officer posts to be retained within the City Council.	Cabinet PFI Committee	September 2006
R14	That a business case be prepared that supports the provision of additional Tree Officers to ensure that local areas have access to adequate arboricultural advice.	Cabinet Member for Leisure, Sport & Culture	March 2006
R15	That a report be submitted to the Leisure, Sport and Culture Overview & Scrutiny Committee on the legal position regarding the transfer of risk to the PFI Contractor and the implications of this to Elected Members should they be involved in advising on the management of street trees.	Cabinet PFI Committee	May 2006
R16	Progress towards achievement of these recommendations should be reported to the Leisure, Sport and Culture Overview & Scrutiny Committee in September 2006.  Subsequent progress reports will be scheduled by the Committee thereafter, until all recommendations are implemented.	Cabinet Member for Leisure, Sport & Culture	September 2006



## Review of Trees in the Public Highway

# 3 Terms of Reference

## 3.1 Reasons for Conducting this Review

- 3.1.1 In late Victorian times, the city forefathers realised the importance of trees to the quality of life of the growing city and many street trees were planted along major roads and in residential streets. However, this legacy is threatened by the need to service a changing modern city. In addition, whilst the Victorians held trees in high esteem, some people now see them as inconvenient and potentially dangerous.
- 3.1.2 Members of the Leisure, Sport and Culture Overview & Scrutiny Committee decided to undertake this review because they wanted to find out how our street trees could be protected at this difficult time.
- 3.1.3 In the short term, they wanted to make recommendations as to how the current policies and processes could be improved.
- 3.1.4 In the longer term, they wanted to ensure that the proposed Highways Maintenance and Management Private Finance Initiative (PFI) would not lead to additional threats and challenges to our street trees.
- 3.1.5 Members were concerned that the proposed Highways PFI would change the way that the street scene is managed. They thought that should the maintenance and management of trees pass out of the direct control of the City Council, effective measures (including policy guidance) would need to be put in place to protect our heritage of street trees.
- 3.1.6 Therefore the objective of the review was to provide the research and background information to enable policy guidance to be drawn up for the maintenance, management, husbandry and planting of trees in the public highway, which could be used to ensure that organisations other than the City Council, who may have responsibility for the city's tree heritage, cherish and protect this legacy.



## Review of Trees in the Public Highway

### 3.2 The Review Group

3.2.1 A cross-party group of Members were constituted to conduct the review involving Members from the Leisure, Sport and Culture Overview and Scrutiny Committee and the Transportation and Street Services Overview and Scrutiny Committee. The Review Group Members were:

- Cllr Ray Hassall (Chairman)
- Cllr David Pears
- Cllr Margaret Waddington
- Cllr Anita Ward
- Cllr Martin Mullaney
- Cllr Peter Hollingworth
- Cllr Mohammed Fazal

3.2.2 In July, September, October and November 2005, the Review Group took written and verbal evidence from 16 Council Officers, the Cabinet Member for Transportation and Street Services, the Cabinet Member for Leisure, Sport and Culture and representatives from various organisations - the Wildlife Trust for Birmingham and the Black Country, the National Urban Forestry Unit (NUFU), the National Forest, the Birmingham Civic Society, Telewest, the City Council's tree contractors – Central Trees Services and Gristwood & Toms and Paul Harris an insurance expert who deals with claims against the City Council with regards to trees.





## Review of Trees in the Public Highway

# 4 The Wider Benefits of Trees

## 4.1 Introduction

- 4.1.1 A series of presentations on the wider benefits of trees were made to the Review Group on 1<sup>st</sup> July 2005.

## 4.2 Birmingham's Legacy of Street Trees

- 4.2.1 The Review Group heard from the Cabinet Member for Leisure, Sport and Culture how the city needs to be proud of its magnificent heritage of trees. Street trees are fundamental to the city's tree heritage. In late Victorian times, the city forefathers realised the importance of trees to the quality of life of the growing city. They planted the first street trees in 1870 in Pershore Street, Edgbaston Street and Broad Street. Shortly afterwards, the city created its own tree nurseries and planted 1,000 trees in the streets every year (with two interruptions for the two world wars).
- 4.2.2 The Council owns about 1,000,000 trees. It is estimated that there are about 100,000 street trees. These street trees have a strong impact on everyone in the city as they go about their daily life.
- 4.2.3 Not only are they important to the city, but also as part of a regional, national and global ecosystem.

## 4.3 Trees Help to Keep us Healthier

- 4.3.1 The Review Group heard from Nerys Jones, the Chief Executive of the National Urban Forestry Unit (NUFU), how important trees are in filtering out harmful polluting particles from vehicle emissions and in absorbing the harmful gases which can trigger respiratory problems including asthma.



## Review of Trees in the Public Highway

- 4.3.2 She referred to recent research from Lancaster University demonstrating how increasing the extent of the West Midland urban tree canopy could help prevent premature deaths from cardio-respiratory diseases. Respiratory illnesses in the city are a cause for concern and pollution levels along our most heavily trafficked roads are very close to levels which can cause health concerns.
- 4.3.3 Evidence is clear that trees and open spaces reduce the stress of urban living. Members heard that after three minutes exposure to 'green space', actual relaxation can be measured in terms of reduction in muscle tension and blood pressure. With six million working days lost a year due to stress, trees have an important role to play.
- 4.3.4 The value of the shade that trees cast in summer is becoming increasingly recognised as the dangers of direct sunlight on the skin are recognised. Members heard from Nerys Jones that skin cancer claims the lives of 2,000 people per year in the UK and trees in school playgrounds, for example, would help protect children.

### 4.4 Trees Bring Broad Environmental Benefit

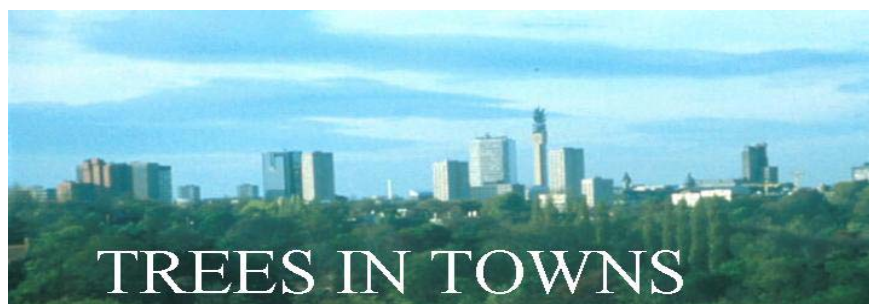
- 4.4.1 Paul Stephenson, Senior Ecologist from the Wildlife Trust for Birmingham and the Black Country reminded the Review Group that whilst some people do not understand the environmental benefits of trees, their value has become apparent in certain countries of the world only after they have been removed. He emphasised how fortunate Birmingham was to have such a legacy but warned that as many trees were becoming old, we could not afford to be complacent.
- 4.4.2 Trees reduce flooding by slowing down the rate at which heavy rain hits the ground. Birmingham has seen an increase in violent storms in the last few years, illustrating that fears of climate change are becoming a reality. Flash flooding following rapid run off causes damage to roads and houses. Nerys Jones reminded the Review Group of the increasing trend of cities being paved over – such as front gardens being paved for car parking.
- 4.4.3 Trees provide significant wildlife habitats which contribute to maintaining biodiversity. Whilst this is important locally, wildlife corridors play an essential role in regional and national nature conservation. Paul Stephenson told the Review Group about the Local Biodiversity Action Plan and how important trees were for birdlife in the city.



## Review of Trees in the Public Highway

### 4.5 Trees Can Affect Economic Regeneration

- 4.5.1 Nerys Jones told Members that research, done by the Government Agency CABE Space, has shown that residential property prices are higher in areas where there is greenspace and trees in comparison with areas of the same type of house, but no green space and trees. There is also a clear correlation between high social deprivation indices and lack of tree cover. Many of our inner city areas of high density housing have fewer trees than lower density suburban areas. As our stocks of street trees become older, their replacement in all types of residential areas is essential to ensure that economically deprived areas are not also deprived of the benefits trees can bring.
- 4.5.2 Paul Stephenson reminded the Review Group that many people "vote with their feet" and move out the harsh inner city environments to our leafy suburbs as soon as they can.
- 4.5.3 Susan Bell and Viv Astling from the National Urban Forest, in their presentation to the Overview & Scrutiny Committee in October 2005, commented on the importance of trees to the image of the city. They thought that the value of the city's green and leafy environment was underestimated in the marketing of the city. The image of Birmingham as a leafy city is often used in promotional material and there is no doubt that the perception of the city is greatly enhanced by its legacy of street trees.



### 4.6 Threats to Trees

- 4.6.1 The Review Group heard how our legacy of trees is now under threat. Many of the street trees planted in Edwardian times are mature and are having to be replaced. Members heard how the primary consideration of the City's Tree Management Service is the safety of members of the public. Absolute safety is arguably not possible in the case of living trees, however the Council has to do everything reasonable to reduce risk. If a tree is damaged in anyway (including the roots), or diseased, it may become a risk and therefore may have to be felled.



## Review of Trees in the Public Highway

- 4.6.2 An increasingly high-tech society has required more services and cables and pipes for gas, electricity, water, cable telephone & broadband are located in pavements. This affects trees in two ways; firstly it is difficult to find locations in the footway to plant replacement and new trees and secondly trenches to insert new services may well damage roots which causes trees to die – therefore they have to be removed to prevent accidents happening later.
- 4.6.3 Not only are trees removed because of their age, but also trees are removed due to highway proposals. Junction improvements, road widening, maintaining site lines, enabling access to sites and dropped kerb vehicle crossings all may require the removal of trees. Again finding suitable locations to plant replacement trees is becoming increasingly difficult.
- 4.6.4 The Review Group heard that when mature trees are replaced, for whatever reason, the benefits of a young tree are far less than the benefits of a mature tree. This is because of the size of the leaf canopy and its ability to filter pollutants etc.
- 4.6.5 To obtain the same environmental benefit, one mature tree should be replaced with six young ones.
- 4.6.6 As society has become more sophisticated, the public's attitude to nature has in some way become more intolerant. Residents find leaves, falling fruit, sticky deposits and insects associated with trees inconvenient and messy when they fall on driveways, cars or homes.
- 4.6.7 In high density inner city areas, many people think space for car parking close to their home is more important than street trees.
- 4.6.8 Trees close to houses are viewed with increasing suspicion especially when they grow large. House subsidence problems are frequently (rightly or wrongly) attributed to trees near houses. House insurance companies are increasingly receiving claims from householders which have resulted in a negative attitude to trees close to houses from surveyors, mortgage lenders and estate agents.



## Review of Trees in the Public Highway

# 5 Street Trees in Residential Areas

## 5.1 Introduction

- 5.1.1 Presentations were made to the Review Group on Street Trees in Residential Areas on Friday 9<sup>th</sup> September 2005.
- 5.1.2 Street trees have an enormous impact on the appearance of our city streets, especially in residential areas. A tree lined street is seen by most people as a more desirable place to live than one without any trees. Several recent studies have shown that houses in areas with trees are valued at a higher amount than similar properties elsewhere without trees close by.
- 5.1.3 The popular belief that people feel better in green, leafy surroundings is now supported by a growing amount of scientific evidence. The stress of life in urban Britain is a very significant factor in the health of the nation, and many people find a green environment more relaxing. Urban residents suffering from stress have been shown to experience less anxiety and insecurity when they have a view of trees.

## 5.2 Types of Residential Areas

### Roads with no Trees

- 5.2.1 Some streets in the city are devoid of any street trees at all. The footway may never have been planted with trees when the houses were constructed, or trees planted in the past have not been cared for and have died or been damaged and removed. This tree-less street scene is made even worse where there are no trees in front gardens or adjacent open space.



## Review of Trees in the Public Highway



### **Roads where the appearance of being tree-lined is created by trees in adjoining gardens or privately owned land**

- 5.2.2 The Calthorpe Estate is well known for its extensive tree cover. Promotional views of the city often show this area to the south west, contrasted with the city skyline. When the Calthorpe Estate was developed in early Victorian times, covenants required the planting of trees in private gardens. Tree lined roads in Edgbaston are the result - the Calthorpe Estate is responsible for their trees: their agents run their own comprehensive Tree Management System. Finance for this is derived from service charges from leaseholders and other income from the estate.



- 5.2.3 In other areas of the city the streets are similarly "greened" by trees not actually in the highway. These may be in gardens (not the responsibility of the Council) or land in housing areas or near schools which are managed by the Council.





## Review of Trees in the Public Highway

### High density, Victorian/Edwardian terraced housing, often in inner areas of the city

- 5.2.4 In some streets, trees were planted in the footways when the houses were constructed at the turn of the century. Trees such as lime and poplar were planted. A hundred years later, the size of these trees is considerable.



