Committee	Sustainable Development Select Committee		Item no	
Title	Management of the boroughs street trees			
Wards	All			
Contributors	Executive Director for Customer Services Head of Green Scene			
Class	Part 1	Date	14th September 2010	

This report is late because it was not possible to obtain input from key contributors due to annual leave in August. It is nevertheless important that members receive the report now as officers are currently drafting a new Tree Management Strategy and therefore the views, comments and observations of members on the issues raised in this report would be timely.

1. Purpose of the Report

1.1   The purpose of the report is to inform the committee of the key issues arising from the stock condition survey of all the boroughs street trees that was completed in July 2009.

The report also provides information on the ecological benefits derived from the boroughs varied street tree stock and gives a breakdown of all new street trees planted in 2009/10.

2 Recommendations

2.1   The Committee is asked to consider the report and raise any questions or comments at the meeting.

3. Background

3.1   Management of the boroughs street trees is undertaken by the tree management team within the Green Scene service group. Tree works such as pruning, tree and stump removal, control of pests, and new tree planting is carried out by specialist contractors.

3.2   In 2009 a stock condition survey of all the boroughs 9278 street trees was carried out. The purpose of the survey was to assess the current condition and maintenance needs of the trees. Information relating to the species, age, and exact location of the trees was also captured and the information logged on the councils new tree management database (Arbortrack) and each tree was given a unique identification number (See appendix A).

4 Street Tree Management

4.1   All street tree maintenance works are prioritised using the following risk based methodology:

Priority rating	Definition	Time indication
1	These are works that are deemed to be immediately necessary as they pose a Health and Safety risk or are, on the balance of probability, are causing damage to property.	As soon as is necessarily practicable

	NOTE – some situations may arise that require an emergency response , in which case contractors are contacted immediately and are not subject to any 'scheduling' as such.	
2	Trees assessed to be causing problems or nuisance, such as trees that are very close to dwellings. These trees require remedial works but do not pose a direct risk to public health and safety.	2 months -12 months
3	Trees that need some form of work e.g. pruning or thinning however it is not immediately necessary and the trees are of an adequate distance from properties.	12 – 36 months
4	No action currently required – will be subject to inspection regime.	Next borough wide stock condition survey (due 2014/15)

4.2 The survey identified 865 trees that fell within the priority 1 category, with 167 being identified as requiring urgent felling. The remaining 698 trees required some form of remedial pruning to reduce the risk to an acceptable level. All necessary works to these trees was completed by June 2010 . 1087 trees were identified as priority 2, 6078 as priority 3 and 1248 required no works .

4.3 Risk management also extends to the damage of property from trees. This can be caused by either direct or indirect damage. Direct damage, for example, is where roots press against structures, causing them to crack. Indirect damage is where there is no direct contact with the structure however damage occurs; for instance, moisture being extracted from clay soil, which causing it to contract and foundations drop (i.e. subsidence).

4.4 Each case of alleged tree root damage is treated on it's own merit. The more significant the tree, the more evidence needs to be provided to ensure that the balance of probability supports the assumption that the tree is the cause.

4.5 To help ensure that street trees do not damage buildings and subsequently need to be felled a regular cycle of planned maintenance such as pollarding and crown reductions is carried out in 69 roads where there are Veteran/Over mature trees .

4.6 Veteran/Over mature trees in the urban environment are important as they provide a larger proportion of the benefits listed in 4.2. It is however common for veteran and over mature trees to have pockets of decay and damaged wood. In many cases, trees can tolerate this however in order to be sure the extent of decay/damaged wood does not exceed safety thresholds, specialist equipment (e.g Picus) can be used to map the condition of the wood.

4.7 In essence, Picus is a machine that sends sounds waves through the tree. The better the wood, the better it conducts the sound. During tests, the sound waves will travel from one sensor to the others, along the shortest distance. Wood that doesn't conduct the wave as well (i.e. decayed/damaged wood) will take a longer time to reach the sensors. From this, a 2D picture is produced that shows difference in the time the waves took from one point to the others - showing areas of potential decayed/damaged wood; and in it's various stage.

4.8 The use of this technology is extremely valuable in ensuring that these trees are structurally sound and provides irrefutable evidence of the need to fell mature trees if the results show an unacceptable level of decay. Appendix B – depicts the results of a Picus test.

5.   Species breakdown –

5.1 The borough has a diverse range of street trees, with each species providing various environmental and ecological benefits. A break down of these is provided at Appendix C.

