

## Further thoughts from the Health and Trees working party

The subject of Trees and Human Health covers a vast range of issues, whether we are talking of trees' contribution to good health and wellbeing globally or on a local scale we discuss this further below, but offer no excuses for now concentrating on an aspect currently in the forefront of the minds of residents, commuters, politicians and others.

Urban Air Quality is the aspect in question. As the major managers of London's Urban Forest, LTOA members have had this in view for a longer time than might be indicated by many recent articles in the media which, to the uninitiated, might suggest that comment on air quality was in some way 'jumping on the bandwagon'.

In reality London's Tree Officers have a fine history of placing the role of trees in the broad context of improving the Health and Wellbeing of Londoners across the widest range of benefits that trees deliver and in identifying the fact that such benefits are linked in a fine web across almost every aspect of life in the city. As this area of the website is expanded you will not only find an increasingly comprehensive resource section but also case studies illustrating how LTOA members were at the forefront of actions on trees and air quality as far back as the 1990s. Along with partners such as the Woodland Trust, Trees for London, Tree Wardens and other volunteers, LTOA members were busy creating perimeter hedgerows around schools, and planting schemes specifically targeted at local atmospheric pollution. It is very easy to forget that even then we had convincing evidence from scientists of the key role trees play in improving air quality and that the 'bandwagon' has taken a long time to start rolling – with help from many sources.

In some ways it is unfortunate that we must dissect and single out aspects of the good that trees do for us as it can appear that, to coin a phrase, 'we don't see the wood for the trees'. But since we have to address individual issues, the Air Quality issue and a number of the elements within that are worth highlighting, and these form some of the areas on which the Trees and Human Health Working Party will currently concentrate.

- There are varied assessments of the efficacy of trees in specifically combatting by absorption and deposition, the pollutants in city air which almost exclusively in these post-industrial days are generated by vehicles. Some estimates put the contribution around 13% of PM10s and 14% of NOx (footnote itree). Others suggest greater and lesser figures. There is no way to 'prove' such figures incontrovertibly generally across the whole city as the 'whole city' cannot be sampled. Sites immediately adjacent to pollution sources at roadside will differ enormously within very short distances – away or *above* – and air movements will vary any results.

- What is not at issue is that trees are the most effective element of Green Infrastructure at removing pollutants and dust. Our members, more than most, will have been aware of this for a very long while – apprenticeships to the profession, for many of us, will have involved climbing and pruning city trees and experiencing their collection of particulates at first hand. A concentration on Green Roofing and Green Walls, misses this vital point. The biomass provided by trees will always outweigh such initiatives – however welcome they may be as *additions* to our air quality armoury.

- The above is of course dependent on providing *sufficient space* for trees. A relevant aside on the issue of space and green roof/green wall initiatives is that such tools are substituted for the provision of adequate space – with the corollary that such trees as are designed in are then limited to *fastigate* (narrow, upright) or *small* specimens. The key here is of course money and the desire to cram as much build into a site footprint as possible.

- Following directly from this is a further consequence. Denser build leading to greater occupancy and more provision for the vehicles which cause the pollution. More space for cars means less for trees – and all the benefits of trees come from the small-scale provision by individual trees - and become significant *en masse* - so loss of space is critical. This applies to both ends of any journey. In suburbia front gardens become car parks, lose permeable surfaces and street tree locations vanish forever: in city centres we arrive at the stage of street canyons.

- And this leads to one further point demonstrating the uphill struggle we have to publicise the benefits of trees. For several years the less responsible parts of the mass media have produced misleading reports from the partial studies which suggest that trees trapping pollution in street canyons, worsen air quality. Two elements can be highlighted. Misrepresentation of the *cause* of pollution is one. The other is that such studies are models based on true street canyon situations outside the UK. An example which regularly surfaces is the statement that some trees emit Volatile Organic Compounds (VOCs) without such caveats that the smell of roses or a pine forest are VOCs and that an unshaded car will emit VOCs from evaporating fuel. We know of nowhere in the UK where a concrete example been provided of trees worsening air quality. Unsurprisingly, since as we noted above, sampling to 'prove' such contentions are virtually impossible and the last and most difficult area in any modelling, will be that hugely complicated component – the Urban Forest. We are often told that in this context there are 'good' trees and 'bad' trees

to plant. Here we have the advantage of the knowledge to factor in, of all the other benefits that trees produce – a tree good at dealing with Nox might be a very poor performer in a dozen ways in a hot city street. It is arboriculturists who have this knowledge, and not necessarily, on this occasion the climate change scientist.

We hope that some of the above might alert readers and members to some of the common misconceptions and misrepresentations around this subject. As the product of the Working Party increases and broadens we trust it will become ever more useful.