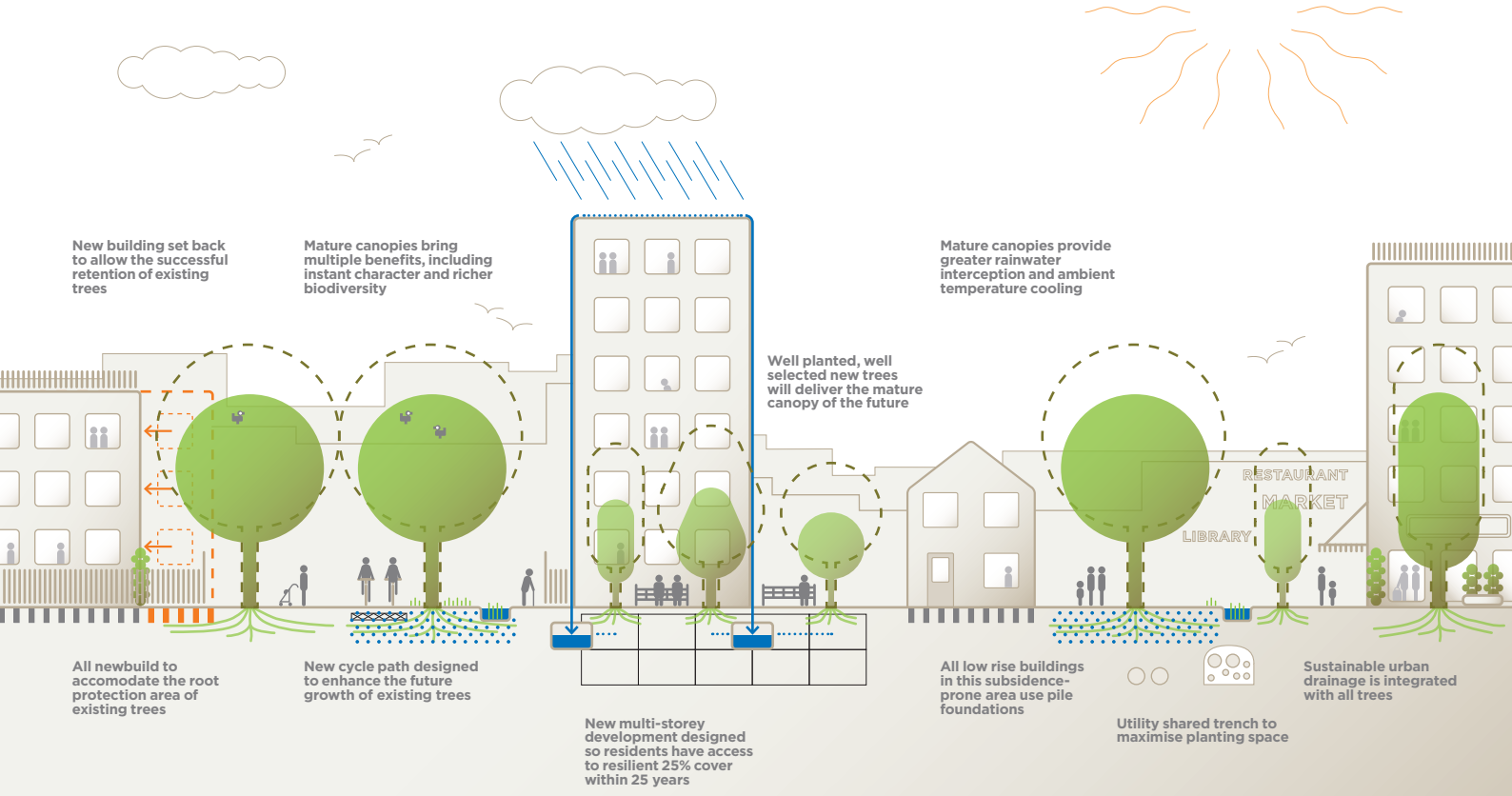
First Steps in Trees and New Developments

For All Working in the Built Environment



Trees & Design Action Group

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National planning policies and guidance[1] across the UK increasingly emphasise the need for trees in new developments. At a time when pressure to provide new housing is high, it can seem daunting to make space for trees while meeting viability and housing number targets. Yet, by adhering to simple principles of good practice from pre- to post-planning, such an ambition can be met. This short guide explains how.

