

Buffer Planting

INTRODUCTION

In a planning application scenario, a planted buffer may be required to address LCC policy N24 and Supplementary Planning Guidance No.25 "Greening the Built Edge". The purpose of this would be to assimilate a development into its surroundings. A planted buffer might also be applied to other more informal situations such as subdividing development sites, forming boundary treatments, creating shelter belts, forming green infrastructure corridors or playing a role in biodiversity /wildlife corridors.

This guidance provides recommendations for arboriculturists, architects, landscape architects as well as planning officers. Professional judgement is required in applying the guidance on a case by case basis, to address site specific circumstances.

As a general rule, any buffer planting should be located in the public domain and **not in private gardens** or in any such situations where the future stewardship cannot be guaranteed. Positive facing of development towards any buffer is the preferred layout arrangement which would offer visual amenity as well as natural surveillance. If rear gardens back onto a buffer, this is likely to lead to illegal garden expansion and other problems such as dumping of waste.



General example of buffer



Example - positive facing to buffer

DESIGN

- **DIMENSIONS** - this is dependent on the scale of development. The HM Government's body for Motorways, Highways England, advises in its Design Manual for Roads and Bridges (DMRB) that screening belts should be a minimum of 10m wide/depth. In the case of a residential development (2 storey), a default 10m deep planting belt would be required plus a minimum 5m standoff clearance to structures to avoid any future conflict (total depth of space 15m). The depth of planting may be greater than 10m extending to up to 30m to respond proportionally to a larger scale development or specific circumstances/site sensitivities. Good twig density (achieved by depth of belt) is required for the buffer to be effective in winter. All details and dimensions may vary according to the site circumstances but proposals must be agreed with the Local Authority.
- Note dimensions are evidence based and reference research carried out by University of Gloucestershire. See also the publication - The Planting Design Handbook – Nick Robinson University of Gloucestershire.



Winter elevation



Summer cross section



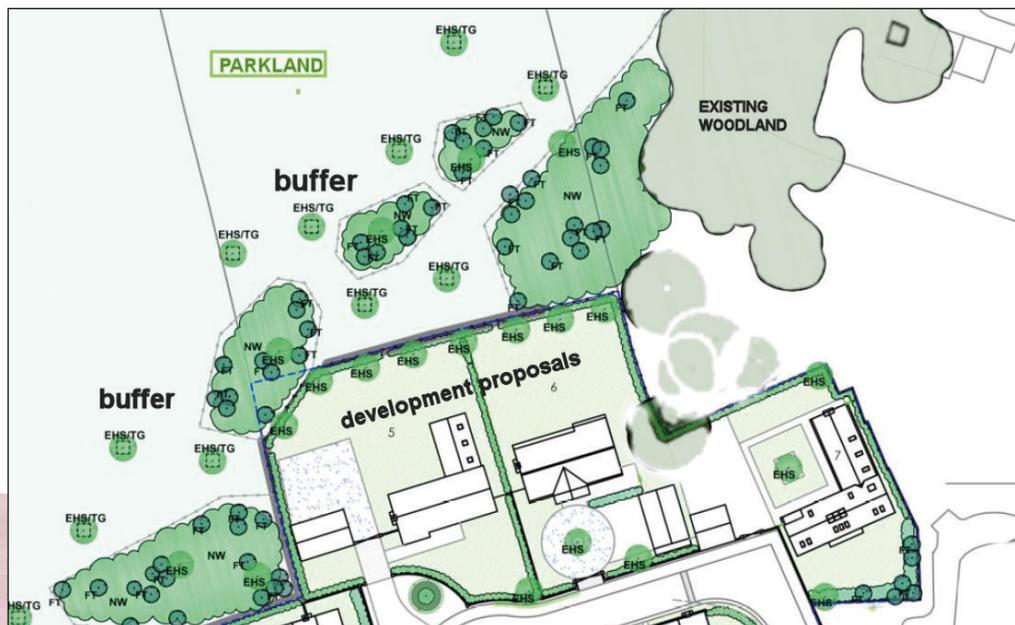
Winter cross section

- **OTHER GUIDANCE** - the design must conform to:
 - LCC Guideline Distances from Development to Trees 2012 - to avoid conflict as planting matures. The ultimate height and spread of the buffer must be considered and how this could impact on gardens and buildings. Layouts will require careful adjustment to ensure structures are set back sufficiently far from the planting to avoid future conflict. This guidance provides tables with dimensions to guide any layouts.
 - LCC Neighbourhoods for Living SPG (includes Amenity Space requirements)