*Albert Road, Handsworth*

- 5.2.5 During regeneration programmes such as the Inner City Partnership Programme, enveloping of homes and reconstruction of front walls were complemented by improvements to the highway, including designating parking bays and construction of tree planting bays. Some of these trees have grown well, but others have not.
- 5.2.6 Because of the density of homes and the increases in car ownership, these areas have high levels of car ownership. Front gardens are often too small to enable their use as hard standings. Lack of off-street parking and garages mean the highway is often congested with cars. Trees in the footway may be damaged by the parking of cars. Finding locations for new tree planting is very difficult.



## Review of Trees in the Public Highway

### **Case Study Washwood Heath**

*The Review Group undertook a Case Study of such an area to examine the impact on the ground of policies and processes. A presentation was made on Monday 7<sup>th</sup> November 2005 on the area of Washwood Heath (Bennett's Road, Chartist Road and Membury Road). Members observed that trees planted in 'tree pits' within 'build outs' as part of Urban Programme Improvements 10 – 15 years ago, had not survived – except for two trees. The local residents however placed more value on space for parking their cars outside their own property, than on retaining the 'tree pits' and replacing the trees.*



*Cllr Hassall concerned about parking on top of an empty tree pit at the bottom of Bennetts Rd.*

*Following a site visit with the local residents, the Chairman of the Review Group and the Cabinet Member for Transportation and Street Services reached a compromise – some of the trees would be replaced with mature, well protected specimens and other 'tree pits' would be removed to enable additional car parking.*

*This case study illustrated that in many of the high density inner areas of the city, car parking is seen by residents as a higher priority*

### **Lower density housing often without garages where there is increased demand for off street parking**

- 5.2.7 The increases in car ownership and the desire for off-street parking, have led to an increase in parking on footways and verges and the desire of residents to create hard-standings in their front gardens.





## Review of Trees in the Public Highway



- 5.2.8 The creation of a new front garden parking area will lead to a request to the Council to agree to the provision of a "Dropped Kerb Vehicle Crossing". Householders are required to pay for this work which comprises lowering the kerb and laying foundations and tarmac from the road to the house, across the footway and/or grass verge.
- 5.2.9 This has a visual impact on the street scene since plants and grass in front gardens is replaced by hard-standing, and grass verge by tarmac. In addition the verge may contain a tree which would need to be felled for the Dropped Kerb Vehicle Crossing to be achieved.

### Dropped kerb vehicle crossing

- 5.2.10 The Review Group heard evidence from the Chief Highway Engineer regarding the process used for deciding if a tree should be felled where it prevented the implementation of a Dropped Kerb Vehicle Crossing. He said that no tree on the Highway could be removed without his authorisation.
- 5.2.11 He explained that if a crossing was proposed on a quiet avenue where a car parked on the street would not cause a traffic hazard, then consent to fell a tree for a crossing would be unlikely to be granted. However, where off street parking was desirable for removing parked cars from heavily trafficked routes, then consent may be given to fell a tree to enable a crossing. Each case was dealt with on its merits.
- 5.2.12 A refusal to allow a tree to be felled to enable a crossing is subject to the right of appeal to the Chief Highway Engineer. If a tree is removed without consent then Highways may pursue a claim against the offender for damage to the highway. The intention would be to recover sufficient costs to provide a replacement semi-mature tree to be planted as close to the felled tree as possible.



## Review of Trees in the Public Highway

- 5.2.13 In 2004/05, 165 trees were removed for crossings. Trees have been replaced on the highway on a 'one for one' basis in every instance.



### 5.3 Threats to Trees from Utility Cable Laying

- 5.3.1 The area beneath the pavement or footway is the major location for pipes and wires carrying services to homes including, gas, electricity, water and Cable TV/Broadband/telephone. Footways are frequently dug up to access existing services, or lay new ones in trenches. If this is done by machine street tree roots can be damaged. A large street tree has an extensive root system close to the surface of the soil.
- 5.3.2 A tree can withstand a small proportion of its roots being damaged, however root damage often leads to the tree deteriorating in health over a short, or longer period of time. The tree then becomes a risk and has to be removed by the Council on safety grounds.



## Review of Trees in the Public Highway



*Villa Road, Handsworth*

- 5.3.3 The Review Group heard evidence from Peter Renhard, a representative from Telewest and a member of Birmingham HAUC (Highway Authority & Utilities Committee). He explained that Birmingham HAUC met once a quarter to discuss any utility problems. He described the regulations that govern the way utilities are required to work in the vicinity of trees. These are the National Joint Utilities Group 'Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees' Publication No 10 April 1995, known as NJUG10. The guidance is based on establishing a Precautionary Area for protecting the roots – in many cases this is the area under the tree canopy. Within this precautionary area care must be taken not to damage tree roots. A copy of these guidelines is attached in the Appendix.
- 5.3.4 However, the Assistant Director, Parks, Sports and Events told the Review Group that whilst the utility companies may have good intentions, sub contractors were sometimes careless. The indiscriminate use of modern machinery, coupled with inadequate site supervision, has led to examples in the city of tree roots being damaged. In Northfield an avenue of trees had to be replaced and payment was provided by the negligent utility company.



## Review of Trees in the Public Highway

### 5.4 Insurance Claims

- 5.4.1 Homeowners are increasingly viewing trees near their property with suspicion. There has been an increase in the tendency to blame trees for subsidence of houses. The insurance industry is involved in several ways.

#### **When new mortgages are sought**

- 5.4.2 When new mortgages are sought on a property with a tree close by, surveyors conducting mortgage reports increasingly recommend the report of a tree specialist.
- 5.4.3 Arboricultural advisors are increasing in number to meet the demand for advice. There have been concerns that reports are prepared after only cursory site visits. Where tree roots are identified in the vicinity of a house, pre-emptive tree felling may well be suggested. If the tree is in a street owned by the Council, felling by the Council is requested.

#### **Structural damage blamed on street trees**

- 5.4.4 If a house has shown symptoms of subsidence, such as cracks in the internal plaster or in the external brickwork, nearby trees are often blamed. The justification for the blame is usually made by claiming that tree roots have removed water from the subsoil under, or near to the foundations. The volume of clay soil reduces if it dries out significantly and this can cause the seasonal movement of foundations and therefore structures.
- 5.4.5 The Review Group received evidence from a Consulting Engineer, Paul Harris on Monday 9<sup>th</sup> September 2005. He outlined his role as an advisor to the City Council's insurers where residents were claiming against the Council saying that a Council owned tree had caused damage to their property. He dealt with 81 cases for the City Council in 2004.
- 5.4.6 He explained that he dealt with situations where a claim is made that a tree has caused:
- Direct physical damage by roots to walls and drives
  - Indirect damage. i.e. subsidence



## Review of Trees in the Public Highway

- 5.4.7 Physical damage arises where roots lift walls, drives or paving – he only looks at cases brought against the Council by private individuals where damage is not covered by household insurance. Where his report assesses that the tree roots have caused the problem, the Council's makes a claim on its insurance – although it has to pay an amount defined in the policy as the 'insurance deductible or excess'. This is then paid to the householder in compensation which pays for the repair/replacement of the drives/walls.
- 5.4.8 Any preventative work, such as severing of the roots causing the damage, is carried out by the Council at their own expense. However, the use of a plastic root barrier to restrict future root growth is not normally carried out. Members thought that this would be a good policy to investigate.
- 5.4.9 Paul Harris advised Members that in his opinion there had not been a rise in incidents of direct physical damage, rather an increase in claims to the Council because of the increased focus on household "perfection", decreasing tolerance and an increasingly litigious society.
- 5.4.10 Although it is often claimed that the cause of the structural movement (which may in any case be extremely small) is the tree roots removing water, there are many other reasons for house foundations becoming unstable. The material question is whether or not the subsidence would have happened if the tree had not been there. If the answer is yes, then the owner of the tree must pay all the costs.
- 5.4.11 Paul Harris explained that when structural damage occurs as a result of subsidence, homeowners claim on their home insurance. Where the insurance company suspects a tree owned by the City Council has led to the subsidence, it is likely to make a claim against the Council. He reminded Members that subsidence was a much more significant problem in London because of widespread clay soils – such soils are only found in areas in South and West Birmingham and these types of claims are confined to those areas. Most, but not all cases, involve highway trees – most, but not all, involve larger and older trees.
- 5.4.12 He said that there were 33 claims due to subsidence against the Council in 2004 (following the 2003 drought). The total cost of settlements was likely to be around £300,000. However, the risk of a specific tree in Birmingham causing subsidence is less than 0.1%. Mr Harris dealt with a further 48 cases for claims due to root damage, although some additional ones were dealt with by the Council direct.





## Review of Trees in the Public Highway

- 5.4.13 Whilst he thought there had been no general increase in numbers of incidents since the late 1980's, the increased number of claims was mainly due to changes in attitudes by household insurers and hardening of the legal position making it easier to claim.
- 5.4.14 He considered that preventative management would involve felling and replacing trees in known "hotspots". Replacement trees should be grown in root restricting pits. Research has shown that pruning does not reduce the impact of root systems.

### 5.5 Conclusions on Tree Removal

- 5.5.1 Trees need to be removed for a number of reasons. Within the Tree Management & Maintenance Programme, these are:
- Old trees likely to fail and cause a safety hazard
  - Diseased or dead trees
  - Trees the subject of a successful legal claim that they are causing damage
  - Trees sustaining root damage which may cause tree failure and a public hazard
  - Trees which are too large for the space they are growing in causing damage to footways or walls/buildings
- 5.5.2 As regards trees affected by Highway Improvement Works and Footway Crossings, these are:
- Where dropped kerb vehicle crossing is deemed essential
  - Where highway improvements need to be implemented
- 5.5.3 Trees on the public highway can only be removed with the permission of the Chief Highway Engineer. Within the Tree Maintenance and Management Programme, removal permissions are delegated to the Assistant Director (Parks, Sports and Events). Where trees are affected by Highway Improvement Works and Footway Crossings, tree removals are authorised on a scheme by scheme basis by the Chief Highway Engineer.
- 5.5.4 The Leisure, Sport and Culture Overview & Scrutiny Committee heard evidence on Wednesday 12<sup>th</sup> October 2005 from Stephen Hartland of the Birmingham Civic Society regarding his concern about the removal of street trees in the city. Whilst many of the photographic examples he showed the Committee were located in the City Centre, he said that his concern extended to residential areas as well.



## Review of Trees in the Public Highway



*Stephen Hartland's concern over trees not replaced on the Hagley Road*

- 5.5.5 There are an estimated 100,000 trees on the highways. During 2004/05 the number of these trees felled was 1,209. Of these, 137 were removed as part of the phased removal programme – where trees have become too old or outgrown the space available. A further 165 were removed for dropped kerb vehicle crossings. The remaining 907 were felled because they were diseased or dangerous, or affected by highway improvement schemes.
- 5.5.6 Residents of the city have different attitudes towards the removal of trees. Some people want trees near their houses felled because they see them as a danger or a nuisance or because they want to park their cars in the space released. Other people feel strongly that trees should not be removed and campaign for their retention.
- 5.5.7 Trees on the public highway can only be removed with the express permission of the Chief Highway Engineer. He is advised by the city's arboricultural experts – the Tree Officers within the Tree Management Service. It is essential that any tree that threatens the safety of the public is removed.

## 5.6 Planting New Trees in Residential Areas

- 5.6.1 It is the policy of the City Council to replace trees removed from the public highway. To do this, on average 1100 trees are ordered every year to be planted citywide – which works out at about 100 per District. During 2004/05, 1,209 trees were removed from the highway and 1,200 replacement trees were planted.



## Review of Trees in the Public Highway

- 5.6.2 However planting new trees in the highway is beset with problems. Where a tree has been removed, it is not possible to plant another in the same place. The Review Group heard from the Assistant Director, Parks, Sports and Events that when a tree is felled it is cut off at the level of the footway. Then the trunk area is broken up with a stump grinder machine. The roots are left in situ to slowly rot away since it is impossible to remove them. This is because over time, they would have threaded themselves through service cables – root removal would damage the services.
- 5.6.3 Where new street tree planting is desirable, a search has to be made of the utility cables/pipes that run beneath the surface. These plans are produced by the utility companies and copies are available from the Chief Highway Engineer. However, Members heard evidence that these plans are often inaccurate. Once a suitable location appears to have been found, a trial pit may need to be dug. If no services are found, then a tree may be planted.
- 5.6.4 Because of these difficulties, not all removed street trees are replanted on the highway. In 2004/05 only 911 of the 1,200 replacement trees were planted back into the highway. The remainder were planted in parks and open spaces.
- 5.6.5 Therefore, there would be a gradual decline in the total number of street trees were it not for planting within new road schemes, local centres, regeneration projects and local level District planting projects.