Benefits every project needs

Trees are crucial to addressing climate change[2] and biodiversity decline[3], as well as improving mental[4] and physical well-being[5] for urban residents. Through their impact on local distinctiveness[6] and thermal comfort[7], trees can have an unrivalled ability to make places more desirable to live in. Trees also positively impact project viability by lowering local opposition to development, enhancing the prospect of securing planning consent, and increasing the speed of sales[8].

Using this guide

The benefits that any tree can provide often depends on how well it is integrated into a development. The principles and actions below will help developers and their design teams as well as Local Planning Authorities (LPAs)'s tree officers and planners to maximise the benefits of trees in developments. Actions are colour-coded to indicate best timeframe for implementation:

- Before applying for planning consent.
- When applying for planning consent.
- After planning consent has been secured.
- Anytime.

Principle 1: Understand

No design work, however conceptual, should start until the tree constraints associated with a development site are well understood.

Why?

– Save time and money: the earlier tree-related constraints are integrated into a project, the greater the opportunity to achieve good results.

Fig. 1 **Mitigation (ie new planting to replace existing trees) is necessary where tree loss is unavoidable, but it cannot be exclusively relied upon to secure good tree outcomes from developments. Here's why:**

Lag time

>25yrs

Even with robust mitigation approaches it can take at least 25 years to match the benefits provided by the existing trees.

Likelihood of survival

<60%

In some cases, up to 60% of newly planted trees in residential settings do not survive beyond five years.[13]

Cumulative impacts

>40%

Within three years, 40% of existing trees found on development sites in Bristol were removed.[14]

Even "Low Value" trees may secure good tree outcomes. Here's why:

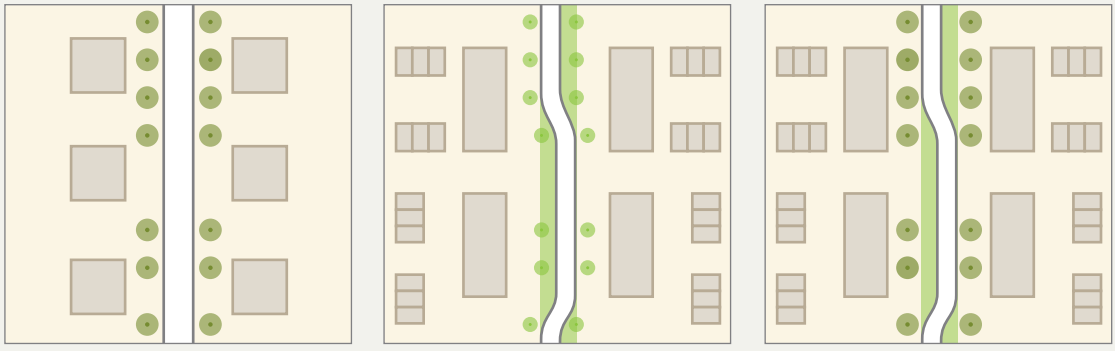
In BS5837:2012[11], trees considered suitable for retention are divided into three main categories: A "High Value", B "Moderate Value" and C "Low Value". While they typically represent a low level of constraint on developments, there are circumstances where the retention of category C trees is worth pursuing (see Fig. 2) because they are already established and may have the potential to become 'Moderate' or 'High" value trees in the future.

Fig. 2 **A typical example where tree retention is preferable to replacement (based on a real project)**

Before development
Existing straight road with healthy and established category C trees, classified as such due to their youth.

Proposed layout and plantings post-development
Curved road for traffic calming and planting. Existing trees replaced with small canopy trees.

Alternative approach, providing greater and immediate benefits
Curved road built with bedding, around the existing trees on site.



References

1 TDAG (2020). *Trees, Planning and Development: A Guide for Delivery*. Trees and Design Action Group Trust: London. Link

2 On climate mitigation, see: Forestry Commission, (2022). *Responding to the climate emergency with new trees and woodlands: A guide to help local authorities and landowning businesses achieve net zero*. Link

On climate adaptation see: Gill S. (2009) The essential role of trees – adapting to climate change by managing high temperatures and reducing pressure on drainage systems, in proceedings *Trees and Urban Climate Adaptation: a sociable agenda for living cities* 19 November 2009. Link

3 The Woodland Trust. *Why are trees important for biodiversity*. Link

4 *Green Cities: Good Health. Mental Health & Function*. University of Washington, College of the Environment. Link

5 *Green Cities: Good Health. Stress, Wellness & Physiology*. University of Washington, College of the Environment. Link

6 See paragraph 1.1.2 in *Trees, Planning and Development: A Guide for Delivery* (2020). Trees and Design Action Group Trust: London. Link

