



Site Guidance Notes: Plugging the tree protection gap on construction sites

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SITE GUIDANCE NOTES: PLUGGING THE TREE PROTECTION GAP ON CONSTRUCTION SITES

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Trends in urban tree canopy cover

In February 2007, I attended the American Society of Consulting Arborists' Consulting Academy in Sacramento. It was held on the 9th Floor of the Downtown Hilton and, during the breaks, delegates took refreshments on a balcony that provided views out past the State Capitol Building (complete with Arnold Schwarzenegger who was the State Governor at the time) and across the city. I saw a city with buildings nestled within a framework of trees, which was the reverse of similar views in London, i.e. trees squeezed into a framework of buildings. The difference intrigued me and a desire to understand why has dominated my professional life ever since. The stark contrast in my observations prompted an informal review of my UK contracting and consultancy experiences, which resulted in a realization that our urban tree canopy cover was declining, and nobody had realized it [1]! Of course, this was just my suspicion based on anecdotal evidence, and there was no formal research to confirm it one way or the other. A decade later, my broad concerns that urban canopy cover was declining and going unnoticed were confirmed as correct widely across the USA [2] and more locally in Denver and Milwaukee [3], although we still have limited research validation that it is similar in the UK.



Figure 1: Sacramento is a city of buildings set within a matrix of trees

As the evidence mounted showing a net loss of urban trees, my attention as a practitioner was directed towards understanding why it was happening and what, if anything, could be done about it. During the last 10 years, I

have identified multiple reasons for tree loss including arborists prematurely condemning trees over safety concerns [4], a presumption by highway managers not to replace felled trees [5][6], poor planting practices resulting in high new tree failure rates [7], a reluctance to factor tree value into built environment decision-making [8], and premature felling of healthy street trees to cut costs [9]. However, my dominant perception was that by far the greatest loss occurred on construction sites through inadequate protection of trees identified for retention that subsequently died or were removed.

Overview of the UK planning system

The UK has a relatively small landmass with a large population, and a long tradition of controlling land-use change. Historically, this resulted from large tracts of land being owned by a small number of the aristocracy but, more recently, the efficient use of land in the public realm has been driven by planning legislation. Central to that approach has been the restriction of urban sprawl through a green belt policy of strict control of residential, commercial, and industrial development in the countryside, and placing a priority on reusing derelict land in urban areas. With so many people squeezed into such small spaces, there is an over-riding need to regulate development so that impacts on close neighbours is kept within reasonable limits, which is a central principle of the extremely sophisticated planning system that we have today. In practice, this means even the smallest changes in land use normally have to be subjected to the planning process, which involves the preparation of detailed design proposals, the review of those by the administering local planning authority (LPA) (usually a council) against predetermined national and local policy objectives, the issuing of a consent or a refusal, the ability for disgruntled applicants to appeal to an independent authority, and statutory controls during development to ensure that what is built matches what was consented.

Within that overall planning process, trees are formally recognised as material considerations, so the decision maker must factor them into the analysis. Wherever trees could be directly impacted through a proposed alteration of an existing land use, it is compulsory to provide enough details of those trees within a planning submission to allow the determining authority to assess the impact of the proposal on local character. This would normally include tree descriptions (including an assessment of quality), an assessment of the impact of the proposal on those trees, and measures to protect retained trees during the development activity. In the UK, and several other countries, e.g. Australia and Sweden, there is high level national guidance on how to manage trees within that process. For instance, in the UK, we have the British Standard (BS) 5837 (2012) *Trees in relation to design, demolition and construction — Recommendations* [10]. Most, although not all, administering authorities have tree experts to assess the submissions and advise a planning officer whose task is to weigh up all the competing priorities referencing adopted policies, and come to a balanced decision. Refusals can be appealed, and often are, and consents have conditions attached, which can be legally enforced if not followed to the letter. In principle, a robust and effective national system, but in practice its local success very much depends on the caliber of the people within it, and the quality of planning delivery varies from perfect to a poor across the country.

Barriers to successful tree retention

More specifically, through our work within the UK planning environment, we identified several practical and procedural barriers to successful tree retention:

- **Communication breakdown:** There is often poor communication between the design and delivery stages of the development process, so it is common for the site operatives to be unaware of tree protection agreed with planners.