## Review of Trees in the Public Highway

### ***Pilot Project District Planting Project***

*One of the Review Group Members, Councillor Mullaney, reported that his District was looking at new ways of increasing the numbers of street trees. He and another Member had been approached by local residents from Moseley, Cotteridge and Stirchley asking if more trees could be planted in their streets. In one area residents hope that planting well protected trees will stop cars parking on footways and verges.*

*The District Parks Manager has arranged for the local City Highways Depot to excavate the tree pits – locations have been chosen where the Utility Plans show there is space. To prevent horizontal spread of tree roots which could damage utility pipes and cables, a plastic 'service guard' is being laid in the tree pit. This is a new technique, borrowed from Holland, that is being tried out at the local level in response to public interest in seeing more trees in their streets.*



*Planting in Selly Oak in January 2006*

*Finance for the planting is being found from within the District Budget. Similarly in the Edgbaston District, Councillor Clarke (who led the pioneering 'Operation Green Up' in the 1980's), is working with local residents in the Quinton Ward to identify sites in the grass verges for tree planting.*



## Review of Trees in the Public Highway

### The concept of 'Home Zones'

- 5.6.6 In some European countries, traffic calming is achieved by narrowing roads in residential areas and planting trees in parts of the carriageway. This not only slows traffic, but introduces more trees in the street scene. In this way they can be planted away from existing utilities in the footway. There are examples of Home Zones in the UK and the concept is supported by the government.



*Northmoor, Manchester - Home Zone*

- 5.6.7 However Home Zones are relatively expensive to implement and some residents only feel comfortable if their car is parked immediately outside their house.
- 5.6.8 It may be that some of the principles of Home Zones could be adapted for use to enable more street trees to be incorporated in high density residential areas.

### Increasing the number of trees in the residential areas

- 5.6.9 If streets are increasingly hostile places for trees to be, consideration needs to be given for increasing the number of trees on sites next to the highway. This could be on land owned by the Council, or privately owned. Local residents may wish to plant trees in their front gardens (where there is space) but lack the knowledge or ability to do this.



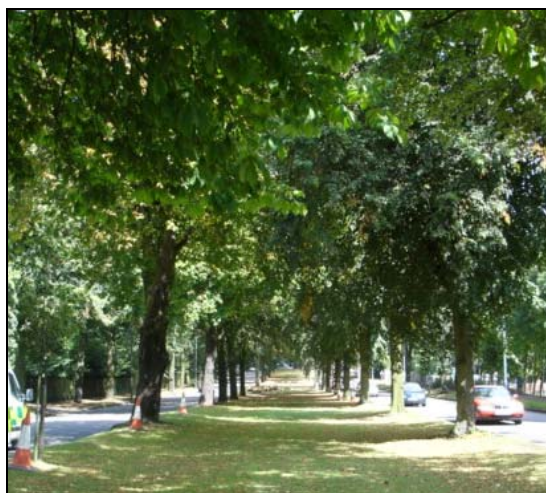


## Review of Trees in the Public Highway

# 6 Street Trees on Major Routes

## 6.1 Introduction

- 6.1.1 Presentations were made to the Review Group on Street Trees on Major Routes on Monday 19<sup>th</sup> September 2005.
- 6.1.2 Dual carriageway roads into the city such as the Bristol Road and the Stratford Road are not only lined with mature trees but the central reservations (where once trams ran) are also the home to large trees. These create very strong green corridors into the city, attractive both to residents and those travelling in and out the city.



*Bristol Road, Selly Oak*

- 6.1.3 Other strategic routes have been 'greened' more recently. In the early 1980's, Operation Green-Up was a radical programme, (inspired by work in Germany) which replaced grass on the central reservations of routes such as the then "Middle Ring Road" with intensive shrub and tree planting. The trees at Dartmouth Circus provide a sharp contrast with the concrete of the Aston Expressway at the northern entrance to the city.



## Review of Trees in the Public Highway

### 6.2 The Protection of Trees

- 6.2.1 The regeneration of the city requires development of a wide variety of sites for employment opportunities, hospitals, shopping areas and homes. Safe and convenient access off major routes is essential. However new access point construction can conflict with the health of our street trees.

#### The requirement of contractors to protect trees

- 6.2.2 Work on the public highway is carried out by contractors on behalf of the City Council. There is a legal contract between the City Council and those companies that carry out the work on our roads and footways. The contractors are working to the designs and the detailed plans agreed with the City Council. Therefore the protection of trees on highways is affected by both the detailed design of the scheme and the way in which those works are carried out by the contractor.
- 6.2.3 There are codes of conduct for contractors working near to street trees. These are "The National Joint Utilities Group Guidelines" and British Standard 5837:1991". Details of these are set out in the Appendix.

#### Section 197 of the Town and Country Planning Act 1990

- 6.2.4 Under section 197 of the Town and Country Planning Act 1990, local planning authorities are under a duty to ensure that they make adequate provision for the protection and planting of trees when granting planning permission. They do this by a combination of planning conditions and tree preservation orders. Tree Preservation orders cannot be applied to trees owned by the Council.

### 6.3 Development Affecting Street Trees

- 6.3.1 New developments can affect existing street trees where additional or improved access points are needed off the highway. Planning applications are available for public viewing and the Local Planning Authority consults widely with Members, the public and Council Services.
- 6.3.2 Where a planning application is approved for a development that requires work to the Public Highway, it is subject to a legal agreement to procure the access. Traditionally Section 106 of the Town & Country Planning Act required the developer to fund the highway works which were carried out by the Local Authority. However this process was seen to take too long. Now under an agreement within Section 278 of the Highways Act 1980, the developer carries out the work at their own expense and the Local Authority has an inspection role.



## Review of Trees in the Public Highway

- 6.3.3 Before any construction on the Highway can take place, detailed plans have to be approved by the Assistant Director (Development Strategy) after consultation with ward Councillors and the Cabinet Members. Plans must show any trees affected. Trees can only be felled with the permission of the Chief Highway Engineer.

### **Case Study** **Access to the Pebble Mill Site off Bristol Road**

*This site was chosen as a Case Study to illustrate the effectiveness of the current arrangements for protecting street trees where a new access off the Highway is proposed in connection with development.*

*The site is the former BBC studios at Pebble Mill – a new access was required off the heavily tree lined Bristol Road to enable the development of the site as a science business park.*

*The Review Group took evidence on Monday 19<sup>th</sup> September 2005 and again on Monday 7<sup>th</sup> November 2005. Officers from several departments explained the processes currently in place for agreeing the works and protecting the street trees.*

*Members were concerned that the original plans submitted to the Local Planning Authority did not give an accurate picture of the number of trees that would be affected by the new access road. It was only when the detailed plans for the access were marked out on the ground as part of the s278 Agreement, and arboricultural advice obtained, that the full impact of the construction on the trees was realised. At the Planning Application stage the assumption was that three trees would need to be felled.*

*The Review Group heard that eight trees had been felled by the end of October 2005 and there were concerns about a further three trees.*



*Central reservation on the Bristol Road at Pebble Mill – August 2005*



## Review of Trees in the Public Highway

*Members were also very concerned about the lack of respect shown by the contractors to the retained trees on the site. They heard evidence of the obligations imposed on developers to protect street trees including the planning conditions and the S278 Agreement. Despite this, photographs taken of the site showed Members the damage being done to the street trees by contractors.*

*The Review Group were adamant that the felled trees should be properly replaced and intended to monitor the process to achieve this.*



*Tree damage – Pebble Mill 14.09.05*

### **Case Study Harborne Lane Cycle Path**

*This site was chosen as a Case Study to illustrate how important it is that both the design of the scheme and the supervision of contractors takes into account the need to protect street trees.*

*Harborne Lane is a heavily trafficked dual carriageway – part of the Outer Circle Route. The cycleway was proposed as part of the Safer Routes to Work Programme because a demand had been expressed for cycling facilities within the vicinity of Birmingham University.*

*The Review Group took evidence on Monday 7<sup>th</sup> November 2005 from officers. Members were concerned that a scheme designed by officers from the City Council and implemented by our own 'term contractors' had resulted in the loss of six mature Hawthorn trees.*



## Review of Trees in the Public Highway



*Existing Hawthorn trees just after the laying of the hardcore*

*Members were disappointed to hear that the design of the scheme required tarmac to be put down close to the base of the trees and that the contractor cut through the roots with heavy machinery to enable the hardcore to be laid. Since such root damage could cause tree failure and a potential highway hazard, all the trees (except two) had to be removed.*



*The same view with the cycleway in place.*

*Replacement trees will be planted in the winter planting season 2005/06.*

### 6.4 New Roads in the City

- 6.4.1 The construction of new roads in the city can both provide opportunities for new tree planting, but also may threaten existing trees. Each scheme is a balance between retaining existing trees and incorporating new trees into the design. Since inserting new trees into existing streets is difficult due to services, new schemes can create planting sites with sufficient soil suitable for good tree growth.





## Review of Trees in the Public Highway

### Bull Ring Bus Mall

- 6.4.2 The demolition of Masshouse Circus and the realigning of the Ring Road have enabled a townscape dominated by concrete to be softened by the planting of mature Plane trees to create a tree lined Boulevard.



### Northfield Relief Road

- 6.4.3 Northfield is one of the city's most important shopping centres, however between 25,000 – 30,000 vehicles use the Bristol Road South everyday. The relief road will divert non-essential traffic from this busy local centre to enable the shopping centre to become a much more pleasant place for people. The scheme is under construction at the present time.
- 6.4.4 The new carriageway is  $\frac{3}{4}$  mile long and is a two lane dual carriageway with a central reservation. Tree planting has been agreed to create an avenue of trees on either side of the road to link up with the existing Bristol Road mature trees. Additional soft landscaping will be provided at suitable locations.





## Review of Trees in the Public Highway

- 6.4.5 The cost of the tree planting will be met from the finance package for the whole project.
- 6.4.6 During the design phase of the project, the city's Landscape Practice Group were commissioned to:
- Design the tree planting and landscaping
  - Advise on the suitability of the type of street trees
  - Select the individual trees in the tree nursery in late summer 2006
  - Supervise the planting of the trees between November 2006 and March 2007 – the planting season
- 6.4.7 The first two years of the care of the trees will be part of the initial contract to ensure that the trees grow well – if they do not then they will be replaced.
- 6.4.8 There will be a significant increase in the number of trees in the locality as there were few trees in this area. Only a small number of trees have been removed as they were in the line of the new road – two trees of significant landscape quality have been saved by redesigning the new highway kerb lines and adjusting levels.

### 6.5 Improving Traffic Flow on Strategic Routes

- 6.5.1 Street trees on strategic routes have to compete with the priority of improving traffic flow. In addition where strategic routes pass through Local Centres, trees also have to compete with the demands of servicing shops and the need for parking. If these demands outweigh the value placed on trees and if existing trees are not protected, then trees will be lost in these locations.



## Review of Trees in the Public Highway



*Sparkhill – Is there room for our trees?*

- 6.5.2 The creation of 'red routes' and 'bus only lanes' are an important part of improving traffic flow on major routes. However creating bus lanes may require a road to be widened, either by the compulsory purchase of privately owned land adjacent to the highway, or by incorporating grass verges into the carriageway. In either case trees may need to be felled. The creation of 'red routes' may lead to increased demand for off street parking.

### **Stratford Road Red Route**

- 6.5.3 The trees in Sparkhill local centre are under pressure from demands on the highway. The creation of the Red Route to increase traffic flows includes work in the shopping centre to create parking bays, so that cars are not parked in prohibited areas on the main through route. The bays have been constructed by inserting them between the street trees in the former footway. Although the spacing of the trees has allowed spaces for several cars, some shop keepers would prefer the spaces to be longer to allow access to their shops by large lorries.
- 6.5.4 During the construction of the bays, local traders wanted an additional tree removed to allow more parking in front of their shops. A request was turned down by the Chief Highway Engineer to fell the tree to enable a larger service/parking bay to be created. The difference in opinion between the wishes of the residents and the wish of the Council to retain the street tree led to the issue being covered on the local radio and Members being involved in the debate.



## Review of Trees in the Public Highway

- 6.5.5 In other locations along the A34 in more residential areas, there will possibly be future pressures to convert grass verges into parking bays to ensure that cars are not parked on the red route carriageway.

### **Bus lane proposal A456 Kings Head, Bearwood**

- 6.5.6 In order to reduce the journey time of buses travelling into the city along the A456, the creation of a bus lane was proposed. The bus lane was to be achieved by retaining the existing two carriageways (albeit narrower) and adding a third lane by widening of the road, or in the area of Lightwoods Park, narrowing the central reservation.
- 6.5.7 The section alongside Lightwoods Park has been successfully implemented. Trees that had to be removed as the road was widened, have been replaced on the central reservation.
- 6.5.8 The section towards the City Centre from the Kings Head Pub in Bearwood was to have taken land on the southern side of the carriageway which has been subject to a longstanding 'road widening line' (land formally reserved for road improvements). Plans were drawn up, however the public became very concerned as several mature trees would have to be felled to make way for the new carriageway. A vigorous public campaign followed and the scheme was dropped.
- 6.5.9 The Review Group heard evidence from the Assistant Director – Development (Highways) that this scheme was an illustration of the political choices that the City Council needs to make between reducing congestion and keeping major routes flowing and preserving street trees.