7 Ferranti, E.J.S et al. (2021). *First Steps in Urban Heat for Built Environment Practitioners*. Trees and Design Action Group Trust: London. Link

8 See paragraph 1.1.1 in *Trees, Planning and Development: A Guide for Delivery* (2020). Trees and Design Action Group Trust: London. Link

Actions for developers

- Appoint an *arboricultural consultant*[9] at the outset with scope to contribute to the iterations of the design process.
- Ensure that findings from the BS5837:2012[10] compliant tree survey and *tree constraints plan* inform feasibility studies.
- Ensure key local policies affecting trees in developments also inform feasibility studies (eg required approach for tree loss mitigation; possible obligations to achieve a defined quantum of *canopy cover* or green area ratio for the site).

Actions for LPAs

- Have an adopted Tree Strategy[11].
- Ensure all land allocated for development undergoes an arboricultural assessment so that trees, hedges and woodlands warranting protection are identified.
- Alongside tree surveying requirements, consider embedding in validation (i) the systematic measuring of canopy cover; and (ii), where coherent with the local approach to reducing tree loss, the use of tree valuation (eg CAVAT[12]).

Principle 2: Retain

Make the successful retention of existing healthy mature trees an upmost priority.

Why?

- Reduce planning risks.
- Maximise the appeal, resilience and acceptability of the future development.
- Avoid negative unintended consequences of cumulated loss (see Fig. 1).

Actions for developers

- When proposing significant removals or works near protected trees, use pre-application advice to review the tree constraints plan, the proposed *tree removal plan* and an indicative *tree protection plan* with the LPA.
- Develop the tree protection plan and *arboricultural method statement* iteratively, elaborating on details as design progresses.
- Appoint an arboricultural consultant to monitor tree protection during construction, starting with a *pre-commencement site meeting* with the LPA before construction work starts.
- Ensure site operatives are briefed on tree protection: highlight good practices to be adhered to in the *construction management plan* and in visual displays onsite.
- Consider the most sustainable use of timber from removed trees.

Actions for LPAs

- Impose monitoring conditions[15] on the implementation of agreed tree protection measures.
- Do not sign monitoring conditions off until receipt of all satisfactory evidence.
- Ensure that planning enforcement policies prioritise the prevention of tree breaches and that a *temporary stop notice (TSN)* can be issued quickly when needed.
- When a serious tree protection breach occurs, serve a TSN. Where the context warrants it, communicate to the local press about such instances.
- Have a robust tree replacement policy to secure equitable mitigation of unavoidable tree losses eg like-for-like canopy cover, amenity value, or carbon benefits.
- Place *Tree Preservation Orders* on onsite mitigation planting to ensure long-term protection.
- When commuted sum payments are collected for offsite mitigation, focus on financing new planting sites (rather than routine replacement).

Principle 3: Enhance

Seek to enhance the extent and resilience of the canopy cover of each site.

Why?

- Use trees to meet local or National Planning Policy Framework targets.
- Enhance appeal, resilience and acceptability of the future development.

Actions for developers

- Achieve species diversity and suitability to the site conditions[16]. Where possible, prioritise large canopy trees.
- Ensure both existing and new trees have a suitable growing environment with: continuous rooting trenches; load bearing media where needed; and access to stormwater runoff. Use BS8545:2014[17] and TDAG guidance[18].
- Mandate the use of quality tree stock. Use BS8545:2014[17] to produce good specifications. Demand Plant Health Passports[19].
- Plan and sufficiently resource post-planting care for three to five years as detailed in BS8545:2014[17].

Actions for LPAs

- Embed into local development management policies and design codes: (i) quantitative targets on the expected canopy contribution of individual sites; (ii) an integrated approach to trees and sustainable drainage; and, (iii) suitable planting specifications for trees in hard landscapes[18].
- Enforce landscaping conditions. For sensitive operations, consider using bonds.
- Identify and maintain up-to-date records of prospective public realm planting sites to enable efficient use of tree-related commuted sums.

References

9 Terms highlighted in green italics are defined in the **Glossary**.

10 *British Standard 5837:2012 Trees in Relation to Design, Demolition and Construction to Construction – Recommendations.* BSI: London. Link

11 See Section Four in TDAG (2022), *Trees, Planning and Development: A Guide for Delivery*. Trees and Design Action Group Trust: London. Link

12 *Capital Asset Valuation of Amenity Trees.* Link

13 Ward Doty (2021) *Ensuring sufficient tree replacement on development sites: a Bristol, UK case study.* MSc thesis, UCLan.

