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TREE CONSULTANCY

Reversing the Trend of Urban Deforestation in the UK

Sitelines – The Journal of Landscape Architecture in British Columbia (October 2012)

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The UK has a robust national green belt planning policy that seeks to prevent urban extensions into rural areas and confine new development within existing settlement boundaries. This has been very successful at restricting urban sprawl and conserving our unique rural character, but it has put immense pressure on green space within our towns and cities. Trees have been one of the most obvious casualties because they are sensitive to change and their multiple benefits were significantly undervalued when balancing development priorities. Those losses of existing trees have been compounded by ineffective new planting that often dies or struggles to mature into fitting replacements. These combined impacts have gradually eroded our urban canopy cover to the extent that the UK's ability to adapt to climate change is becoming increasingly compromised.

In 2008, through the Climate Change Act (www.legislation.gov.uk/*ukpga/2008/27/contents*), the UK legally committed to mitigate the impacts of climate change through an ambitious target of an 80 percent carbon generation reduction on the 1990 levels by 2050. Additionally, the Act covered the importance of adapting the urban environment to make our living conditions more comfortable. In tandem with these strategic developments, there has been a

mounting body of research evidence cataloguing the multiple benefits that trees provide, reinforcing their importance as an essential component of a healthy urban environment. As communities begin to appreciate the contribution of trees to their physical and psychological wellbeing, optimizing canopy cover is becoming an increasingly urgent priority. However, decades of urban deforestation has created a culture of complacency over the loss of trees, and reversing the current trend is proving a stiff challenge.

Historically, much of the tree loss arose directly through development activity, where existing residential and commercial plots were subdivided to increase the intensity of use and reduce the pressure to expand into rural areas. Mature trees take up lots of space and were often sacrificed or poorly protected in the drive to maximize development potential. More recently, improvements in the application of existing planning legislation and advancements in technical capabilities to install structures close to trees has significantly improved our performance on construction sites. We now know how to effectively protect important trees, which has made a significant contribution to slowing the rate of canopy cover loss.

Disappointingly, similar progress cannot be claimed for establishing new trees to replace those being lost. We know large numbers of new trees are being planted because nursery sales are buoyant, but there is also visible evidence all around us that many never reach their full potential. They do not necessarily die, but they frequently struggle to develop into the healthy and mature trees needed to provide effective climate adaptation benefits. Moribund and small trees will not improve the resilience of our cities to the impacts of climate change, a realization that has prompted some detailed analysis of UK tree production and planting practices.

It seems that part of the problem lies with nursery production and the lack of control that the buyers have over the long term quality and viability of the product. Growing trees is a competitive business, strongly influenced by the need to maximize returns at the nursery gate. Producing the biggest tree in the shortest time, using the smallest amount of space, is a recipe for profit and has dominated conventional nursery practice. This has driven species selection towards the fastest growers, not the best survivors. On site, the buyer wants a tree that will cope with difficult growing conditions, establish with minimal maintenance, and live a long time. Although the new tree initially appears to be fit for purpose, because it has been grown to look good at the point of sale, it is often not well-equipped to adapt to difficult conditions, the weakest take years to decline or die and the delay is too long to seek redress. The length of time between supply and final tree death, often measured in decades, means that suppliers have continued to get away with growing trees for short term profit, while communities pay the long term price of failing to meet canopy cover targets because the new trees do not perform as expected.

Against this unsatisfactory background, arborists in the UK are welcoming the British Standards Institution (www.bsigroup.co.uk) announcement of a new British Standard being developed. *BS* 8545 *Code of Practice for trees: From*

nursery to independence in the landscape, is being prepared by a panel of industry experts intent on identifying the main problems in the production system and offering best practice guidance for buyers looking for long term performance. With a target publishing date of 2013, hopes are high that this may offer a rare opportunity to break the suppliers' grip on this market and allow managers to buy trees that are fit for purpose, not fit for profit.

In response to these emerging pressures, UK nurseries are beginning to recognize that addressing these concerns provides a business opportunity and are investing heavily in offering solutions. Private enterprise is blazing the trail in an absolute absence of any valuable progress from any other direction. As a result, a series of innovative approaches are emerging, including:

- **STEM TAPER:** The traditional, profit-driven approach to growing trees makes good business sense, but it has a tendency to produce tall and thin stems with little taper, sometimes unable to stand without a stake! However, experience and emerging research is indicating that sturdy stems with a natural taper can improve survival after planting; a simple change that seems to make a big difference. Barcham Trees (www.barcham.co.uk) has been pioneering growing trees at wider spacing and retaining low branches to increase stem taper, and are hopeful this will give their product an edge in the market place.

- **LONG TERM TREE VITALITY:** Traditionally, the assessment of the quality of new trees was focused on physical characteristics (mainly size and structure), but these often have little bearing on the potential of the tree to successfully establish to independence in the landscape. Barcham, in association with Bartlett Tree Experts (www.bartletttree.co.uk), has been investigating whether tree vitality characteristics such as chlorophyll fluorescence, leaf chlorophyll content, and electrolyte leakage can reliably indicate tree health. The research is not yet published, but the hopes are that such measurements will form the basis for health certificates, adding an extra layer of confidence for the buyer that their tree investment has the potential to survive and thrive into the long term.

- **INTERACTIVE TREE SELECTION:** Big semi-mature specimens represent a significant investment and it is natural for buyers to seek assurance that each tree will produce the instant impact they want. Barcham believes that being able to see the tree you are going to buy is a marketing advantage, but you can decide for yourself at www.buythetreeyousee.com.

Barcham trees

Without private enterprise working on these matters, there would be no progress (and in case there is any confusion, I have no business

connections whatsoever with Barcham or Bartlett and so I have no vested interest in promoting them). The simple fact is that they are the only ones doing it — this is the cutting edge and it is not coming from researchers.

These initiatives demonstrate a significant break from traditional, purely short term profit-driven approaches to tree production. For the first time, buyers are articulating what they want for their money and growers are having to respond with creative ways of growing trees with better survival potential. Indeed, the most visionary growers are already investigating a range of new ideas focused around producing a tougher tree that hits the ground running when transferred from nursery to the street. Reducing fertilizing regimes to grow trees more slowly, searching for new provenances that can better cope with urban conditions and reducing nursery watering to reduce reliance on post-planting maintenance, are all avenues with the potential to deliver significant improvements in new tree planting survival rates.

Although the UK got off to a bad start, those failures seem to have kick-started a new approach to street tree production, which can only improve our chances of adapting to the inevitable extremes that climate change will bring.

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