## **6.6 The Need for More Street Trees on Major Routes**

- 6.6.1 Street trees on major routes have a big impact on the impression of the city that residents and visitors see on a daily basis, if they are travelling around the City. Evidence suggests that tree lined streets have a positive effect on our health and wellbeing.
- 6.6.2 The Leisure, Sport and Culture Overview & Scrutiny Committee, on Wednesday 12<sup>th</sup> October 2005, received a presentation from Susan Bell and Viv Astling from the National Forest. They were keen to promote the importance of tree planting along the major routes linking the National Forest (to the north of the City in Staffordshire) with the city. Such tree planting would not only create a wildlife corridor, but also improve the image of the approach to the city from the North.



## Review of Trees in the Public Highway

- 6.6.3 The success of the 'Operation Green-Up' project implemented in the 1980s was referred to now that tree planting is maturing not only in Birmingham – around Dartmouth Circus – but also in cities such as Sheffield.
- 6.6.4 The Committee heard a presentation on Wednesday 9<sup>th</sup> November 2005 from Brian Stocks on the effect of the Olympics in London in 2012. He emphasised the opportunities to the city of hosting training camps for athletes and other sportsmen and women. However, the routes to and from these training camps would form an impression of the city and he considered that the Council should be planning ahead with environmental improvements such as tree planting.
- 6.6.5 However increasingly trees are under pressure as traffic levels grow, travel demands increase the number of journeys - our radial routes struggle to cope with being both through routes and neighbourhood high streets. Not only are measures necessary to protect existing trees from these pressures, but sites for new planting need to be found.
- 6.6.6 Street trees on major routes are usually planted when they are about eight years old – this is old enough for the tree to make an impact straight away. At this age they are 6-7 feet high and have trunks 14-16cm thick. Although they have been specially raised to have a small root ball (to facilitate replanting), a hole with good soil is needed at least 1 metre square. In urban areas finding areas of ground that are not constrained by previous tree roots, previous development or underground services is very difficult.
- 6.6.7 It is City Council policy to replace with another tree – in another location – any street tree that is felled. However a suitable site has to be found and this may be away from the location of the felled tree. Therefore members of the public may not know that their local tree has been replaced.
- 6.6.8 The only suitable location may be in a city park where the tree can subsequently be maintained within the park management plan.
- 6.6.9 If highway land is increasingly a hostile place for trees to be, consideration needs to be given for increasing the number of trees on land adjacent to the highway. This could either be done in conjunction with the private owners of the land, or land in the ownership of the Council could be identified and used.





## Review of Trees in the Public Highway

### The process for replacing trees

- 6.6.10 The responsibility for replanting on minor schemes lies with the District Parks Manager. Where specialist advice on tree species etc is required, they may consult with the Tree Officer. The work is carried out by the Council's Horticultural Maintenance Contractors.
- 6.6.11 The responsibility for replanting on major schemes, especially when developer's contractors are involved lies with the Council's Landscape Practice Group (LPG).
- 6.6.12 During the construction of Harborne Lane Cycleway, a number of mature Hawthorn trees were removed. Each area of the city is allocated one of the four Tree Officers and each District has a Parks Manager. The Tree Officers and the Parks Manager visited the site and recommended the size, type and planting location for the replacement trees. The same number of a similar species of tree has been specified.
- 6.6.13 The District Parks manager placed an order with Hilliers Nurseries who supply the City Council with most of its trees. They will be delivered to the site during the winter planting season. They will be planted by the Horticultural Maintenance staff working for the District Parks Manager. The costs will be recharged to the Chief Highway Engineer. If it is considered that the contractor was negligent in failing to protect the trees, then a financial claim could be pursued against the contractor.
- 6.6.14 The trees will be 14 – 16 cm trunk girth which means they will be about 6 feet high. They will have been grown with a restricted rootball to enable them to be planted in the narrow grass verge adjacent to the new cycleway.
- 6.6.15 During the construction of the new access road to the Pebble Mill site off Bristol Road, a number of large lime trees were removed. The City Council's Landscape Practice Group (LPG) will be working with the developer of the site since the trees were removed as part of work carried out by the developer under S.278 of the Highways Act.
- 6.6.16 The LPG will specify the species and the sites for planting. In this case large 'semi-mature' trees, 8 – 9 metres tall will be planted. The developer's sub contractor will be planting the trees with advice and supervision from LPG.
- 6.6.17 The developer will meet the cost of the trees, the planting by their sub-contractor and the advice service from the Landscape Practice Group.



## Review of Trees in the Public Highway

- 6.6.18 The advantage of planting larger trees is not only that they make an impact quickly, but they are more resistant to disease and to vandalism. If a tree dies within the first 2 years of planting, then it is replaced as part of the contract. If it is vandalised, then the replacement cost is not met from the contract.

### Tree varieties

- 6.6.19 The Review Group discussed varieties of trees used in new schemes and where trees have to be replaced. On the one hand, they accepted that large forest trees such as Lime are seen by some people as too large for urban areas. On the other they were aware that the ecological benefit of small ornamental trees is very limited.
- 6.6.20 Members agreed that all tree planting needed to take into account the ecological significance of the trees chosen.
- 6.6.21 Members heard that new varieties of trees are being bred which do not have some of the negative features sometimes associated with trees. The major nursery suppliers of street trees are working hard to develop varieties which are of the greatest benefit and which are of the size and shape to suit a variety of locations.
- 6.6.22 The species selected for the Northfield Relief Road planting scheme are as follows:
- 12 Acer Campestre 'Elsrijk' (Field Maple)
  - 13 Betula Pendula (Silver Birch)
  - 68 Corylus Colurna (Turkish Hazel)
  - 7 Prunus Avium 'Plena' (Double Flowered form of Wild Cherry)
  - 13 Pyrus Calleryana 'Chanticleer' (Callery Pear)
  - 22 Quercus Robur 'Fastigiata Koster' (Columnar form of English Oak)
  - 9 Tilia Tomentosa 'Doornik' (European White Lime)



## Review of Trees in the Public Highway

# 7 Tree Management Policy

## 7.1 Introduction

- 7.1.1 A series of presentations on the Tree Management Policy was made to Members of the Scrutiny Review Group on Monday 12<sup>th</sup> September 2005.
- 7.1.2 Birmingham City Council is a major land owner. The Council 'owns' about a million trees. These are located in parks, in housing areas, in school grounds and in the streets. It is estimated that there are about 100,000 street trees.
- 7.1.3 The Tree Management Policy applies to all the trees the Council owns – about a million. The estimated 100,000 street trees are numerically a small proportion, however because of the levels of risk involved, their care is a high priority within the service.

## 7.2 What is Tree Management?

- 7.2.1 In all urban areas, trees are inevitably a compromise. In many cases they lose leaves in the autumn, produce fruit, deflect light and sometimes cause damage to surfaces and very occasionally buildings.
- 7.2.2 Even so, people regard trees as an amenity, providing habitats for wildlife, shelter from sunshine, and adding so much to the visual amenity of an area. Far more important, and often less obvious is the role of trees in terms of our climate. They are massive air filters and purifiers, they create oxygen and help recycle water from the soil into the atmosphere. They provide shelter and shade, and on a macro scale help stabilise the earth's surface from erosion, heavy rain and high wind.



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- 7.2.3 Although trees are natural, living things which usually grow happily, they do actually need to be looked after. This is variously described as management, upkeep, maintenance, care, safeguarding, conserving, enhancing and preserving tree health. The professionals that do this are arboriculturalists. The whole tree needs to be looked after – the trunk, the branches and the roots.
- 7.2.4 Changing climatic conditions including cataclysmic storms, high winds, such as the hurricanes in 1987 and 1991 culminating in the tornado in July 2005, cause severe damage to tree stocks. Climate change may mean that the current tree species may not be suitable. Also physical damage to any one of these can reduce the health, and therefore the life of the tree. Other threats include chemicals in the soil, air pollution, disease (especially fungus) and old age.
- 7.2.5 Without tree management, trees not only die earlier than necessary, but they may become a hazard to people and property as branches may fall off and the whole tree may uproot or break off at the trunk. Falling branches or whole trees is termed 'tree failure' and any tree which has characteristics which could lead to tree failure is called a tree 'at risk'.

### 7.3 Responsibility for Tree Management

- 7.3.1 Every tree has an owner and the responsibility for the tree lies with the owner of the land on which it grows. Under legislation, the owner of the tree has a duty of care to ensure that tree(s) on their land do not cause damage to persons or property. Any actions the tree owner takes (or does not take) may be judged in a legal sense as to whether they were "within reason" or "reasonably practicable".

### 7.4 The City Council's Tree Management Service

- 7.4.1 The Review Group sought clarification on who was responsible for trees in different parts of the Council, since they were under the impression that each Directorate had their own Tree Officer. However, the evidence showed clearly that the Tree Management Service is a corporate service that is responsible for all the trees owned by the Council.



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- 7.4.2 Trees on Council owned land is the responsibility of the Cabinet Member who owns the land. However, the responsibility for managing and maintaining all trees has been delegated to the Parks, Sports and Events Division of the Directorate of Local Services. This service is the responsibility of the Cabinet Member for Leisure, Sport and Culture.
- 7.4.3 Members heard that this service is usually achieved through Service Level Agreements between the relevant Portfolios. A Service Level Agreement is in place covering the Tree Management of Highways and Housing trees (the Housing agreement is currently being renegotiated by a group of the relevant officers) and for all other service areas an approved specification provides the basis for the management and maintenance programme.
- 7.4.4 The current basis for the Council's management regime for trees is by way of the criteria set out in the report approved by Cabinet on 21 January 2002 titled 'The Maintenance and Management of the City's Trees'.

### 7.5 Financing the Tree Management Service

- 7.5.1 The Assistant Director, Parks, Sports & Events explained to the Review Group that the finance for tree management is located in the budget of the Portfolio holder who owns the trees. This then forms part of the City Council's Integrated Horticultural Maintenance Budget which is administered on behalf of all Portfolios by the Parks, Sports and Events Division in Local Services.

#### Financial Analysis of Expenditure on Tree Work

Cabinet Portfolio	2003/4	2004/5	2005/6
	Budget	Budget	Budget
Transportation & Street Services	854,899	887,319	947,927
Housing	144,425	175,085	193,116
Education	100,000	100,000	100,000
Leisure, Sport & Culture	200,000	211,360	225,690
Environmental Health	80,000	80,000	80,000
<b>Totals</b>	<b>1,379,324</b>	<b>1,453,764</b>	<b>1,546,733</b>





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- 7.5.2 The budget for the Tree Management Service is administered centrally based on priorities identified by Districts/Wards and proactive/reactive inspections carried out by Tree Officers in accordance with the agreed policy guidelines.
- 7.5.3 In addition some finance may be available through a variety of budgets to carry out additional tree maintenance (one offs). Examples include housing revenue funds for additional tree planting on housing land, planting finance from Local Centres, finance associated with minor road schemes and city centre funds. In addition Districts may have access to funds such as Neighbourhood Renewal Fund (NRF) and SRB6 for tree planting where local Members feel this is particularly important.

### 7.6 Staffing the Tree Management Service

- 7.6.1 The responsibility for the corporate Tree Management Service rests with the Cabinet Member for Leisure, Sport and Culture and its day to day management is the responsibility of the Assistant Director Parks, Sports and Events.
- 7.6.2 The work of the Tree Management Service falls within the remit of the Horticultural Manager within Parks, Sports and Events Division. A strategic overview of the trees in our parks is maintained by the Council's Parks Managers and professional guidance and advice on all trees is provided by the Urban Forestry Officer.
- 7.6.3 Day to day responsibility for all Council trees lies with four Tree Officers (and one trainee). Each Tree Officer is responsible for a group of Districts - the groups are:
- Edgbaston, Northfield & Selly Oak
  - Erdington, Perry Barr & Sutton Coldfield
  - Hall Green & Sparkbrook
  - Hodge Hill, Ladywood & Yardley
- 7.6.4 The Tree Officers carry out inspections in response to enquiries and complaints and devise work programmes and arrange for their implementation in accordance with the agreed policy. The actual work such as pruning and felling is carried out by specialist contractors. Two firms have been appointed through the tendering process: Gristwood and Toms are a national firm and can carry out surveys and practical work – they tend to work mostly in the south of the city, and Central Trees do practical work in the north of the city. When additional work is needed in the city, such as in the wake of the recent tornado, both Contractors can draft in additional support through their national networks or engage experienced approved subcontractors.



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- 7.6.5 All enquiries about trees including public telephone enquiries are received by the Tree Contact Centre, a small unit of three staff located at Manor Farm who provide an administration service for all horticultural enquires including trees. Queries about Council owned trees are passed on to the Tree Officers for assessment.
- 7.6.6 Members of the Review Group expressed different opinions regarding the effectiveness of the Tree Contact Centre. Some said that all calls they (or their constituents) had made were answered promptly and efficiently. Others said they had had complaints about the service.
- 7.6.7 The Review Group were under the impression that several different parts of the Council had their own Tree Officers, however the only other Tree Officers employed by the City Council are in the Planning Division who deal specifically with Tree Preservation Orders (TPOs) and tree matters relating to the Development Control process.
- 7.6.8 In addition, landscape architects with arboricultural skills are located within the Landscape Practice Group within the Parks, Sports & Events Division. The services of this Group are recharged to the Directorates.