- **EARTHWORKS** - depending on site specifics, the planting could be combined with earth mounding/bunding to increase immediate impact and effectiveness of the screen. Any mounding should not look alien or be over engineered but rather it should be free flowing and sympathetic to its context. Mounding can additionally act as an effective sound barrier and provide immediate extra height to the planting. Treatment of the soil/subsoil and the avoidance of compaction is a critical factor for success (BS8601/2013 Subsoil & BS 3882/2015 Topsoil).

- **SHAPE** - the line of the planting may be varied to give a more naturalistic effect in certain circumstances. In other situations it may be appropriate to create gaps to allow views in/out or use other approaches to ensure the planting looks less artificial/ engineered and is sympathetic to the surrounding landscape character. A combination of individual standalone parkland trees combined with mass planting could be appropriate approach in certain circumstances as in the example below.

- **OVERHEAD LINES** - overhead lines must be avoided and likewise any underground services. A much greater standoff may be required in some circumstances such as where planting is adjacent to a Highway or buildings.
- **ACCESS** – ease of access for maintenance/ management purposes is an essential consideration.



Informal buffer arrangement



Adel - buffer soon after planting Feb 2016



Adel - maturing belt 2019

SPECIFICATION

- **SOIL** - soil depth shall consist of 300mm topsoil and 600mm subsoil (in accordance with BS3882 (see *LCC GUIDANCE TOPSOIL BS3882 2015*))
- **SIZES** - a selection of planting specification sizes shall be used ranging from 60-90cm transplants; whips; feathered trees and a selection of standards NOTE - a minimum of 25% of mix must be above transplant size specification. All planting must be in accordance with BS3936 1992: Nursery Stock and BS 8545 2014 Trees from Nursery to Independence. Standard size trees and above must be either Container Grown, Air pot or Root Balled.
- **SPACING** - plant spacing 1 - 1.5m centres (1 - 0.44 plants/m²) depending on circumstances and the spread of the establishment required.
- **STRUCTURE** - a multi layered structure, of mainly native species, is required. The species must consist of dominant trees, sub-dominant trees, a shrub layer, and a peripheral "woodland edge". Edge planting is particularly critical if located adjacent to a garden boundary for instance. An element of evergreen must be included. NOTE- there is a presumption in favour of having large canopy trees that are long lived forming at least 25% of the tree element. Large species provide the greatest ecosystem service and mitigation for climate change (such as carbon storage). Management must be geared towards prioritising these species.
- **ACCESSORIES** - the use of plastic products must be avoided. The specification shall include:
 - soil conditioner
 - mulching (bark mulch or bio-degradable mulch mats such as sheep's wool, cardboard and fabric mulches like hemp can be used)
 - bio-degradable tree shelters such as cardboard
 - staking (using non plastic bio degradable tree



Buffer structure

- ties such as Green - tech
- Natural tree tie is made entirely of natural fibres)
- rabbit protection
- stock proof fencing etc. as required in accordance with the site specifics.

PLANTING DENSITIES

| Centres/per m ² | Plants/per m ² |
|----------------------------|---------------------------|
| 150 mm | 45 |
| 200 mm | 25 |
| 300 mm | 11 |
| 400 mm | 6.3 |
| 500 mm | 4 |
| 600 mm | 2.8 |
| 700 mm | 1.98 |
| 800 mm | 1.6 |
| 900 mm | 1.2 |
| 1000 mm | 1 |
| 1500 mm | 0.44 |
| 2000 mm | 0.3 |

- **FENCING** - the default position is that there is a requirement for fencing on all sides of the planting. Depending on the adjoining land use, the outside treatment may vary. For instance if in an urban setting then security type fencing may be required but if it abuts agricultural land then BS standard stock proof fencing will be required. The inside site fence may vary also but the minimum requirement is for a post and wire mesh fence. Maintenance access must be incorporated.
- **WIND PROTECTION** - the specification must take account of wind protection in exposed situations. Solutions may include the use of shelter nurse species in the mix (possibly thinned out at a later date) or the use of wind shield mesh fencing
- **ARRANGMENT** - planting to be arranged in same species clumps/ drifts of 3-9 plants depending on the scale of the area.