5.2   In addition to the above , urban street trees have many other environmental benefits. These include the following:

- The absorption of carbon dioxide and the release of oxygen
- Filtering pollutant gasses including ozone, sulphur dioxide, carbon monoxide and nitrogen dioxide
- Reducing noise and dust levels.
- Helping to reduce the Urban Heat Island and therefore offsetting climate change
- Large leaf canopies catch rainfall and can reduce flash flooding
- Softening hard landscaping
- Providing shade
- Can positively affect property values
- Giving off scents and aromas that can create a positive emotional response.

6.   New Tree Planting Programme 2009/10

6.1   In 2009/10 a total of 425 new trees were planted. A breakdown of the species is listed below:

Common Name	Botanical name	Qty
Field maple	Acer campestre	21
Silver maple	Acer saccharinum	1
Erman's birch	Betula ermanii	25
Silver birch	Betula pendula	41
Swedish birch	Betula pendula Dalecarlica	41
Downy birch	Betula pubescens	1
Hornbeam	Carpinus betulus Frans Fontein	27
Turkish hazel	Corylus colurna	6
Hawthorn (variety)	Crataegus laevigata Alboplena	26
Hawthorn (variety)	Crataegus x grignonensis	7
Hawthorn (variety)	Crataegus x lavalleei	24
Honey locust	Gleditsia tricanthos 'Sunburst'	2
Judas tree	Cercis siliquastrum	1
Tree privet	Ligustrum japonica	6
Lime	Tilia cordata	1
Liquidambar	Liquidambar styraciflua	1
Apple (variety)	Malus Director Moerland	13
Apple (variety)	Malus Rudolph	16
Dawn redwood	Metasequoia glyptostroboides	3
Olive	Olea europaea	4
Black pine	Pinus nigra	3
London plane	Platanus x hispanica	13
Cherry (variety)	Prunus Accolade	5
Cherry (variety)	Prunus Amanogawa	13
Cherry (variety)	Prunus avium	10
Plum (variety)	Prunus cerasifera Nigra	9
Cherry (variety)	Prunus Okame	4
Cherry (variety)	Prunus Pandora	10
Cherry (variety)	Prunus Umineko	24
Whitebeam (variety)	Sorbus aria Lutescens	19
Whitebeam (variety)	Sorbus aria Magnifica	4
Rowan (variety)	Sorbus aucuparia	41
Mountain ash	Sorbus discolor	3