### **7.7 The Objectives of the Tree Management Service**

#### **The safety of members of the public and trees at risk**

- 7.7.1 The Assistant Director, Parks, Sports & Events emphasised to the Review Group the paramount importance of safety of members of the public when running the Tree Maintenance Service.
- 7.7.2 He explained that trees growing on Council owned land can be a 'risk' as identified in the Health and Safety at Work Act 1974. This Act provides that every employer has a duty to conduct his undertaking in such a way as to ensure, so far as is reasonably practicable, that members of the public who may be affected are not exposed to risks to their health and safety.



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- 7.7.3 The Act imposes absolute criminal liability, subject only to the defence of reasonable practicability, which defence relates only to measures necessary to avert the risk. Nothing is without risk, but the law requires that people and property be guarded from that which is unreasonable. Absolute safety is arguably not possible – in the case of trees, it probably could only be achieved by the removal of all of them. However it is the Council's responsibility to ensure that sufficient action is taken to ensure that a tree, or part of a tree in the Council's ownership, does not fall on a person.
- 7.7.4 Other primary legislation affecting the management of highway trees include:
- The Occupiers Liability Acts (1957 and 1984), concerning duty of care to people when accessing property.
  - Highways Act (1980), deals with maintaining clearance of highway, visibility, removal of dangerous trees affecting the highway etc.
  - Local Government (Miscellaneous Provisions) Act (1957), deals with removal dangerous trees on private property.
- 7.7.5 A review of the Council's tree maintenance and management arrangements was carried out following the accident on 3 December 1999 when three people were killed on Alcester Road South as a result of a large tree being blown down by high winds falling onto cars in stationery traffic. The review and the subsequent revised Tree Policy Statement, were done as a result of an Improvement Notice issued under the Health and Safety Executive (HSE). The current policy is as set out in the report approved by Cabinet on 21 January 2002 titled 'The Maintenance and Management of the City's Trees'.
- 7.7.6 The primary consideration of tree maintenance or management, is the safety of members of the public. Since this is of paramount importance, not only are the requirements of the law satisfied, but the requirements must be significantly improved upon in order to minimise the level of risk to the lowest possible level.
- 7.7.7 In assessing the level of risk to the public, it is considered that street trees, because of their location so close to areas heavily used by the public, are especially important. However, trees in parks and playing fields also need to be assessed for risk.
- 7.7.8 This Scrutiny Review is primarily concerned with street trees.



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### **Maintaining the long term health of the Council's tree stock**

- 7.7.9 The Council does all it can to care for all its trees to ensure that our tree stock thrives for the benefit of the people and wildlife of Birmingham.

### **Maintenance of highway Trees**

- 7.7.10 There is a legal duty (various & complex) on the Council to ensure that the highway is kept clear of obstructions. It has to ensure the free and safe passage of pedestrians and vehicles, safe pedestrian passage on footways and passage for parents with buggies, the elderly and the disabled.

### **Tree preservation orders and conservation areas**

- 7.7.11 Consent is required for the felling and lopping of any tree protected by a Tree Preservation Order or located within a Conservation Area under the framework of planning legislation. These measures are administered by the Planning Control Division Tree Officers who work within the Portfolio of the Planning Committee.
- 7.7.12 In exceptional cases trees owned by the Council can be the subject of a TPO. These are usually trees that were protected before they came into the Council's ownership. Where land is to be sold by the Council – for example for new development, trees may be protected before the transfer of land takes place. A Conservation Area may include Council owned land and trees, for example on the highway. The Council is not required to complete a 'section 211 notice' (application), before carrying out work to such trees.

### **Trees in gardens and private open space near roads**

- 7.7.13 Trees in gardens and private open space near to roads are the responsibility of their owners. However where the tree is close to a public footway or road, there could be a risk to public safety if that tree was not adequately maintained.
- 7.7.14 Where it is brought to the attention of the Council that a tree may be in a dangerous condition, it will be inspected. Should the Tree Officer determine that the tree is an imminent threat to public safety and is growing on private property he/she is empowered under the Highways Act (for trees affecting the highway) or the Local Government Miscellaneous Provision Act (other trees i.e. not affecting highway) to serve notice on the landowner to make safe the tree and subsequently recharge them. These are the only instances where Local Authorities are legally empowered to do work on private trees.



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### Emergencies

7.7.15 The City Council provides a 24 hours a day, 7 days a week service in respect of tree enquiries. During the normal working day, the Tree Contact Centre at Manor Farm deals with the enquiries. Outside normal working hours all calls are redirected to the Transportation Department's Emergency Call Centre in Lancaster Circus. They will call out the Tree Officers from home who can call out the Tree Contractors to carry out emergency work.

## 7.8 The Tree Management Service and Highway Trees

7.8.1 The Chief Highway Engineer gave a presentation to the Review Group on the Aims and Challenges of managing highway trees.

### Objectives

7.8.2 He said that the aim is:

- To preserve the environmental benefits enjoyed through the presence of trees on the highway.

The challenges are:

- To maintain a mature stock of appropriate highway trees without jeopardising the safety, serviceability or sustainability of our live and dynamic highway network,
- To strike a publicly acceptable compromise between the level of tree preservation and the standards of other street services.

### Issues

7.8.3 The major issues were identified as:

- Demanding tree maintenance standards – the need to keep mature stock healthy and safe through controls and procedures such as codes of practice, guidelines and agreements.
- Interface with public utility services – the need to prevent tree roots damaging services balanced with the need to protect tree roots whilst working on services.
- Interference to street lighting from trees caused by low tree canopies / overgrowth and residue obscuring signs requiring management processes for optimum locations for new lamps and coordinated pruning work.
- Risks for pedestrian safety due to tripping hazard of exposed roots, slips from moss/leaves and high wind blow downs requiring adjustments to footway levels and





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- surfaces, a risk register and emergency response service.
- Maintaining clear pedestrian footway routes requiring basal growth obstruction, minor improvements and public consultation.
  - Retaining drive sight lines at junctions and for signals and signs requiring inspections and pruning.
  - Projecting vehicular access for cars, buses and parking requiring processes for tree removal and pruning where needed.
  - Facilitating clear drainage requiring maintenance of pipes threatened by roots or leaves.
  - Preventing damage to property directly by roots/branches or indirectly by subsidence involving inspections and reports.
  - Reducing nuisance to residents from aphid mess in gardens, branches close to houses and leaves requiring customer care and arboricultural advice.

### 7.9 Mature and Old Trees

- 7.9.1 Since many street trees were planted in late Victorian and Edwardian times, many are mature and often very large.



*These trees in Grove Lane, Handsworth are included in the 2005/06 Pruning Plan*

- 7.9.2 Large street trees may cause residents to complain when they block out light or when leaves and branches touch properties. The Annual Tree Pruning Plan addresses these problems. This Plan is drawn up by the Tree Officers in response to concerns from the public and with reference to the age and size of street trees across the city.

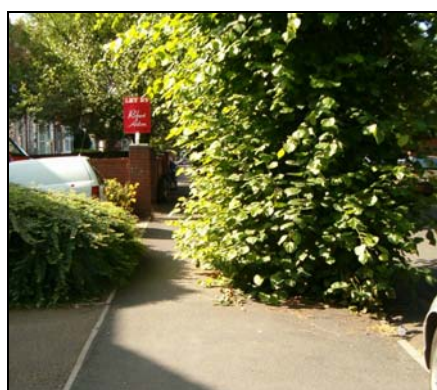


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*Trees in Holly Road, Handsworth pruned in the 2004/05 Plan*

- 7.9.3 However severe pruning of mature trees, such as London Plane or Lime can cause concern with residents. In Hall Green some residents were particularly proud of their Lime trees and insisted that the type of pruning was discussed with them prior to the work going ahead:
- 7.9.4 Some streets may have individual trees that need replacing because they are old and becoming unsafe, or whole streets of trees may need replacing. This is managed within the Council's Annual Highway Tree Pruning Programme – trees are usually replaced in sequence rather than all trees being felled at once and replanted.



- 7.9.5 Mature street trees also have large trunks and root systems which may reduce the width of footways - roots can damage paving and kerbs. These are some of the factors that have to be taken into account when deciding when trees need to be replaced.



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- 7.9.6 People are concerned about crime and street lighting makes a contribution to residents feeling safe outside their homes. Tree branches can reduce the levels of lighting and hamper access to the light by maintenance contractors. Pruning is managed within the Annual Tree Pruning Programme.

### 7.10 The Implementation of the Tree Management Service

#### Computerised tree database 'Confirm Arbor'

- 7.10.1 Prior to the year 2000, the Council's inspection records for Highways Trees were kept in paper form as part of the service's ISO 9002 Quality Management System for Data Management.
- 7.10.2 From 2000 onwards, Highway Tree Inspection Records have been kept electronically on the computerised system called 'Confirm Arbor'. This is a software package used by many Local Authorities. The database has the capacity to record the location, type, age and condition of Council owned trees together with information affecting tree health or its safety risk assessment.
- 7.10.3 The setting up of this database was part of the measures put in place to meet the requirements of the HSE Improvement Notice, as set out in the report to Cabinet in January 2002.
- 7.10.4 The priority has been to collate and manage information on trees presenting the greatest potential risk of causing harm, using the principles of risk-assessment i.e. the probability of a tree or branch striking someone if it should fall.
- 7.10.5 Those trees currently on the computerised system are as follows:



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- All street trees that have been inspected over the last 5 years
- All street trees on the 'At Risk Register'
- Street Trees within the regular Tree Pruning Programme (within the last five years) such as large limes
- Trees within the City Council's Housing areas
- Trees on Education sites including school grounds
- Trees on Social Care sites – a pilot study so far

7.10.6 In total about 35,000 of the 94,000 street trees are on the computerised system. The ones that are not on the system are either those covered by the original paper records or young trees, small ones or ornamental species that are unlikely to pose any risk to public safety.

7.10.7 The intention is to extend the electronic data to include the existing paper records on street trees and also the records of all other Council owned trees. Maintaining accurate data on Council owned trees is essential and requires that re-inspection schedules (as determined at the time of inspection) are adhered to. Data held on each tree allows information to be accessed and manipulated allowing enquiries to be dealt with and future actions/ priorities to be determined.

7.10.8 However further data entry is required to input the information from the paper record system as well as data from new inspections. In addition upgrading and enhancement of the data base is needed. This will make the manipulation of data and the production of information reports easier and also assist in dealing with day to day tree enquires from officers, Members and the public. The appointment of a dedicated System Manager has been identified as a key priority to enable development of the 'Confirm Arbor' system.

### Tree inspection and risk assessment

7.10.9 As a result of the Health & Safety Executive Improvement Notice issued in August 2001, a street by street assessment of all Highway Trees was undertaken by the City's Tree Officers and consultants during 2002. This was in addition to all the existing inspection regimes already in place.

7.10.10 One objective of the exercise was to increase the accuracy of the estimate of the total number of street trees – in 2002 the survey showed 94,000 street trees.



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- 7.10.11 The second objective was to identify those trees that had the characteristics that are associated with risk of tree failure. The assessment teams were supplied with a 'template' of factors such as the age, location, size and type of tree that affect the likelihood of a tree falling down or shedding a branch. Large forest type trees, such as Beech and Oak, over a certain age and close to the highway, were carefully recorded.
- 7.10.12 These trees were then subject to a full survey by experts. Depending on the condition of the tree, some of these were entered onto the At Risk Register. This Register includes trees deemed to present a risk to public safety as defined in the January 2002 Cabinet Report – The Maintenance and Management of the City's Trees. Specific inspection programmes and frequencies were established. The trees on the Register were categorised into three types:
- Dangerous and to be felled immediately
  - Requiring immediate attention such as pruning
  - Satisfactory at the time of survey but needing re-inspection at specific intervals such as 2, 3 or 4 years
- 7.10.13 Since the 2002 survey, specialist consultants have re-inspected those trees 'At Risk' which required re-inspection. The report on each of these trees sets out the level of risk associated with the tree, the maintenance required and the future inspection interval necessary. Clearly the principles of risk assessment are used to determine tree maintenance priorities.
- 7.10.14 There are currently 4,218 trees on the At Risk Register.
- 7.10.15 It is intended to re-inspect those trees that are listed only in the paper records (pre 2000) and not included on the At Risk Register plus the Annual Pruning Programme, within the next year. The results of the inspections will be included on the 'Confirm Arbor' database.
- 7.10.16 The survey of the City Council's trees has been extended to trees in lower risk locations. A survey of trees on Housing sites has been undertaken, and includes 33,166 trees. A survey of trees on Education sites has been undertaken, and includes 24,041 trees. A survey of trees on Social Service sites has been undertaken (pilot only), and includes 33 trees.
- 7.10.17 Trees in parks are subject to an annual inspection and risk assessment included with the management of the park, undertaken by parks staff.