14 Garwood. M. (2021). *Living amongst the trees: is the current UK planning system effective at delivering tree planting as part of residential development?* MSc thesis, UCLan.

15 London Tree Officers Association (2017). *Suggested Standard Wording for Planning Conditions.* LTOA: London. Link

16 TDAG (2019) *Trees Species Selection for Green Infrastructure: A Guide for Specifiers.* Trees and Design Action Group Trust: London. Link

17 *British Standard 8545:2014 Trees: from nursery to independance in the landscape – Recommendations.* BSI: London. Link

18 TDAG (2014). *Trees in Hard Landscapes: A Guide for Delivery.* Trees and Design Action Group Trust: London. Link

19 British Landscape Association *Industries FAQ on Plant Health Passports.* Link

Glossary

Arboricultural consultant.
Someone with recognised qualifications and expertise in tree management and care.

Arboricultural method statement.
Outlines how construction workers must work to protect trees during development and mitigate any adverse impacts.

Canopy cover.
The area of leaves, branches, and stems of trees covering the ground when viewed from above.

Construction management plan.
Outlines the approach to be taken for managing construction works to minimise impacts eg including those trees to be retained. The plan will help ensure tree protection proposals are practical and implemented.

Pre-commencement site meeting.
Held on site before works start, with the developer's arboricultural consultant, the site foreman and an LPA representative to (i) discuss working procedure details and (ii) agree either the precise position of the approved tree protection measures to be installed or that all tree protection measures have been installed correctly.

Temporary stop notice (TSN).
An enforcement tool that allows LPAs to quickly address some breaches of planning control by requiring operations or a use of land to cease for up to 28 days.

Tree constraints plan.
Helps inform the development of a site plan by identifying the above and below ground constraints represented by trees.

Tree preservation order (TPO).
Gives legal protection to trees or woodlands.

Tree protection plan.
Has precise information on the location of existing trees to retain within a development site, and the protection measures to enforce during the building process.

Tree removal plan.
Shows the trees to be felled to allow a proposed development to take place.

Case study
Using canopy cover targets in development management and design

Location
Wycombe, England

Project category
Residential

Policy DM34 of the Wycombe Local Plan (2019)[20] requires all new developments outside town centres and over 0.5 ha to achieve a future canopy cover of at least 25% within 25 years. Within town centres and on sites below 0.5 ha, developments are required to maximise the opportunities available for canopy cover. This is intended to help improve biodiversity, visual amenity, resilience to climate change and alleviate pollution issues.

Implementation of policy DM34 is supported by a supplementary planning document[21] and canopy calculator workbook[22] providing a standardised methodology to account for existing canopy and future canopy growth in development proposals. Calculations are based on soil volume requirements and individual species growth patterns.

If the policy cannot be met through trees alone, other green infrastructure elements such as green roofs and green walls can be used. The approach also accounts for situations where easements preclude the creation of new canopy cover.

The Vistry Partnership's Clay Lane development was one of the first projects that applied policy DM34. This development will deliver 39 homes (19 affordable), including three blocks of flats and 21 houses in a tree rich, quality environment on the rural fringe of High Wycombe.

While the design team had worked with canopy cover before, "*it was the first time we were provided with a clear calculation method to deliver canopy objectives within a development proposal*" explains Isaac Winchcombe, from Pegasus Group, the landscape architect for the project, adding "*This is very helpful*".

It was initially considered challenging to reach the 25% canopy cover target. The development was subject to ill-founded restrictions resulting from a blanket application of the NHBC Standard[23] for low rise buildings in shrinkable clay areas, regardless of soil types, or in lieu of a robust approach to foundation design.

However, the need to meet the canopy cover target led to creative thinking and a stronger focus on incorporating large canopy growing trees. This included tulip trees (*Liriodendron tulipifera* spp) in green spaces and sweet gum (*Liquidambar styraciflua* spp) alongside streets and other hard landscapes throughout the development.

It also encouraged the integration of a small woodland on the northeast boundary of the site where a landscape buffer was required to help screen the future development from the surrounding countryside. Here, the woodland habitat provided also helped deliver biodiversity net gains objectives.

20 *Wycombe District Local Plan: Adopted September 2019*. Link

21 *Canopy Cover Supplementary Planning Document: Guidance to accompany policy DM34 of the Wycombe District Council Local Plan* (March 2020). Link

22 Canopy cover calculator. Link

23 NHBC Standard 2022, section 4.2. Link

Clay Lane development landscape masterplan achieves the 25% canopy cover target through preserved hedgerows, newly planted individual trees and woodland creation.
Image: Pegasus Group

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