7. Background documents and report author

7.1 There are no background documents to this report.

7.2 If you would like any further information regarding this report please contact John Thompson, Head of Green Scene on 020 8314 2015.
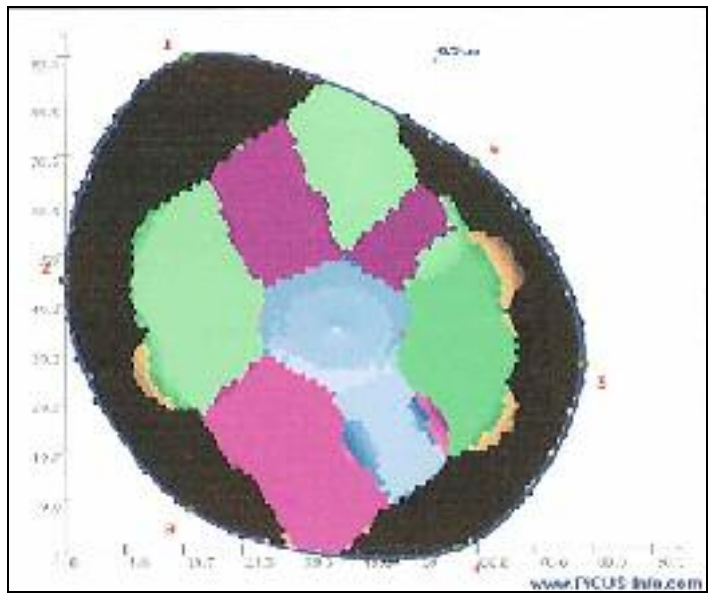
Appendix A – Screen shot of Arbortrack
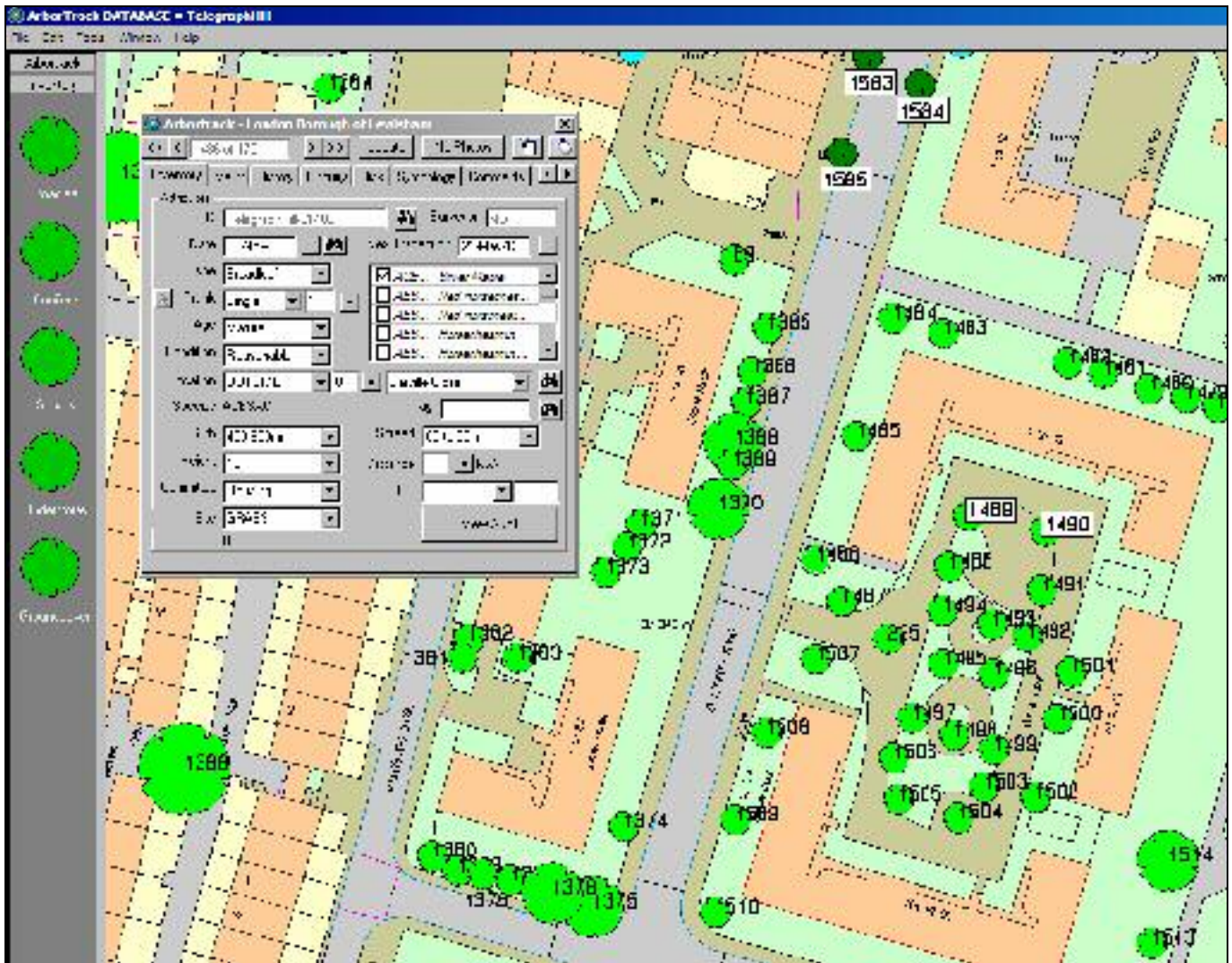
Data collection includes: Full Inventory
Recommended maintenance, including priority rating
Full works history
Details of enquiries
Risk matrix
General Comments

Appendix B – Example of Picus Test

2D picture showing internal condition of wood

In this reading:

Light blue/blue - very advanced stages of decay; could be hollow
Green - advance stages of white rot; mushy
Pink - White rot
Light brown - currently unknown but could be discolored wood that is containing the decay (i.e. trying to prevent decay expanding).
Brown - Sound wood.

Photos of subject tree (arrow indicates location of sensor 1). Visually trunk appears to be in reasonable condition however when tapped with a nylon mallet, sounded partly hollow. Picus test, along with wood samples, confirms extensive damaged/decayed wood.