## Review of Trees in the Public Highway

### Annual highway tree pruning programme

7.10.18 Each year a programme of highway tree management is drawn up and agreed with the Cabinet Member for Transportation and Street Services. The programme includes work to be done in each ward. Once it is agreed it is circulated to the Districts and is available to the public on the Council's website.

7.10.19 The roads to be included in the annual maintenance programme are suggested by the Tree Management Service using the following criteria: :

- Age, size & species of tree
- Proximity to highways and buildings
- Public concern, levels of enquiries received
- Length of time since previous pruning
- Budgetary requirements

### Tree felling

7.10.20 'At Risk' trees: the decision is made by the Tree Management Service, often with advice from specialist contractors. The felling is carried out by the appointed contractors under the management of the Tree Officers.

7.10.21 'Healthy' trees: these can be felled for the following reasons:

- If they are in the path of an approved road/junction improvement scheme, subject to the approval of the Cabinet Member for Highways and Transportation
- If they are in the path of a 'dropped kerb vehicle crossing' fall within the approved policy and the Tree Management Service have been consulted
- If they have outgrown their location
- If a successful legal claim has been made

### Tree replacement

7.10.22 It is the Council's policy to replace street trees that have been removed for whatever reason. Tree replacement is carried out within the Annual Highway Tree Pruning Programme. The current policy is as follows:

- Location, as close to the original location as practicable
- Type of tree, appropriate for location, site specific

7.10.23 'Fell and replant' programmes are developed for streets in the city. These are set out in the Highway Tree Maintenance Pruning Programme. In drawing up the programme consideration is given to roads where:

- Residents consider certain tree species are unsuitable for their locations
- Where trees have outgrown their location leading to





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- damage to footways or road surface
- Where trees have been lost to disease or storm damage

7.10.24 Such a programme aims to remove the trees in a particular road, or road length, over a specified period of years on a phased basis and replace them with more appropriate species. This ensures that the replacement trees planted at the beginning of the programme are well established by the time the final phase trees are removed and replaced.

### **Provision of advice to contractors and utility companies**

7.10.25 Where contractors and/or utility companies are carrying out work in the highway/footway, advice is given to ensure that the principles of tree care are adhered to and there is an understanding that the desired outcome is the preservation of tree health. Advice includes ensuring that sufficient precautions are taken in the vicinity of trees to ensure that work is sympathetic and to provide care of trees and their roots. Ensuring that National Joint Utilities Group, Guidance Note 10 (NJUG10), is adhered to.



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# 8 The Effect on Street Trees of the Highways Private Finance Initiative (PFI)

## 8.1 Introduction

- 8.1.1 A series of presentations on The Effect on Street Trees of the Highways PFI was made to Members of the Scrutiny Review Group on Monday 10<sup>th</sup> October 2005 and specific queries followed up on Monday 7<sup>th</sup> November 2005.
- 8.1.2 The Review Group were aware that in the short term the Council would manage and maintain its street trees, but in the long term this responsibility may well be transferred to the successful PFI Contractor. Therefore Members sought information on how the PFI would affect trees and what preparation work was underway.

## 8.2 The Background to the Highways PFI Proposal

- 8.2.1 The proposal to look at the PFI (Private Finance Initiative) mechanism to fund the highways maintenance services originated in the Best Value Review. In March 2001 the outline Business Case was commenced and by July of that year a submission was made to the Government for funding. At about the same time the Audit Commission reported that the Highways Maintenance Service was providing a 'fair' 1 star service that was unlikely to make a step change improvement.
- 8.2.2 In November 2003 the City Council's Cabinet decided to accept the award by the Department of Transport of PFI credits for a future Highways Maintenance and Management Service. The Executive agreed to work with Overview & Scrutiny and a Scrutiny Review was commenced.



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- 8.2.3 At the full Council meeting in October 2004, the Scrutiny Review Report was considered. It concluded that the PFI was the only option currently available that will bring the additional resources to the City Council. However, concern was expressed at the inclusion of trees within the PFI. Following the meeting and further discussion with the Minister of State for Transport, it was decided to retain trees within the PFI. This was ratified at Cabinet in December 2004.
- 8.2.4 The executive decision making body within the City Council for the PFI process is now the Cabinet Committee on Highways Maintenance and Management Private Finance Initiative. This is supported by a Project Board – its membership includes technical, legal, financial, human resource advisors and external consultants, and it is chaired by the Chief Highway Engineer in his role as Project Director.
- 8.2.5 As regards the timetable, at the time of evidence gathering for this Scrutiny Review, Members were advised that discussions were underway with three short listed bidders as part of the Invitation to Negotiate (ITN) stage of the procurement process.
- 8.2.6 Subsequently bids were received on the 30<sup>th</sup> December 2005. From January to early March 2006 the bids will be evaluated. An evaluation report will be prepared by the end of March and submitted to the Transportation and Street Services Overview & Scrutiny Committee in addition to the Cabinet PFI Committee. At the beginning of April, one or more bidders will be deselected and during April/May 2006 negotiations will continue with the remaining bidder(s) prior to them submitting Best and Final Offers in June 2006. The preferred bidder will be selected in July/August 2006 and the contract is due to start in April 2007. The contract is for 25 years.
- 8.2.7 The preferred bidder will need to appoint their own arboricultural advisors and the successful bidder will need to sub-contract the management of the city's 100,000 street trees to a professional arboricultural contractor with appropriate and skilled staffing capacity. The Council will need to be assured that the contractor selected will be competent to look after our trees in the way that Members and residents expect.

### **8.3 Specific Preparation Work required to Protect Street Trees**

- 8.3.1 All discussions with the short listed bidders regarding trees are managed by the PFI Board, chaired by the Chief Highway Engineer and including the Head of Parks from the Division of Parks Sports and Events.



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- 8.3.2 A 'data room' has been set up at Lancaster Circus where each set of bidders can access the same information as part of their bid preparation work. Deposited in the 'data room' is information about the current Tree Management Service. In addition the bidders have access to an electronic data room including a hosted website where data held electronically is available.
- 8.3.3 As regards the items around which Scrutiny discussion needs to take place - the Cabinet Report of 13 December 2004, set out the agreed position regarding Highway Trees:
- The PFI Contractor will be required to work in partnership with City Council to develop and implement the highway aspects of tree husbandry which has been previously agreed with the relevant local Members
  - A legally binding method statement will be agreed detailing the PFI contractor's procedures as well as a tree development and management plan
  - Policy remains with the City Council
  - No tree shall be removed without prior Member approval
  - A clear and strong specification will be produced and heavy financial penalties being included for infringement
  - Client to contain appropriate Tree Officer capacity to ensure compliance

### 8.4 Evidence Gathered on Preparation Work

- 8.4.1 The Review Group heard evidence from a number of officers and from Andy Toms from Gristwood and Toms the City Council's current arboricultural contractors. Andy Toms was familiar with Portsmouth City Council – the only Local Authority that has entered into a PFI contract for the management and maintenance of roads in an urban environment.
- 8.4.2 Members assessed progress on several key issues including:
- Tree Management Policy Statement, as referred to in the Cabinet Report as "tree husbandry" and "policy remains with the City Council".
  - The role of Members in developing and monitoring policy as referred to in the Cabinet Report as "tree husbandry which has been previously agreed with the relevant local Members" and "no tree shall be removed without prior Member approval".
  - The retention by the Council of Tree Officers as referred to in the Cabinet Report as "client to contain appropriate Tree Officer capacity to ensure compliance".



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### Tree management policy statement

- 8.4.3 The Cabinet Report of 13 December 2004 states that 'Policy remains with the City Council.' In addition it states that work is required to develop a programme of tree husbandry and a tree development management plan.
- 8.4.4 The Review Group heard from Andy Toms that he was concerned that not enough information would be available to potential bidders (and their arboricultural advisors) to enable them to appreciate the work required to maintain and manage the 100,000 street trees. He was of the opinion that the amount of data held on individual trees and the levels of tree inspection were not as great as he would have thought was desirable.
- 8.4.5 Comparing the city with other areas he was familiar with, he said that many London Boroughs spend considerably more on their Tree Management Service and employed more Tree Officers within the Tree Management Service (in proportion to the number of trees) than Birmingham.
- 8.4.6 Officers of the Division of Parks, Sports & Events are currently updating the existing Tree Management Policy Statement (in so far as it affects Street Trees) to make it suitable for inclusion in the PFI documentation.
- 8.4.7 Members heard that it is intended to produce this document by March 2006 so that the evaluation of the bids received can take place in the context of the Policy Statement.
- 8.4.8 The Statement will include:
- Objectives of tree management including the need to ensure the safety of members of the public and trees at risk
  - Measures to maintain the long term health of the tree stock – both in terms of quantity and quality
  - Tree inspection and risk assessment requirements, including an assessment of the appropriateness of current tree inspection
  - Details of the computerised database of trees
  - Criteria and process for justifying the removal of any tree
  - Criteria for the Annual Pruning Programme, Tree Replacement Programme and provisions for new tree planting, including an assessment of the adequacy of current levels of service
  - Horticultural standards and specifications
- 8.4.9 The Cabinet Committee - PFI will need to be reassured that the wording of the PFI Contract makes it clear that Tree Management will need to comply with the policy rather than just take it into account.



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- 8.4.10 The Cabinet Report of 13 December refers to 'a legally binding method statement will be agreed detailing the PFI contractor's procedures .....'. The bidders have submitted their 'method statement' as part of their ITN bid return in December 2005. These includes their intended Annual Landscape Action Plan and their intended maintenance programme (including pruning), together with their tree replacement programme and new planting proposals. Appraisal of these is taking place by the City's Tree Officers as part of the technical evaluation of the bids.
- 8.4.11 The evaluation results will be presented to the Cabinet PFI Committee at the end of March 2006.

### The role of Members

- 8.4.12 The Cabinet Report of 13 December 2004 states that '....the PFI Contractor will be required to work with the City Council to develop and implement the highway aspects of a programme of tree husbandry which has been previously agreed with relevant local members'. This suggests that the detailed plans and programmes drawn up by the successful contractor will need to be approved, not just by the Cabinet Member for Highways and Street Services, but also by Ward Members and District Chairs.
- 8.4.13 Following localisation and the increased involvement of Members in their local areas through the District Committees, the District Members will be involved in the approval of the Tree Management Programme and Tree Replacement programme for their District (Member approval of this is required). This will have the advantage that the involvement of local residents could be channelled through the District structures.
- 8.4.14 The Review Group Members discussed the role that local Members would be expected to take on. Whilst they welcomed the involvement, they emphasised that they would need adequate arboricultural advice from Tree Officers employed by the City Council. They thought that if there was a Tree Officer clearly identified with a District, a good local relationship could be developed. Districts could then be actively involved in working with residents on all local tree matters.

### The transfer of risk

- 8.4.15 In his letter of the 29 October 2004, the Minister of State for Transport referred to the transfer of 'risk' implied by including highway trees in the PFI:





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"On highway trees, you are right to note the important part they play in the PFI business case. So I am pleased you believe there is a way to address concerns through specification and client controls, and that – on this basis – they would remain part of the PFI deal. I would be grateful if you would keep DfT officials in touch with the detailed work here, to ensure that it does not undermine risk transfer."

8.4.16 Members discussed at length the legal position regarding trees. They heard that responsibilities for accidents were being debated currently due to the case of the Hatfield rail disaster. They realised that as the first Highways PFI contracting authority of a major size (Portsmouth is the only other authority) Birmingham could be in the position of testing out the law should an accident happen. Members were very concerned that it appeared that they could be held personally criminally liable if their representations affected the PFI contractors management of a tree that subsequently failed and caused an accident.

8.4.17 The following advice was subsequently given by the Chief Legal Officer:

8.4.18 "The Output Specification in the PFI contract sets out in Performance Standard PS3B obligations in respect of Tree Management and Maintenance for trees on the Council's highway network (Project Network). The PS3B obligations include;

- Ensuring that the trees on the Project Network do not cause a danger or obstruct the Project Network and/or any land and/or property in the possession of a third party.
- Ensuring that the trees on the Project Network shall not damage any land and/or property in the possession of a third party and where any damage occurs be responsible for any costs associated with any such damage.
- Ensuring every tree on the Project Network is free from disease and decay.
- Not removing a tree from the Project Network without the prior written consent of the Authority unless such removal is a Highway Emergency (a highway emergency includes any unplanned occurrences which may affect safety on the Project Network including trees which have blown over, fallen over or are in imminent danger of the same).

The consequence of a failure by the PFI contractor to comply with the PS3B obligations is that the PFI contractor has to indemnify the Council from all liability for:-

- death and personal injury;
- loss or damage to property;



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- breach of statutory duty;
- actions, claims, demands, costs, charges and expenses;
- ("the Indemnified Losses") which may arise as a result.