- **EVERGREEN** - an evergreen element should be included to assist in an all year round effect
- **AIR QUALITY** - where improvement of air quality is an objective of the planting then this may influence the species selection (references: <https://www.woodlandtrust.org.uk/mediafile/100083924/Urban-air-quality-report-v4-single-pages.pdf> and <http://www.forestry.gov.uk/fr/URGC-7EDHQH>)

- **COMPLIANCE** - in a planning application scenario, photos of finished planting scheme may be required as evidence of compliance alongside 7 days notice for the Council to attend a site meeting to inspect the works



Buffer in summer



Buffer in winter

GENERAL

- **GROUND PROTECTION** - in a development context the planting should be located in undisturbed ground. During construction, the ground area (soil conditions/soil structure) must be protected by the creation of a pre-commencement "Construction Exclusion Zone" in accordance with BS5837 (trees in relation to design, demolition and construction) in the same way as any existing trees are protected. This is critical to achieve a highly successful planting scheme and to avoid expensive replacements for planting failures.
- **ROTAATION** - avoid mechanical rotavation over any Root Protection Areas of existing trees (in accordance with BS5837). Mechanical rotavation is likely to lead to damage to tree roots that are normally just under the surface.
- **MANAGEMENT PLAN** for the life time of the development and beyond is required - any planting will normally be accompanied by a Management Plan (refer to LCC Guidance on Management Plans). The management regime will be required to ensure the successful establishment including thinning operations in accordance with standard woodland management practice to achieve a mature native woodland. In particular
 - thinning of mass planted vegetation where climax trees are emerging.
 - management of understorey at 5 and 10+ years onward; periodic coppicing, formative pruning.
 - timed inspection for failed plantings, and programmed replacement.
 - litter picking and rubbish clearance

References

- ◇ The Planting Design Handbook – Nick Robinson University of Gloucestershire
- ◇ Guidance Note No.3 Planting and Managing Amenity Woodlands (D.R. Helliwell – Arb Assoc 2006)

Relevant British Standards

- ◇ BS 8545 2014: Trees from Nursery to Independence
- ◇ BS8601/2013: Subsoil & BS 3882/2015: specification Topsoil
- ◇ BS5837 2012: trees in relation to design, demolition and construction
- ◇ BS 4428 1989: Code of practice for general Landscape Operations
- ◇ BS3936 1992: Nursery Stock part 1 Specification for Trees and Shrubs.
- ◇ BS 7370 1993: Part 4, Grounds maintenance recommendations including shrub pruning

GENERAL CHECKLIST

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|--|--|
| • POSITIVE FACING – natural surveillance | |
| • PUBLIC DOMAIN - not in private gardens | |
| • P.D. Rights - planning officer consideration (buffer rear of gardens) | |
| • DIMENSIONS – 10m deep default depth | |
| • SHAPE - naturalist effect appropriate? | |
| • VEWS – consider views through buffer | |
| • EARTHWORKS - for greater effect? | |
| • SOILS - BS3882 | |
| • PROTECT SOIL – protect designated planting zone from construction damage as per BS5837 | |
| • MIXED PLANTING SPECIFICATION (transplants- heavy standards) 25% of mix to be above transplant size | |
| • STRUCTURE – through species choice and grouping | |
| • PLANT SPACING – see recommendations | |
| • BIO-DEGRADABLE accessories and plastic reduction | |
| • ACCESSORIES - conditioner; mulch; tree shelters; staking; rabbit protection | |
| • FENCING – on all sides | |
| • ACCESS for maintenance | |
| • MANAGEMENT PLAN – thinning/closed canopy; weed control (no strimmers); replanting of failures etc | |

PLANNING OFFICER CHECKLIST

| | |
|--|--|
| • POSITIVE FACING? | |
| • BUFFER IN PUBLIC DOMAIN? | |
| • P.D. Rights? (if gardens back onto buffer) | |
| • LEGAL AGREEMENT? Include management or buffer? | |
| • TRIGGER POINTS - for the implementation of the buffer | |
| • PHASING – phased condition for the planting? | |
| • NOTICE TO INSPECT PLANTING - build this into planting condition | |