The following table is a breakdown of Lewisham's street trees

Tree Species	As a % of all street trees	Description and ecological information
Prunus	28.11%	Species includes Cherry, Plums, Peach, Almond and Apricot. Foliage of some Prunus are a food plant for many moth species. Birds are attracted to ripened fruit. Up to 109 different insects can be associated with Prunus. Two are native to the UK
Sorbus	15.92%	Sorbus includes Rowan, Mountain ash, Whitebeam and Service tree. At least 28 species of insects are attracted to Sorbus. Three are native to the UK
Platanus	11.49%	Species include London and Oriental plane. Both are introduced to the UK with London plane commonly planted in the Victoria era and in avenues. Large tree at maturity. There is one insect generally associated with Platanus.
Tilia	11.04%	Lime trees – two of which are native to the UK. 31 specie of inspects are associated. Common issue with Lime trees is they harbour aphids and their consequent drip of Honeydew. Alternative species (with hairy leaves) are available that lessen the honeydew
Acer	10.01%	18 different species that are common in Britain, one of which is Native (Field Maple). Species include Sycamore and Maples. Maples harbour at least 26 different specie of insects Fallen seed are an important source of food of small mammals and the leaves are eaten by the larvae of moth specie.
Betula	5.33%	Birch's. Two species B. pendula and B. pubescens and native. Birch harbour the third most different specie of insects – 229. Birch in a woodland is rich with fungi. Seeds are important food for small birds in the winter.
Crataegus	2.62%	Hawthorns and Thorns. A large group of trees with many different specie and numerous forms. Characterised by thorny twigs. 149 different insects associated with the species. Winter berries are important sorce of food for some birds and small mammals. C. monogyna is native.
Pyrus	2.54%	Pear – mainly grown for edible fruit and can tolerate street environments
Aesculus	2.46%	Horse/Red Chestnut – The flowers of the trees are popular with nectar-seeking insects, in particular bees. 9 species of insects are associated with chestnuts.
Malus	2.22%	Apple (including crab). More than 2000 cultivated in Britain. Hardy trees that grow in a variety of soils/climates. Leaves are a food source for larvae of moths, one of which lives in the trunk of old trees.
Other	1.87%	Mixture of species and currently need identifying. Some surveying was carried out during winter
Fraxinus	1.11%	Ash – F. excelsior is native. Ash harbours 41 different species of insects.
Quercus	0.86%	Oak – Sessile and English are native. Harbours the most species of insects (284). Oaks are immensely important to wildlife for food and shelter. Dead wood retained in mature trees and after death, Oaks support wood boring beetle larvae and fungi.
Robinia	0.85%	False acacia – no specific ecological benefits
Carpinus	0.76%	Hornbeam supports 28 species of insect. Only one British bird can crack the tough seeds (Hawfinch). C. betulus is native to the UK
Gleditsia	0.35%	Honey locust – no specific ecological benefits
Populus	0.31%	Poplar – P. nigra and P. tremula are native. 97 species of insects are associated with poplars in the UK
Alnus	0.30%	Alder – A. glutinosa is native. Leaves are the food plant for many insects, particularly the larvae of moths.
Fagus	0.24%	Beech – F. sylvatica is native and 64 different species of insects are associated with them.
Taxus	0.20%	Yew – Taxus baccata is native to UK. Tolerant of pollution in towns. Was historically planted in church grounds to deter livestock.
Catalpa	0.20%	Indian Bean tree - no specific ecological benefits
Chamaecyparis	0.13%	Lawsons cypress - no specific ecological benefits
Ilex	0.12%	Holly – I. aquifolium is native to the UK. Berries are popular with Thrushes.
Pinus	0.11%	Pine – P. sylvestris is native and harbours 91 different insects.
Liquidambar	0.11%	Sweet gum - no specific ecological benefits
Juglans	0.11%	Walnut - no specific ecological benefits
Ulmus	0.08%	Elm - no specific ecological benefits
Laburnum	0.08%	No specific ecological benefits

Tree Species	As a % of all street trees	Description and ecological information
Corylus	0.08%	Turkish Hazel – no specific ecological benefits
Ligustrum	0.07%	Privet - no specific ecological benefits
Amelanchier	0.07%	No specific ecological benefits
Ailanthus	0.06%	Tree of Heaven – no specific ecological benefits
Salix	0.05%	Willow – three specie of Willow are native and they house 266 different specie of insects.
Metasequoia	0.05%	Redwood - no specific ecological benefits
Ginkgo	0.04%	Maidenhair tree - no specific ecological benefits
Laurus	0.02%	Laurel - no specific ecological benefits
Liriodendron	0.01%	Tulip tree - no specific ecological benefits
Larix	0.01%	Larch - no specific ecological benefits