This means that the PFI contractor has a contractual responsibility for the performing the PS3 obligations. If the contractor breaches these obligations the Council has an effective remedy against any civil claim it may face as a consequence.

The Council cannot contract out of any criminal liability which it may have.

There will not be a transfer of any highways infrastructure assets to the PFI contractor. Therefore street lighting and **highway trees** remain in the Council's ownership. Ultimately legal responsibility for the trees remains with the Council as highway authority. The PFI contractor is still liable to indemnify the Council in respect of claims arising out of a breach of the PS3B obligations as referred to above.

There is an exception to the indemnity principle where the PFI contractor properly acts on the instructions of the Council. In those circumstances the PFI contractor is not responsible for the Indemnified Losses. If therefore the PFI contractor requests permission to remove a tree on a highway because the PFI contractor considers it is at risk of falling as it is diseased, but the Council refuses consent, then if the tree falls and causes damage and is found to have been diseased then the PFI contractor is not at fault and does not have to indemnify the Council."

- 8.4.19 Members were concerned about the possibility that the PFI Contractor may want to minimise risk to a very low level by requesting the removal of any tree that may have a potential problem. This could result in widespread requests to remove trees adjacent, or near to the highway on public safety grounds. Pressure could be considerable to replace mature trees with small ornamental trees. This would have a damaging effect on wildlife in the city and also change the visual appearance of many streets.
- 8.4.20 Discussions referred to the widespread clearance of trees near railway lines following changes to the way the railway network is managed and concerns to minimise risk.

### The retention of Tree Officers

- 8.4.21 The Cabinet Report of 13 December 2004 states that 'Client to contain appropriate tree officer capacity to ensure compliance.' Therefore sufficient Tree Officers will need to be retained by the Council to ensure that this function can be carried out effectively.



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- 8.4.22 Tree Officers will be required to advise Members so that they can effectively carry out the work in their local areas as set out above. Members heard that finance is available within the Partnership Priorities Budget for additional Tree Officers in recognition of the demands on Tree Officers implied by the Cabinet report of 13 December 2004. This would enable a dedicated Tree Officer to be available to each area of the city to advise local Members, build relationships with the local residents and ensure all City Council trees are respected.
- 8.4.23 However the Review Group heard that current negotiations ongoing with potential bidders have included a reference to the possible transfer of the City's Tree Officers to the successful PFI Contractor under the Transfer of Undertakings / Protection of Employment Regulations (TUPE).
- 8.4.24 The Review Group were very concerned and asked for further advice at another session. Representatives from the Council's Legal and Human Resources Services attended the next session on Monday 7<sup>th</sup> November. They indicated to the Review Group that the Council was entitled to retain the services of staff in a 'client role' if it could be proved that the transfer of such staff would be detrimental to the Council.
- 8.4.25 They were further advised that, for the TUPE regulations to apply, an employee must spend 50% or more of their time on the undertaking which is to be transferred – in this case the inspection of street trees and the formulation of maintenance programmes. However Tree Officers could spend less than 50% of their time on street trees in any one year, since they also advise on trees in parks, schools and housing estates.
- 8.4.26 Members thought that if the Tree Officers are transferred to the PFI contractor, their responsibility will be to the contractor, not to City Council and local residents - the city will have no resource left to undertake the supervision, monitoring and technical advisory role.
- 8.4.27 The following further advice was subsequently received from the Chief Legal Officer:
- 8.4.28 "The Council will prior to the service commencement date of the PFI contract, 1st April 2007, have set up a retained client function. This has the following attributes/consequences: The retained client will comprise a group of staff with the skills and expertise and local knowledge to manage the performance of the contract/the PFI contractor. It is important therefore that the Council retains/recruits staff to perform the range of functions that the retained client will need to undertake.



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Staff within the retained client will not transfer under TUPE as their job is the management of the PFI contract not the performance of the Output Specification within the PFI contract. If therefore Council employees who would otherwise transfer to the PFI contractor under TUPE are offered and take up positions within the retained client prior to the service commencement date, then they will not transfer to the PFI contractor under TUPE.

There are a number of tests to determine whether an employee is within an undertaking (ie whether the employee performs work that is comprised within the Output Specification in the PFI contract) and transfers under TUPE or whether the employee is engaged on non-PFI work (eg work in parks, schools). The test which is the easiest to apply is to determine where the employee spends the greater part of his/her time (the 51% rule). Clearly this may vary from month to month in accordance with the Council's priorities. The other tests include considering the employee's job specification in terms of whether duties are in/outside the scope of PFI specification, and evaluating how important/valuable to the employer are the respective duties.

If it is clear that for a tree officer that the majority of his/her time is spent on performing work in respect of non-highway trees then there will be a basis for concluding that such tree officer will not transfer under TUPE."



## Review of Trees in the Public Highway

# 9 Conclusions and Recommendations

## 9.1 The Wider Benefits of Trees

- 9.1.1 The Review Group concluded that understanding of the significance of trees needs to be much more actively promoted in the city. The importance of trees to health, the environment and to economic regeneration may not be widely understood. Members were concerned that threats to trees are increasing and replacing trees is becoming more and more difficult.
- 9.1.2 Members thought that one way of getting the "trees matter" message across to local people would be to set up a Birmingham branch of the charity "Trees for Cities". This would undertake a high profile campaign in the city, (as has taken place in London) attract sponsorship from business and involve children, communities (especially those from Black, Minority and Ethnic Communities) and companies in tree planting events.

	Recommendation	Responsibility	Completion Date
R1	That consideration be given to supporting the setting up of a Birmingham branch of the charity 'Trees for Cities'.	Cabinet Member for Leisure, Sport & Culture & Cabinet Member for Transportation and Street Services	September 2006

## 9.2 Street Trees in Residential Areas

- 9.2.1 The Review Group concluded that we need to be much more vigilant in recording when street trees have been removed. Members accepted that there were many legitimate reasons for removing street trees; however they understood the concerns of local residents and the Civic Society that these trees appear not to be replaced. Several Members said that residents contacted them (often in a state of anxiety) when they saw a street tree being removed, with an expectation that they would know the reasons for its removal and when it would be replaced.



## Review of Trees in the Public Highway

- 9.2.2 A register of removed street trees (together with the reason for removal) would enable the scope of the problem to be identified – reporting a tree removal, an entry on the database and the passing of information to the Local Councillor should be obligatory. The data base should identify when and where a replacement tree has been, or is proposed to be planted. Concerned residents could then be reassured that trees are being replaced.
- 9.2.3 Members realised that there appeared to be many difficulties associated with replacing trees in the highway, however they did not agree that this was sufficient justification for a gradual decline in the numbers of street trees. They felt that the success of the two Pilot Projects in Selly Oak and Quinton Districts should be monitored closely to enable lessons to be learnt regarding local street tree planting involving residents.
- 9.2.4 Members suggested that street trees could be introduced into traffic calming schemes in order to improve the environment whilst reducing traffic speeds along the lines illustrated in the Home Zones projects.

	<b>Recommendation</b>	<b>Responsibility</b>	<b>Completion Date</b>
R2	That if a street tree is to be removed for any reason, Ward Councillors be informed and a register of such trees be set up within the existing 'Confirm Arbor' database.	Cabinet Member for Leisure, Sport & Culture & Cabinet Member for Transportation & Street Services	September 2006
R3	That a summary report of Street Trees Removed and Replaced be submitted to the Leisure, Sport and Culture Overview & Scrutiny Committee on a six monthly basis.	Cabinet Member for Leisure, Sport & Culture	September 2006
R4	That a report of the evaluation of street tree planting proposals within the Pilot Projects in Selly Oak and Edgbaston Districts to identify ways of increasing tree planting in residential areas, be submitted to the Leisure, Sport and Culture Overview & Scrutiny Committee.	District Chairs for Selly Oak and Edgbaston	March 2007
R5	That consideration be given to setting up a pilot project to identify ways of using street trees in traffic calming schemes.	Cabinet Member for Transportation & Street Services	September 2006

### 9.3 Street Trees on Major Routes

- 9.3.1 The Review Group were very concerned about the City Council's apparent difficulty in controlling the activities of contractors working in the vicinity of street trees. Despite a whole range of safeguards, including guidelines, agreements and contracts, the case studies demonstrated a lack of respect for trees from some contractors, resulting in damage to and subsequent removal of trees on Council owned land.





## Review of Trees in the Public Highway

- 9.3.2 Therefore the Review Group felt that an additional safeguard was necessary to protect Council owned trees. This would require a Permit to Work Adjacent to Trees to be issued to developers, utility companies and contractors prior to consent being granted for opening up of the Highway.
- 9.3.3 The issuing of the permit would be dependant on the submission and agreement of a signed risk assessment statement prepared by the developer or utility company in conjunction with the Council's Tree Officer. The risk assessment would include details of any trees to be affected by the proposed works and what tree protection measures would be put in place.
- 9.3.4 Since consent is already required from the Highway Authority to open up any public highway by any persons other than those with statutory powers the issuing of the Permit could be part of the same process. Members also thought that consideration should be given to requiring a bond which would be forfeited should trees be subsequently damaged. Work on site would be monitored by the Council's Tree Officer.
- 9.3.5 The case studies were on major routes, however the same principles apply to any tree in any street of the city, whether they are on major routes or in residential areas. Agreements under S 278 of the Highways Act are not limited to major routes – they are used throughout the city.
- 9.3.6 Where major development is taking place affecting street trees on major routes, the Review Group expected that the current City Council Protocol "Building a Better Birmingham – A Charter for Development" would ensure that all City Council departments involved in the development process would be working together with the developer – facilitated by a Project Co-ordinator.
- 9.3.7 Evidence collected on the Pebble Mill Access Case Study suggested that the protocol had not achieved its desired aim in this case. In particular, Members regretted the lack of arboricultural advice early in the development process and thought that the coordination of the different stages of the scheme could have been smoother. It was only after the two Evidence Gathering Sessions had been concluded that it came to light that in fact a Project Co-ordinator had been appointed within the protocol. The Chairman of the Review Group was disappointed that from the evidence, the role of the Project Co-ordinator appears not to have been fulfilled in this particular case.



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- 9.3.8 When this was raised with the Strategic Director of Development, it was confirmed that an officer level internal review into the protocol was underway which would look at the role of the Project Co-ordinator and ways to improve cross-service working. The Review Group thought that its conclusions should be reported to the O&S Committee to ensure that the issues raised in the case studies are resolved.
- 9.3.9 However the protocol would only be used on a relatively small number of development proposals – some 30-40 at any one time in comparison with some 8,000 planning applications a year.
- 9.3.10 In addition Members thought it was essential that the confusion around which tree people in the organisation did what was removed to enable advice on trees to be co-ordinated across the Council. Therefore they welcomed the idea of a seminar and will encourage all officers and Members involved with trees and development to attend.

	Recommendation	Responsibility	Completion Date
R6	That a process be introduced to require developers, utilities and their contractors to obtain a Permit to Work Adjacent to Trees before consent is granted to open up the highway.	Cabinet Member for Transportation & Street Services	September 2005
R7	That a report on the internal review of the effectiveness of the protocol 'Building a Better Birmingham – A Charter for Development' be submitted to the Leisure, Sport and Culture Overview & Scrutiny Committee.	Cabinet Member for Regeneration	September 2006
R8	That a review of the process and content of the S278 Highways Act Agreement be undertaken including: <ul style="list-style-type: none"> <li>• Development of the highway affecting any tree in the city, on any street.</li> <li>• The connections between the Planning Control process and the S278 Highways Act process.</li> <li>• The process for obtaining arboricultural advice.</li> <li>• The measures and resources currently in place to supervise contractors working in the vicinity of street trees.</li> </ul>	Cabinet Member for Transportation & Street Services	September 2006
R9	That a seminar be organised for the officers and Members involved in development planning to provide advice on the processes within the City Council for securing arboriculture advice. The proceedings of the seminar should be written up and made widely available, including a report to the Leisure, Sport and Culture Overview & Scrutiny Committee.	Cabinet Member for Leisure, Sport & Culture	June 2006



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### 9.4 Tree Management Policy

- 9.4.1 The Review Group agreed that a high priority should be given by the City Council to the completion, upgrading and enhancement of the computerised tree management system 'Confirm Arboriculture'. The setting up of the database was one of the measures put in place to meet the requirements of the Health & Safety Executive Improvement Notice. In addition, a high quality database is essential to ensure that the bidders for the Highway Private Finance initiative are aware of the needs of our street trees.
- 9.4.2 However dedicated system management and sufficient data entry staff are not available at the moment to support the database and only less than half of all our street trees are entered onto the system. Therefore upgrading and enhancement of the system is recommended as an urgent priority.
- 9.4.3 The Review Group thought that insufficient support was being given to the Tree Contact Centre, bearing in mind the number and complexity of phone calls from the public and Members regarding trees. The Review Group understood the importance of ensuring that all tree enquiries are dealt with efficiently because of the essential requirement to minimise risk to the public from old or damaged trees.