- **British Standard (BS) guidance:** The BS guidance is copyrighted, which prevents its detail being easily reproduced to explain specific operations.
- **Weak planning conditions:** Poorly informed/inexperienced planners often write weak planning conditions, and so agreed tree protection cannot be enforced as intended.
- **Formal reports:** Although detailed reports are an essential part of describing a development proposal in the design and planning stage, once consent is issued, those reports are rarely found or used on site.
- **Report aversion:** Practical people on site are not engaged by complex or lengthy reports, which results in key personnel not understanding how to properly protect retained trees.
- **Ineffective enforcement:** LPAs often struggle to enforce tree protection requirements that are not clearly explained in the planning application documents.

On the bright side, we find that plans are a universally understood medium on site and their use is routine, so important information on plans has a better chance of being used than if it is buried in a report.

Evolution of the Site Guidance Note (SGN) concept

To make a real difference on tree survival, we wanted to develop a solution to bridge the procedural gap between planning and implementation, i.e. assist the operatives doing the building to understand the tree protection proposals and how to execute them on site. Our early efforts focused around including the detail of site operations within our impact appraisal reports submitted with planning applications, but this resulted in lengthy documents making it difficult to pinpoint specific information. Although this approach contained all the technical information, it drew regular criticism from LPAs as being too complex, generic, and not site specific. Our subsequent evolution illustrated the technical content with photographs of real examples from our thousands of projects, which was more effective at explaining, but still resulted in long reports, so was only partially successful. The report size issue was solved by the advent of improved internet storage of and access to information. We took our lead from the UK government approach to storing generic guidance for planning online: if that was acceptable for government administration, then why not for tree protection as well?

Through this lengthy process of trial and error, the design priorities began to emerge to shape the SGN concept. Reports could be kept short and site specific by extracting and storing generic information online. That information needed to explain the principles of each individual tree protection operation in a way that made it easy for site operatives to understand and access. There needed to be a summary of the technical support references to add the necessary depth of detail and credibility. Photographs of tree protection operations were preferred to text explanations. Finally, the overview and detail of how to do each tree protection operation should be quickly and easily accessible through the tree protection plan.



Figure 2: 12 individual SGNs describe the practical application of tree management on construction sites.

That was the design process resulting in twelve individual SGNs covering the commonest tree protection issues, ranging from supervision, to fencing, to excavating in root protection areas. Each SGN starts with a concise bullet point summary of key information that site operatives should know, followed by images showing how it can be done, and concludes with a summary (not verbatim quotes) of the technical guidance. Each SGN can be downloaded free (www.barrelltreecare.co.uk/resources/technical-guidance/) and accessed directly on site using mobile devices to scan the QR Codes on the tree protection plan.



Figure 3: QR Codes allow rapid access to each SGN from mobile devices.

Using SGNs

Anyone can access and use each SGN free, but the source must be acknowledged, and their format/content must not be altered. Their multiple benefits include:

- LPAs can link online to SGNs to publicise planning expectations to the public and professionals.
- Consultants can reference SGNs in their planning reports, either linking to the online source, or downloading them and inserting them directly into the report.
- Developers can use SGNs to specify tree protection for pricing and implementation.
- LPA planning officers can directly reference SGNs in planning conditions as a source of credible detail.
- LPA tree officers can use SGNs on site to explain tree protection expectations to developers.
- Site operatives can download SGNs to mobile devices on site as a quick reference when working near trees.
- When it all goes wrong, LPA enforcement officers can reference SGNs as clear examples of what was expected.

In short, SGNs provide a common standard for reasonable tree protection expectations during development.

Although SGNs have evolved in the UK planning system and are intended for use within it, the difficulties they have been designed to overcome apply around the world and there is increasing interest from other countries who have a similar desire to reverse the loss of urban canopy cover. It is feasible to adapt the concept for application in other countries through modification of the detail to suit local circumstances, e.g. using alternative site photos and referencing local technical documents instead of the BS. If you think SGNs may have a place in your planning environment, please contact us to see if we can assist adapting the concept to your local needs.

Explore these links if you are interested in learning more about the challenges facing urban arboriculture in the UK and around the world:

<https://www.barrelltreecare.co.uk/resources/>

<https://www.facebook.com/Heritage-Tree-Management-573985506028429/>

<https://www.linkedin.com/in/jeremy-barrell-48b4ab19/>

<https://twitter.com/JeremyDBarrell>

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9. Barrell, J. 2018. Sheffield's shame; Arboriculture's gain. *ICF Chartered Forester Magazine* Autumn 2018. <https://www.barrelltreecare.co.uk/resources/articles-and-papers/btc1302018-sheffields-shame-arboricultures-gain-icf-chartered-forester-magazine/>.
10. BSI Standards Publications. 2012. Trees in relation to design, demolition and construction — Recommendations. <https://shop.bsigroup.com/ProductDetail/?pid=000000000030213642>.