	Recommendation	Responsibility	Completion Date
R10	That consideration be given to upgrading and enhancing the 'Confirm Arbor' database as an urgent priority.	Cabinet Member for Leisure, Sport & Culture	July 2006
R11	That a business case be prepared that sets out the scope for and the consequences of transferring the role of the Tree Contact Centre to the City Council's Call Centre.	Cabinet Member for Leisure, Sport & Culture & Deputy Leader	September 2006

### 9.5 The Effect on Street Trees of the Highway PFI

- 9.5.1 The Review Group were unified in their belief that should the Highways Maintenance and Management PFI Contract take place and the management and maintenance of street trees become the responsibility of the successful PFI contractor, then a strong policy statement is necessary from the City Council to protect our heritage. Members welcomed the opportunity created to update the existing Tree Management Policy (in so far as it affects Street Trees) and thought that the research and evidence gathering undertaken for this review would provide valuable background information. Within this Policy Statement, Members were particularly interested in a section clarifying the role of Members in their local areas through the District or Constituency Committees.



## Review of Trees in the Public Highway

- 9.5.2 The Review Group Members were very concerned about the degree to which Tree Officers would be retained by the City Council to advise them should the proposed PFI proceed. They felt strongly that without adequate arboricultural advice, the City Council would not be able to protect its legacy of street trees. They referred back to the Cabinet Decision of 13 December 2004 when it was decided to include trees within the PFI – subject to a number of safeguards. One of these safeguards was that “client to contain appropriate Tree Officer capacity to ensure compliance”. They felt that more Tree Officers were needed - to be available to local residents to give arboricultural advice on the Council's trees.
- 9.5.3 Members were also very concerned about the legal position regarding the transfer of risk. They were aware of the current debates regarding responsibilities for accidents prompted by the Hatfield rail disaster. They realised that as the first major PFI contracting authority Birmingham could be in the unfortunate position of testing out the law should an accident happened.

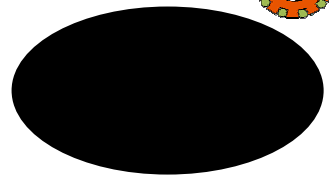
	Recommendation	Responsibility	Completion Date
R12	That the Council's current Tree Management Policy Statement (in so far as it affects street trees) be revised and included in the 'Best & Final Offer' PFI documentation. The revisions should include the conclusions and recommendations from this Scrutiny Review.	Cabinet Member for Leisure, Sport & Culture & Cabinet PFI Committee.	March 2006
R13	That all necessary steps are taken to give the best opportunity for the existing Tree Officer posts to be retained within the City Council.	Cabinet PFI Committee	September 2006
R14	That a business case be prepared that supports the provision of additional Tree Officers to ensure that local areas have access to adequate arboricultural advice.	Cabinet Member for Leisure, Sport & Culture	March 2006
R15	That a report be submitted to the Leisure, Sport and Culture Overview & Scrutiny Committee on the legal position regarding the transfer of risk to the PFI Contractor and the implications of this to Elected Members should they be involved in advising on the management of street trees.	Cabinet PFI Committee	May 2006

- 9.5.4 All scrutiny decisions taken by the City Council need to be tracked to ensure that implementation is proceeding smoothly.

	Recommendation	Responsibility	Completion Date
R16	Progress towards achievement of these recommendations should be reported to the Leisure, Sport and Culture Overview and Scrutiny Committee in September 2006.  Subsequent progress reports will be scheduled by the Committee thereafter, until all recommendations are implemented.	Cabinet Member for Leisure, Sport & Culture	September 2006



## **Review of Trees in the Public Highway**



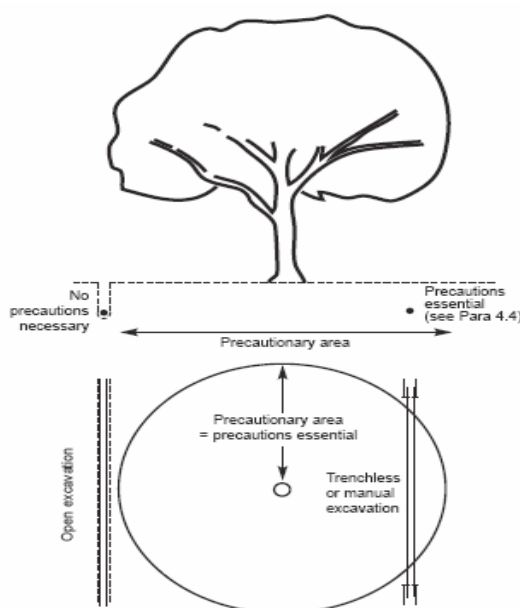


## Review of Trees in the Public Highway

# Appendix 1 Guidance for Contractors Working Near to Trees

**The National Joint Utilities Group GUIDELINES FOR THE PLANNING, INSTALLATION AND MAINTENANCE OF UTILITY SERVICES IN PROXIMITY TO TREES – Publication No 10 April 1995**

- 9.5.5 The "NJUG 10" guidance is specifically directed at the installation of new services, however in addition it states that "The principles set out in these guidelines also have relevance in respect of work carried out to highways near trees (e.g. kerbing, footway reinstatement)." The guidelines state that:
- 9.5.6 "Trees play an essential role in the environment and visual amenity of both rural and urban landscapes. They may take decades to grow, but can be destroyed in minutes. Wherever they are growing, whether in public footpaths, private gardens, rural verges or elsewhere, they require space for the adequate development of their root systems and to allow the branches to develop an attractive and natural shape."
- 9.5.7 Their guidance is based on establishing a Precautionary Area for protecting roots.







## Review of Trees in the Public Highway

9.5.8 Within this Precautionary Area the guidance states:

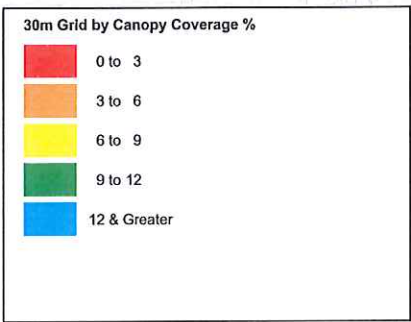
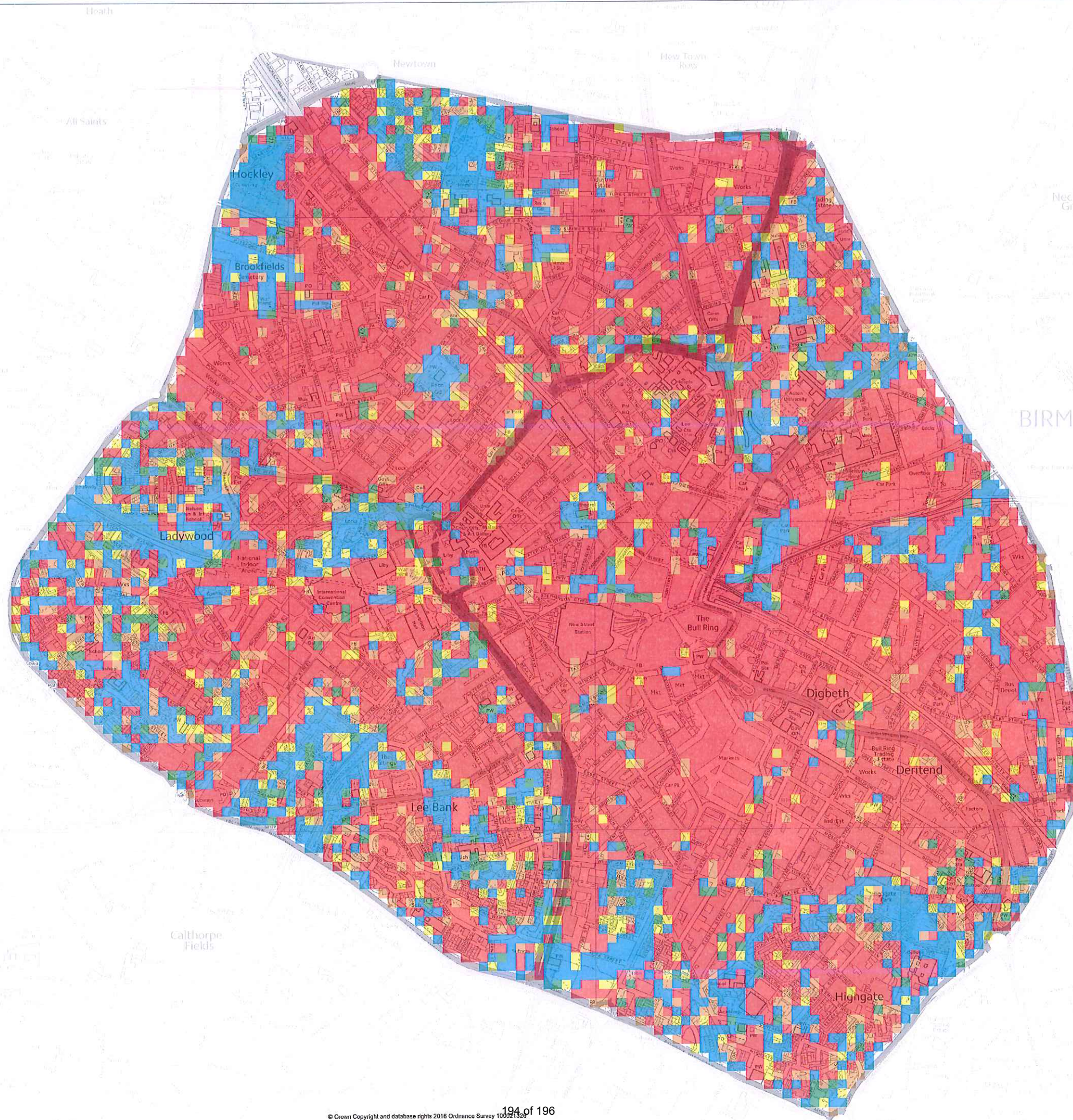
- Don't excavate with machinery. Use trenchless techniques where possible. Otherwise dig only by hand.
- When hand digging, carefully work around roots, retaining as many as possible.
- Don't cut roots over 25mm in diameter, unless the council's Tree Officer agrees beforehand.
- Prune roots which have to be removed using a sharp tool (e.g. secateurs or handsaw). Make a clean cut and leave as small a wound as possible.
- Backfill the trench with an inert granular material and top soil mix. Compact the backfill with care around the retained roots. On non highway sites backfill only with excavated soil.
- Don't repeatedly move/use heavy mechanical plant except on hard standing.
- Don't store spoil or building material, including chemicals and fuels."

### **British Standard 5837:1991, 'Guide for Trees in Relation to Construction**

9.5.9 British Standard 5837:1991, 'Guide for Trees in Relation to Construction' gives advice on the integration of new development amongst trees.

9.5.10 It advocates identifying an area around the trees which can remain free of any disturbance, and the erection of protective fencing around this area. Wherever possible the installation of new services should be outside the protected areas. If the new services must pass through the area, they should be laid in accordance with section 4 of these guidelines.





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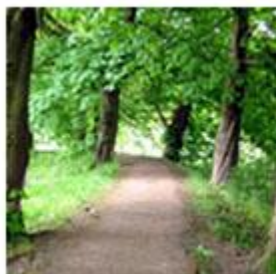
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## **Capital Asset Value for Amenity Trees (CAVAT) written by Chris Neilan**

**CAVAT provides a method for managing trees as public assets rather than liabilities. It is designed not only to be a strategic tool and aid to decision-making in relation to the tree stock as a whole, but also to be applicable to individual cases, where the value of a single tree needs to be expressed in monetary terms.**



**Therefore there are two versions of the CAVAT method. The Full method is recommended for use in decisions concerning individual trees or groups, when precision is required and sufficient time is available for a full assessment. The Quick method is intended specifically as a strategic tool for management of the stock as a whole, as if it were a financial asset of the community.**

**The primary, intended use of CAVAT is to allow local authorities to incorporate asset value management into their control of their own tree stocks, whether in streets, parks or other open spaces. Users will normally incorporate the CAVAT quick method into their routine tree surveys. Alternatively they could value a proportion of their stock and extrapolate an overall value.**

**The CAVAT full method will value individual trees, for purposes of comparison or in relation to insurance claims etc. CAVAT is included for this purpose in the Joint Mitigation Protocol, (JMP) negotiated between the London Tree Officers Association and the insurance industry. Use of CAVAT for individual tree valuation may also be useful where trees are to be removed as part of development of public areas or road improvements to help determine necessary compensation, and help ensure that adequate resources are available for realistic replacement.**

**A couple of years ago LBI improved our Tree Policy;**

**'Policy 9: The council will seek compensation from any external organisation responsible for significant damage to or removal of any council owned tree(s) to the value as calculated by CAVAT.'**

**I would be very happy to discuss this further and to advise anyone on how we've dealt with these issues.**

As responsible tree owners, we cannot allow people or firms to get away with damaging our trees, and CAVAT is an effective way to hit the culprits where it hurts and reduce the likelihood of them re-offending.